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# Post-Disaster Redevelopment Plan

## 2022 Edition



**Palm Beach County  
Public Safety Department  
Division of Emergency Management**

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## PROMULGATION STATEMENT

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This Post-Disaster Redevelopment Plan (PDRP) is intended to serve as a single source, countywide document to promote, assist, and facilitate post- and pre-disaster decisions and actions relating to long-term community recovery, reconstruction, and economic redevelopment following major or catastrophic disasters. The 2022 edition is an update of the plan published in 2013 and supersedes all previous plans promulgated for this purpose.

This PDRP has been developed to complement, support and expand the guidance offered by Palm Beach County's Comprehensive Plan, Comprehensive Emergency Management Plan (CEMP), Recovery Plan, Post Disaster Economic Recovery Plan, and other official county and municipal policy and operational documents addressing topics and issues relevant to long-term community recovery and redevelopment.

The content and format of this PDRP was developed to meet or exceed the guidance offered by relevant state statutes, *Post-Disaster Redevelopment Planning: A Guide for Florida Communities*, published jointly in 2010 by the Florida Department of Community Affairs and the Florida Division of Emergency Management (FDEM), the National Response Framework, and the provisions outlined in the National Disaster Recovery Framework.

Oversight of the development, maintenance, enhancement, and administration of this PDRP is the responsibility of the PDRP Executive Committee. Implementation of the plan rests primarily with the Working Groups identified herein. The Division of Emergency Management (DEM), under the direction of the PDRP Executive Committee, is charged with administering and coordinating PDRP program activities in accordance with local, state, and federal guidance, including the periodic review and updating of the plan's content in accordance with best professional and planning standards and practices.

This plan is hereby promulgated as of the sign date below.

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Mary Blakeney, Director  
Division of Emergency Management

August 29, 2022

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Date

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**TABLE OF CONTENTS**

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RECORD OF REVISIONS ..... 3

PROMULGATION STATEMENT ..... 5

INTRODUCTION ..... 12

    Origin of Post-Disaster Redeveloping Planning in Palm Beach County ..... 12

    Post-Disaster Redevelopment Plan ..... 13

        Description..... 13

        Purpose ..... 13

        Guiding Principles ..... 13

        Goals and Objectives ..... 14

        Benefits ..... 15

        Using This Plan ..... 15

        Statutory Guidance ..... 16

        Types and Levels of Disasters ..... 16

        Social Vulnerability Index ..... 17

DISASTER MANAGEMENT PROCESS ..... 18

    Relationship of the PDRP with Other Local Plans ..... 18

        Short Term Recovery Phase ..... 18

        Long-Term Recovery ..... 19

    Key Goals of Long-Term Community Recovery..... 19

    Successful Community Recovery ..... 20

PDRP ACTIVATION ..... 21

    Triggers/Considerations ..... 21

    PDRP Activation Decision Authority ..... 22

    PDRP Activation Process..... 22

    Types and Levels of Disasters..... 23

    Key Post-Disaster Subject (Issue) Areas..... 27

    PDRP Deactivation ..... 28

OVERVIEW OF PDRP ACTIVATION ORGANIZATION STRUCTURE ..... 28

    Lead Role of the Deputy County Administrator ..... 28

    Primary PDRP Organizational Entities ..... 29

    Communication and Coordination..... 29

PDRP IMPLEMENTATION THROUGH WORKING GROUPS ..... 31

    PDRP Executive Committee ..... 31

Working Groups ..... 31

OVERVIEW OF PRIMARY AREAS OF FOCUS AND MEMBERSHIP ..... 33

Executive Committee Responsibilities & Membership ..... 33

THE REDEVELOPMENT TASK FORCE ..... 34

    Economic Redevelopment Working Group ..... 36

    Infrastructure & Public Facilities Restoration Working Group..... 37

    Land Use Working Group ..... 38

    Environmental Restoration Working Group..... 39

    Health and Social Services Working Group..... 40

    Housing Recovery Working Group..... 41

    Governance and Financial Administration Working Group..... 42

    Public Outreach Working Group..... 43

Stakeholder Organization and Participation..... 44

    PDRP Support Staff..... 44

Role of the Recovery Operations Center (ROC)..... 49

Pre-disaster PDRP Implementation..... 50

PDRP MAINTENANCE/UPDATING..... 51

APPENDICES ..... 52

    Appendix I: PDRP Update History ..... 52

        Summary of Plan Development/Updating Processes ..... 52

        1995 Post-Disaster Redevelopment Plan..... 52

        2006 Post-Disaster Redevelopment Plan..... 53

        2011-2013 PDRP Update ..... 54

        2022 PDRP Update..... 55

    Appendix II: PDRP Adoption History ..... 56

        PDRP Adoption Documentation ..... 56

        Critical reviews of the 2006 Palm Beach County PDRP..... 66

        Government Accountability Office ..... 66

        FEMA – University of Oregon (2010) ..... 69

        Planning for Coastal Resilience: Best Practices for Calamitous Times ..... 70

        Gap Analysis of 2006 PDRP by the Florida Department of Community Affairs ..... 71

    Appendix III: Action Plan..... 87

        Short-term Recovery Actions ..... 87

        Pre-disaster Short-Term Actions ..... 89



Pre-disaster Long-Term Actions ..... 104

Post-disaster Long-Term Recovery Actions..... 109

Appendix IV: Sea Level Rise..... 114

    Overview of Local, Regional, State Activities Related to Sea Level Rise..... 114

    Select Reports: Sea Level Rise in Palm Beach County..... 117

    Integrating Sea Level Rise into Local Plans..... 122

    PDRP Plan Integration Analysis/Sea Level Rise ..... 123

    Sea Level Rise Integration and Community Resilience ..... 127

Appendix V: Key Redevelopment Issues and Priorities ..... 129

    The Challenge of Governance during Long-Term Recovery ..... 129

    Sustaining Essential Government Services in the Face of Post-Disaster Economic Crisis  
 ..... 132

    Municipal Insolvency ..... 134

Appendix VI: Major Post-Disaster Redevelopment Goals and Issues..... 141

    Local Government Recovery Issues ..... 141

    Economic and Private Sector Issues ..... 147

    Social and Environmental Issues ..... 152

    Redevelopment and Mitigation Issues..... 157

Appendix VII: Observations/Guidance of Key Recovery Issues..... 162

    Local Government Recovery Priorities ..... 164

    Infrastructure and Public Facilities..... 168

    Land Use..... 173

    Housing..... 178

    Economic Redevelopment..... 183

    Health and Social Services ..... 190

    Environmental Preservation and Restoration ..... 199

Appendix VIII: PDRP Priority Issues & Strategies by Topic Area ..... 205

Appendix IX: Funding & Assistance Sources for Community Redevelopment..... 210

    Potential Federal and State Recovery/Redevelopment Funding Sources..... 211

    Recovery Funding Assistance Programs ..... 212

    Potential Federal and State Recovery/Redevelopment Funding Sources..... 219

Appendix X: State and Key Outside Economic Redevelopment Organizations/Agencies  
 ..... 222

Appendix XI: Engaging Private Sector Resources in Community Recovery ..... 226

Appendix XII: National Disaster Recovery Framework (NDRF) ..... 230

Federal Agencies & Assistance Programs/Services ..... 232  
Appendix XIII: Post-Disaster Visioning and Community Participation Process Guide... 234  
Appendix XIII: Social Vulnerability Index ..... 238  
GLOSSARY ..... 240  
ACRONYMS ..... 254

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## INTRODUCTION

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Palm Beach County's geographic location, coastal beauty, exotic environmental resources, and appealing tropical climate have greatly influenced its explosive growth and prominence as a great place to live, work, and visit. However, these same natural characteristics also contribute to its vulnerability to a full range of natural and man-caused hazards. The County has a storied history of disaster events, including seven major hurricanes in the course of a 30 year period, two hurricanes in a three week period, and the second most deadly hurricane in U.S. history. The threat of a major breach in the Herbert Hoover Dike looms among the highest concerns of the County and the U.S. Army Corps of Engineers. As a relatively flat, low lying, heavily developed coastal county that experiences frequent intense rain events and periodic tropical storms, Palm Beach County is especially susceptible to inland flooding, coastal erosion, and storm surge damage. Concerns over the long-term effects of sea level rise have emerged as a priority as well.

These are among the more compelling reasons Palm Beach County has chosen to be a proactive leader in community disaster preparedness, resiliency, and pre-event redevelopment planning. The County's PDRP is one manifestation of this effort. The PDRP is considered to be a cornerstone strategic tool for building a more disaster resilient community and economy.

### Origin of Post-Disaster Redeveloping Planning in Palm Beach County

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Palm Beach County was among the first jurisdictions in Florida to prepare a PDRP. The 1996 plan was very rudimentary, narrow in scope, and focused primarily on land use and development issues.

Influenced by the near miss of a Category 5 storm (Hurricane Floyd) in 1999, direct impacts from three Category 2 hurricanes in a two year span (2004 and 2005), and lingering memories of the total transformational devastation caused by Hurricane Andrew in Homestead, Florida in 1992, Palm Beach County's DEM concluded that a more comprehensive actionable guidance document was needed, geared to catastrophic disaster events. In concert with the County's Planning Zoning and Building Department and the Economic Development Office, efforts began in early 2005 to develop an enhanced, more comprehensive guidance document. Treasure Coast Regional Planning Council and an area hazard mitigation planning consulting firm were retained to support the project. The goal of the project was to develop a plan that went beyond State statutory requirements existing at the time to address a full range of challenges and issues that will likely confront community leaders if and when the County suffers a major or catastrophic event. During the course of plan development, Katrina devastated the Gulf region of the U.S., reinforcing the wisdom of the project and providing an unfortunate, but valuable, case study for the project team.

In 2006 the County published and adopted a Countywide PDRP designed specifically to support the difficult decisions and actions that must be made in the chaotic post-disaster environment in order to accomplish community long-term recovery, reconstruction, and economic redevelopment in a timely and effective manner. The plan also addressed pre-disaster and short-term recovery decisions and actions having long-term implications.

The PDRP was updated in 2011 and 2022. A complete history of Palm Beach County PDRP planning is contained in Appendix I.

## Post-Disaster Redevelopment Plan

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### Description

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A PDRP is a guidance document that identifies and lays out policies, operational strategies, and roles and responsibilities to help guide the decisions and actions of community leaders relative to long-term recovery and redevelopment following a major or catastrophic disaster. In short, it serves as a blue print for rebuilding the physical, social, and economic fabrics of our community.

The PDRP also encourages capitalizing on the unique window of opportunity for hazard mitigation and community improvement provided by the post-disaster environment, consistent with the goals of the local Comprehensive plan and with full participation of the citizens.

Key recovery and redevelopment topics emphasized in the PDRP include, but are not limited to:

- Business resumption and economic redevelopment
- Housing repair and reconstruction
- Infrastructure restoration and mitigation
- Governance and financial management
- Sustainable land use
- Environmental preservation and restoration, and
- Short-term recovery actions that affect long-term redevelopment

### Purpose

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Palm Beach County's PDRP is intended to be a single source reference to guide action and decision making during the difficult long-term disaster recovery period. In addition, it suggests actions the community can take before disaster strikes to facilitate a more timely, effective, and complete post-disaster recovery and to use redevelopment as an opportunity to go beyond returning to the status quo to build a more sustainable, disaster resilient community.

### Guiding Principles

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Long-term community recovery planning should be:

- Action-oriented and support other community plans and policies
- Community driven
- Based on public involvement
- Locally controlled
- Project-oriented
- Incorporate mitigation and community improvement approaches and techniques

## Goals and Objectives

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Among the primary goals and objectives of the PDRP are the following:

- Establish a vision of how the community wants to rebuild and what it seeks to be and look like in the post-disaster environment
- Develop a positive momentum and identity for the recovery
- Optimize self-sufficiency and self-determination, reduce dependency on outside assistance, retain local control over recovery, and speed economic redevelopment through the preferential use of local and regional resources and capabilities
- Present an organized, sellable vision to successfully secure funding assistance and program support
- Effectively secure, direct, and manage outside resources and assistance needed from federal, state, private sector, and other non-governmental sources
- Lay the foundation for holistic recovery and bolster institutional capacity through: broad engagement of community, regional, state, federal and non-governmental resources; building on collaborative partnerships and initiatives; ensuring an understanding of assistance programs and resources; and establishing productive working relationships with public and private sector organizations within and outside the community
- Effectively identify, address, and plan for the simultaneous coordination of a full range of redevelopment and resiliency issues including business resumption and economic redevelopment, housing repair and reconstruction, infrastructure restoration and mitigation, sustainable land use, environmental preservation and restoration, sustainable jurisdictional governance, and financial management
- Exploit opportunities to build back better and smarter through hazard mitigation and community improvement, consistent with the goals of the local comprehensive plan and with full participation of citizens
- Link and integrate post-disaster recovery language, priorities, principles and issues with other community plans, including the Comprehensive Plan, the CEMP, the Recovery Plan, the Strategic Economic Development Plan, Post-Disaster Economic Recovery Plan, and the Local Mitigation Strategy (LMS)
- Provide for a seamless transition from disaster response and short-term recovery activities, roles, and responsibilities to those required for long-term recovery and redevelopment
- Effectively integrate and coordinate multi-disciplinary resources, many of whom may be unfamiliar with emergency management protocols, systems, policies, and practices
- Ensure that recovery and redevelopment take place in a manner consistent with community values
- Gather resolve and spirit, progress forward, and heal through the active process of rebuilding together

## Benefits

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Many benefits accrue from having a PDRP:

- First and foremost, having a prepared plan should promote a faster and more efficient recovery. Creating a process and mechanism to make smart post-disaster decisions and prepare for long-term recovery requirements will enable the community to do more than react, and hopefully facilitate post-disaster action while minimizing unproductive, time-consuming confusion and debate. By identifying appropriate planning mechanisms, financial assistance sources, and agency capabilities, roles and responsibilities beforehand, the County should be able to begin the road to recovery more quickly.
- Having a PDRP assists with anticipating issues and capitalizing on opportunities for community improvement beyond rebuilding to the status quo. Without a guiding vision, short-term decisions might otherwise inadvertently restrict long-term, sustainable redevelopment. The PDRP strengthens the recovery process, and allows community leaders to assess risk levels and to craft strategies and plans for long-term redevelopment free of much of the stress and chaos that accompany major disasters.
- The PDRP encourages government officials, residents, and businesses to consider long-term redevelopment goals and develop informed policies and procedures that will guide recovery and redevelopment. While outside resources will be needed and welcomed after a major or catastrophic disaster, a locally developed Plan will help to channel those resources to effectively meet the community's specific needs and goals.

## Using This Plan

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The PDRP is intended to be a dynamic, living document that will be regularly reviewed and enhanced over time to enrich its practical utility and make it more user friendly for those charged with activating and implementing it.

This edition of the PDRP incorporates several changes made in response to observations of the planning team, feedback from PDRP Executive Committee, Working Group members, and feedback from a PDRP tabletop exercise in 2013.

With the continuous integration of new information, the PDRP becomes increasingly voluminous and difficult to navigate. Recognizing the varying needs and interests of different user groups, an effort has been made to reorganize the plan to accommodate changes and make it easier for users to locate needed information quickly and drill down to whatever level of detail they need or desire.

The PDRP is now organized into a single document with key information related to long-term recovery objectives and goals, activation and demobilization processes, and working group membership identified in the core plan. Appendices following the plan provide a variety of contextual and technical details that are important for working groups and PDRP staff to consider during the execution of the PDRP and should be referenced as needed.

## Statutory Guidance

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The 2006 PDRP was developed in compliance with Chapter 163 of Florida’s Growth Management Act, Rule 9J-5, Florida Administrative Code (F.A.C.), and the Coastal Management Element of the County’s Comprehensive Plan.

In its pre-2011 form, Florida’s Growth Management Act of 1985 and its subsequent amendments placed a burden on coastal counties to plan and regulate land use and development to protect coastal resources, life, and property. The Act and its implementing regulations contained numerous general and specific requirements which coastal counties were expected to address, including the development and adoption of PDRPs.

In the Spring of 2011 several significant changes in Florida growth management laws were instituted in Tallahassee. Among these changes, Chapter 2011-139, Laws of Florida, revised Section 163.3178, Florida Statutes and eliminated Rule 9J-5, Florida Administrative Code. In so doing, language that explicitly “required” coastal communities to prepare PDRPs was dropped.

The State’s Community Planning and Emergency Management divisions, however, continue to encourage and support local jurisdictions involved in or interested in getting involved in the Statewide Post-Disaster Redevelopment Planning Initiative to the extent permitted by the remaining, albeit less stringent, guidance provided under Chapter 163.

Recognizing the criticality of having long-term redevelopment plans and the growing national trend toward adopting such plans, Palm Beach County, and most Florida communities, can be expected to continue to support the basic tenets of the Post-Disaster Redevelopment Planning Initiative at the local level.

## Types and Levels of Disasters

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Many of the recovery issues, strategies, and actions outlined in this PDRP are applicable to numerous types of disasters which may or may not have long-term implications and impacts. The 2006 PDRP was designed principally for use with the three most probable major disaster types: intense hurricanes and tropical storms; failure of the Herbert Hoover Dike; and large-scale flooding events. The 2022 PDRP continues to use these three disaster types in its planning assumptions.

Detailed discussions on these disasters, including pre-event hazard-specific plans, mitigation and recovery strategies, vulnerability assessments, etc. are contained the Palm Beach County LMS .

Technically, the PDRP is useful for all levels of disasters: minor, major, and catastrophic. However, because the scale of long-term recovery and redevelopment is almost always proportional to the severity of the damage caused by a disaster, the PDRP is expected to be most valuable with major or catastrophic disasters which affect a large segment of the community or region.

As they require significantly different planning strategies and recovery actions, other potentially major or catastrophic disasters such as highly contagious diseases, acts of terrorism, technological disasters, etc. will be considered for inclusion in future editions of the PDRP.



## Social Vulnerability Index

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New to the 2022 PDRP is the inclusion of the Social Vulnerability Index (SVI). This index is intended to provide additional information to the PDRP Executive Committee, working groups, and staff when working toward long-term recovery goals.

According to the US Center for Disease Control, social vulnerability is defined as the characteristics of a person or group in terms of “their capacity to anticipate, cope with, resist and recover from the impact” of a discrete and identifiable event in nature or society. Characteristics that influence social vulnerability for the US population; among the most commonly accepted ones are age, gender, race, socioeconomic status, medical status, disability, and English language proficiency.

As of this writing, the Federal Emergency Management Agency (FEMA) has not developed guidance indicating how SVI will influence disaster recovery. Possible guidance could influence FEMA and other Federal recovery programs and funding. Until FEMA guidance is developed and released, the FDEM recommends awareness of the CDC SVI model and data.

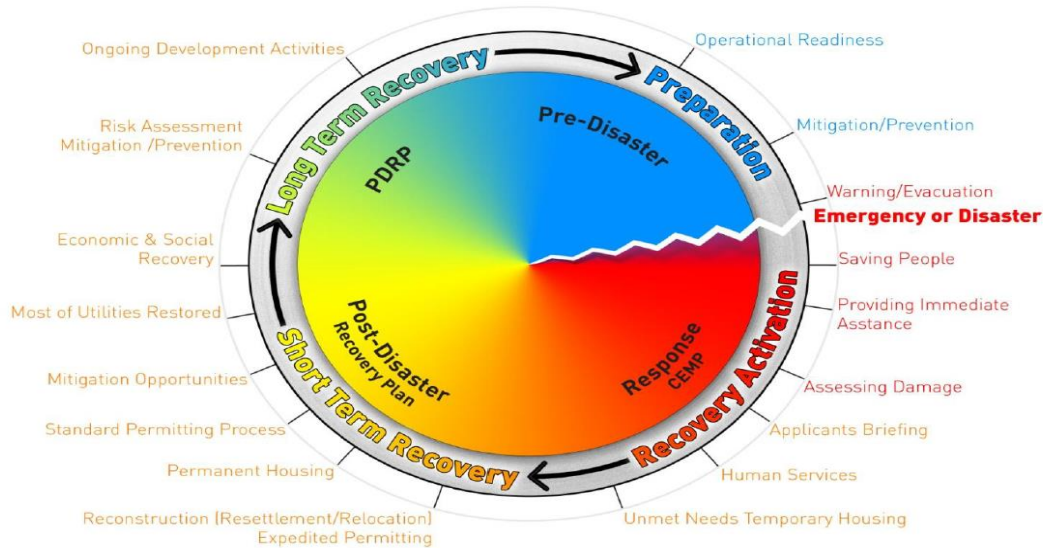
See Appendix XIII for CDC SVI references.

## DISASTER MANAGEMENT PROCESS

### Relationship of the PDRP with Other Local Plans

The PDRP is not a stand-alone document. Its scope, guidance and implementation must work effectively with, complement, and support other relevant policy and guidance documents critical to effective disaster management. Appropriate language recognizing linkages with other plans such as the Comprehensive Plan, CEMP, Recovery Plan, LMS, Strategic Economic Development Plan, and Post-Disaster Economic Recovery Plan. The figure below provides a simplistic illustrative depiction of the time-phased relationships with key disaster-relevant plans and representative activities covered by each plan. Overlaps denote key transition and integration points between and among the plans during the different phases of a disaster. While the depicted flow and interactions are useful in understanding the disaster management process, they are neither definitive, fixed, nor precise. There can be significant variation from one disaster event to another.

**Time Phased Relationship of the PDRP and Other Disaster Management Plans**



### Short Term Recovery Phase

Short-Term Recovery, as identified in the Recovery Plan, is the critical time period when life-saving activities have ceased, but survivors remain in a state of uncertainty and transition. While the transition from response to recovery is gradual and not clearly delineated, there are a number of priority activities which signal the predominance of recovery-related activities. During short-term recovery, the goal is to reopen habitable areas by remediating any unsafe conditions such as severely damaged infrastructure, hazardous materials, downed power lines or unstable structures. Search and rescue operations are ceasing and live recovery is improbable. Debris removal teams have at least completed emergency clearance of roadways to open one lane. Power restoration efforts should be steadily progressing and critical facilities should be operational. The human service goal is to identify survivors with long-term displacement needs and move them from emergency and transitional shelters to more appropriate and sustainable temporary solutions such as rental properties and mobile housing units. Enhanced transportation services may be required

to return evacuees from emergency shelters to alternate locations, such as interim housing, places of employment, schools, etc. Persons with special medical, physical, and/or mental health needs may require additional assistance such as transportation. During the Short-Term Recovery Phase, the Recovery Operations Center will seek to deactivate most immediate short-term life supporting systems such as shelters, mobile feeding sites, comfort stations, and mutual aid support crews which may no longer be essential. Key priorities for short-term recovery include: restoring government service, repairing public facilities and infrastructure, providing short-term assistance to individuals and families, helping residents resume basic routine activities, restoration of essential goods and services, providing emergency housing, and identifying immediate emergency funds for individuals, businesses and the government such as bridge loans.

The Recovery Executive Policy Group will transition to the Post-Disaster Redevelopment Executive Committee and implement the policies detailed in the PDRP.

### Long-Term Recovery

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Long-term recovery is the protracted phase of recovery that follows short-term recovery. Recovery actions during long-term recovery are increasingly guided by the PDRP and focus on more permanent, sustainable solutions; reconstruction of the community's destroyed or damaged physical features; a return to viability through the repair, restoration and revitalization of the social, economic and political processes, institutions, and relationships damaged by the disaster; and exploitation of opportunities to rebuild better, stronger, and smarter. The goal underlying long-term redevelopment is moving the community toward self-sufficiency, sustainability, self-determination, and greater disaster resilience. Long-term recovery activities may continue for years or decades depending on the severity and extent of the disaster damages and the availability of resources.

### Key Goals of Long-Term Community Recovery

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- Identify risks that affect long-term community sustainment and vitality.
- Rebuild to appropriate resilience standards in recognition of hazards and threats.
- Address recovery needs across all sectors of the economy and community, with an emphasis on individual and family recovery activities and unmet needs.
- Rebuild educational, social, and other human services and facilities according to standards for accessible design.
- Reestablish medical, public health, behavioral health, and human services systems.
- Reconfigure elements of the community in light of changed needs and opportunities for “smart planning” to increase energy efficiency, enhance business and job diversity, and promote the preservation of natural resources.
- Implement mitigation strategies, plans, and projects.
- Implement permanent housing strategies.
- Reconstruct and/or relocate, consolidating permanent facilities.
- Implement economic and business revitalization strategies.
- Implement recovery strategies that integrate holistic community needs.

- Implement plans to address long-term environmental and cultural resource recovery.
- Ensure there is an ongoing and coordinated effort among local, state, and federal entities to detect and deter waste, fraud and abuse.
- Identify milestones for the conclusion of recovery for local entities.

### Successful Community Recovery

Communities define successful recovery outcomes differently based on their circumstances, challenges, recovery visions, and priorities. One community may characterize success as the return of its economy to pre-disaster conditions, while another may see success as the opening of new economic opportunities. Although no single definition of a successful recovery can fit all situations, successful recoveries do share a common condition in which the community successfully meets its priorities to overcome the impacts of the disaster, reestablishes an economic and social base that instills the confidence of local citizens, and businesses regarding the community's viability, and rebuilds the community to be more resilient from future disasters.

The establishment of viability in the present and for the future is the critical variable that defines community recovery. Viability means the community has a developmental trajectory projected to result in continued self-sufficiency and its institutions are coping with and adapting to changing circumstances. Successful recovery also assumes the condition of the post-disaster community is generally acceptable to a critical mass of the residents.

The extent of recovery should not be measured by how closely the post-event community resembles the pre-event community. Things never return to what they were before the disaster event.

Because neither individuals nor neighborhoods recover at the same pace or in the same pattern, establishment of a clear timetable for long-term recovery is unproductive.

## PDRP ACTIVATION

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This section describes when and how the PDRP is activated. Activation officially launches the County's long-term recovery process and authorizes the commitment of resources to implementing the actions outlined herein.

### Triggers/Considerations

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A number of factors will be considered in decisions regarding if and when to activate the PDRP. These include, but are not limited to:

- Type and magnitude of the disaster:
  - By virtue of the damages that can be anticipated from Category 3, 4, and 5 hurricanes landfalling in Palm Beach County, PDRP activation is a virtual certainty. The issue is not "if," but "when" to activate the PDRP. Given the lead times involved, partial plan activation might begin even before landfall.
  - Plan activation decisions for hurricanes of lesser intensity and other forms of disasters will be more dependent on post event damage assessments.
- Situational considerations such as:
  - The status of short-term recovery efforts that clear the way for long-term recovery.
  - Availability and readiness of governmental resources that can be productively mobilized and committed to administering long-term recovery.
  - If a local, state and/or Presidential declarations, memos of understanding, etc. necessary to qualify the County for outside assistance, executed and is in place.
  - If institutional capacity levels are sufficient to meet the long-term recovery and redevelopment requirements for this event, and have been fully assessed
  - If reliable, all inclusive, assessments of damages have been developed in sufficient detail and form and can be used to justify assistance and ensure eligibility for compensation.
- Timing considerations such as:
  - If long-term recovery efforts can be thwarted or rendered ineffectual by further escalation of disaster damages or cascading physical, social, economic or political impacts.
  - How pressing are the needs to initiate long-term recovery actions (e.g., meeting windows of opportunity or otherwise qualifying for assistance)?
  - Are the tasks necessary to meet short-term recovery requirements and priorities sufficiently complete to free resources for long-term recovery responsibilities.
- Availability and readiness of community resources:
  - Status of local governmental, private sector, and non-governmental resources and capabilities.
  - Status of regional resources and capabilities.
- Opportunities for securing outside financial and non-financial assistance:
  - Are federal, state, and other assistance services and funds available for long-term recovery? Is there a sufficient window of opportunity available for securing these services and funds?

- Are National Disaster Recovery Framework (FEMA ESF #14 long-term community recovery) services available and appropriate?
- Are non-governmental organizations positioned to initiate long-term recovery assistance?

### PDRP Activation Decision Authority

Recommendations relating to activation of the PDRP will generally come from members of the PDRP Executive Committee participating on the Recovery Executive Policy Group during the early recovery phase as described in the *Palm Beach County Recovery Plan* and/or from the Deputy County Administrator. Final authority for activation ultimately rests with the Board of County Commissioners, the County Administrator, or Deputy County Administrator.

Implementation of pre-disaster actions called out in the PDRP does not require activation of the plan. Pre-disaster actions and initiatives can be initiated by Working Groups themselves unless special resources requiring approvals are involved.

### PDRP Activation Process

Most often, decisions as to if, when, and to what level the PDRP should be activated will be based on the magnitude, scope and type of damages suffered; the status of stabilization and early recovery efforts; and considered assessments of available long-term recovery resources and capacity. In the case of slow emerging disasters such as intense hurricanes, PDRP activation may be anticipated well in advance of the actual event itself.

When, in the collective opinion of those involved in short term recovery efforts, a consensus emerges that it may be time to activate all or part of the PDRP, the PDRP Executive Committee will be convened to discuss the timing and strategy for formally launching long-term recovery actions. The Executive Committee will prepare a formal position statement for presentation to the Deputy County Administrator and the Board of County Commissioners.

Upon official approval to activate the PDRP, all members of the Executive Committee will be notified and Work Groups charged with implementing actions in key recovery areas will be convened.

Assuming appropriate declarations are in place and communications have been opened with state and federal agencies in accordance with the *National Disaster Recovery Framework*, formal requests for state and federal assistance will be prepared and submitted with the assistance of the Local Disaster Recovery Manager (Deputy County Administrator), the State Disaster Recovery Manager (if assigned), and the Federal Disaster Recovery Coordinator (if designated).

At a minimum, the following individuals and organizations will be promptly notified of PDRP activation and provided regular recovery status reports and plans:

- Board of County Commissioners
- County Administrator

- Deputy County Administrator
- Members of the PDRP Executive Committee
- All working group members
- Community EM and Recovery stakeholders and partner organizations
- Municipal governments
- Regional governments
- Florida Department of Economic Opportunity
- Florida Division of Emergency Management
- FEMA Region IV
- Federal Disaster Recovery Framework principals and partner organizations
- Palm Beach County residents and businesses
- Palm Beach County and regional private sector partners
- Non-governmental partners and organizations (e.g., Long Term Recovery Coalition)
- U.S. Chamber of Commerce/Business Civic Leadership Center

### Types and Levels of Disasters

Although this PDRP is intended to be an “all hazards” guide, its language clearly reflects a heavy emphasis on hurricanes. Hurricanes provide perhaps the most useful frame of reference for a full range of impact levels. In general, however, the guidance offered in the plan will apply to a full range of disaster types.

It is anticipated the PDRP will be most likely activated and implemented for events involving:

- Major hurricanes
- Failure of the Herbert Hoover Dike
- Large-scale flooding events

Although clearly not a disaster event in the traditional sense, sea level rise will likely produce critical consequences in the form of progressive events that will impact broad segments of the County. These consequences include increasingly higher storm surge inundation, encroaching damages from coastal erosion, salt water intrusion into critical fresh water sources, increased inland flooding from reduced drainage capacities, etc.

Commonly used definitions of levels of disasters include:

1. "Catastrophic disaster" A disaster event that results in large numbers of deaths and injuries; causes extreme damage or destruction of facilities that provide and sustain human needs; produces an overwhelming demand on the state and local response resources and mechanisms; causes a severe long-term effect on general economic activity; and severely affects state; local, and private sector capabilities to begin and sustain response activities.
2. "Major disaster" As defined under the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C 5122) a major disaster is any natural catastrophe (earthquakes, explosion, fire, flood, high water, hostile actions, hurricanes, landslide, mudslide, storms, tidal wave, tornado, wind-driven water, snowstorms, or drought), or, regardless of cause, any fire, flood, or explosion, in

any part of the United States, which in the determination of the President causes damage of sufficient severity and magnitude to warrant disaster assistance under this Act to supplement the effort and available resources of States, tribes, local governments, and disaster relief organizations in alleviating the damage, loss, hardship, or suffering caused thereby.

3. "Minor disaster" Any disaster that is likely to be within the response capabilities of local government and results in only minimal need for state or federal assistance. The damage level to life and property is minimal and can be controlled and contained with resources within the municipality, or county in which they occurred.

The LMS is the basis for countywide hazards, vulnerabilities, and mitigation strategy activities. The LMS is the hazard and vulnerability analysis of record for the County.

The following chart provides some subjective guidance for deciding if a minor, major, or catastrophic disaster has occurred. These descriptions are not meant to provide legal authority or replace any established disaster definitions, but should be useful in suggesting decision points and actions to take based on the magnitude of impact.



*Common Characteristics of Catastrophic, Major, Minor Disasters*

| CATASTROPHIC DISASTER   | MAJOR DISASTER  | MINOR DISASTER   |
|---|---|--|
| <i>Most likely would be caused by:</i>  |   |  |
| <p><i>Category 4 or 5 hurricanes: Winds 130 MPH and higher, Surge 13 feet and greater</i><br/> <i>A direct hit by storms of this magnitude will cause immense destruction in the County. Significant human toll.</i></p>  | <p><i>Category 2 and 3 hurricanes: Winds between 96 and 129 MPH, Surge between 6 and 12 feet.</i><br/> <i>A direct hit will cause substantial physical damage. Relatively little loss of life.</i></p>  | <p><i>Tropical Storms and Category 1 hurricanes: Winds up to 95 MPH, Surge up to 5 feet.</i><br/> <i>A direct hit will cause scattered light physical damage. Loss of life unlikely.</i></p>   |
| <p><b>Large-scale failure of Herbert Hoover Dike</b></p>  | <p><b>Significant failure of Herbert Hoover Dike</b></p>  | <p><b>Minor failure of Herbert Hoover Dike</b></p>   |
| <p><b>Large-scale flooding (highly unlikely)</b></p>  | <p><b>Substantial area or scattered flooding</b></p>  | <p><b>Significant localized flooding</b></p>   |
| <i>May exhibit some or all of the following:</i>  |   |  |
| <p><b>Approx. \$50 billion or more in estimated losses.</b> TAOS models of the County calculate Cat. 4 &amp; 5 storms will cause this much in surge and wind damages. (Palm Beach County, 2004)</p> <p><b>More than 25% of housing is destroyed or not habitable.</b><br/>                     With such a severe reduction in housing stock much of the population will at least temporarily relocate. This could lead to workforce shortages which slow economic recovery and reductions in the tax base which limit local governmental functions.</p> <p><b>Most or all of the community’s structures are impacted in some way.</b><br/>                     This places a strain on the construction industry and local government building and planning staff, as well as making it difficult for anyone to return to normal daily operations.</p> <p><b>Most government operational centers are inoperable and County EOC operations are severely impacted.</b><br/>                     This causes an organizational hurdle for recovery operations. Government should provide assistance</p> | <p><b>Between \$10 and \$50 billion in damages, approx.</b><br/>                     The TAOS model calculates the dollar figures through a comparison of parcel data with wind and storm surge damage from Category 2 and 3 hurricanes. (Palm Beach County, 2004)</p> <p><b>5-25% of housing is destroyed or not habitable.</b><br/>                     A greater percentage of the population can return from evacuation, however shelters will remain overburdened. Also, some workforce shortages will slow recovery efforts.</p> <p><b>A majority, but not all, of the built structures are impacted.</b><br/>                     With a reduced number of impacted structures, reconstruction crews can make repairs quicker and since more habitable structures remain, repopulation can occur more quickly.</p> <p><b>Government operational centers are severely impacted and County EOC is partially impacted.</b><br/>                     The EOC can remain the center of operations with minor repairs, however, other government locations will need work before they can be reopened causing a delay in services.</p> | <p><b>Up to approx. \$10 billion in losses.</b><br/>                     With so much population and development concentrated on the coast, damages are difficult to avoid. However, the TAOS model calculates that a Category 1 storm is likely to have a far reduced amount of property impact. (Palm Beach County, 2004)</p> <p><b>&lt;5% of housing is destroyed or not habitable.</b><br/>                     Population displacement is not as extreme. Citizens are easily able to return from a local shelter or short evacuation. Issues of repopulation and employee loss are minimal.</p> <p><b>Less than half of all built structures are impacted in any way.</b><br/>                     Local contractors are able to handle the repair and construction demands. Residents can return to or remain in their homes.</p> <p><b>Government operational centers are slightly impacted, but operational.</b><br/>                     Public facilities will remain fully operational and experience few effects from Category 1 hurricanes or tropical storms.</p> |

| CATASTROPHIC DISASTER   | MAJOR DISASTER  | MINOR DISASTER   |
|---|---|--|
| <p>to citizens in a time of need, but when they are also victims the response effectiveness is hampered.</p> <p><b>More than 75% of electric utilities are inoperable for 4 or more days.</b><br/>Electricity outages affect residents’ everyday life and limit commercial activity. Without electricity, street lights are inoperable and curfews continue to be enforced. Non-functioning traffic signals are also a hazard and consume police personnel hours.</p> <p><b>Communication is not operational due to damaged telecommunications systems.</b><br/>Severely hampers recovery activities. All utility companies will be affected by a lack of personnel and reliant on outside help.</p> <p><b>Extensive shortages of water and extended “boil” orders as well as environmental impacts from sewer system failures.</b><br/>Lack of potable water is a major inconvenience for residents and boil water notices are often confusing for the public. Sewer system failures pollute waterways and require beaches to be closed.</p> <p><b>Roadways, railroads, and airports are severely damaged, public transit is not in service for 10+ days, and gas shortages are widespread for 4+ days.</b><br/>Transportation disruptions prevent the inflow of supplies, slow the response times of those providing assistance, and stop citizens from returning to work.</p> <p><b>Local inter-governmental assistance is not an option.</b><br/>The size of the event and range of its impacts prevent neighboring jurisdictions from assisting. Outside assistance/resources must be called upon.</p> | <p><b>50 - 75% of electric utilities are inoperable for 4 or more days. Telecommunications are heavily damaged, but remain partially operational.</b><br/>Fewer electrical outages or those lasting fewer days mean fewer inconveniences, safety hazards are reduced and work crews can correct the problems quicker than during a catastrophe. However, a great amount of external personnel will be utilized to repair both systems.</p> <p><b>Some impacts to water utilities and limited sewer system failures.</b><br/>Boil water orders are required for limited portions of the population and are short in duration. Some pump stations are temporarily down.</p> <p><b>Transportation is largely functioning within a week, once debris is cleared and minimal repairs complete.</b><br/>Response supplies can reach the destination with minor delays. Debris removal and sufficient employee power are the major impediments to restoring transportation operations.</p> <p><b>Inter-governmental assistance must be utilized to fill personnel voids.</b><br/>Mutual aid agreements will be utilized. Personnel cannot come from neighboring jurisdictions, but does not require out-of-state entities.</p> | <p><b>0 – 50% of electric utilities are inoperable for 4+ days. Telecommunications are disrupted intermittently throughout the clean up process.</b><br/>Public safety concerns are nearly non-existent. The major concerns are those of convenience, but local crews can quickly restore power to the grid.</p> |

### Key Post-Disaster Subject (Issue) Areas

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It is impossible to predict all of the issues that will need to be addressed as part of the long-term recovery and redevelopment process. Each disaster will present different challenges. However, the following subject areas invariably predominate community, long-term recovery decision making, and actions following major disasters and are singled out for emphasis in this PDRP.

Governance & Financial Administration: Continuity of essential governmental functions and services and competent management of local financial matters and outside financial assistance are central to long-term community recovery. These tasks will be especially challenging given the number, interdependencies, and financial vulnerabilities of the County's many jurisdictional entities.

Economic Redevelopment: Community disaster recovery hinges largely on how quickly and effectively the local economy can be rebooted and returned to viability. Economic redevelopment is a complex process beyond the reach of traditional governmental decisions and actions, requiring significant participation of the private sector as the primary basis for jobs, essential goods and services, and tax revenue.

Health & Social Services: The community's capacity to meet the increased needs for health, public safety, and social services peak during the short-term recovery period, but will continue well into the long-term recovery process. The economically and socially vulnerable segments of the population (particularly the elderly, very young, disabled, and poor) invariably are the most severely impacted and will present the greatest challenges.

Housing Recovery: Assuming a large percentage of the County's housing stock is destroyed or badly damaged, a significant portion of the population will need assistance on such issues as locating transitional or permanent housing, understanding and navigating assistance programs, resolving insurance claims, deciding if and when to rebuild, finding reputable contractors, dealing with rebuilding protocols, understanding renters rights, etc.

Land Use: Post-disaster decisions on land use will be among the most difficult, politically charged, and contentious issues faced during the long-term recovery process. Invariably the challenge boils down to rebuilding quickly or seizing the opportunity to rebuild in a manner which breaks the "build-rebuild" cycle and increases community resiliency to future disasters. Tourism and development considerations will be central.

Environmental Restoration: Palm Beach County's quality of life is tied inextricably to its rich environmental resources and beauty. As a priority in the long-term recovery process, environmental restoration extends well beyond quality of life issues to encompass the full range of benefits derived from healthy ecosystems (water, food, clean air, protection from natural events, etc.) to minimization of environmental degradation caused by the recovery and rebuilding process. The process of environmental restoration will be greatly complicated and slowed by the myriad of interests that must be addressed and accommodated (political, regulatory, biotic, financial, public relations/media, legal, etc.).

Public Outreach: Communication in all quarters and all levels is the cornerstone for coordinating long-term recovery efforts. Unfortunately, major disasters all too often breed communication breakdowns in the form of no information, misinformation, conflicting information, media hype, blaming, disputes, open dissatisfaction with the pace and equity of recovery, political posturing, etc. Local media coverage can become overshadowed by the presence of the national media, unfiltered or poorly filtered and screened electronic media, and an overemphasis on dramatic negative stories. The open, timely sharing of information and involvement of the public in redevelopment activities will be essential to building confidence and trust.

Public-Private Infrastructure & Facilities: Rapid restoration of infrastructure and public facilities are key priorities to establish within the County's response and short-term recovery processes. In addition, long-term considerations for infrastructure restoration will need to be weighed in conjunction with land use, environment, housing, and economic redevelopment issues. Exploiting opportunities for upgrading, mitigating, and relocating infrastructure and public facilities should be an integral piece of building a more disaster resilient community.

As more than 80% of the County's critical infrastructure is owned and/or operated by the private sector, pre and post-disaster public-private partnerships which support the continuity plans, decisions, and actions of these operations is vital to both post-disaster recovery and future resiliency.

### PDRP Deactivation

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The PDRP Executive Committee will continuously monitor recovery and redevelopment progress. When, in their judgment, critical post-disaster actions and initiatives contained herein and other actions identified and implemented post-disaster have been completed to a level that no longer requires the Committee's ongoing direct involvement and oversight, the Executive Committee may recommend full or phased partial deactivation of the PDRP to the Local Disaster Recovery Manager (Deputy County Administrator). The decision to deactivate the PDRP ultimately rests with the Board of County Commissioners. Certain aspects of the long term recovery and redevelopment process will likely continue beyond PDRP deactivation.

### OVERVIEW OF PDRP ACTIVATION ORGANIZATION STRUCTURE

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The next several pages detail the organizational framework for post-disaster long-term recovery and redevelopment according to the PDRP, including the roles and responsibilities of key lead and support agencies. They also establish expectations for coordination and communication among County and municipal officials, the PDRP Executive Committee, the eight Working groups, federal and state coordinating agencies and the community at large.

### Lead Role of the Deputy County Administrator

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Primary responsibility and authority for oversight, direction, and management of post-disaster redevelopment decisions and actions ultimately rests with the Deputy County Administrator. On behalf of the Board of County Commissioners and municipal officials, the Deputy County Administrator convenes and leads the business of the PDRP Executive Committee which serves

as the multi-jurisdictional/multi-disciplinary steering, policy and advisory body for countywide recovery and redevelopment activities and decisions.

In addition to serving as the Chair of the PDRP Executive Committee, the Deputy County Administrator may need to concurrently carry out their leadership responsibilities with the Recovery Executive Policy Group until short-term recovery and stabilization activities are concluded. Finally, the Deputy County Administrator or their delegate will serve as the principal coordination contact with state and federal coordinating agencies in the capacity of Local Disaster Recovery Manager as spelled out by the National Disaster Recovery Framework (NDRF).

### Primary PDRP Organizational Entities

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Given the complexity and diversity of issues involved in post-disaster long-term recovery, Palm Beach County has established eight Working Groups as a means of efficiently and effectively allocating and engaging community resources and capabilities. The validity of this approach, is reinforced by the fact that the eight Working Groups closely align with the Recovery Support Functions (RSF) defined by FEMA in the National Disaster Recovery Framework.

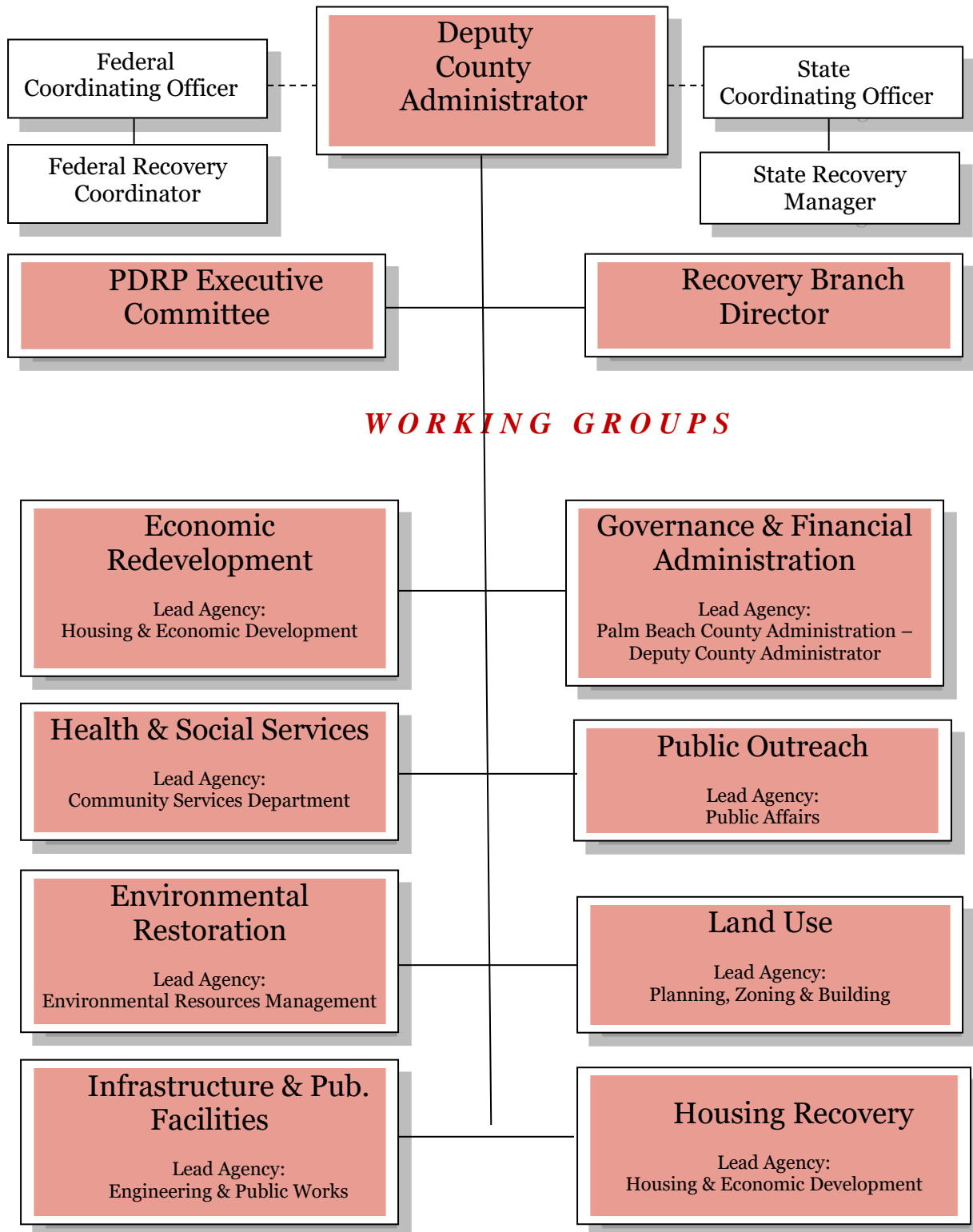
The chart on the following page provides an overview of the lead agencies comprising the County's PDRP activation organization. In several issue areas, the lead agency will depend on the support of agencies outside their areas of expertise and specialization. Representative support agencies for each working group are identified in a later section.

### Communication and Coordination

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While the PDRP working group organization structure allows for concentrating the community's subject area expertise on matters key to recovery and redevelopment issues, it also recognizes that working groups cannot be expected to work independently in isolation on complex tasks. Cross organizational communication and coordination will be critical to ensuring a balanced and efficient recovery process. Consequently, working groups are expected to talk and meet frequently with each other, and with the working group chairs who, as members of PDRP Executive Committee members, serve as the primary conduit for keeping the Executive Committee informed and involved in key decisions and actions. While interfacing with federal and state coordinating agencies on matters within their areas of expertise, working groups will appropriately advise and involve the Deputy County Administrator and the Executive Committee in matters, decisions, and actions of political and financial significance and importance.

***PDRP Working Group Organizational Elements***



## **PDRP IMPLEMENTATION THROUGH WORKING GROUPS**

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Long-term post-disaster community recovery and redevelopment requires the simultaneous involvement, contributions, and coordinated interactions of a broad range of highly diverse public and private sector stakeholder organizations. The task of coordinating and managing this maelstrom of highly diverse activities amidst the chaotic backdrop of a major disaster far exceeds the abilities and authorities of any single local entity.

A flexible organizational structure utilizing “Working Groups” has been developed to focus resources and expertise on key, common aspects of the disaster recovery process and to carry out the specific actions outlined in this PDRP.

Each working group is comprised of community leaders (both public and private sector) with specialized knowledge and experience relevant to the group’s assigned area of responsibility. The number, size, and composition of each working group and the level and type of its activities are tailored to the specific challenges facing the group. While each working group represents specialized skill sets tailored to its mission, it must coordinate closely with other working groups to achieve optimum efficiency and results, avoid duplication and incompatible actions, and ensure equitable and fair solutions. At the same time some semblance of a hierarchical structure is necessary to ensure resources are appropriately allocated to meet community priorities and to capitalize on the limited windows of opportunity provided by outside assistance organizations.

In brief, the core elements of the PDRP organization and their primary responsibilities include:

### **PDRP Executive Committee**

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The PDRP Executive Committee, an evolution of the Recovery Executive Policy Group during the short-term recovery process is ultimately responsible for overseeing and coordinating implementation of the PDRP. As a group, and by virtue of their other organizational and function responsibilities, the Executive Committee will meet only when circumstances dictate. However, based on critical subject expertise and decision making authority, certain members of the Executive Committee are tasked with chairing or co-chairing working groups.

### **Working Groups**

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Working groups are the principal implementers of the PDRP in each of the key subject areas. Their actions and decisions will most directly determine the pace and success of the overall community recovery process. Working groups almost certainly will be required to go beyond the recovery and redevelopment action items specified in the PDRP.

The membership of each working group is set up to be flexible so that as special expertise is needed on a particular task or staff turnover changes membership, the working group can adjust and still function effectively. The working group’s main purpose during implementation is to assign actions to appropriate group members and partners for execution. Working group membership shall be reviewed and adjusted periodically or as necessary prior to a disaster event (e.g., before

each year's hurricane season). Membership will be reevaluated following a disaster to ensure pre-designated members are available and prepared to work.

Working groups will work independently and collectively, as necessary, to deal with post-disaster issues and to take on recovery and redevelopment tasks and projects.

Municipal representation in working group activities will be coordinated by the group chairpersons, directly or through the League of Cities. Private sector involvement will be coordinated through the Private-Public Partnership, South Florida Disaster Resiliency Coalition, Chambers of Commerce and other business and professional organizations. Non-governmental Organization (NGO) and Community Based Organization (CBO) participation will be coordinated principally through the Long Term Recovery Coalition.

The working group chair(s) decide when and how often their working groups need to meet, although, obviously, during activation of the PDRP there will be a need to meet with greater frequency.

Each working group will be responsible for monitoring its progress toward implementing its assigned tasks and providing regular status reports to the Executive Committee.



## OVERVIEW OF PRIMARY AREAS OF FOCUS AND MEMBERSHIP

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### Executive Committee Responsibilities & Membership

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The Executive Committee, not to be confused with the Recovery Executive Policy Group cited in the County's *Recovery Plan*, is comprised of a select multi-disciplinary team of senior level county and municipal governmental leaders, private sector and non-governmental organization representatives and other community stakeholders critical to long-term recovery and redevelopment. As long-term recovery becomes a major priority, many of the members of the PDRP Executive Committee, who also have served (or may concurrently continue to serve) on the Recovery Executive Policy Group, will be needed to complete ongoing shorter term recovery activities. To minimize confusion and to distinguish its mission and member makeup from that of the Recovery Executive Policy Group, the longstanding name PDRP Executive Committee was adopted rather than trying to explain the merging and transformation of the two groups.

Collectively, the PDRP Executive Committee possesses the authority, unique technical expertise, resources and experience critical to planning, coordinating and executing all critical aspects of long-term recovery and redevelopment countywide.

The Committee is charged with overseeing, monitoring and directing long-term recovery, redevelopment and mitigation activities, advising the Board of County Commissioners and municipal councils on a full range of issues, and making and/or recommending operational decisions on behalf of the County. Certain members of the Executive Committee or their designees will be asked to serve as Chairpersons on Working Groups within their areas of expertise and offer guidance and assistance as appropriate. The Executive Committee will also play a key role in coordinating with State and Federal agencies on long term recovery matters.

Once the PDRP is activated, the Executive Committee will meet to prepare a work plan for the post-disaster period based on the best assessments available at that time. Regular meetings of the Task Force will be needed throughout the post-disaster period to guide implementation, adjust work plan schedules, and evaluate the progress of Working Groups. The number and timing of meetings will be left to the discretion of the Committee Chairperson.

At a minimum, the following functions and organizations will be represented in the standing membership of the PDRP Executive Committee. Membership will be adjusted, as appropriate, to accommodate personnel changes and situational priorities.

## **PDRP Executive Committee (Standing Committee Members)**

### **County Department Representatives**

Deputy County Administrator (Chair)  
 Director, Planning Division  
 Executive Director, Planning, Zoning, & Building  
 Director, Facilities Development & Operations  
 Administrator, Fire and Rescue  
 Director, Building Division  
 Director, Housing & Economic Development  
 Executive Director, Housing & Finance Authority  
 Director, Purchasing  
 Director, Division of Emergency Management  
 Director, Division of Human Services  
 Director, Environmental Resource Management  
 Director, Engineering & Public Works

### **Countywide Organization Representatives**

Director Planning & Environmental Programs SWA  
 Director, Tourist Development Council  
 Hospital Administrators  
 Chief of Facilities, Palm Beach County School Board  
 President, Business Development Board  
 Executive Director, Palm Beach County League of Cities  
 Director, Palm Beach Metropolitan Planning Organization  
 Chair, Long Term Recovery Coalition

### **Municipal Representatives**

Minimum of four municipal representatives

## **THE REDEVELOPMENT TASK FORCE**

The Redevelopment Task Force is an ad hoc group comprised of the chairpersons and members of the various working groups to act as a clearinghouse of working group issues. Its purpose is to offer an opportunity for the working groups to coordinate their actions, share critical information, ensure concurrence on planned and necessary decisions and actions, and provide inter-group support and assistance. The Task Force will take unresolved matters and decisions beyond their authority levels to the Executive Committee. The Task Force may provide a direct interface with state, federal, non-profit, voluntary, private sector, and other assistance organizations.

**Activation:** Recommendations relating to activation of the Redevelopment Task Force will come from the PDRP Executive Committee and working group membership. Final authority for activation rests with the Deputy County Administrator.

**Membership:** Members of the Redevelopment Task Force will be identified by the PDRP Executive Committee upon activation. A Task Force Chairperson will be selected from the

working groups to lead the Task Force and act as the main point of contact between the Task Force and PDRP Executive Committee.

Responsibilities: The Redevelopment Task Force, if activated, shall act as a clearinghouse of questions, issues, and conflicts that may arise among the working groups through the process of long-term recovery. Questions, issues, and concerns the Task Force is unable to answer due to lack of authority, complexity of political landscape, or other unforeseen event shall be directed to the PDRP Executive Committee for resolution. The Task Force may advise the PDRP Executive Committee, Board of County Commissioners, and municipal councils on a wide range of post-disaster recovery, redevelopment, and mitigation issues based on direction given by the PDRP Executive Committee.

Once the Task Force is activated the selected members will convene to develop a work plan for the post-disaster period based on the best assessments at that time. Regular meetings of the Task Force will be needed throughout the post-disaster period to guide implementation, adjust work plan schedules, and evaluate progress. Due to the uncertain nature of post-disaster conditions, the number and timing of meetings will be left to the discretion of the Task Force Chairperson.

To carry out this function, the Task Force may have the following responsibilities. This list is not exclusive and the Task Force may identify additional responsibilities through the course of recovery operations, while responsibilities listed below may not be needed depending on the needs of the Executive Committee and working groups:

- Review the nature of damages, identify and evaluate alternate program objectives for repairs and reconstruction, and formulate recommendations to guide recovery.
- Review alternative strategies and actions for implementing post-disaster actions and recommend the internal and external resources needed for achieving them.
- Assist PDRP Staff in making budget requests and securing approval of grant agreements.
- Initiate recommendations for the enactment, repealing, or extension of emergency ordinances and resolutions for consideration.
- Activate working groups in accordance with needs and circumstances.
- Formulate special committees and sub-committees as situations warrant.
- Set a calendar of milestones for redevelopment tasks.
- Recommend the repealing or extension of moratoria.
- Evaluate redevelopment progress using pre-determined criteria and indicators where appropriate; ensure progress is communicated clearly and factually to the public.
- Ensure that the redevelopment process is as transparent and equitable as possible.
- Review and evaluate decisions and actions and, based on lessons learned, recommend amendments to the PDRP, the CEMP, the Comprehensive plan, and other pertinent documents.

## Economic Redevelopment Working Group

Post-disaster redevelopment is predominantly an economic proposition. Economic recovery and redevelopment is not easily conducted through traditional government action and requires participation from the private sector. The purpose of the Economic Redevelopment Working Group is to gather and organize the expertise and resources necessary to identify and resolve post-disaster economic issues and to develop and implement strategies and actions to facilitate and support economic recovery and redevelopment.

### Primary Areas of Focus

1. Business survival, resumption and retention
2. Small business assistance
3. Addressing changes in market and workforce composition/workforce recovery
4. Tourism renewal
5. Innovative strategies for economic redevelopment
6. Long-term impacts caused/exacerbated by climate change and sea level rise
7. Tax incentives/policies to spur business reinvestment
8. Increase capital availability to businesses
9. Improved assessments of damage to local/regional economies
10. Communication/coordination among local, state, federal governments on economic redevelopment matters

## Representative Assistance & Advisory Members & Resources

**Lead Agency:** Palm Beach County Department of Housing & Economic Development

### Support Agencies:

1. Palm Beach County Office of Equal Business Opportunity
2. Small Business Development Centers
3. Tourist Development
4. The Center for Enterprise Opportunity
5. Palm Beach County Black Business Investment Corporation (BBIC)
6. BAC Funding Corporation
7. Palm Beach County Sports Commission, Inc.
8. Cultural Council for Palm Beach County
9. Center for Enterprise Opportunity
10. Palm Beach County Film & Television Commission
11. Port of Palm Beach
12. Palm Beach County International Airport
13. Urban League of Palm Beach County, Inc.
14. Community Redevelopment Agency
15. Palm Beach County Health Department
16. Chambers of Commerce
17. Palm Beach County Health Department
18. Farm Credit of South Florida, ACA
19. Workforce Alliance of Palm Beach County, Inc.
20. Palm Beach County Resource Center, Inc.
21. Business Development Board of Palm Beach County, Inc.
22. Economic Council for Palm Beach County
23. World Trade Center Palm Beach
24. Representative large, medium-sized, small businesses
25. Center for Technology Enterprise & Development, Inc.
26. Palm Beach County Cooperative Extension
27. Land Development Services
28. Palm Beach County Metropolitan Planning Organization d/b/a the Palm Beach Transportation Planning Agency
29. South Florida Regional Transportation Authority
30. Florida Department of Economic Opportunity
31. Florida ESF #18
32. Enterprise Florida
33. FEMA Private Sector Division
34. Small Business Administration
35. Department of Commerce
36. Economic Development Administration
37. U.S. Department of Labor
38. Business Civic Leadership Center/U.S. Chamber of Commerce

**Infrastructure & Public Facilities Restoration Working Group**

The Infrastructure & Public Facilities Restoration Working Group is the lead implementing body for coordinating with appropriate local and regional organizations and agencies to plan for the timely repair, reconstruction, and enhanced resilience of Palm Beach County’s critical public and private infrastructure and public facilities following a major disaster.

**Primary Areas of Focus**

|  |   |
|--|---|
| 1. Security of critical infrastructure information   | 4. Infrastructure and public facility repair                                      |
| 2. Infrastructure services to priority redevelopment areas and other areas of new service resulting from redevelopment | 5. Communication and coordination among agencies, jurisdictions, and stakeholders |
| 3. Infrastructure services to interim redevelopment needs  | 6. Long-term impacts caused or exacerbated by climate change and sea level rise   |

**Representative Assistance & Advisory Members & Resources**

**Lead Agency:** Palm Beach County Engineering & Public Works

**Support Agencies:**

- |  |                                       |
|--|---------------------------------------|
| 1. Palm Beach County Road & Bridge Division  | 11. Property Appraiser’s Office       |
| 2. Palm Beach County Facilities Development & Operations Department  | 12. Gas Utilities                     |
| 3. Municipal Facilities Managers   | 13. Palm Beach County School District |
| 4. Florida Public Utilities Company  | 14. Comcast                           |
| 5. Palm Beach County Water Utilities   | 15. Verizon Wireless                  |
| 6. Municipal Public Utilities Departments  | 16. AT&T                              |
| 7. South Florida Water Management District   | 17. Palm Beach International Airport  |
| 8. Lake Worth Drainage District  | 18. Port of Palm Beach                |
| 9. Florida Power & Light   | 19. Florida DOT                       |
| 10. Palm Beach County Metropolitan Planning Organization d/b/a the Palm Beach Transportation Planning Agency | 20. U.S. Department of Transportation |
|  | 21. SEC/FEC/Amtrak Railroads          |

## Land Use Working Group

The Land Use Working Group is responsible for working in coordination with relevant local and regional organizations and agencies to ensure redevelopment is done consistent with the visions of the County and cities and in a manner that will increase the resiliency of Palm Beach County to future disasters. It will seek reasonable solutions to highly political and contentious issues relevant to post-disaster land use.

### Primary Areas of Focus

1. Prioritizing areas to focus rebuilding, reconstruction, and redevelopment
2. Build-back standards
3. Develop policies for redeveloping land areas that have sustained repeated damages from disaster events
4. Long-term impacts caused or exacerbated by climate change and sea level rise

### Representative Assistance & Advisory Members & Resources

**Lead Agency:** Palm Beach County Planning, Zoning, and Building Department

**Support Agencies:**

1. Treasure Coast Regional Planning Council
2. Municipal planning, land development and growth management departments
3. Palm Beach County Land Use Advisory Board
4. Palm Beach County Department of Housing & Economic Development
5. Palm Beach County Metropolitan Planning Organization (MPO) d/b/a the Palm Beach Transportation Planning Agency
6. Planning Commission
7. Local Emergency Planning Committee
8. Rural Lands stewardship Council
9. South Florida Ecosystem Restoration Task Force
10. Florida Public Service Commission
11. Florida Department of Community Affairs
12. Florida Fish & Wildlife Conservation Commission
13. The Office of Community Revitalization (OCR) - Countywide Community Revitalization Team
14. Community Redevelopment Areas
15. Cooperative Extension Service
16. Palm Beach County Environmental Resources Management Department
17. South Florida Water Management District
18. Drainage Districts
19. Sugar Cane Growers Cooperative of Florida
20. Property Appraisers Office
21. PBC Parks & Recreation
22. Palm Beach County Water Utilities Department
23. Community/ Neighborhood Planning Program
24. Countywide Community Revitalization Team (CCRT)
25. Palm Beach County Economic Development Office
26. Florida Power & Light
27. U.S. Department of Housing & Urban Development

**Environmental Restoration Working Group**

The Environmental Preservation & Restoration Working Group coordinates with relevant local and regional organizations and agencies to restore natural resources after a disaster, prevent environmental degradation during redevelopment, and address concerns over contamination from debris and damaged industrial sites.

**Primary Areas of Focus**

- |  |   |
|--|---|
| 1. Hazardous materials, debris contaminants  | 6. Urban forest restoration   |
| 2. Environmental review of temporary sites   | 7. Environmental review of housing sites/neighborhoods                          |
| 3. Waterway debris removal, pollution        | 8. Long-term impacts caused or exacerbated by climate change and sea level rise |
| 4. Wetland restoration                       |   |
| 5. Habitat restoration on conservation lands |   |

**Representative Assistance & Advisory Members & Resources**

**Lead Agency:** Palm Beach County Environmental Resources Management Department

**Support Agencies:**

- |   |  |
|---|--|
| 1. USACOE - Jacksonville District   | 10. Palm Beach County DEM  |
| 2. South Florida Water Management District (SFWMD)                              | 11. Palm Beach County Planning, Zoning & Building Department                             |
| 3. Florida Department of Environmental Protection                               | 12. Palm Beach County Solid Waste Management Department                                  |
| 4. Environmental Protection Agency Region 4                                     | 13. Municipal Public Works Departments   |
| 5. Environmental Protection Agency - Office of Wetlands, Oceans, and Watersheds | 14. United States Fish and Wildlife Service  |
| 6. Palm Beach County Water Utilities Department                                 | 15. Florida Division of Forestry   |
| 7. Palm Beach County Road & Bridge Division                                     | 16. Environmental & Ecotourism Groups  |
| 8. Palm Beach County Health Department Environmental Health & Engineering       | 17. Nature Preserves, Centers, Gardens   |
| 9. Palm Beach County Parks & Recreation Department                              | 18. Universities & Colleges  |
|   | 19. Professional Societies (NPDES, South Florida Ecosystem Restoration Task Force, etc.) |
|   | 20. Oil Spill Taskforce  |

**Health and Social Services Working Group**

The Health and Human Services Working Group is large diverse group responsible for working in coordination with relevant local and regional organizations and agencies to ensure that Palm Beach County will be able to meet the increased health, social service, and public safety needs of its population after a major disaster and make a smooth transition from short-term recovery services to long-term redevelopment assistance. Special attention will be given to the socially and economically vulnerable most severely affected during a disaster event. The Health and Social Services Working Group identified and prioritized the following list of issues.

**Primary Areas of Focus:**

**Health and Medical**

1. Hospital, clinic, medical office restoration
2. Medical personnel retention and recruitment
3. Mental health assistance
4. Assisted living and nursing home safety
5. Long-term assistance for special needs population
6. Health related pollution and environmental justice
7. Community redevelopment from Healthy Communities perspective

**Safety and Security**

1. Public safety service levels reestablished throughout county

**Education**

1. Schools, higher education reopened
2. Daycare, after-school and youth programs restored
3. Recreation, cultural activities restored

**Health and Social Services**

1. Public transportation restoration
2. Children and family services
3. Low income assistance
4. Homeless programs
5. Coordination and assistance for NGOs and volunteers

**Representative Assistance & Advisory Members & Resources**

**Lead Agency:** Palm Beach County Human Services Division

**Support Agencies:**

- |  |   |
|--|---|
| <ol style="list-style-type: none"> <li>1. Long Term Recovery Coalition</li> <li>2. Palm Beach County Health Department</li> <li>3. National Volunteer Organizations Active in Disaster (NVOAD)</li> <li>4. Small Business Administration</li> <li>5. United Way</li> <li>6. Salvation Army</li> <li>7. United Way</li> </ol> | <ol style="list-style-type: none"> <li>8. American Red Cross</li> <li>9. U.S. Army Corps of Engineers</li> <li>10. Palm Beach County DEM</li> <li>11. Area Agency on Aging</li> <li>12. Children’s Services Council of Palm Beach County</li> <li>13. Citizens Advisory Committee on Health &amp; Human Services</li> <li>14. Housing Finance Authority of Palm Beach County</li> </ol> |
|--|---|



## Housing Recovery Working Group

The primary mission of the Housing Recovery Working Group is to support long-range housing solutions that enable Palm Beach County to quickly move its impacted residents out of emergency shelters and into safe, accessible long-term transitional housing while assisting in the repair and replacement of the damaged housing stock in a timely and efficient manner.

### Primary Areas of Focus:

- |   |  |
|---|--|
| 1. Temporary housing provision and removal      | 6. Code enforcement and contractor licensing                   |
| 2. Rapid repair permitting                      | 7. Available contractors and skilled construction workers      |
| 3. Temporary housing sitting criteria           | 8. Rebuilding enhanced and sustainable homes and neighborhoods |
| 4. Funding assistance and insurance problem     |  |
| 5. Non-conforming structures/substantial damage |  |

## Representative Assistance & Advisory Members & Resources

**Lead Agency:** Palm Beach County Department of Housing and Economic Development

### **Support Agencies:**

- |  |   |
|--|---|
| 1. Long Term Recovery Coalition                                | 12. Palm Beach County Department of Housing & Community Development |
| 2. Palm Beach County Health Department                         | 13. Area Agency on Aging  |
| 3. National Volunteer Organizations Active in Disaster (NVOAD) | 14. Urban League of Palm Beach County                               |
| 4. Small Business Administration                               | 15. Center for Family Services of Palm Beach County, Inc.           |
| 5. United Way  | 16. County – Palm Beach Housing Authority                           |
| 6. Salvation Army  | 17. Children’s Services Council of Palm Beach County                |
| 7. American Red Cross  | 18. Citizens Advisory Committee on Health & Human Services          |
| 8. Project Hope  | 19. Housing Finance Authority of Palm Beach County                  |
| 9. Unmet Needs Committee                                       | 20. Housing & Urban Development (HUD)                               |
| 10. U.S. Army Corps  | 21. Home Investment Partnership Program                             |
| 11. Palm Beach County DEM                                      | 22. State Disaster Housing Planning Initiative (SDHPI)              |
|  | 23. Disaster Temporary Housing Program - FDEM                       |

**Governance and Financial Administration Working Group**

The Governance and Financial Administration Working Group is responsible for ensuring the continuity of essential county and municipal government functions and the administration of all disaster-related finances during the long-term recovery process. Financial responsibilities include working with local and regional organizations and agencies to exploit post-disaster funding sources and ensuring public funds are spent wisely, legally, and equitably after a disaster.

Areas of Primary Focus

- |   |  |
|---|--|
| <ol style="list-style-type: none"> <li>1. Provide for continuity of government and operations</li> <li>2. Succession of officers; standby/temporary officers</li> <li>3. Emergency powers and authority</li> <li>4. Project revenue shortfalls</li> <li>5. Coordinate private and public funding</li> <li>6. Pre-develop options for sustainably cutting services or finding other funding sources</li> <li>7. Retain high bond ratings</li> <li>8. Enforce equitable disaster assistance</li> <li>9. Establish internal claims reimbursement process for FEMA funds</li> <li>10. Modify purchasing/contracting procedures to expedite emergency purchases</li> </ol> | <ol style="list-style-type: none"> <li>11. Track the following: financial expenditure, including tracking outside resources received and how these funds are being used</li> <li>12. Performance and schedule variance from set goals or estimated timeline (that is determined after level of damage is known)</li> <li>13. Contracting statistics – local businesses, small or minority businesses</li> <li>14. Employment resumption metrics</li> <li>15. Home occupancy and rental rates</li> <li>16. Tourism accommodations’ occupancy rates</li> <li>17. Standard of living measurements to judge quality of recovery</li> </ol> |
|---|--|

**Representative Assistance & Advisory Members & Resources**

**Lead:** Palm Beach County Administration - Deputy County Administrator

**Support Agencies:**

- |  |   |
|--|---|
| <ol style="list-style-type: none"> <li>1. Board of County Commissioners - Chair</li> <li>2. Palm Beach County League of Cities - Executive Director</li> <li>3. Municipal Representatives</li> <li>4. Palm Beach County Office of Financial Management &amp; Budget (OFMB)</li> <li>5. Palm Beach County Legislative Affairs</li> <li>6. Palm Beach County Purchasing</li> </ol> | <ol style="list-style-type: none"> <li>7. Palm Beach County Public Affairs</li> <li>8. Palm Beach County Public Safety Department – Director</li> <li>9. PDRP Executive Committee Representative(s)</li> <li>10. Palm Beach County Attorney’s Office</li> <li>11. Florida Division of Emergency Management</li> <li>12. Florida Department of Financial Services</li> </ol> |
|--|---|

**Public Outreach Working Group**

The Public Outreach Working Group will work to maintain open lines of communication among local, state, and federal governments, partnering agencies, and the public so that the entire community has appropriate access to information regarding the long-term redevelopment process both prior to and following a disaster.

Primary Areas of Focus

- |   |  |
|---|--|
| <ol style="list-style-type: none"> <li>1. Providing effective and clear communication to all affected groups</li> <li>2. Pre-established outreach methods, traditional and nontraditional</li> <li>3. Establishment or co-location of well-distributed information centers</li> <li>4. Clear and effective cross-communication among governments (local, state, federal)</li> <li>5. Opportunity for public participation in redevelopment decisions</li> </ol> | <ol style="list-style-type: none"> <li>6. Public understanding of redevelopment policies before a disaster</li> <li>7. Transparency in redevelopment decisions and activities</li> <li>8. Defense and promotion of area’s viability/ability to re-build</li> <li>9. Topics for public outreach should include the following topics suggested by Sarasota County’s Plan.</li> </ol> |
|---|--|

**Representative Assistance & Advisory Members & Resources**

**Lead Agency:** Palm Beach County Public Affairs Department

**Support Agencies:**

- |   |  |
|---|--|
| <ol style="list-style-type: none"> <li>1. Media (Local, National)</li> <li>2. Palm Beach County Planning Division (Charrettes)</li> <li>3. Palm Beach County DEM</li> <li>4. Palm Beach County Planning, Zoning &amp; Building Department</li> <li>5. Palm Beach County Attorney’s Office</li> <li>6. Working Groups; PDRP Executive Group</li> </ol> | <ol style="list-style-type: none"> <li>7. Long Term Recovery Coalition</li> <li>8. United Way; Other NGOs, CBOs</li> <li>9. Chambers of Commerce, professional organizations</li> <li>10. Private-Public Partnership (Business Continuity Information Network)</li> <li>11. County and Municipal Public Works</li> <li>12. Workforce Alliance Consumer Affairs</li> <li>13. NDRF</li> <li>14. Florida House of Representatives</li> <li>15. Palm Beach County Health Department</li> </ol> |
|---|--|

## Stakeholder Organization and Participation

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While the PDRP Executive Committee working groups and Redevelopment Task Force (if activated) are the principal contributors to long-term recovery and redevelopment activities on an ongoing basis, there are numerous other organizational representatives, government staff, and individuals with expertise that can provide valuable support services and information on an ad hoc basis during both the pre-disaster and post-disaster stages of PDRP activation. These work arrangements are referred to as stakeholder organizations.

## PDRP Support Staff

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Certain County staff are charged with key PDRP activities. These positions include but are not necessarily limited to:

**PDRP Coordinator:** The PBC DEM is charged with coordinating the PDRP plan and program. This includes facilitating and coordinating PDRP plan maintenance and ensuring appropriate integration and coordination of the PDRP with other community planning documents such as the Comprehensive Plan, CEMP, Recovery Plan, LMS, Strategic Economic Development Plan, etc. The PDRP Coordinator works with County staff to organize meetings and provides technical advice and counsel to the Executive Committee on long-term recovery issues, practices and developments. During non-disaster periods the PDRP Coordinator serves as the primary point of contact on long-term recovery matters for federal, state, and non-governmental organizations and agencies.

**Recovery Branch Director:** Among other duties, the Recovery Branch Director is charged with working with the Office of Management and Budget, DEM, the Executive Committee, and other County offices on facilitating the securing and coordination of federal, state, and other disaster assistance. Although the Recovery Branch Director will be initially leading the damage assessment process, once the Recovery Operations Center is activated most damage assessment activities should be drawing to a conclusion. Ongoing updates of damages, impacts, restoration, and redevelopment activities will be conducted at the Recovery Operations Center, and therefore the Recovery Branch Director will be able to adjust their focus to their duties under the PDRP (see *Recovery Plan*).

Duties consist of, but are not be limited to, the following:

1. Determining the types of assistance available and match with needs.
2. Assisting in the local coordination of federal and state disaster recovery efforts.
3. Providing local assistance to facilitate federal and state disaster assistance.
4. Facilitating the securing of federal or state disaster assistance.
5. Informing decision makers of the types of disaster assistance available.
6. Performing other duties as directed by the PDRP Executive Committee or the Board of County Commissioners.

Economic Recovery Coordinator: The Economic Recovery Coordinator will work with the Business & Industry Unit Leader, the Business Development Board, and other business-oriented organizations to facilitate the coordination of economic recovery within the business community following a declared disaster.

Duties consist of, but are not be limited to:

- Determining the potential or actual economic impacts and determine short and long term strategies for economic redevelopment.
- Assisting in the local coordination of federal and state economic recovery efforts.
- Acting as a facilitator in disseminating accurate economic impact and recovery information to and from the business community and the public.
- Keeping the business community apprised of the types of disaster assistance available.
- Performing other duties as directed by the Economic Redevelopment Working Group, PDRP Executive Committee, or the Board of County Commissioners.

Hazard Mitigation Coordinator: DEM's Hazard Mitigation Coordinator will work with the LMS Working Group to facilitate, coordinate and otherwise support the long-term hazard mitigation process.

Duties will include, but are not be limited to:

1. Promoting the case for capitalizing on post-disaster mitigation opportunities.
2. Identifying potential federal, state and other sources for long-term recovery hazard mitigation assistance.
3. Communicating assistance opportunities and application guidance to the community.
4. Facilitating and supporting the development of mitigation plans and projects.
5. Compiling mitigation project proposals; assisting with the project prioritization.
6. Assisting eligible applicants apply for and secure mitigation assistance funding,
7. Ensuring mitigation projects are conducted in accordance with federal, state and non-governmental program guidelines and consistent with local LMS practices.
8. Performing other duties as directed by the Recovery Branch Leader, PDRP Executive Committee, or the Board of County Commissioners.

Public Information Officer: As appropriate and circumstance allow, every effort will be made through the working groups and Public Affairs to keep the public fully informed on long-term recovery and redevelopment activities and plans, and to invite public participation in meetings and workshops. Public announcements will be made through web postings and other available means.

### PDRP Organizational Linkages and the National Disaster Recovery Framework (NDRF)

The *National Disaster Recovery Framework (NDRF)* was formally adopted by FEMA as a federal initiative in September, 2011.

The *National Disaster Recovery Framework (NDRF)* provides context for how the whole community works together to restore, redevelop, and revitalize the health, social, economic, natural,

and environmental fabric of the community. The NDRF ensures coordination and recovery planning at all levels of government before a disaster, and defines how federal agencies will work together following a disaster to best meet the needs of states, local, and tribal governments, communities, and individuals during recoveries. It establishes coordination structures, defines leadership roles and responsibilities, and guides coordination and recovery planning at all levels of government before a disaster happens. It is intended to better utilize resources at the local, state, and federal level.

The *NDRF* identifies Recovery Support Functions (RSFs) that are led by designated federal coordinating agencies. These RSFs (listed below) roughly align with the County’s functional working groups. The RSFs comprise the coordinating structure for key functional areas of assistance. Their purpose is to support local governments by facilitating problem solving, improving access to resources, and fostering coordination among state and federal agencies, non-governmental partners, and stakeholders. These six RSFs and their designated federal coordinating agencies are:

| Recovery Support Function              | Federal Coordinating Agency                    |
|--|--|
| Community Planning & Capacity Building | FEMA   |
| Economic                               | U.S. Department of Commerce                    |
| Health & Social Services               | U.S. Department of Health & Human Services     |
| Housing                                | U.S. Department of Housing & Urban Development |
| Infrastructure Systems                 | U.S. Army Corps of Engineers                   |
| Natural & Cultural Resources           | U.S. Department of Interior                    |

FEMA’s ESF #14 Long-Term Community Recovery function has been integrated into the NDRF organizational structure.

The NDRF also establishes three positions that provide focal points for incorporating recovery considerations into the decision making process and for monitoring the need for adjustments in assistance where necessary and feasible throughout the recovery process. Those positions are: Federal Disaster Recovery Coordinator (FDRC), State Disaster Recovery Coordinators (SDRCs), and Local Disaster Recovery Managers (LDRMs).

*Roles and Responsibilities of Local Disaster Recovery Manager(s)*

The *National Disaster Recovery Framework* recommends that local government leaders prepare as part of their disaster recovery plans to appoint Local Disaster Recovery Managers (LDRMs) to lead disaster recovery activities for their respective jurisdictions.

According to the Framework, the role of the Local Disaster Recovery Manager is to organize, coordinate, and advance recovery at the local level. The experience and skill sets of these individuals should include a strong grounding in community development and good knowledge of the community’s demographics. While these positions will often interact with the emergency management community, it is not necessary that these individuals be emergency management professionals.

The individual(s) occupying the position(s) should be able to represent and speak on behalf of their respective chief executives (e.g., mayors, Administrator, Commissioners, Councils, etc.) and to serve as the jurisdiction's primary point of contact with the State Disaster Recovery Coordinator during the recovery process.

It is suggested that in the event of a multi-jurisdictional disaster impacting Palm Beach County that the Chair of the PDRP Executive Committee (i.e. Deputy County Administrator) serves in this capacity.

### *Roles and Responsibilities of State Disaster Recovery Coordinator*

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States lead, manage, and drive the overall recovery process and play the central role in coordinating recovery activities that include providing financial and technical support. States oversee regional coordination of recovery, set priorities, and direct assistance where it is needed.

States are a conduit to local governments for key federal recovery assistance programs. In addition to managing federally-provided resources, state government may develop programs or secure funding that can help finance and implement recovery projects. An example of this type of assistance is helping communities in issuing bonds after a disaster. Where additional needs exist, states can reassign existing internal resources to streamline and expedite recovery, such as forming a new or ad hoc state recovery agency. States play an important role in keeping the public informed through strategic messaging and working with all other stakeholders to provide an information distribution process.

The *NDRF* looks to State Disaster Recovery Coordinators to establish and/or lead a statewide structure for managing recovery, providing support for local recovery-dedicated initiatives, ensuring local governments understand their responsibilities and options, and facilitating the development of a unified and accessible communication strategy.

### *Roles and Responsibilities of the Federal Disaster Recovery Coordinator*

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While disaster-impacted jurisdictions must necessarily and immediately focus on emergency response activities, the decisions made very early after a disaster can greatly influence recovery. In large-scale disasters and catastrophic incidents where a federal role is necessary, the Federal Disaster Recovery Coordinator (FDRC) is a focal point for incorporating recovery and mitigation considerations into the early decision making processes. The Federal Disaster Recovery Coordinator monitors the impacts and results of such decisions and evaluates the need for additional assistance and adjustments where necessary and feasible throughout the recovery. In these situations, the Federal Disaster Recovery Coordinator works as a deputy to the Federal Coordinating Officer (FCO) for all matters concerning disaster recovery. The Federal Disaster Recovery Coordinator is responsible for facilitating disaster recovery coordination and collaboration between the federal, state, and local governments; the private sector; and voluntary, faith-based and community organizations. The Federal Disaster Recovery Coordinator partners with and supports the Local Disaster Recovery Manager (LDRM) and the State Disaster Recovery Manager to facilitate disaster recovery in the impacted area.

The FDRC responsibilities include developing a strategic approach for coordinating federal assistance and policies. The intent is to facilitate timely, sufficient, and effective federal assistance to the impacted State or Tribal government to support its disaster recovery. In addition, the FDRC will work with impacted communities to establish relevant recovery measures. The aim is to track overall recovery progress and support the community in meeting its recovery goals in terms of outcome, milestones, and budget; to make timely adjustments to the recovery effort if needed; and to define relationships between new players and the existing framework.

### *Organizational Relationships*

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Coordination with regional, state and federal agencies and assistance organizations at the working level will be coordinated primarily through the working groups and the PDRP staff. Higher order decisions and coordination issues will necessitate involvement of the PDRP Executive Committee and County Administration. In all cases a priority will be placed on obtaining maximum assistance benefits while retaining optimal local control over long-term recovery and redevelopment decisions and actions.

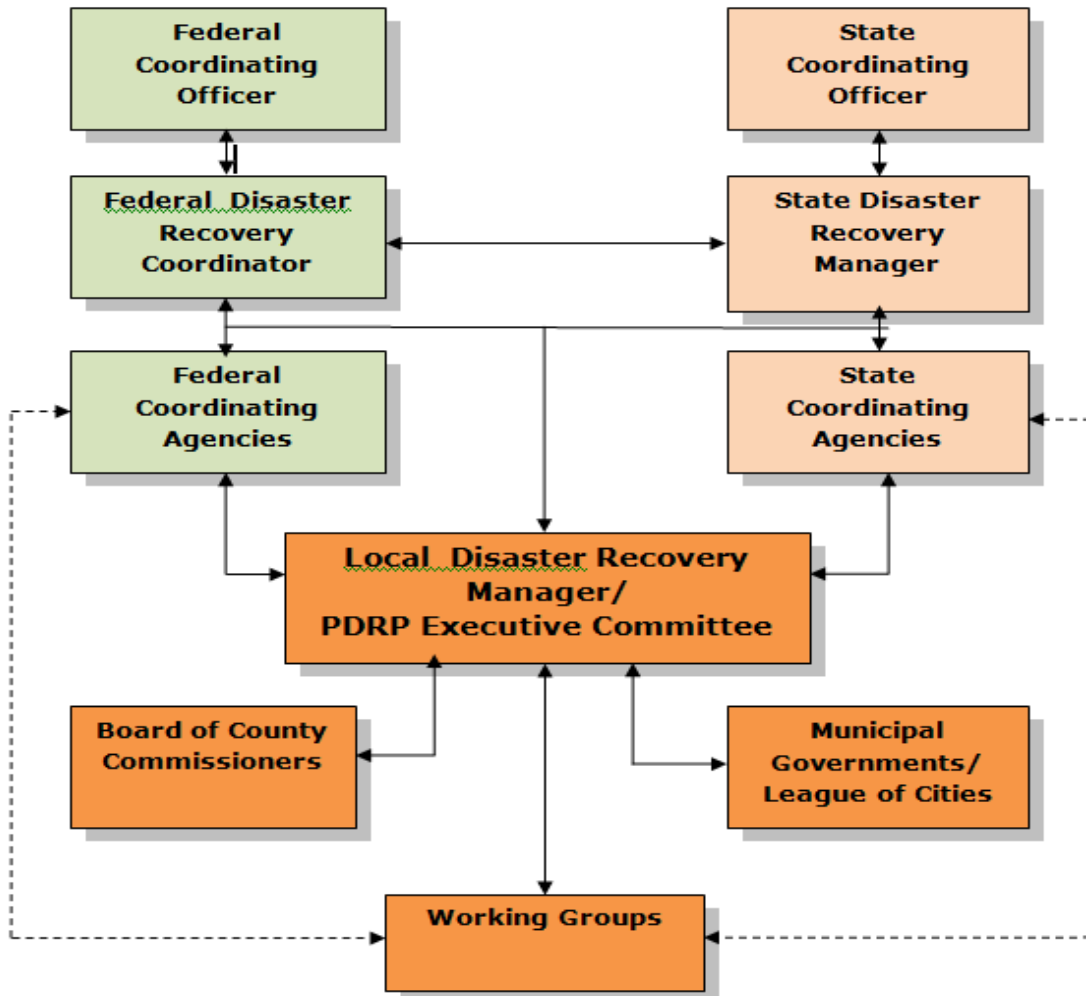
Special efforts will be taken during blue sky periods to build a productive working relationship with *National Disaster Recovery Framework (NDRF)* agencies and to become familiar with their roles, responsibilities, practices, expectations, and requirements. This will help ensure the best possible collaboration and coordination following disaster events.

The County also will continue to develop and sustain regional, private, and public sector partnerships that will, whenever possible, allow for mutual aid and resource sharing. All efforts will be made to recognize the primacy of local and regional resources in rebuilding communities and the economy.

The figure on the next page depicts how the County's PDRP organization will link with the NDRF organization operationally.



**Organizational Linkage of PDRP with State and Federal Agencies in Accordance with The National Disaster Recovery Framework**



**Role of the Recovery Operations Center (ROC)**

Implementation of post-disaster long-term recovery and redevelopment will require frequent and, at times, sustained on-going interactions within and among the working groups; integration of public and private sector subject matter expertise; and the ability to work closely and collaboratively with state and federal organizations. The Recovery Operations Center (ROC) concept is intended to help satisfy these needs.

The ROC will be a temporary, special purpose facility, independent and physically separate from the County’s Emergency Operations Center (EOC). The EOC facility and staff must be freed to focus on its primary mission of Emergency Management and to maintain its preparedness to deal with future disasters and emergencies.

Long-term recovery involves different players with different skill sets; different outside resource organizations and programs; different issues and agendas; and different time horizons. Many of those involved in long-term recovery and redevelopment must juggle these activities with the need to return to normal non-disaster related job functions. The ROC provides the ability to keep these functions separate and organized, with fewer competing priorities and distractions.

The ROC is activated by the County Administrator and is managed by the Recovery Executive Policy Group. The *Recovery Plan* identifies additional detail on the location, use, and operations of the ROC during long term community recovery and redevelopment as well as the physical and logistical requirements for supporting it. Selection of an appropriate, available facility or facilities will be done by Facilities Development and Operations in cooperation with the Recovery Executive Policy Group, the State Disaster Recovery Manager, and the Federal Disaster Recovery Coordinator. DEM will provide logistical support in standing up the ROC once a location has been identified.

As many of the functions critical to recovery are housed at or near the Vista Center, serious considerations should be given to it as a likely location for the ROC. The PDRP Exercise held in February 2013 provided an opportunity to evaluate the Vista Center facility as a potential ROC site. Exercise participants noted that several improvements would be necessary to make it a viable option.

### Pre-disaster PDRP Implementation

While the primary emphasis of this PDRP is to guide post-disaster actions and decisions, the PDRP suggests a number of key initiatives to be carried out before disaster events threaten or occur. Implementation of these pre-disaster initiatives is important to building a more disaster resilient community.

Appendix IV lists a number of suggested priority pre-disaster initiatives which should be implemented as soon as time and resources permit. This will require Working Groups to remain current and active on an ongoing basis.

Some of these pre-event initiatives might be productively pursued in conjunction with the County's LMS, Community Rating System (CRS), and other ongoing community improvement programs.

## **PDRP MAINTENANCE/UPDATING**

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The PDRP is a dynamic document that adapts to changes in policy, priorities, and needs. This plan will be updated as needed to meet compliance with the CEMP, and other recovery specific regulatory and guidance documents. Authority for changes to the PDRP is delegated to the Director of the DEM, who is responsible for the coordination of changes with affected agencies, and after concurrence, may make changes to this plan. A Record of Changes, displayed at the front of this document, is used to record all published changes. All major changes will be routed to plan holders within 90 days of the promulgation of the change. In addition, *SOG PL-002 – Review and Maintenance of DEM Plans*, establishes policy and procedure for the review and maintenance of all DEM Plans. The PDRP is maintained and updated as per the schedule found in SOG PL-002. Reference: *SOG PL-002 – Review and Maintenance of DEM Plans*.

## APPENDICES

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### Appendix I: PDRP Update History

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#### Summary of Plan Development/Updating Processes

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Palm Beach County's post-disaster redevelopment program and plan is one of the more developed programs in the state. Several editions of Palm Beach County's PDRP have been produced. Each edition attempts to enhance the plan's utility as an effective recovery and redevelopment tool. The following paragraphs briefly summarize the planning processes employed during major PDRP updates and enhancements.

#### 1995 Post-Disaster Redevelopment Plan

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The catalyst for development of the County's first PDRP was the 1989 Comprehensive Plan which recognized the climatology of the region and its potential for damaging hurricanes and flood-related hazards. In accordance with State law, the Board of County Commissioners, adopted language in the Comprehensive Plan that addressed the need to develop a long-range redevelopment plan. In the summer of 1992, the Board directed County departments to develop a Long-Range Redevelopment Plan that would coordinate the activities of all County agencies in Palm Beach County.

With the assistance of an out-of-state consultant, a special ad hoc multidisciplinary Task Force was formed to develop a PDRP. The County's Building Division took the lead in coordinating development of the plan.

The resulting plan focused primarily on; post-disaster organization and authority, land use, building reconstruction regulations, and public sector services. Economic recovery was addressed in a very rudimentary manner. The plan was officially adopted as the County's PDRP by the Board of County Commissioners in October 1995.

Maintenance of the plan was initially assigned to the Building Division, but eventually gravitated to the DEM. While the plan underwent periodic minor revisions after its adoption, it remained largely the same in form, scope, and substance until 2005.

As the County's CEMP and LMS program grew in size and sophistication, and lessons were learned from a number of large-scale disaster events around the country, it became apparent that the PDRP needed to be expanded, enhanced, and brought in line with contemporary thinking, priorities, plans, and practices. It was also evident that the Plan needed to be more fully integrated with the County's growth management and disaster recovery and mitigation plans, programs, and procedures.

## 2006 Post-Disaster Redevelopment Plan

Funded by a State of Florida EMPA competitive grant, the County initiated a comprehensive project to develop a state-of-the-art PDRP. No model pre-disaster plans for post-disaster redevelopment could be found in the literature, so new ground needed to be broken.

The stated objective of the project was to:

*Develop an updated/revised “multi-jurisdictional” Post-Disaster Redevelopment Plan which incorporates best policies and practices relative to current and future community needs, meets or exceeds local, state and federal guidelines, and otherwise supports community plans and programs, including Comprehensive Plans, the unified Local Mitigation Strategy, Comprehensive Emergency Management plans, etc.*

An expanded Post-Disaster Redevelopment Executive Committee comprised of county and municipal officials and a cross section of community stakeholders was established to oversee the PDRP development process. Co-Chaired by the Deputy County Administrator and the Executive Director of the Palm Beach County League of Cities, the Executive Committee provided direction, technical expertise, and reviewed successive drafts of the plan.

Technical aspects of the project and a good portion of the writing were done by the Senior Planner of the DEM, an area planning and mitigation consulting firm, and the Treasure Coast Regional Planning Council.

Plan development was a highly participative process. In addition to numerous one-on-one and group planning meetings, a half day public forum was conducted to solicit citizen, NGO, and business inputs and reactions to proposed plan content and emphasis. It was decided there was a need for additional, unbudgeted inputs from technical experts, business continuity professionals, urban planners, housing professionals, economists, and emergency managers experienced in major disaster recovery efforts. Concurrent with the plan development process Hurricane Katrina struck the Gulf, providing a useful, albeit unfortunate, living case study for issues that needed to be incorporated into the PDRP.

Using grant funds secured from the Public Entity Risk Institute, a comprehensive one day symposium/workshop was organized. The session featured distinguished speakers who were actively working in the Gulf during early Hurricane Katrina recovery efforts and Daniel Alesch, a noted authority on community recovery following extreme events. Attendees included 178 invited government, business, NGO, and academic leaders, including regional, state, and federal representatives. Five areas of special interest were addressed by breakout sessions. These included the following post-disaster recovery topics:

- Balancing rebuilding quickly with rebuilding smart.
- Sustaining governmental services in the face of economic crisis.
- Facilitating business survival, recovery and retention.
- Ensuring housing and repopulation.

- Addressing quality of life issues.

The 2006 PDRP was specifically designed to serve the following purposes:

- Establish a sustainable, countywide, long-term, coordinated process to enhance the community's ability to withstand and rebound from a major disaster event and rebuild in a manner that promotes greater disaster resilience.
- Serve as a single source resource to support post-disaster long-term recovery and redevelopment decisions and actions.
- Identify pre- and post-disaster issues that will need to be addressed including recommendations in the form of user-friendly action matrices.
- Ensure the recovery process exploits, meshes with, and builds upon existing pre- and post-disaster planning and operations policies, processes, and capabilities.
- Apply best recovery and planning practices consistent with local, state, and federal guidance.

The 2006 PDRP drew extensive attention and acclaim nationwide. The U.S. Government Accountability Office dispatched a Strategic Issues team to Palm Beach County to meet with the PDRP project team and select members of the Executive Committee. The plan was subsequently featured in a GAO report on best practices. The plan was also featured in numerous other government, business, and academic reports on best recovery practices. The PDRP also served as a strawman model for several statewide initiatives to expand post-disaster redevelopment planning, including development of a guideline document published by the Florida Department of Community Affairs and the FDEM and several pilot projects around the state. The Palm Beach County PDRP was also briefed to the White House by FEMA in 2009.

Despite this external recognition there was concern internally that the plan had not been fully institutionalized into the County's recovery process and needed to be made more actionable. Recognizing that a state guideline document was being prepared to reflect lessons learned and best planning practices, the County held off encouraging its 38 municipalities to adopt the 2006 plan by resolution pending a planned update of the plan.

### 2011-2013 PDRP Update

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In 2011 work began on updating and further enhancing the PDRP. The PDRP project team requested a gap analysis by the Florida Department of Community Affairs evaluating the 2006 PDRP against the state Post-Disaster Planning Guidebook. A copy of the gap analysis report is included in Appendix II. Results of the analysis were factored into the planning process of the 2012-2013 version of the PDRP.

It was estimated that the enhancement process would take about 18 months to complete. That timeline was accelerated to accommodate a request from DCA to integrate sea level rise adaptation strategies into the revised PDRP in a way that could serve as a model for other communities. As the deadline for that integration project was December 2011, the PDRP revision process was split into two phases. Phase 1 incorporated actions to reconfigure and rewrite sections to make the PDRP more user-friendly and actionable. Phase 2, to be accomplished in 2012 would complete this process and focus on implementing several pre-disaster initiatives called out in the plan.

The 2011 – 2013 PDRP update and enhancement project followed methodologies consistent with the state’s *Post-Disaster Redevelopment Planning: A Guide for Florida Communities* released in early 2010, and included the pilot integration of sea level rise adaption strategies commissioned by the Florida Department of Community Affairs and the FDEM. The sea level rise integration piece was spearheaded by a regional consulting group working closely with County members of the South Florida Climate Change Compact. Special technical advisory committees were formed to capitalize on subject knowledge in eight (8) key areas:

Land Use – Chaired by Planning, Zoning, and Building

Public/Private Infrastructure & Facilities – Chaired by Engineering and Facilities Management

Economic Redevelopment & Housing Recovery – Chaired by Housing and Economic Development

Health & Human Services – Chaired by Community Services, Palm Beach County Health Department, and Long Term Recovery Coalition

Environmental Preservation & Restoration – Chaired by Environmental Resources Management

Governance & Financial Administration – Chaired by County Administration

Infrastructure and Public Facilities – Chaired by Facilities & Engineering

The plan revision and enhancement process encouraged increased participation and buy-in on the part of the 38 municipalities through the League of Cities and City Managers Association, and more intensive technical and administrative involvement and collaboration through members of technical advisory work groups and partnering subject experts.

## 2022 PDRP Update

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The 2022 PDRP update overhauled the plan formatting. Consistent with planning guidance the previous detailed hazard analysis was removed from the PDRP. The PBC LMS contains the hazard analysis of record for the County. Historic PDRP information and the PDRP Action Plan each are now contained as annexes, allowing Volume I to be condensed into a base plan. Volume II and III, including historical and administrative information and other reference material are now contained as appendices.

In 2022, reference to the CDC Social Vulnerability Index was added to the PDRP. Future FEMA guidance related to SVI could affect how disaster recovery funding is distributed or project eligibility.

In 2018, the FDEM and Florida Department of Economic Opportunity completed a pilot project of Palm Beach County to explore a range of adaptation strategies that may be employed in the post-disaster environment to enhance community sustainability. Best practices guidance related to how coastal communities could address potential sea level rise adaptation during the long-term recovery process were discussed.

Appendix II: PDRP Adoption History

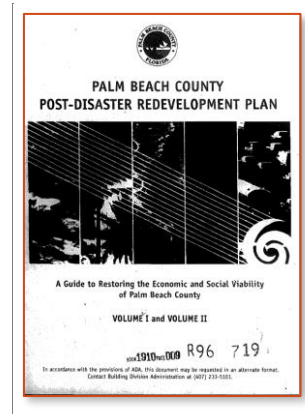
PDRP Adoption Documentation

**1996 PDRP**

BCC Agenda Item

BCC Resolution

Table of Contents

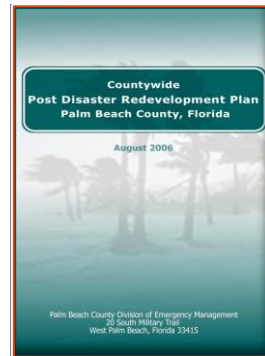


**2006 PDRP**

BCC Agenda Item

BCC Resolution

Table of Contents





1996 PDRP BCC Adoption Agenda Item

Agenda Item #: 3.J. 1  
2002 A/MC  
1-0  
R.96-719

MICROFILMED

PALM BEACH COUNTY  
BOARD OF COUNTY COMMISSIONERS

AGENDA ITEM SUMMARY

Meeting Date: June 4, 1996 [ X ] Consent [ ] Regular [ ] Workshop [ ] Public Hearing

Department: Submitted By: Planning, Zoning, and Building Department  
Submitted For: Planning

I. EXECUTIVE BRIEF

A. Motion and Title: STAFF RECOMMENDS A MOTION TO ADOPT A RESOLUTION PROVIDING FOR ADOPTION OF THE PALM BEACH COUNTY POST DISASTER REDEVELOPMENT PLAN AS A GUIDE FOR EFFORTS TO RESTORE PALM BEACH COUNTY AFTER A MAJOR DISASTER.

B. Summary: The Comprehensive Plan requires the development of a Post Disaster Redevelopment Plan which is designed to guide efforts to restore the Palm Beach County area after a major disaster. The Plan was developed by the Post Disaster Redevelopment Plan Task Team with the assistance of a consultant provided under a contract with Plan Graphics, Inc. The Plan has been reviewed by the affected municipalities, Municipal League, the Countywide Intergovernmental Coordination Committee (IPARC) and a number of departments and agencies. The plan contains goals, objectives, policies and actions which promote a faster return to economic and social activity and reduce future loss of life and property.

The Plan was reviewed by the Board at a workshop meeting on January 16, 1996. The Board endorsed the Plan and directed Staff to place it on a Consent Agenda for official approval.

C Attachments:

- 1) Background Information
- 2) IPARC Sub-Committee Report
- 3) IPARC Letter which endorses the Plan through the Issues Form
- 4) A Resolution which provides for Adoption of the Plan as a guide with Exhibit A - Post Disaster Redevelopment Plan

Note: Post-Disaster Redevelopment Plan, Volumes I and II (previously sent to BCC under separate cover; can be reviewed in Administration)

Recommended By: [Signature] [Signature]  
PZ&B Department Director/Public Safety Date  
Approved By: [Signature] 5/14/98  
Assistant County Administrator Date

II. FISCAL IMPACT ANALYSIS

BOOK 1910 PAGE 001 1

R96 719

1996 PDRP BCC Adoption Resolution (p1)

RESOLUTION NO. R-96-719

RESOLUTION OF THE BOARD OF COUNTY COMMISSIONERS OF PALM BEACH COUNTY, FLORIDA, PROVIDING FOR ADOPTION OF THE PALM BEACH COUNTY POST-DISASTER REDEVELOPMENT PLAN AS GUIDE FOR EFFORTS TO RESTORE PALM BEACH COUNTY AFTER A MAJOR DISASTER; PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, there is a high probability of a major hurricane striking the Florida coastline; and

WHEREAS, it is the intent of the Board of County Commissioners to provide for the health, safety, and welfare of the community through sound pre and post planning; and

WHEREAS, the 1989 Palm Beach County Comprehensive Plan requires the County to prepare and implement a Post-Disaster Redevelopment Plan; and

WHEREAS, the Palm Beach County Post-Disaster Redevelopment Plan was prepared in accordance with the Robert T. Stafford Disaster Relief and Emergency Assistance Act, the National Flood Insurance Act, Chapters 161, 163, 187, 380 and 553, Florida Statutes and Rules 9J-5 and 168-33, Florida Administrative Code; and

WHEREAS, this plan contains the goals, objectives, policies and actions which promote a faster return to economic and social activity and reduce future loss of life and property; and

WHEREAS, this plan has been reviewed by the affected municipalities, and the Municipal League, the Countywide Intergovernmental Coordination Committee and several departments and agencies.

BOOK 1910 PAGE 002

R96 719

1996 PDRP BCC Adoption Resolution (pg 2)

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF COUNTY COMMISSIONERS OF PALM BEACH COUNTY, FLORIDA, THAT:

Section 1. Adoption

The Palm Beach County Post-Disaster Redevelopment Plan attached hereto as Exhibit A is hereby adopted as a set of guidelines to aid efforts to restore the County after a major disaster.

Section 2. Effective Date

This Resolution shall take effect upon adoption by the Board of County Commissioners.

The foregoing Resolution was offered by Commissioner AARONSON, who moved its adoption. The motion was seconded by Commissioner MCCARTY and, being put to a vote, the vote was as follows:

|                               |     |
|-------------------------------|-----|
| COMMISSIONER KEN L. FOSTER    | AYE |
| COMMISSIONER BURT AARONSON    | AYE |
| COMMISSIONER MAUDE FORD LEE   | AYE |
| COMMISSIONER MARY MCCARTY     | AYE |
| COMMISSIONER KAREN T. MARCUS  | AYE |
| COMMISSIONER WARREN H. NEWELL | AYE |
| COMMISSIONER CAROL A. ROBERTS | AYE |

The Chair thereupon declared the Resolution duly passed and adopted this 4th day of JUNE, 1996.

APPROVED AS TO FORM AND LEGAL SUFFICIENCY

PALM BEACH COUNTY, FLORIDA, BY ITS BOARD OF COUNTY COMMISSIONERS

By: *[Signature]*  
County Attorney

By: *[Signature]*  
Deputy Clerk



(g:\common\wpdata\landuse\rbanks\pd.res)

BOOK 1910 PAGE 003 -2 R96 719

1996 PDRP Table of Contents

| TABLE OF CONTENTS   |   | PAGE  |
|---|---|-------|
| INTRODUCTION AND BACKGROUND                                 |   | 1-4   |
| GUIDELINES ON HOW TO USE THE PLAN                           |   | 5     |
| ACRONYMS  |   | 6-7   |
| DEFINITIONS   |   | 8     |
| ABBREVIATIONS   |   | 9-10  |
| <b>CHAPTER I: RECONSTRUCTION PROGRAM</b>                    |   |       |
| A.  | Authority   | 11-13 |
| B.  | Reconstruction Policies   | 13-17 |
| C.  | Tools, Forms and Procedures   | 17-39 |
| <b>CHAPTER II: PALM BEACH COUNTY GOVERNMENT ACTIVITIES</b>  |   |       |
| A.  | Introduction  | 40    |
| B.  | Public Facilities   | 40-41 |
| C.  | Vital Records   | 41    |
| D.  | Land Development Policies   | 41-42 |
| <b>CHAPTER III: MULTI-JURISDICTIONAL COORDINATION ITEMS</b> |   |       |
| A.  | Introduction  | 43    |
| B.  | Housing and Shelters  | 43-44 |
| C.  | Economic  | 44-46 |
| D.  | Toxic Hazards   | 47    |
| <b>CHAPTER IV. EDUCATION AND TRAINING</b>                   |   |       |
| A.  | Introduction  | 48    |
| B.  | Education   | 48-49 |
| C.  | Training  | 49-50 |
| D.  | Grants  | 50    |
| <b>APPENDIX:</b>  |   | 51-71 |
| A.  | List of Approved Municipal Mutual Aid Agreements                                | 52-53 |
| B.  | Statewide Mutual Aid Agreements for Catastrophic Disaster Response and Recovery | 54-71 |

BOOK 1910 PAGE 012

R96 719 1



2006 PDRP BCC Agenda Item (p2)

**II. FISCAL IMPACT ANALYSIS**

**A. Five Year Summary of Fiscal Impact**

| Fiscal Years                                   | 2007     | 2008     | 2009     | 2010     | 2011     |
|--|----------|----------|----------|----------|----------|
| Capital Expenditures                           |          |          |          |          |          |
| Operating Costs                                |          |          |          |          |          |
| External Revenues                              |          |          |          |          |          |
| Program Income (County)                        |          |          |          |          |          |
| In-Kind Match (County)                         |          |          |          |          |          |
| <b>NET FISCAL IMPACT</b>                       | <u>0</u> | <u>0</u> | <u>0</u> | <u>0</u> | <u>0</u> |
| <b># ADDITIONAL FTE POSITIONS (Cumulative)</b> | <u>0</u> | <u>0</u> | <u>0</u> | <u>0</u> | <u>0</u> |

Is Item Included In Current Budget? Yes  No

Budget Account No.: Fund \_\_\_\_\_ Agency \_\_\_\_\_ Org. \_\_\_\_\_ Object \_\_\_\_\_  
Reporting Category \_\_\_\_\_

**B. Recommended Sources of Funds/Summary of Fiscal Impact:**

There is no fiscal impact.

**C. Departmental Fiscal Review:**

*Seigne Julianne*

**III. REVIEW COMMENTS**

**A. OFMB Fiscal and/or Contract Dev. and Control Comments:**

*Elizabeth Bloese 11/15/06* N/A  
 11/14/06 OFMB 11/15/06 Contract Administration  
 11-14-06 11/15/06

**B. Legal Sufficiency:**

*[Signature]* 11/20/06  
 Assistant County Attorney

**C. Other Department Review:**

\_\_\_\_\_  
 Department Director

REVISED 9/03  
 ADM FORM 01  
 (THIS SUMMARY IS NOT TO BE USED AS A BASIS FOR PAYMENT.)

**2006 PDRP BCC Adoption Resolution****RESOLUTION NO. \_\_\_\_\_****RESOLUTION OF THE BOARD OF COUNTY COMMISSIONERS, PALM BEACH COUNTY, FLORIDA ADOPTING THE REVISED PALM BEACH COUNTY COUNTYWIDE POST DISASTER REDEVELOPMENT PLAN DATED AUGUST 2006**

**WHEREAS**, Florida Administrative Code Section 9J-5.012(3)(b)(8), requires all Florida coastal jurisdictions to include provisions for the development of Post Disaster Redevelopment Plans (PDRP) in their Comprehensive Plans; and

**WHEREAS**, Palm Beach County developed and adopted a Post Disaster Redevelopment Plan in 1996; and

**WHEREAS**, since the federal Disaster Mitigation Act of 2000 was subsequently enacted, significant changes in PDRP guidelines have been developed and important lessons have been learned from recent disasters such as Hurricane Katrina in the Gulf and the terrorist attack of September 11, 2001; and

**WHEREAS**, Palm Beach County applied for and was awarded an Emergency Management and Preparedness Assistance grant from the Florida Department of Community Affairs, and a supplemental grant from the Public Entity Risk Institute, to prepare a state-of-the-art county-wide PDRP, with special attention to Long-term Recovery, Reconstruction and Economic Redevelopment decisions and actions in the aftermath of catastrophic disasters; and

**WHEREAS**, the revised plan is consistent with the policies, objectives and guidance outlined in the County's Comprehensive Plan, the Comprehensive Emergency Management Plan, and the Local Mitigation Strategy; and

**WHEREAS**, development of the Palm Beach County PDRP involved a highly participative planning process and the final revised plan was reviewed and approved by the County's PDRP Executive Committee and by the Division of Emergency Management, Florida Department of Community Affairs.

**NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF COUNTY COMMISSIONERS OF PALM BEACH COUNTY, FLORIDA, THAT:**

**Section 1.** The Board of County Commissioners hereby approves and adopts the revised Countywide Post Disaster Redevelopment Plan dated August 2006 in its entirety, as a reference document to guide post disaster decisions and actions at the County and city levels.

**Section 2.** Under the direction of the PDRP Executive Committee, the County will continue to pursue the pre-event actions and initiatives outlined in the Plan.

**Section 3.** The Board of County Commissioners authorizes the appropriate County Officials to pursue available funding opportunities for implementation of proposals designated therein, and will, upon receipt of such funding or other necessary resources, seek to implement the actions contained in the Plan.

2006 PDRP BCC Adoption Resolution (p2)

ATTACHMENT 2

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**Palm Beach County Post Disaster Redevelopment Plan**

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**EXECUTIVE SUMMARY**

Palm Beach County, like all communities, is vulnerable to disaster. Despite a long period of relative calm, Palm Beach County has a storied history of major disasters, including the infamous 1928 hurricane which still ranks as the second most deadly in U.S. history. Now during the current period of increased hurricane activity and after recent events in the Gulf States, a major hurricane hitting the county has become more conceivable, albeit just as frightening. Rather than simply hope a disaster never happens here, Palm Beach County has been proactive in increasing its ability and capacity to withstand and recover from a catastrophic disaster event.

Palm Beach County was one of the first jurisdictions in Florida to draft a Post Disaster Redevelopment Plan (PDRP) in 1996. Now, having become more sophisticated in emergency operations and hazard mitigation, the county decided it was also time to strengthen its post disaster planning. The 2006 Countywide Post Disaster Redevelopment Plan is the product of extensive research of best planning practices, lessons learned from recent catastrophic disaster events, and information gathered from participative public workshops. The purpose of the plan is to act as a single reference for guiding decision-making and action during the difficult disaster recovery period, as well as detailing actions that can be taken before a disaster strikes to speed the recovery process. It addresses disaster recovery and redevelopment issues with long-term implications. It does not address pre-disaster mitigation or immediate response and emergency operations, as those are already excellently covered by the Local Mitigation Strategy and the Comprehensive Emergency Management Plan, respectively.

The PDRP is action-oriented and outlines a countywide implementation approach. Through an Executive Committee representing county, municipal, non-profit, and private stakeholders and a flexible Working Group structure, actions outlined in the plan can be implemented as needed regardless of jurisdictional boundaries and possible staffing fluctuations in a post-disaster environment. Pre-disaster actions and annual maintenance of the plan allow the PDRP Executive Committee and Working Groups to actively prepare for a possible disaster. Post-disaster actions create a strategy for dealing with minor, major, or catastrophic disasters and are activated by the county's Executive Policy Group in concert with the PDRP Executive Committee and Recovery Branch Chief. The format of the plan allows new actions to be easily included and new participants to become involved immediately through the Working Groups. The success of the plan relies on the ease of implementation in the aftermath of a disaster and on the participants' commitment to continually strengthen it by performing "blue skies" preparations. A disaster event, while tragic, also presents a window of opportunity for strengthening communities and working toward disaster resilience. With a strong plan in place, Palm Beach County can take advantage of those opportunities and more quickly recover from a disaster should it experience one.



2006 PDRP Table of Contents

**2006 PDRP Table of Contents**

**TABLE OF CONTENTS**

**1. INTRODUCTION ..... 1-1**

1.1 Purpose and Authority..... 1-1

1.2 How to Use this Plan..... 1-1

1.3 Relevant Plans and Policies..... 1-3

**2. MAJOR POST DISASTER REDEVELOPMENT GOALS AND ISSUES ..... 2-1**

2.1 Local Government Recovery Issues ..... 2-1

2.2 Economic and Private Sector Issues..... 2-7

2.3 Social and Environmental Issues ..... 2-11

2.4 Redevelopment and Mitigation Issues ..... 2-16

**3. PLAN IMPLEMENTATION ..... 3-1**

3.1 Activating the Plan..... 3-1

3.2 Implementing the Plan through Working Groups..... 3-4

**4. ACTION PLAN..... 4-1**

4.1 Short-term Recovery Actions..... 4-2

4.2 Long-term Recovery and Redevelopment Actions..... 4-30

**5. MAINTENANCE OF THE PLAN..... 5-1**

5.1 Updating and Revision Process..... 5-1

5.2 Continuation of the PDRP Committee and Working Groups..... 5-2

**Appendix A. Issues Index, Sources, Acronyms, & Glossary..... A-1**

**Appendix B. Planning Area, Plan Summaries, & Relevant Policies..... B-1**

**Appendix C. Planning Process and Documentation..... C-1**

**Appendix D. Implementation Tools and Sub-plans..... D-1**

**Appendix E. Actions Listed by Issue..... E-1**

## Critical reviews of the 2006 Palm Beach County PDRP

Palm Beach County's 2006 PDRP drew independent critical acclaim from a number of organizations and individuals active in the field of disaster recovery and redevelopment. Among them were the following:

Government Accountability Office

*Experiences from Past Disasters Offer Insights for Effective Collaboration after Catastrophic Events*

(GAO-09-811 July 2009 Report to the Committee on Homeland Security and Governmental Affairs, U.S. Senate)

FEMA – University of Oregon (2010)

*Pre-Disaster Planning for Post-Disaster Recovery: Case Studies*

Timothy Beatley (2009)

*Planning for Coastal Resilience: Best Practices for Calamitous Times*

Florida Department of Community Affairs

*A solicited Gap Analysis vs. State PDRP Guidebook (2010)*

*A Review of the 2006 Palm Beach County Post-Disaster Redevelopment Plan*

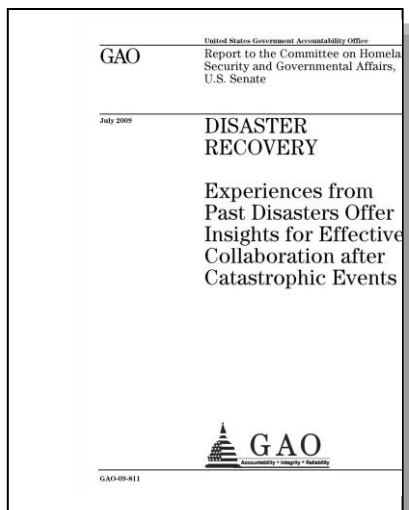
Briefs of these reviews follow.

## Government Accountability Office

### Disaster Recovery: Experiences from Past Disasters Offer Insights for Effective Collaboration after Catastrophic Events

**GAO-09-811 July 2009**

Report to the Committee on Homeland Security and Governmental Affairs, U.S. Senate



Partly as a result of experiences following Hurricane Andrew, Florida's Palm Beach County developed the Palm Beach Countywide Post-Disaster Redevelopment Plan for guiding decision making and action during the disaster period as well as detailing actions that can be taken before a disaster strikes to speed the recovery process. Palm Beach County delineates roles and responsibilities for recovery by creating working groups who will be responsible for implementing different sections of the plan, including infrastructure, economic development, and government operations. Each working group is assigned several issues to cover along with a chairperson to spearhead those activities for the county. Additionally, city departments and agencies are represented in each of these working groups.

As an outgrowth of this plan, a Business and Industry program was created that formally integrated business interests into the recovery process. Additionally, the program also created a private-public partnership comprising local, state, regional, and national businesses as well as governmental and nongovernmental organizations. According to a Palm Beach County official, partners in this program are fully engaged in the development and implementation of recovery initiatives. These collaboration efforts have resulted in improved relationships among the governmental, nongovernmental, and business entities involved in the program.

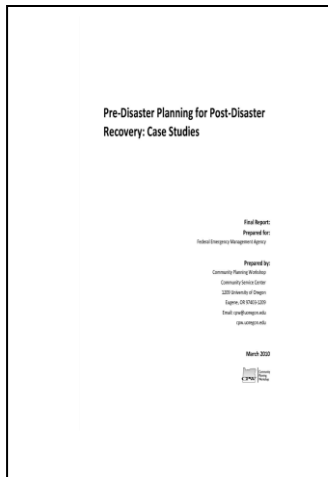
Post-disaster recovery plans can also provide a vehicle to designate roles and responsibilities for recovery, among other things. We have previously reported that well-crafted post-disaster recovery plans can clarify roles and responsibilities and help jurisdictions make progress with recovery.

Palm Beach County Division of Emergency Management, *Countywide Post-Disaster Redevelopment Plan*, Palm Beach County, Florida, (West Palm Beach, FL: August 2006), <http://www.pbcgov.com/publicsafety/emergencymanagement/resources>

Collaborating organizations can work together to define and agree on their respective roles and responsibilities. In doing so, they can collectively agree on who will do what, organize joint and individual efforts, and facilitate decision making. One way to delineate roles and responsibilities for disasters is through planning. For the emergency response phase, the National Response Framework sets out the roles and responsibilities of key partners at the local, tribal, state, and federal levels. Responsibilities for recovery stakeholders are detailed in ESF #14, the Long-Term Recovery Annex. The annex mostly addresses the responsibilities of federal agencies involved in recovery.

Because state and local governments play a lead role in disaster recovery, it is also important for their roles and responsibilities to be clearly delineated. After past disasters, this information has been delineated through long-term community recovery plans. Communities can develop such plans either before or after a disaster occurs. Post-disaster recovery plans typically include detailed projects and approaches to rebuild a community based on the damage and impacts of the specific disasters. Some communities have supplemented post-disaster plans by conducting planning efforts prior to a disaster.

Prepared for FEMA by University of Oregon (March 2010)



**Table of Contents**

- Chapter I: Introduction ..... 1
- Background ..... 1
- Purpose and Methods ..... 2
- Organization of this report ..... 3
- Chapter II: Framework for this analysis ..... 4
- Flooding in the U.S. .... 4
- The Community Rating System (CRS) ..... 5
- Long Term Post-Disaster Recovery Planning – Defined ..... 6
- Why Plan for Post-Disaster Recovery? ..... 7
- How to Plan for Post-Disaster Recovery? ..... 8
- Relationship of post-disaster planning to the CRS ..... 9
- Chapter 3: Case studies ..... 11
- Palm Beach County, Florida ..... 11
- Community and Hazard Background ..... 12
- Plan Development ..... 12
- Plan Elements ..... 14
- Plan Implementation ..... 15
- Conclusions ..... 15
- Process Conclusions ..... 15
- Land Use Conclusions ..... 16
- Other Conclusions ..... 16
- Polk County, Florida ..... 16
- Community and Hazard Background ..... 18
- Plan Development ..... 18
- Plan Elements ..... 19
- Plan Implementation ..... 20
- Conclusions ..... 20
- Process Conclusions ..... 20
- Land Use Conclusions ..... 21
- Other Conclusions ..... 21
- Hillsborough County, Florida ..... 21

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### CHAPTER 3: CASE STUDIES

This chapter presents the results of CPW's review of post-disaster recovery plans in the four case study jurisdictions: Palm Beach County, Florida; Polk County, Florida; Hillsborough County, Florida; and Tillamook City, Oregon. CPW conducted considerable research to identify candidate jurisdictions. We ultimately chose three jurisdictions in Florida due to the state's initiative to develop post-disaster redevelopment plans. We selected Tillamook, Oregon because of its efforts in redevelopment planning which resulted from years of repetitive flood losses, particularly in areas along Highway 101.

To complete the case studies, CPW reviewed the plans and related materials from the case study jurisdictions' web sites and conducted interviews with local staff. Each case study is organized into four sections:

- Community and Hazard Background
- Plan Development
- Plan Elements
- Plan Implementation
- Conclusions

#### **PALM BEACH COUNTY, FLORIDA**

Palm Beach County's efforts focus on economic recovery. The County initiated its planning efforts in 2005, adopted the plan in August of 2006, and has not experienced a major flood disaster since preparation of the plans. A copy of the post-disaster redevelopment plan can be found on the County's website:

[http://www.pbcgov.com/publicsafety/emergencymanagement/resources/pdf/pdrp\\_AUG\\_06.pdf](http://www.pbcgov.com/publicsafety/emergencymanagement/resources/pdf/pdrp_AUG_06.pdf).

## FEMA – University of Oregon (2010)

---

### University of Oregon/FEMA Case Study on Palm Beach County's PDRP

The Community Workshop of the University of Oregon, as part of its March 10, 2010 study for FEMA entitled “*Pre-Disaster Planning the Post-Disaster Recovery*”. Independently found and reviewed Palm Beach County's 2006 PDRP and prepared a very positive case study. Among its conclusions and observations were the following:

#### Process Conclusions

- Developing a post-disaster recovery plan is an opportunity to encourage collaboration between planners, emergency managers, and economic development partners.
- Building these relationships may have more impact than the plans they create.
- It is important to do sufficient background research and preparation before holding a workshop; holding workshops too early can be problematic.
- To encourage participation and buy-in, staff should use local resources and organizations to help organize the post-disaster planning process.
- There is no one process template for every community; however a participatory approach informed by an executive committee and technical support seems to be effective.

#### Land Use Conclusions

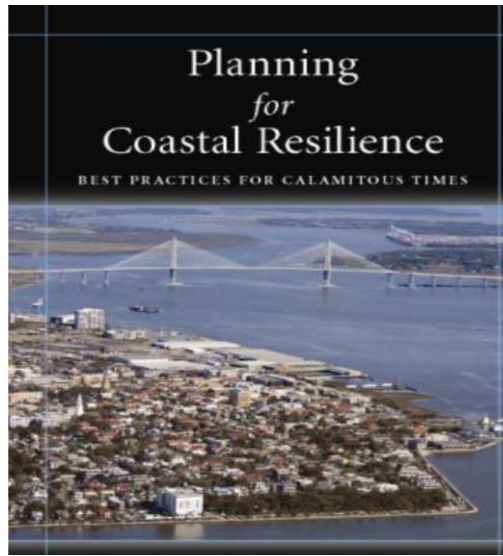
- Land use issues are highly integral to effective post-disaster redevelopment. However, they are also the most contentious.
- Understanding the impacts of land use decisions in relation to the community's overall vision and political environment helps to make a more effective plan.

#### Other Conclusions

- Action matrices are helpful in making plan implementation happen.
- Integrating post-disaster redevelopment planning into other plans is important, even if the integration is relatively minimal at first.
- Private public partnerships can be used to encourage and support post-disaster recovery planning in the business community.
- Planning for economic recovery is important. Finding ways to use local resources first takes pre-disaster organization and coordination.
- Communities shouldn't be completely reliant on state or federal resources that don't understand local needs.

## Planning for Coastal Resilience: Best Practices for Calamitous Times

By Timothy Beatley  
July 2009



### Contents

#### Introduction: Climate Change and Coastal Resilience

#### I. Coastal Resilience: Background and Vulnerability

Chapter 1: Coastal Resilience: What is it?  
Chapter 2: Vulnerability of Coastal Communities

#### II. Approaches to Planning for Coastal Resilience

Chapter 3: Coastal Resilience: Key Planning Dimensions  
Chapter 4: Barriers to Coastal Resilience  
Chapter 5: Understanding the Political Setting and Context  
Chapter 6: Principles of Coastal Resilience  
Chapter 7: Tools and Techniques for Enhancing and Strengthening Coastal Resilience

#### III. Best Practices in Planning for Coastal Resilience

Chapter 8: Worcester County, MD  
Chapter 9: Cannon Beach and northwest Oregon coast  
Chapter 10: Palm Beach County, FL  
Chapter 11: Charleston County, SC  
Chapter 12: New Orleans and resilience after Katrina  
Chapter 13: Brief Coastal Resilience Profiles  
La Plata, MD  
Kinston, NC  
Loreto Bay, Mexico  
Maui County, HI  
Solara, San Diego County, CA  
Noisette, North Charleston, SC

Conclusions: The Promise of Coastal Resilience  
References

In *Planning for Coastal Resilience*, Beatley writes that coastal resilience must become the primary design and planning principal to guide all future development and all future infrastructure decisions. Resilience, the author explains, is a profoundly new way of viewing coastal infrastructure – an approach that values smaller, decentralized kinds of energy, water, and transport more suited to the serious physical conditions coastal communities will likely face. Implicit in the notion is an emphasis on taking steps to build adaptive capacity, to be ready ahead of a crisis or disaster. It is anticipatory, conscious, and intentional in its outlook.

After defining and explaining coastal resilience, Beatley focuses on what it means in practice. Resilience goes beyond reactive steps to prevent or handle a disaster. It takes a holistic approach to what makes a community resilient, including such factors as social capital and sense of place. Beatley provides case studies of five U.S. coastal communities (including Palm Beach County), and “resilience profiles” of six North American communities, to suggest best practices and to propose guidelines for increasing resilience in threatened communities.

## Gap Analysis of 2006 PDRP by the Florida Department of Community Affairs

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*The following section is a gap analysis of the 2006 Post-Disaster Redevelopment Plan published by the Florida Department of Community Affairs. The text from the original document has been included here as a reference, and therefore does not necessarily match the format of the rest of the PDRP. This section is included to provide context to the evolution of the PDRP through its update history. This section is not intended to provide specific direction or action items for the current PDRP version.*

### A Review of the 2006 Palm Beach County Post-Disaster Redevelopment Plan

#### **Introduction**

The Palm Beach County Post-Disaster Redevelopment Plan (PDRP) was developed in late 2005-2006 and is a pioneer in pre-disaster planning for long-term recovery. The plan covers a wide array of topics and many actions that, when implemented, will help ensure that the County:

- experiences faster and more efficient recovery,
- maintains local control over the process, and
- takes advantage of opportunities to build back better.

Since the development of the plan, the State of Florida has completed a 5-Year initiative to further define post-disaster redevelopment planning and the elements of a successful plan. This guidance can be found in “Post-Disaster Redevelopment Planning: A Guide for Florida Communities,” released by the Florida Department of Community Affairs and FDEM in October 2010. At the request of the Palm Beach County DEM, the following courtesy assessment reviews the Palm Beach Post-Disaster Redevelopment Plan in light of this new guidance and offers suggestions for strengthening the plan during the next scheduled update kicking off in 2011. Overall it should be noted that the Palm Beach PDRP is an exemplary document that has the potential to be very successful in its current capacity. The guidance contained in the guidebook was gleaned from many different efforts, including that of Palm Beach County. No one community has accomplished all of these tasks. The Statewide Guidance suggests an incremental approach to post-disaster redevelopment planning. The following suggestions might be best accomplished over time. It is not expected that the County will respond to all of these suggestions at the time of their next update.

#### **Planning Process**

The planning process is documented on page 16 of the Post-Disaster Redevelopment Planning Guidebook and detailed throughout Chapter Two. This process was largely followed by Palm Beach County when developing their plan; however there are some additional tasks the County may wish to include during their scheduled update.

#### **Plans Assessment**

The current Palm Beach County PDRP summarizes polices from the three main relevant plans – the local comprehensive plan, Local Mitigation Strategy (LMS), and Comprehensive Emergency Management Plan (CEMP). Since this last update, both plans have undergone a significant update (the PBC Comprehensive Plan in 2007, LMS in 2009 and CEMP under current revision) and

changes to these plans should be reviewed. In order to make this a county-wide strategy, relevant sections from municipal local comprehensive plans should be reviewed and included as well. Since this could be a significant undertaking, it is suggested that a targeted approach be taken with involving municipalities. More about municipal involvement can be found below in the Stakeholder Involvement Section.

The County may consider reviewing other relevant plans and policies such as Disaster Housing Strategy, Debris Management Plans, Long-Range Transportation Plans, Dike Breach Outreach/Recovery Plans, Economic Development Plans, Land Acquisition Programs, Beach Renourishment Plans, Land Development Codes, Community Redevelopment Agency Plans, and other vision documents. It is important to ensure that the Post-Disaster Redevelopment Plan functions as a guide that provides direction on how to implement other relevant local plans and in order to do this properly, you must first take inventory of what is already in existence.

Additionally, the Palm Beach County Comprehensive Emergency Management Plan Recovery Annex has been significantly modified to focus more on Long-Term Recovery. The ties between this Recovery Annex and the PDRP should be further fleshed out and clear points of transition between the two documents should be made as well as clear transitions between the organization's managing the efforts. The County should also pay close attention to the work at the national level through ESF-14 to ensure that the resources available through this function are noted and properly used during long-term recovery.

#### Capacity Assessment

The Capacity of Palm Beach County may have shifted over the past 5 years due to budget cuts or constraints and the County may have begun new initiatives over the past five years that have strengthened its current capacity. Therefore, capacity should be re-evaluated as . New initiatives may include the County's extensive Public-Private Partnership Network and sustainability initiatives. Both of these initiatives are also referenced in the review actions included in this report. The county may wish to include a short synopsis of each new initiative that relates to the post-disaster redevelopment plan or long-term recovery as well as a contact person for each initiative. It may be appropriate to include this representative on appropriate working groups or Technical Advisory Committees as necessary.

Besides new initiatives in the County, new organizations and existing organizations that may not have been included in the original planning process should be included as a resource evaluated during the capacity assessment. Specifically, the County may wish to reach out to its current Long-Term Recovery Organizations including Palm Beach Long Term Recovery Coalition, Rivera Beach Community Coalition and the Glades Area Recovery Team. These organizations are familiar with the recovery needs of the community and can help coordinate volunteer activities even during the long-term recovery process. For more information on the capacity assessment see page 25 in the Guidebook.

The County may also want to evaluate its current financial capacity to handle a disaster recovery situation. This could include financial reserves, mutual aid agreements, bond capacity, etc. For more information on how the community might take on this task, see pages 115-117 in the Guidebook.



### Vulnerability Analysis

Currently, the County does not include a vulnerability assessment in their Post-Disaster Redevelopment Plan. This may be because the plan chose to use the vulnerability assessment found in the Local Mitigation Strategy, a practice local governments are encouraged to do in the statewide guidance. However, this vulnerability assessment may have been updated in 2009 and should be re-reviewed. It might be relevant to include certain maps from these this document as well, especially if the County chooses to target specific areas for acquisition or mitigation. Some communities have chosen to augment their vulnerability analysis to include additional tasks that may not be included in a typical LMS. These tasks may include:

- Developing one or more scenarios that include descriptions of long-term impacts. This is often helpful to communities when exercising the Post-Disaster Redevelopment Plan and can help to focus the scope of the plan for participants (p. 29).
- Analyze the different land uses within hazard zones. In 2005 the Florida Department of Community Affairs conducted an analysis of the land uses found within areas subject to flooding, coastal storm surge, wildfire and sinkholes. Furthermore, in 2006 a similar, yet more detailed analysis was conducted specifically for the Glades Communities of Palm Beach County (Belle Glade, Pahokee and South Bay). While this information may be out-of-date it would be a good starting place. Copies of these reports along with maps that analyze the land uses in vulnerable areas can be found on the Department's website:
  - Palm Beach County Profile:  
<http://www.dca.state.fl.us/fdcp/dcp/hazardmitigation/Counties3.cfm>
  - (Scroll down to the bottom –alphabetical order).
  - Glades Communities Profiles:  
<http://www.dca.state.fl.us/fdcp/dcp/hazardmitigation/Municipalities.cfm>
  - (all listed on page in alphabetical order).
- Analyze the community's non-conforming structures and uses. This could be a simple inventory and may target Repetitive Loss and Severe Repetitive Loss areas for specific action in the post-disaster environment. The Palm Beach County LMS may have more information on repetitive loss properties and the growth management department should have information on non-conforming uses.
- Ensure a solid understanding of the infrastructure and facilities likely to be damaged (p. 30).
- Analyze the Palm Beach County community's social vulnerability to disasters. This may be especially useful to identify areas with large concentrations of elderly, special needs or non-English speaking folks who may need additional forms of specific assistance in the long-term recovery process. As the latest information comes out from the 2010 Census, it will be very important for the County to review the current demographics to see if new issues have presented themselves over the past 10 years. For more information see page 30 in the guidebook and visit: [www.sovius.org](http://www.sovius.org).
- Analyze the local economic vulnerability to disasters. This is an advanced task that has probably been explored significantly through the County's ESF-18 and Public-Private Partnership work that has been completed over the past 5 years. This information should be documented in the County's plan. A great resource for long-term economic recovery that may be useful as the County augments this section of the plan is: <http://restoreyoureconomy.org/>.
- Conduct a financial impact analysis (p. 32).

- Conduct an environmental or habitat impact analysis (p. 32).
- Analyze the community's designated historic sites and structures. Through this review, no evidence of participation from the Historical Society of Palm Beach County or other agencies focused on historic and cultural preservation was noted. The community may wish to undertake a specific vulnerability analysis of its historic structures and consider inviting a representative from this community to the PDRP Committee.

### Stakeholder Involvement

The Palm Beach County PDRP had wide representation from many different groups invited to participate in the planning process, however, as has been experienced in many of the planning processes involvement tended to wane over time. The County may wish to adopt a model that uses the current PDRP Executive Committee as a steering group and expand the membership of the sub-committees involved in the process. Page 23 in the Guidebook contains a list of potential stakeholders who could be included in the process. Specifically, Palm Beach County should consider including someone from the Historical Society of Palm Beach County and additional representation from the Office of Economic Development working specifically on the issue of sustainability.

In addition to expansion of the committees involved in the planning process, the County should actively seek out more participation from the municipalities in Palm Beach County. During the original planning process James Titcomb, Executive Director of the Palm Beach League of Cities, served as the Acting Chairperson of the PDRP Executive Committee. This was a great strategy that ensured the issues that the municipalities experience were broadly addressed and brought to the table. In addition to this, representatives from Boca Raton, Juno Beach, Wellington, Greenacres, and South Bay were also included in the Executive Committee. While it would be very difficult to include all 37 municipalities in the planning/update process, the County should develop some actions that specifically target these communities to make sure they are aware of the plan and how they can be involved. The PDRP contains a Municipal Participation Form (page C-12) designed to solicit feedback specifically from the other jurisdictions within the County. This concept that recognized the need for further outreach to cities as the plan was implemented. If this form was used over the past five years, the feedback gained should be incorporated into this update and the communities should be contacted again to make sure the information still holds true. This worksheet could also be used during the update of the plan.

Municipal Insolvency was addressed as an issue in the plan with three actions associated, including:

- Establish procedures for municipalities receiving financial assistance from the County (LG-34)
- Assist municipalities in developing Continuity of Operations Plans (COOP) and coordinate with county COOPs (LG-35)
- Information sharing between municipalities and county (LG-36).

Any work related to these three actions would also help to develop municipal awareness and support.

In addition to this, the Coastal Resilience Index created by the Gulf of Mexico Alliance is a great facilitation tool to use when communicating risk and the need for long-term recovery following disasters to smaller jurisdictions that may not be well versed in hazard mitigation and recovery. Information on this tool can be found online at: [www.masgc.org/ri](http://www.masgc.org/ri).

**PDRP Issues and Actions**

Below is a crosswalk that compares the issues found in the Statewide Guidance Document and those identified in the Palm Beach Post-Disaster Redevelopment Plan. The Shading of the box indicates the achievement level: White = Minimum, Light Blue = Recommended and Darker Blue = Advanced. For a full description on the levels of achievement see page ii in the guidebook.

| ISSUES IDENTIFIED IN STATEWIDE GUIDANCE                                     | COMMENTS ON PALM BEACH COUNTY PDRP  |
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| <b>LAND USE</b>   |   |
| Phased reconstruction and streamline permitting                             | Palm Beach County currently has a Post-Disaster Temporary Permit Suspension Ordinance (Article XXII, Section 7). Action RM-8 on page E-35 suggests some additional tasks that could be taken to strengthen this provision. See page 46 in the Guidebook for more information.   |
| Build back standards for nonconforming and substantially damaged structures | Action RM-2 on page E-34 suggests lowering the threshold for bringing non-conforming uses into compliance to 40 or 45% damaged and RM-11 on page E-27 calls for a non-conforming structure inventory. This inventory would be extremely valuable in the aftermath of a disaster. For more information see page 47 in the Guidebook.   |
| Controlling long-term post-disaster blight                                  | Action LG-18 on page E-6 “Establish housing demolition protocols” suggests that protocols for demolition of destroyed homes be established. Long-term blight eradication after a disaster is a major issue. The county should take some of the steps laid out in this action as well as look at some of the actions taken by the City of New Orleans, post-Katrina on this issue to gain further insight. See page 48 in the Guidebook for more information.  |
| Reducing disaster vulnerability through voluntary mitigation programs       | Including mitigation in rebuilding is addressed as a major issue in the Palm Beach County PDRP and therefore there are a number of actions suggested under this umbrella these including: <ul style="list-style-type: none"> <li>▪ Partner with home improvement stores and major home builders to advocate structural hazard mitigation (RM-17)</li> <li>▪ Expand One-Stop Permitting Centers to include mitigation information (RM-18)</li> <li>▪ Institute landscaping and invasive vegetation public education campaign (RM-19)</li> </ul> In addition to these programs, the County may wish to explore land acquisition programs for highly vulnerable areas (see also Action Item RM-13 regarding CLASC). For more information see page 49 in the Guidebook. |
| Prioritizing areas to focus redevelopment                                   | Palm Beach County hasn’t yet begun to identify areas on a map for focused redevelopment. Although there is an action looking at Revitalization, Redevelopment and Infill Overlays which concern wind  |

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|  | <p>damage vulnerability (RM-14). The concept of Priority Redevelopment Areas is an advanced task accomplished successfully by Hillsborough County that Palm Beach County may be interested in pursuing. For more information see pages 50-51 in the Guidebook.</p>  |
| Historic Preservation and restoration  | <p>Restoring Educational, Cultural and Historic Amenities was included as an issue in the Post-Disaster Redevelopment Plan and two action items were included to address this subject:</p> <ul style="list-style-type: none"> <li>▪ Assisting Educational and Cultural Facilities with finding funding for repairs and restoration (SE-7)</li> <li>▪ Tax Breaks for Historic Structure Restoration (SE-8)</li> </ul> <p>As mentioned during the analysis of the vulnerability assessment, a risk analysis of all historic structures in Palm Beach County could help the County identify their most vulnerable structures to target for mitigation. This would be an appropriate addition to the LMS if it hasn't already been accomplished. For more information see page 52 in the Guidebook.</p> |
| Reducing disaster vulnerability through land use and development regulations | <p>Limiting Redevelopment in Hazardous Areas was included as an issue in the plan and in addition to addressing non-conforming uses, the following actions were proposed:</p> <ul style="list-style-type: none"> <li>▪ Petition FDCA for expedited Comprehensive Plan amendment review/approval (RM-12)</li> <li>▪ Renew funding for Conservation Land Acquisition Selection Committee purchases (RM-13)</li> <li>▪ Establish Revitalization, Redevelopment, and Infill Overlays (RRIO) in areas that experienced severe wind damage (RM-14)</li> <li>▪ Down-zoning undeveloped parcels in hazard-prone areas (RM-15)</li> <li>▪ Initiate municipal cooperation in Transfer of Development Rights Program (RM-16)</li> </ul> <p>For more information see page 53 in the Guidebook.</p>              |

| HOUSING   |   |
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| Temporary housing sitting criteria, provision and removal | <p>Availability of temporary housing/long-term sheltering was identified as the top priority issue for Palm Beach County. Quite a few actions are included to address this issue:</p> <ul style="list-style-type: none"> <li>▪ Creation of a vacant lands inventory (for placement of temporary housing units) (LG-1)</li> <li>▪ Housing stock analysis to identify the most vulnerable housing (LG-2)</li> <li>▪ Inform Damage Assessment Teams (DA) of temporary housing and long-term shelter sites (LG-3)</li> <li>▪ Pre-arranged agreements with hotels to house government employees and aid agreements (LG-4)</li> <li>▪ Assistance in finding rental units for temporary housing (LG-5)</li> <li>▪ Create an on-site employee housing permit (LG-6)</li> <li>▪ Designate Long-term Shelters (LG-7)</li> <li>▪ Analysis of damage assessment findings (LG-8)</li> <li>▪ Subsidize long-term temporary housing (LG-9)</li> </ul> <p>The county may also wish to explore on-site temporary housing in residential areas as well. The State of Florida is now encouraging</p> |

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|   | <p>disaster housing to be located on the site of the homeowners damaged home, if at all possible and safe, as it supports faster reconstruction and maintains a sense of community. For more information see page 56 in the Guidebook.</p>  |
| <p>Ability to reconstruct homes rapidly</p>                               | <p>Shortage of contractors/supplies slowing down the repair of homes and businesses was identified in the top ten issues in the Palm Beach PDRP. To address this, the following actions were proposed:</p> <ul style="list-style-type: none"> <li>▪ Encourage contractors and citizens to maintain pre-arranged agreements for hurricane repairs (EP-15)</li> <li>▪ Provide staging areas for contractors and repair (EP-26)</li> <li>▪ Stockpile temporary repair and/or construction materials needed for immediate repairs to public facilities (EP-27)</li> <li>▪ Develop incentives for large construction firms to take part in the repair and reconstruction process (EP-16)</li> </ul> <p>During the update of the plan the County may also consider volunteer coordination of assistance available to repair low-income housing and also include actions to encourage local contracting support on housing repair. See page 57 in the Guidebook for more information.</p>  |
| <p>Transitioning residents back to permanent housing</p>                  | <p>In the Palm Beach County PDRP this topic is partially addressed through the issue, “Reducing Incidence of Fraudulent and Unethical Practices” through the following actions:</p> <ul style="list-style-type: none"> <li>▪ Create public education campaign to inform citizens of services offered by the County (SE-1)</li> <li>▪ Provide Personal Finance Consultation Services at Community Redevelopment Centers (SE-2)</li> <li>▪ Educate the public on risks of using unlicensed contractors (SE-24)</li> <li>▪ Preventing predatory real estate investment and ‘house flipping’ (SE-4)</li> <li>▪ Establish a countywide liaison with the State Attorney General fraud task force (SE-5)</li> <li>▪ Establish housing demolition protocols (LG-18)</li> </ul> <p>More information may be available on this transition in the local disaster housing strategy. If this has been developed, it should be included in the plan review and if not an action to create this strategy should be included. For more information see pages 58-59 in the Guidebook.</p> |
| <p>Rebuilding affordable housing</p>                                      | <p>Including affordable housing in redevelopment projects is one of the top ten priorities in the Palm Beach County PDRP. There are four actions associated with this issue including:</p> <ul style="list-style-type: none"> <li>▪ Adopting a ‘No Net Loss’ Resolution (RM-20)</li> <li>▪ Addressing Post-Disaster Redevelopment in the County Workforce Housing Program Regulations (RM-21)</li> <li>▪ Expediting grant and loan funding processes (RM-22)</li> <li>▪ Creating Community Land Trusts (RM-23)</li> </ul> <p>For more information see page 59 in the Guidebook.</p>   |
| <p>Encouraging homeowners to incorporate mitigation during rebuilding</p> | <p>Including mitigation in rebuilding is addressed as a major issue in the Palm Beach County PDRP and therefore there are a number of actions suggested under this umbrella including:</p> <ul style="list-style-type: none"> <li>▪ Partner with home improvement stores and major home builders to advocate structural hazard mitigation (RM-17)</li> </ul>  |

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|  | <ul style="list-style-type: none"> <li>▪ Expand One-Stop Permitting Centers to include mitigation information (RM-18)</li> <li>▪ Institute landscaping and invasive vegetation public education campaign (RM-19)</li> </ul> <p>These actions work towards this issue as well as the issue: Reducing disaster vulnerability through voluntary mitigation programs and land use and development regulations. For more information see page 60 in the Guidebook.</p> |
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**ECONOMIC REDEVELOPMENT**

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| <p>Resumption and retention of major employers</p> | <p>Avoiding permanent relocations of core businesses outside of the community is an issue that has many actions associated with it, including:</p> <ul style="list-style-type: none"> <li>▪ Create Downtown Improvement Districts (BID) in downtown and retail centers (EP-9)</li> <li>▪ Advertise the quick recovery and resumption of business to the nation (EP-10)</li> <li>▪ Produce statistics for post-disaster economic environment for better marketing business opportunity and discovering needs (EP-11)</li> <li>▪ Hold an economic development charette for the business community after a disaster (EP-12)</li> <li>▪ Beautification/landscaping for tourism (EP-13)</li> <li>▪ Adjusting incentive packages (EP-14)</li> <li>▪ Develop special post-disaster incentive packages to entice businesses to remain in Palm Beach County (EP-25)</li> </ul> <p>Many of these actions will most likely address the additional issues below concerning economic redevelopment. Palm Beach County has made great strides in long-term economic recovery and redevelopment. For more information on resumption and retention of major employers see page 63 in the Guidebook.</p> |
| <p>Small business assistance</p>                   | <p>The ability of small businesses to stay afloat until adequate financial assistance is available is another issue that Palm Beach County created many actions to support, including:</p> <ul style="list-style-type: none"> <li>▪ Locate possible sites for post-disaster temporary office space (EP-2)</li> <li>▪ Make arrangements to secure mobile units/trailers for temporary office space (EP-22)</li> <li>▪ Establish criteria for placing small businesses in temporary office sites (EP-23)</li> <li>▪ Locate possible sites for Business Recovery Centers (EP-3)</li> <li>▪ Secure supplies for temporary offices and business recovery centers (EP-4)</li> <li>▪ Coordinate with Workforce Alliance to co-locate services with Business Recovery Centers (EP-5)</li> <li>▪ Encourage local physicians to create a coalition/network focusing on post-disaster recovery or enter into mutual aid agreements (EP-24)</li> <li>▪ Assist small businesses with continuity planning and mutual aid agreements (EP-1)</li> </ul>   |

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|   | <ul style="list-style-type: none"> <li>▪ Establish Business Recovery Centers (EP-6)</li> <li>▪ Establish temporary office sites (EP-7)</li> <li>▪ Provide wireless internet access hubs throughout the community (EP-8)</li> <li>▪ Provide short-term children’s activities until regular school and child-care facilities are available (EP-29)</li> </ul> <p>For more information on small business assistance see pages 64-55 in the Guidebook.</p>  |
| <p>Workforce Retention</p>                                    | <p>The retention of workforce is directly related to the ability of businesses to survive. Therefore the two topics above help to accomplish this task, however there are some additional actions described in the plan that support this issue including those related to the use of local business capabilities in disaster recovery:</p> <ul style="list-style-type: none"> <li>▪ Create a Public-Private Partnership Network to supplement governmental recovery/redevelopment activities (LG-37)</li> <li>▪ Include local businesses in pre-arranged contracts for recovery and redevelopment (LG-38)</li> <li>▪ Organize a post-disaster potential subcontractors meeting (LG-39)</li> </ul> <p>For more information on workforce retention see page 66 in the Guidebook.</p> |
| <p>Tourism Renewal</p>  | <p>The topic of tourism renewal is not addressed specifically in the Palm Beach County PDRP, however the following actions could be used to support this topic:</p> <ul style="list-style-type: none"> <li>▪ Beautification/landscaping for tourism (EP-13)</li> <li>▪ Advertise the quick recovery and resumption of business to the nation (EP-10)</li> </ul> <p>For more information on tourism renewal see page 67 in the Guidebook.</p>  |
| <p>Physical economic redevelopment projects</p>               | <p>The Palm Beach County PDRP doesn’t include any physical economic redevelopment projects; however it does include an action to create Downtown Improvement Districts (BID) in downtown and retail centers (EP-9). This might be because these projects are listed in other documents such as economic development strategic plans or the Local Mitigation Strategy. However, it would be helpful to note them in the plan as well if they are in alternative documents. This might be best accomplished in the plans review section. See page 68 in Guidebook for more information.</p>   |
| <p>Opportunities to sustainably restore economic vitality</p> | <p>The Palm Beach County PDRP doesn’t currently include a focus on sustainability during redevelopment. However, the Palm Beach County Strategic Economic Development Plan lists sustainability as one of its five strategies to guide future development. Specifically the plan states, “Enhance the natural environment’s sustainability in making the land use/transportation connection and establish alternative energy policies for sustainability of the built and natural environment.” <i>Palm Beach County Strategic Economic Development Plan</i>, March 2007, p. 5. The next update might consider ways to bridge these two documents. For more information see page 69 in the Guidebook.</p>   |

| INFRASTRUCTURE AND PUBLIC FACILITIES                         |   |
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| <p>Infrastructure for temporary recovery operations</p>      | <p>Temporary recovery operations have been addressed in the Palm Beach County PDRP through many different issues and action items such as temporary housing and siting criteria. Actions that work towards this issue include:</p> <ul style="list-style-type: none"> <li>▪ Vacant Lands Inventory (LG-1)</li> <li>▪ Identify potential debris sites in municipalities (LG-14)</li> <li>▪ Locate possible sites for post-disaster temporary office space (EP-2)</li> <li>▪ Make arrangements to secure mobile units/trailers for temporary office space (EP-22)</li> <li>▪ Establish temporary office sites (EP-7)</li> </ul> <p>The focus of this issue is the placement of temporary infrastructure that furthers permanent infrastructure development. When selecting temporary recovery operations the County should try to connect these temporary uses with places that could be permanent in the future or at least are slated for development in the future so that any investments in temporary infrastructure can be used in the future. For more information see page 74 in the Guidebook.</p>   |
| <p>Debris management</p>                                     | <p>While debris removal is a short-term recovery issue, the management of that debris has long-term implications. The Palm Beach County PDRP recognizes this as one of their top 10 priority issues for long-term recovery and have developed the following actions to address debris management and disposal:</p> <ul style="list-style-type: none"> <li>▪ Create municipal debris management plans (LG-10)</li> <li>▪ Secure Pre-event contracts from non-local waste collectors (LG-11)</li> <li>▪ Determine pre-existing conditions at all Debris Collection sites (LG-12)</li> <li>▪ Annual reassessment of debris collection sites (LG-13)</li> <li>▪ Identify potential debris sites in municipalities (LG-14)</li> <li>▪ Promote recycling of surplus materials from reconstruction activities (LG-16)</li> <li>▪ Create public education for the proper segregation of debris (LG-17)</li> <li>▪ Establish housing demolition protocols (Lg-18)</li> <li>▪ Coordinate burning with FL Division of Forestry (FDOF) (LG-19)</li> </ul> <p>Additional guidance on debris management plans has been released from the FDEM since the creation of this plan. The latest Palm Beach County Debris Management Plan should be consulted during the update of this plan. For more information see page 75 in the Guidebook.</p> |
| <p>Financing infrastructure and public facilities repair</p> | <p>The Palm Beach County PDRP doesn't fully address how public facility repair will be financed, however Appendix D.8 contains a list of post-disaster recovery funding resources. In addition to this the following actions were created:</p> <ul style="list-style-type: none"> <li>▪ Maintain current infrastructure designs and electronic back-up files (LG-20)</li> <li>▪ Budget outlays for new design and reconstruction (LG-21)</li> </ul>   |



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|  | <ul style="list-style-type: none"> <li>▪ Prearranged contracts with non-locals for repairs or supplies (LG-15)</li> </ul> <p>The county should also consider pre-arranged contracts with local repairs when available. While this is mentioned in the description of Action LG-15, a specific action to take on this task was not found. For more information on how to augment these actions see page 76 in the Guidebook along with page 115 on financing implementation of the plan. Also, a companion list of recovery resources has been developed that could augment Appendix D.8. This can be found online at: <a href="http://www.dca.state.fl.us/fdcp/dcp/PDRP/Files/ToolBox/FundingResourcesCompanionHandbook.pdf">http://www.dca.state.fl.us/fdcp/dcp/PDRP/Files/ToolBox/FundingResourcesCompanionHandbook.pdf</a></p> <p>For more information see page 76 in the Guidebook.</p>   |
| <p>Infrastructure and public facilities mitigation and historic considerations</p> | <p>Infrastructure and public facilities mitigation is addressed through Action RM-24:</p> <ul style="list-style-type: none"> <li>▪ Public facility retrofits/repairs built to exceed current standards.</li> </ul> <p>Restoring historic amenities is touched on through the following actions:</p> <ul style="list-style-type: none"> <li>▪ Assisting Educational and Cultural Facilities find funding for repairs and restoration (SE-7)</li> <li>▪ Tax breaks for historic structure restoration (SE-8)</li> </ul> <p>While both topics are addressed, the Palm Beach County PDRP could be revised to include more information/actions in these two areas. These may be subjects already adequately addressed in the Local Mitigation Strategy (where they would more appropriately belong), but that information should be captured in this plan or at least point to the LMS as the source of info for infrastructure mitigation to make sure the connection is made during long-term recovery. To better address historic facility mitigation, the state in partnership with 1000 Friends of Florida has prepared a couple of guidance documents. Links to both of these are below:</p> <p><a href="http://www.1000friendsofflorida.org/PUBS/HistoricalDisater/1000%20Friends%20Book.pdf">http://www.1000friendsofflorida.org/PUBS/HistoricalDisater/1000%20Friends%20Book.pdf</a></p> <p><a href="http://www.1000friendsofflorida.org/PUBS/HistoricalDisater/ManualFinal.pdf">http://www.1000friendsofflorida.org/PUBS/HistoricalDisater/ManualFinal.pdf</a></p> <p>For more information see page 77 in the Guidebook.</p> |
| <p>Relocation of vulnerable infrastructure and public facilities</p>               | <p>The Palm Beach PDRP addresses the relocation of vulnerable infrastructure and public facilities through different issues and actions that have already been stated above. These are mostly related to land use decisions to limit development in hazardous areas. As was mentioned above, the County may have plans that explore the relocation of vulnerable infrastructure, but they were not referenced in the plan. This may appropriately belong in the Capital Improvements Element or Metropolitan Planning Organization’s Long-Range Transportation Plan. If there are other documents that address this issue they should be mentioned in the plans or capacity assessment of the PDRP. For more information on the relocation of vulnerable infrastructure in the Guidebook see page 77. For additional information the County may want to look at a recent guidance document released by the FSU Department of Urban and Regional Planning and FDEM, “Taking the High Road: Integrating Hazard Mitigation into Long-Range</p>   |

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|  | Transportation Planning.” If requested, this document can be delivered to the County electronically. For more information see page 78 in the Guidebook.  |
| Regional infrastructure consideration                            | Regional considerations haven’t been taken into consideration from a multi-county perspective in the Palm Beach County PDRP. However, the Treasure Coast Regional Planning Council recently received funding to create a regional vulnerability analysis and it is expected that infrastructure vulnerability will be a component of this project. The county should coordinate with TCRPC on this project and use this information during the next update of their Post-Disaster Redevelopment Plan. For more information see page 79 in the Guidebook. |
| Enhanced infrastructure capacity to priority redevelopment areas | The concept of Priority Redevelopment Areas is not discussed in the Palm Beach County PDRP, however the plan does recognize the existence of Revitalization, Redevelopment and Infill Overlays (RRIO) in the comprehensive plan, which could be used as a vehicle for prioritizing redevelopment following a disaster. If the RRIO mechanism is used during long-term recovery, infrastructure capacity and provisions should be a main component explored during the planning phases. For more information see pages 79-80 in the Guidebook.            |

**HEALTH AND SOCIAL SERVICES**

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| Health facility restoration  | Health facility restoration is an important consideration for Palm Beach County due to the vulnerable location of some hospitals. Currently there are two actions that address the continuity of health services including: <ul style="list-style-type: none"> <li>▪ Assess capabilities of hospital system and medical transport services to cope with non-operational hospitals (SE-25)</li> <li>▪ Provide a mobile health unit (SE-28)</li> </ul>  |
| Social service provision to socioeconomic vulnerable populations     | Fair and Equitable Distribution of Disaster Assistance is an issue addressed by the Palm Beach PDRP that takes into account social service provisions to socioeconomic vulnerable populations. The following actions have been proposed: <ul style="list-style-type: none"> <li>▪ Prioritize Low Income Census Tracts for Recovery Resources (LG-23)</li> <li>▪ Provide multi-lingual assistance to communities throughout the County (LG-25)</li> </ul> <p>The county may also want to prepare for increased social service need following a disaster. This could include the need for extra disaster case workers or social workers. Additional information on this subject can be found in the Guidebook on pages 84-85.</p> |
| Public safety service levels re-established throughout the community | The Palm Beach County PDRP doesn’t address re-establishing public safety service levels throughout the community. However, this could be something more adequately addressed in another plan such as the short-term recovery portion of the Comprehensive Emergency Management Plan. The county should examine other planning documents to make sure this issue is addressed and capture the appropriate document for implementing actions regarding re-establishing public safety in the Post-Disaster Redevelopment Plan. See pages 85-86 in the Guidebook for more information.  |

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| <p>Coordination and assistance for non-governmental organizations and volunteers</p> | <p>The Palm Beach PDRP contains an Action to establish procedures for securing donations and services from the private section (LG-22). The actions associated with this issue should ideally be connected with the activities of ESF-15 (Volunteers and Donations) and be included in the Standard Operating Procedures that lay out the specific responsibilities of ESF-15. Many CEMPs do not adequately address the long-term responsibilities of ESF-15. The county should consider including this in the update of their Recovery Annex, if not already included. In addition to this, the County should determine how the Long-Term Recovery Organizations can be included in any actions associated with this issue. For more information see page 86 in the Guidebook.</p> |
| <p>Provide for special needs populations throughout long-term redevelopment</p>      | <p>While the topic fair and equitable distribution of disaster assistance touched on social services for socioeconomic vulnerable populations, special needs populations such as children and elderly were not addressed during the long-term redevelopment period. This could be because Palm Beach County has another planning document that addresses this issue. If this is the case, it should be noted in the PDRP where this information can be found. For more information on this topic, see page 87 in the Guidebook.</p>   |
| <p>Public transportation restoration and improvement</p>                             | <p>Currently, there are no actions addressing public transportation restoration and improvement in the Palm Beach County PDRP. The County might consider adding a representative from Palm Tran to the committee to discuss how public transportation might assist in the disaster recovery process. Specifically coordinating any temporary disaster housing sites with the current Palm Tran bus routes or considering altering routes temporarily after a disaster to accommodate temporary housing sites, if needed. For more information see page 88 in the Guidebook.</p>   |
| <p>Schools, higher education reopened</p>  | <p>The Palm Beach County PDRP contains an action that addresses the provision of short-term children’s activities until regular school and child-care facilities are available (EP-29). In addition to this, the County may want to include a representative from the School District of Palm Beach County as well as representation from Palm Beach County State College, Palm Beach Atlantic University, Northwood University, etc. to discuss the vulnerability of campus locations, if appropriate and long-term continuity. Planning for schools and higher education facilities should be coordinated with disaster housing as schools are often used as temporary shelters in the short-term recovery phase. For more information see page 89 in the Guidebook.</p>          |
| <p>Mental and behavioral assistance</p>  | <p>Adequate health and mental health services are addressed through several actions in the plan. This includes:</p> <ul style="list-style-type: none"> <li>▪ Encourage Employee Assistance Programs to address post-disaster mental health (SE-27)</li> <li>▪ Coordinate with the American Psychological Associations (APA) Disaster Outreach Program and SAMHSA Project Hope and Recovery (SE-6)</li> </ul> <p>For more information see page 90 in the Guidebook.</p>  |
| <p>Medical personnel retention and recruitment</p>                                   | <p>Recognizing that many local physicians are also small business owners, the Palm Beach County PDRP includes an action to encourage local physicians to create a coalition/network focusing on post-disaster</p>   |

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|  | recovery or enter into mutual aid agreements (EP-24). In addition to this many hospitals most likely have their own agreements and plans in place to address continuity and recruitment following a disaster. The county may wish to coordinate with the local large medical facilities to ensure that they have these plans, especially in vulnerable locations. For more information see page 91 in the Guidebook.   |
| Health-related pollution and environmental justice | The Palm Beach County PDRP addresses unhealthy levels of mold in damaged structures as an issue with two actions associated: <ul style="list-style-type: none"> <li>▪ Educate the public of the health risks of mold (SE-22)</li> <li>▪ Provide information and oversight of mold infestation (SE-23).</li> </ul> Other environmental health concerns the County may wish to address includes hazardous waste, asbestos removal during structure demolition, etc. The county should ensure that when planning debris removal sites or conducting activities that are necessary but may be considered a nuisance that one particular population group is not inordinately burdened. Any inordinate burden imposed by land use decisions following a disaster should also be avoided. For more information see page 92 in the Guidebook.   |
| Quality of life factors                            | The Palm Beach County PDRP contains an action that addresses the provision of short-term children’s activities until regular school and child-care facilities are available (EP-29). The county may also want to work with their parks and recreation staff to address access to playgrounds as well as work with any NGO’s in the area that may be able to help ensure that the small neighborhood and community ties are not lost after a disaster by possibly scheduling activities and programs for the community to bring them back together. These activities can also serve as an economic boost for communities in need. For example, a fish fry or barbeque offers an opportunity for neighbors to gather as well as a way for the neighborhood to generate funding for small repair or restoration projects needed that would benefit the entire community. In 2010 Galveston decided to celebrate 2-years of recovery following Hurricane Ike by staging a “flash mob” dance in the downtown area to bring the community together and send a positive message of recovery to the nation. For more information see page 92 in the Guidebook. |

| ENVIRONMENT                 |   |
|-----------------------------|---|
| Beach and Dune Restoration  | Beach and dune restoration has been addressed in the Palm Beach County PDRP through the issue coastal and aquatic restoration. The actions addressing beach and dune restoration include: <ul style="list-style-type: none"> <li>▪ Ensure FDEP files/permits are up to date (SE-9)</li> <li>▪ Revise beach/dune templates as necessary (SE-10)</li> <li>▪ Reassess CCCL (SE-12)</li> </ul> The county may want to review any current beach renourishment plans as well as the FEMA Public Assistance Program requirements for renourishment projects. |
| Environmental Contamination | In addition to the public health concerns mentioned under the health-related pollution section above, environmental contamination has been addressed in the Palm Beach County PDRP through the following actions: <ul style="list-style-type: none"> <li>▪ Assess damage to coastal wetland/mangrove habitats (SE-13)</li> </ul>  |

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|   | <ul style="list-style-type: none"> <li>▪ Assess and restore damaged coral reefs (SE-14)</li> <li>▪ Marine debris clean up (SE-15)</li> <li>▪ Create surface water cleanup procedure (SE-16)</li> </ul> <p>For more information see page 96 in the Guidebook.</p>   |
| <p>Environmental and historical review of temporary sites</p> | <p>The Palm Beach County PDRP includes a couple of actions that would examine temporary sites including:</p> <ul style="list-style-type: none"> <li>▪ Vacant Lands Inventory (LG-1)</li> <li>▪ Determine pre-existing conditions of all Debris Collection sites (LG-12)</li> <li>▪ Identify potential debris sites in municipalities (LG-14)</li> </ul> <p>The county might consider further defining the above actions to include the historical review of temporary housing, debris management or staging sites. In addition, it is likely that the County’s debris management plan has been updated in the past 5 years based on the new state/federal guidance and some of these actions may have been accomplished and/or further fleshed out. For more information see page 97 in the Guidebook.</p>                           |
| <p>Natural land and habitat restoration</p>                   | <p>The Palm Beach County PDRP contains actions related to natural habitat restoration in wetlands as well as in forested areas that may be subject to wildfire through increased fuel loads. These actions include:</p> <ul style="list-style-type: none"> <li>▪ Assess damage to coastal wetland/mangrove habitats (SE-13)</li> <li>▪ Assess and restore damaged coral reefs (SE-14)</li> <li>▪ Marine debris cleanup (SE-15)</li> <li>▪ Create surface water cleanup procedures (SE-16)</li> <li>▪ Promote management plans for conservation areas with emphasis on dealing with hurricane debris (SE-18)</li> <li>▪ Conservation areas damage assessment (SE-19)</li> <li>▪ Accelerated fuel reduction strategy (SE-20)</li> </ul> <p>For more information see page 97 in the Guidebook.</p>                                      |
| <p>Green Rebuilding</p>                                       | <p>Currently, the Palm Beach County PDRP does not address green rebuilding or incorporating sustainability into the long-term redevelopment of the County. However, the Palm Beach County Strategic Economic Development Plan lists sustainability as one of its five strategies to guide future development. Specifically the plan states, “Enhance the natural environment’s sustainability in making the land use/transportation connection and establish alternative energy policies for sustainability of the built and natural environment.” <i>Palm Beach County Strategic Economic Development Plan</i>, March 2007, p. 5. In addition to this the County may also try to find ways to incorporate the “PBC Go Green Initiative” into the long-term recovery process. For more information see page 98 in the Guidebook.</p> |
| <p>Parks and urban forest restoration</p>                     | <p>While forest restoration is discussed through wildfire prevention and conservation areas damage assessment, the concept of parks and urban forest restoration has not been addressed. There is a unique opportunity for Palm Beach County specifically to address this issue as an extensive urban reforestation study has been conducted for the County. In fact, this effort was profiled in the national publication, “Planning the Urban Forest: Ecology, Economy and Community Development,” a PAS Report produced by the American Planning Association. DCA is more than happy to send this information to the County if they are interested in</p>   |

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|  | using this during their update. For more information see page 99 in the Guidebook. |
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## Implementation

### *Pre-Disaster*

Pre-Disaster Implementation has been addressed through the identification of many actions that should be taken by the County along with approximate timeframes and funding considerations for completing the tasks. While there are timeframes associated with each action, most of them state “Immediate” or “As soon as possible” or “Prior to next hurricane season. It may be helpful for the community to re-evaluate this very extensive list of pre-disaster actions and put actual dates for completion on each of the tasks. This would be a great exercise for each of the Technical Advisory Committees or Working Groups to undertake in order to begin to assess which actions have actually been completed and when other actions may be most appropriate (in the next 6 months, 1 year, 3 years, 5+ years). The TACs may also consider scheduling meetings in advance around the target dates to complete tasks to reassess what has been accomplished and re-evaluate tasks if the group is experiencing challenges with implementation.

In addition to this, the County may want to explore exercising the PDRP in order to get a better idea of how it might function in the post-disaster environment. This often helps communities best identify any gaps in their current plans and actions most effectively.

### *Post-Disaster*

Currently, the Palm Beach County Post-Disaster Redevelopment Plan addresses post-disaster implementation through a series of tools and sub-plans located in Appendix D, including:

- Post-Disaster Visioning and Community Participation Process Guide
- Ideas for Redevelopment Opportunities to use in Post-Disaster Visioning
- Creating Community Redevelopment Centers
- Creating Business Recovery Centers
- Sub-plans located in the Emergency Operations Center
- Common Post-Disaster Funding Sources
- Disaster Organization Contacts

Post-Disaster Implementation is something that fortunately Palm Beach County has not had to face to date. Since the state has not experienced any large-scale disasters since the completion of Post-Disaster Redevelopment Plans, none of our pilots have had the opportunity to implement their plan in the post-disaster environment. Because of the lack of experience in this subject, it is often the section that is the sparsest in all of the current plans, however there is an opportunity to augment this section of the plan. The FDEM is currently working with FEMA ESF-14 to begin to find ways to tie local post-disaster redevelopment plans to the Draft National Disaster Recovery Framework. In addition to this, Palm Beach County is currently working on further developing the Recovery Annex of its Comprehensive Emergency Management Plan. Due to both of these activities, Palm Beach County is in a prime position to begin to tie the post-disaster redevelopment plan to the long-term disaster recovery operational strategy. It is recommended that Palm Beach County strengthen both of these plans by tying them together during the update of the PDRP.

### Appendix III: Action Plan

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To assist in implementation of the PDRP this section briefly lists actions for post-disaster recovery and redevelopment in a matrix format. The actions listed in this section are not exhaustive of everything that should or could be done leading up to or following a disaster event. It is inevitable that as Palm Beach County gains new experience with disaster recovery, additional recovery and redevelopment actions will surface. Some of the actions in this section are one-time occurrences, meaning once the task has been accomplished it can be dropped from the “to do” list. The matrix format of this section, which is kept in a separate electronic spreadsheet file, should assist in easily updating the actions of the PDRP. Completed actions that do not need to be implemented every time there is a disaster event can be removed from these tables and kept as a record of accomplishments. New actions can be added and the list can easily be resorted by one of the fields to meet the needs of any user of the Plan.

The Action Plan is divided into short-term and long-term recovery/redevelopment and into pre-disaster and post-disaster actions. Post-disaster short-term actions are addressed by the Recovery Plan. This results in three PDRP action matrices (Pre-Disaster Short-Term Actions; Pre-Disaster Long-Term Actions; and Post-disaster Long-Term Recovery Actions) that are each sorted by the Working Group responsible for implementation.

Each table or matrix contains an action identification column. Actions are assigned an identification code based on the major topic area that it is related to and then a unique number assigned in no particular order. Each action in the tables is assigned to an issue topic and to a Working Group that is responsible for its implementation (see Section 3, Implementation, for further information on working group responsibilities). The table indicates whether the action is meant for only the unincorporated county or if it has a countywide potential. As municipalities adopt the plan, they may wish to have their jurisdiction listed on particular actions to record their intent to implement those actions. Even actions listed as countywide may not be applicable for all jurisdictions to implement. It is up to each adopting jurisdiction to decide which actions they find appropriate for their community and to add their own unique actions to the plan. The action tables include a Municipal Participation Form on which the municipality can submit which actions they plan to address. The action tables also include the approximate timeframe for implementation and funding considerations, which may allude to possible funding sources. In addition, the post-disaster action tables include a Disaster Level column that includes one or more of the disaster scenario levels (minor, major, or catastrophic).

#### Short-term Recovery Actions

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The short-term recovery stage of the PDRP includes actions which should be started before long-term redevelopment occurs. These are short-term actions which have long-term impacts and implications. Some issues, such as debris management, may have a response component contained in the CEMP in addition to the actions listed in this PDRP. Typically the timeframe in which to complete these short-term actions will be shorter than the timeframe for long-term actions.

The tables also present the short-term recovery actions that should be done in the “blue-skies” or pre-disaster period. They contain the short-term recovery actions that will be needed after a minor, major, or catastrophic disaster event occurs in Palm Beach County.

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Pre-disaster Short-Term Actions

| Responsible Working Group* | ID    | Issue Topic                    | Action  | Disaster Level | Jurisdictions Involved                 | Approx. Timeframe | Funding Consideration  |
|----------------------------|-------|--------------------------------|---|----------------|--|-------------------|--|
| Administration             | LG-10 | Debris Management and Disposal | <b>Create municipal debris management plans:</b> To maximize coordination and effective, rapid clean-up, municipalities should create their own plans OR the municipalities and county should expand the existing debris management plan to be inclusive of all jurisdictions and multiple agencies.  | NA             | XX Municipalities                      | Immediate.        | In-house staff from Engineering and SWA coordinates with municipalities. |
| Administration             | LG-11 | Debris Management and Disposal | <b>Secure Pre-event contracts from non-local waste collectors:</b> The County already holds pre-approved contracts (PBC Debris Management Plan, 2005). Those should be assessed to determine that contractors have resources beyond the likely storm impact area, which would allow them to operate immediately. Local contracts could be supplemented with back-up contracts for non-local company in case locals are not operational. | NA             | Unincorp. County and XX Municipalities | Immediate.        | In-house staffing.   |
| Administration             | LG-12 | Debris Management and Disposal | <b>Determine pre-existing conditions at all Debris Collection sites:</b> FL Dept. of Environmental Protection (FDEP) advises soil and groundwater testing be undertaken to establish pre-existing conditions to which the site must be restored prior to official closure.  | NA             | Unincorp. County and XX Municipalities | Immediate.        | In-house staffing.   |
| Building & Housing         | LG-13 | Debris Management and Disposal | <b>Annual Reassessment of Debris Collection sites:</b> GIS analysis will show the availability of parcels and any changes in adjacent land use which may have occurred since the site was selected. Follow-up with ground truthing.   | NA             | Unincorp. County and XX Municipalities | Conduct Annually. | In-house staffing.   |

| Responsible Working Group*                 | ID    | Issue Topic                               | Action  | Disaster Level | Jurisdictions Involved                 | Approx. Timeframe                       | Funding Consideration                          |
|--|-------|---|---|----------------|--|---|--|
| Building & Housing                         | LG-14 | Debris Management and Disposal            | <b>Identify Potential Debris Sites in Municipalities:</b> Potential debris sites within municipalities are not included in the current PBC Debris management plan. In preparation for a catastrophic event, municipalities may wish to identify potential sites within their jurisdictions that can be used for debris. These debris sites could be operated by the municipality, or by the SWA pursuant to interlocal agreement, and would speed the clean up and recovery process.  | NA             | XX Municipalities                      | Immediate. Conduct annual reassessment. | In-house staffing.                             |
| Building & Housing                         | LG-16 | Debris Management and Disposal            | <b>Promote Recycling of Surplus Materials from Reconstruction Activities:</b> Salvaging construction materials from hurricane debris is not practical on a large scale. After a disaster, however, rushed, fragmented repair and rebuilding often results in extra construction materials being tossed in with construction debris while they could be easily salvaged. A substantial private-sector infrastructure exists within the County to recycle this type of waste and a process should be identified pre-disaster to make recycling as easy as tossing for contractors. When reconstruction activities begin, these recycling facilities should be advertised and the use of them highly encouraged. | NA             | Unincorp. County and XX Municipalities | Immediate.                              | In-house staffing.                             |
| Building & Housing                         | LG-17 | Debris Management and Disposal            | <b>Create Public Education campaign for the proper segregation of debris:</b> Set the categories and explain the need to separate types of debris.  | NA             | Countywide                             | Immediate.                              | In-house staffing.                             |
| Public/Private Infrastructure & Facilities | LG-20 | Critical Infrastructure & Facility Repair | <b>Maintain current infrastructure designs and electronic back-up files:</b> Staff should <i>continue</i> to analyze the structural integrity of the infrastructure systems (e.g., roads, culverts, bridges) to determine weaknesses and develop improved designs to increase mitigation. New construction designs could be kept on file, with electronic back-ups, for the at-risk system components. By maintaining electronic copies of designs, staff can act faster post-disaster and integrate mitigation into the repair process.  | NA             | Unincorp. County & XX Municipalities   | Begin as soon as possible.              | In-house staffing and/or hire consulting firm. |

| Responsible Working Group*                 | ID    | Issue Topic  | Action  | Disaster Level | Jurisdictions Involved                 | Approx. Timeframe  | Funding Consideration   |
|--|-------|--|---|----------------|--|--|---|
| Public/Private Infrastructure & Facilities | LG-21 | Critical Infrastructure & Facility Repair                                | <b>Budget outlays for new designs and reconstruction:</b> Considering the high cost and necessary function infrastructure systems provide, special budget outlays should be established as a contingency fund for post-disaster reconstruction or pre-disaster implementation of new, more advanced designs.  | NA             | Unincorp. County & XX Municipalities   | Adjust every FY to ensure adequate funding.                            | In-house staffing + a source of funds for the budget outlays. |
| Public/Private Infrastructure & Facilities | LG-15 | Critical Infrastructure & Facility Repair                                | <b>Prearranged contracts with non-locals for repairs or supplies:</b> Local companies should be used for public facility repairs if they have the capacity to do so after a disaster. However, to make sure that these repairs are made as soon as possible after a disaster, pre-arranged contracts with non-local companies should be made as a back-up.  | NA             | Unincorp. County & XX Municipalities   | Begin as soon as possible.   | In-house staffing.  |
| Public/Private Infrastructure & Facilities | EP-27 | Shortage of Contractors/Supplies Slows Repairing of Homes and Businesses | <b>Stockpile temporary repair and/or construction materials needed for immediate repairs to public facilities:</b> A small warehouse and stockpile of materials needed for cleanup and quick repairs to public facilities such as schools and government offices should be obtained so that a delay in supplies does not hinder resumption of public services. If excess supplies are available after public repairs have been made these can be opened for sale for private use. | All            | Unincorp. County and XX Municipalities | Procure prior to next hurricane season and restock annually as needed. | Disaster Recovery Fund.                                       |
| Public/Private Infrastructure & Facilities | EP-17 | Rapid Restoration of Power & Private Utilities                           | <b>Improve interconnections between utility providers:</b> Isolated failures in utility infrastructure can place extreme burden on certain citizens. Improved interconnections will alleviate those isolated failures by providing service from adjacent systems. Improvements can include larger capacity lines that can provide full service quickly and valves controlled remotely that will function from afar without personnel.   | NA             | Countywide                             | Begin as soon as possible.   | Seek state assistance through programs such as HMGP.          |
| Public/Private Infrastructure & Facilities | EP-18 | Rapid Restoration of Power & Private Utilities                           | <b>Include multiple utility representatives on the Infrastructure Working Group:</b> With FPL, Adelpia, multiple municipal water utilities, and PBC water and wastewater services, this issue is a complex network of players that must be coordinated to achieve a swift and efficient restoration of power and other utility services.  | NA             | Countywide                             | Immediate.   | No cost.  |

| Responsible Working Group* | ID   | Issue Topic   | Action   | Disaster Level | Jurisdictions Involved                 | Approx. Timeframe                                      | Funding Consideration                |
|----------------------------|------|---|--|----------------|--|--|--------------------------------------|
| Housing Recovery           | LG-1 | Availability of Temporary Housing/ Long-term sheltering | <b>Vacant Lands Inventory:</b> Locate suitable parcels for the placement of temporary housing units (tents or trailers). Inter-departmental coordination needed to ensure vacant sites have adequate access to infrastructure and will be compatible with adjacent land uses. Utilize selection criteria in Temporary Housing Plan for Catastrophic Events (see Appendix D). | NA             | Countywide                             | Conducted annually, prior to storm season.             | In-house staffing.                   |
| Housing Recovery           | LG-2 | Availability of Temporary Housing/ Long-term sheltering | <b>Housing Stock Analysis:</b> Identify those areas of County with most vulnerable housing stock - likely due to age, poor maintenance, or sitting - and assure temporary housing lots are nearest these areas. Also, could require greatest amount of redevelopment attention.  | NA             | Countywide                             | Immediate.   | In-house staffing and/or consultant. |
| Housing Recovery           | LG-3 | Availability of Temporary Housing/ Long-term sheltering | <b>Inform Damage Assessment Teams (DAT) of Temporary Housing and Long-term Shelter Sites:</b> Inform DATs of temporary housing sites with a GIS layer of these sites included on their laptops. Habitability assessments needed in initial phase to determine if previously selected sites can be used.  | NA             | Unincorp. County and XX Municipalities | Conducted annually, immediately prior to storm season. | In-house staffing.                   |
| Housing Recovery           | LG-4 | Availability of Temporary Housing/ Long-term sheltering | <b>Pre-arranged agreements with hotels to house government employees and aid workers:</b> Secure agreements with nearby hotels to house government employees and the influx of external aid workers deemed essential for sustaining government functions.  | NA             | Unincorp. County and XX Municipalities | Immediate.   | In-house staffing.                   |

| Responsible Working Group* | ID   | Issue Topic   | Action  | Disaster Level | Jurisdictions Involved                 | Approx. Timeframe               | Funding Consideration                                  |
|----------------------------|------|---|---|----------------|--|---------------------------------|--|
| Housing Recovery           | LG-5 | Availability of Temporary Housing/ Long-term sheltering | <b>Assistance in finding rental units for temporary housing:</b> The Temporary Housing Plan suggests using vacant apartments and condo units to house displaced citizens (Temporary Housing Plan for Catastrophic Events, 2005). Due to the rapid turnover of rental units and the nature of private property, relying on vacant units will be a logistical problem, which could result in fewer available units than anticipated prior to the event. While utilizing available rental housing should be encouraged, finding these units will be up to individuals. The County could assist by setting up a website that allows land lords/rental agencies with undamaged available units to submit this information. Community Redevelopment Centers could have computers and telephones available for displaced persons to search for housing through this website. Staff could be available to assist. | NA             | Countywide                             | Immediate.                      | In-house staffing and/or consultant to set up website. |
| Housing Recovery           | LG-6 | Availability of Temporary Housing/ Long-term sheltering | <b>Create an On-site Employee Housing Permit:</b> Allow business owners to apply for a special permit to allow on-site employee housing in the event of a disaster. Staff will establish short term code compliance and ensure infrastructure hook ups are present in order to place housing on-site at major employment centers, utilizing parking lots, vacant industrial lands, or campus office centers.  | NA             | Unincorp. County and XX Municipalities | Prior to next hurricane season. | In-house staffing.                                     |
| Housing Recovery           | LG-7 | Availability of Temporary Housing/ Long-term sheltering | <b>Designate Long Term Shelters:</b> The county could designate secondary shelter sites in order to vacate the emergency, school-based shelters for repairs and swift restoration of educational services. Focus on community centers, church facilities, etc.  | NA             | Countywide                             | Immediate.                      | In-house staffing.                                     |

| Responsible Working Group* | ID    | Issue Topic  | Action   | Disaster Level | Jurisdictions Involved | Approx. Timeframe               | Funding Consideration                |
|----------------------------|-------|--|--|----------------|------------------------|---------------------------------|--------------------------------------|
| Economic Redevelopment     | LG-22 | Fair & Equitable Distribution of Disaster Assistance | <b>Procedures for securing donations and services from the private sector:</b> In the aftermath of a disaster, there may not only be individual donations to groups such as the Red Cross, but private sector groups may wish to donate money or services for particular recovery functions. A procedure for accepting and properly using these donations should be in place. Also, some donations of services could be pre-arranged with the private sector in the event of a disaster.   | NA             | Countywide             | On-going.                       | In-house staffing.                   |
| Economic Redevelopment     | LG-23 | Fair & Equitable Distribution of Disaster Assistance | <b>Prioritize Low Income Census Tracts for Recovery Resources:</b> Utilize U.S. Treasury Department Investment Area Criteria to designate census tracts that should have first access to recovery grants and other financial assistance.   | NA             | Countywide             | Prior to next hurricane season. | In-house staffing.                   |
| Economic Redevelopment     | LG-40 | Sustaining Essential Governmental Services           | <b>Create countywide clearinghouse for PDRP-related documentation:</b> To ensure access, especially after a disaster, to needed documents by all working to implement PDRP actions, create a countywide clearinghouse of all materials relevant to implementation of the PDRP, as well as backup procedures. These materials include, but are not limited to, plans cited herein, all mutual aid agreements for post-disaster assistance, and approved, pre-arranged contracts for post-disaster work. Documents should be available in hardcopy at the EOC library and in electronic format preferably accessible through a secure website. | NA             | Countywide             | Prior to next hurricane season. | In-house staffing.                   |
| Economic Redevelopment     | LG-26 | Sustaining Essential Governmental Services           | <b>Model Damage for Different Storm Scenarios:</b> Using local GIS data, HAZUS and Solid Waste Authority modeling capabilities, produce countywide estimated damage scenarios based on the level of disaster. These can be used in both planning and training for post-disaster redevelopment.   | NA             | Countywide             | Prior to next hurricane season. | In-house staffing and/or consultant. |

| Responsible Working Group* | ID    | Issue Topic                                | Action  | Disaster Level | Jurisdictions Involved                 | Approx. Timeframe               | Funding Consideration                                   |
|----------------------------|-------|--|---|----------------|--|---------------------------------|---|
| Economic Redevelopment     | LG-27 | Sustaining Essential Governmental Services | <b>Perform Mock-Disaster Finance Exercise:</b> Using realistic damage estimates for a Category 4 or 5 hurricanes, conduct an exercise that includes finance staff and decision makers in determining how to proceed with essential services with inevitable depletion of revenues.  | NA             | Unincorp. County and XX Municipalities | Prior to next hurricane season. | In-house staffing, possibly hire consultant to conduct. |
| Economic Redevelopment     | LG-28 | Sustaining Essential Governmental Services | <b>Prioritize Essential Services:</b> Creating a prioritized list of those services that citizens need immediately (i.e., law enforcement, public works, and housing) can help speed the decision making process for post-disaster funding and reconstruction.  | NA             | Unincorp. County and XX Municipalities | Immediate.                      | In-house staffing.                                      |
| Economic Redevelopment     | LG-29 | Sustaining Essential Governmental Services | <b>Maintain Mutual Aid Agreements statewide:</b> The agreements can help sustain services when many local staff and employees may find themselves victims of the disaster event. Establishing agreements statewide prepares the County for large disasters which will also adversely affect neighboring jurisdictions such as Broward and Martin Counties.  | NA             | Unincorp. County and XX Municipalities | On-going.                       | In-house staffing.                                      |
| Economic Redevelopment     | LG-30 | Sustaining Essential Governmental Services | <b>Maintain a list of possible funding sources for disaster recovery and redevelopment:</b> Funding sources are included in this plan (Appendix D), however, new ones may arise and some may disappear. Current changes being made to FEMA and pilot programs being tested in Mississippi and Louisiana right now are examples of changes that could come to post-disaster funding opportunities. Annual updating of the funding list is essential. | NA             | Countywide                             | On-going.                       | In-house staffing.                                      |
| Economic Redevelopment     | LG-31 | Sustaining Essential Governmental Services | <b>Establish protocols for County operational assistance to municipal jurisdictions:</b> In the event that municipalities are overwhelmed and require operational assistance, agreements with the County should clearly state the parameters of authority and control for particular services provided.   | NA             | Unincorp. County and XX Municipalities | Immediate.                      | In-house staffing.                                      |

| Responsible Working Group* | ID    | Issue Topic                               | Action  | Disaster Level | Jurisdictions Involved                 | Approx. Timeframe  | Funding Consideration                             |
|----------------------------|-------|---|---|----------------|--|--|---|
| Economic Redevelopment     | LG-32 | Avoiding Erosion of Local Control         | <b>Establish a Disaster Recovery Fund:</b> By creating recovery funding mechanisms (e.g., savings funds, stand-by line of credit) available for post-disaster recovery and redevelopment actions, local jurisdictions can exercise greater control over decision making and have the ability to set programs and actions in motion without having to wait for State or Federal assistance.  | NA             | Unincorp. County & XX Municipalities   | Account for general contingency fund in annual FY. And, work with banking community for credit line. | Portion of budget set aside as savings.           |
| Economic Redevelopment     | LG-34 | Municipal Insolvency following a disaster | <b>Establish procedures for municipalities receiving financial assistance from the County:</b> In the event that municipalities are overwhelmed by disaster and lose the financial foundation to remain stable in the short term, assistance agreements with the County should clearly state services provided, proper authority and control, and procedures for restoring stability to the municipality.   | NA             | Unincorp. County and XX Municipalities | Immediate.   | In-house staffing.                                |
| Economic Redevelopment     | LG-35 | Municipal Insolvency following a disaster | <b>Assist municipalities in developing Continuity of Operations Plans (COOPs) and coordinate with county COOPs:</b> Not all municipalities currently have COOPs which could assist in planning for a situation which could lead to insolvency. Having coordination between the many municipalities' COOPs and the many county departments' COOPs could help establish procedures for dealing with possible municipality problems in providing services. | NA             | Unincorp. County and XX Municipalities | As soon as possible.   | In-house staffing and consulting services needed. |
| Economic Redevelopment     | LG-36 | Municipal Insolvency following a disaster | <b>Information Sharing between Municipalities and County:</b> When entering into assistance agreements, providing access to information regarding administration practices, contracts, and GIS files can facilitate a more efficient response on the part of the County staff. A GIS Countywide Clearinghouse could be created that provides back-up of this critical data and access by all involved in disaster recovery.                             | NA             | Unincorp. County and XX Municipalities | Immediate.   | In-house staffing.                                |



| Responsible Working Group* | ID    | Issue Topic   | Action   | Disaster Level | Jurisdictions Involved                 | Approx. Timeframe               | Funding Consideration  |
|----------------------------|-------|---|--|----------------|--|---------------------------------|--|
| Economic Redevelopment     | LG-37 | Use of Local Business Capabilities in Disaster Recovery                                   | <b>Create a Public-Private Partnership Network to supplement government recovery/redevelopment activities:</b> Certain services cannot be fulfilled by the government post-disaster. Establishing a partnership framework that utilizes the capabilities of private businesses to fill the particular voids can be beneficial to citizens.   | NA             | Countywide                             | Prior to next hurricane season. | In-house staffing.   |
| Economic Redevelopment     | LG-38 | Use of Local Business Capabilities in Disaster Recovery                                   | <b>Include local businesses in pre-arranged contracts for recovery and redevelopment:</b> While it would not be wise to rely entirely on local capabilities in a post-disaster situation, contract bids could be scored higher that have plans to sub-contract with local businesses if they are operational. The local governments could also arrange for services from local companies but have back-up agreements with outside companies (e.g., unaffected areas of FL, out-of-state) in the event that the locals are unable to operate. | NA             | Unincorp. County and XX Municipalities | Prior to next hurricane season. | In-house staffing.   |
| Economic Redevelopment     | EP-2  | Ability of Small Business to Stay Afloat until Adequate Financial Assistance is Available | <b>Locate possible sites for post-disaster temporary office space:</b> On an annual basis prior to hurricane season, locate buildings/spaces that could be at least partially used for temporary space for businesses in need after a disaster, e.g., hotel meeting space or portions of community centers. Set up pre-arranged agreements for use of the spaces. Also, locate properties near business districts that mobile units could be placed on for temporary office space.   | NA             | Countywide                             | Prior to next hurricane season. | In-house staffing.   |
| Economic Redevelopment     | EP-22 | Ability of Small Business to Stay Afloat until Adequate Financial Assistance is Available | <b>Make arrangements to secure mobile units/trailers for temporary office space:</b> To provide more temporary office space than can be secured in undamaged buildings, mobile units should also be provided. Pre-arranged agreements to deliver these mobile units after a disaster should be made. The Small Business Administration (SBA) should be approached to see if they would create a program to provide these just as FEMA provides temporary housing trailers.   | NA             | Countywide                             | Prior to next hurricane season. | Grants/assistance from SBA or work to get a sponsoring company to help with costs; Disaster Recovery Fund. |

| Responsible Working Group* | ID    | Issue Topic   | Action  | Disaster Level | Jurisdictions Involved | Approx. Timeframe  | Funding Consideration |
|----------------------------|-------|---|---|----------------|------------------------|--|-----------------------|
| Economic Redevelopment     | EP-23 | Ability of Small Business to Stay Afloat until Adequate Financial Assistance is Available | <b>Establish criteria for placing small businesses in temporary office sites:</b> To ensure those businesses most in need of operating space are placed in the limited amount of temporary sites, scoring criteria and an application need to be created for use after the disaster. Example criteria: damage to office space prevents any safe use, financial need, ability of business to be productive during recovery period (i.e. no/limited loss of customer base due to disaster). | NA             | Countywide             | Prior to next hurricane season.  | In-house staffing.    |
| Economic Redevelopment     | EP-3  | Ability of Small Business to Stay Afloat until Adequate Financial Assistance is Available | <b>Locate possible sites for Business Recovery Centers:</b> Using GIS, determine areas of high office concentration and search for facilities that could be used temporarily after a disaster for Business Recovery Centers (i.e., Workforce Alliance or chamber buildings). Secure pre-disaster agreements for a facility in each area and an alternate in case of damage or access problems.  | NA             | Countywide             | Prior to next hurricane season.  | In-house staffing.    |
| Economic Redevelopment     | EP-4  | Ability of Small Business to Stay Afloat until Adequate Financial Assistance is Available | <b>Secure supplies for temporary offices and business recovery centers:</b> Work with office supply and electronics companies to secure agreements for donations such as desks, chairs, computers, etc. to supply temporary office spaces and business recovery centers in the event of a disaster. Create a list and estimated amount of supplies that may be needed.  | NA             | Countywide             | Prior to next hurricane season.  | In-house staffing.    |
| Economic Redevelopment     | EP-5  | Ability of Small Business to Stay Afloat until Adequate Financial Assistance is Available | <b>Coordinate with Workforce Alliance to co-locate services with Business Recovery Centers:</b> Assisting employers in the search for employees can facilitate recovery. Co-locating the two entities can assist both parties. Coordinate with Workforce Alliance, which has offices in each region of the County.  | NA             | Countywide             | Establish partnership prior to event, and keep operational with the Business Recovery Centers. | In-house staffing.    |

| Responsible Working Group*                 | ID    | Issue Topic   | Action  | Disaster Level | Jurisdictions Involved | Approx. Timeframe  | Funding Consideration  |
|--|-------|---|---|----------------|------------------------|--|--|
| Health & Human Services                    | EP-24 | Ability of Small Business to Stay Afloat until Adequate Financial Assistance is Available | <b>Encourage local physicians to create a coalition/network focusing on post-disaster recovery or enter into mutual aid agreements:</b> Doctor offices are an important part of the small business community. Due to specialized equipment and office needs, offering temporary office space is not a very practical option. Instead forming a network or coalition may be helpful so that they can assist each other through sharing offices and equipment until repairs can be made. In addition, for doctors and nurses who cannot work out of their facilities, a network could assist in temporarily placing them with clinics and other doctor offices that need extra staff to deal with increased needs after a disaster. | NA             | Countywide             | Prior to next hurricane season.                          | In-house staffing.   |
| Governance & Financial Admin.              | EP-15 | Shortage of Contractors/ Supplies Slows Repairing of Homes and Businesses                 | <b>Encourage Contractors and Citizens to maintain pre-arranged agreements for hurricane repairs:</b> Finding a contractor after even a small storm is not easy and often results in damage going unrepaired for months or more. By making arrangements with qualified contractors before a storm for them to repair any damage, it allows for quicker repairs and for the contractor to already be aware of what supplies they may need so they can pre-stock to some degree.   | NA             | Countywide             | On-going.  | Include in next season's public education materials for hurricane preparation and costs will be minimal. |
| Public/Private Infrastructure & Facilities | EP-26 | Shortage of Contractors/ Supplies Slows Repairing of Homes and Businesses                 | <b>Provide staging areas for contractors and repair crews:</b> Work crews of various trades consume open parking lots as their staging areas, preventing the entities using those sites from returning to normal operations. Defining regional locations that can be used as staging areas will coordinate recovery and redevelopment logistics.  | NA             | Countywide             | Locate sites prior to hurricane season. Review annually. | In-house staffing.   |

| Responsible Working Group* | ID    | Issue Topic  | Action  | Disaster Level | Jurisdictions Involved                 | Approx. Timeframe               | Funding Consideration  |
|----------------------------|-------|--|---|----------------|--|---------------------------------|--|
| Public Outreach            | EP-28 | Agricultural Losses or Lake Okeechobee Dike breach     | <b>Continue utilization of community-based structure (e.g., CERTs) in the Glades area to facilitate hazard recovery/redevelopment and information dissemination:</b> Given the current concerns over immigration, government officials may not be welcome in many areas of the County. The CERT structure should be established to address CEMP-related issues. (e.g., ESOL teachers could work within the community to identify individuals that could take a leadership role.) This structure should also be used to spread recovery and redevelopment information to the immigrant population. | NA             | Unincorp. County and XX Municipalities | Prior to hurricane system.      | In-house staffing. Volunteers within the schools.                          |
| Public Outreach            | SE-1  | Reducing Incidence of Fraudulent & Unethical Practices | <b>Create Public Education campaign to inform citizens of services offered by the County:</b> Many incidents of fraud and deception occur when individuals are not aware of proper procedures or legal protections. The county could educate its citizens thoroughly about the services that will be provided and proper procedures to follow in an attempt to prevent such fraudulent acts.  | NA             | Countywide                             | Prior to next hurricane season. | In-house staffing; include in next season's hurricane education materials. |
| Public Outreach            | SE-2  | Reducing Incidence of Fraudulent & Unethical Practices | <b>Provide Personal Finance Consultation Services at Community Redevelopment Centers:</b> Secure pre-arranged agreements with firms to provide expert volunteers to counsel individuals and small business owners on their financial options after the disaster. Lack of knowledge or assistance often forces people into selling their property in a rush for much less than it's worth or falling prey to predatory lenders.  | NA             | Countywide                             | Immediate.                      | None if firms donate staff time.   |
| Public Outreach            | SE-24 | Reducing Incidence of Fraudulent & Unethical Practices | <b>Educate the public on risks of using unlicensed contractors:</b> Hurricane preparation education prior to storms should include information on why unlicensed contractors should not be used and how to check the credentials of a contractor. This information can also be made available at the Community Redevelopment Centers after a hurricane.   | NA             | Countywide                             | Immediate.                      | In-house staffing; include in next season's hurricane education materials. |

| Responsible Working Group*    | ID    | Issue Topic  | Action  | Disaster Level | Jurisdictions Involved | Approx. Timeframe  | Funding Consideration                                   |
|-------------------------------|-------|--|---|----------------|------------------------|--|---|
| Governance & Financial Admin. | SE-5  | Reducing Incidence of Fraudulent & Unethical Practices               | <b>Establish a countywide liaison with the State Attorney General fraud task force:</b> This individual will act as Palm Beach County's liaison with the State Attorney General and Department of Consumer Affairs. Work should focus on pre-disaster education campaigns and informing the public of scams regarding home repairs, charity/donations, price gouging, ID theft, and insurance payments, among others. Also, the liaison could work with the media to keep citizens informed of recent fraudulent trends.  | All            | Countywide             | Immediately seek to create the group. Can go into investigative action soon after recovery begins. | In-house staffing and possibly temporary employees.     |
| Public Outreach               | SE-3  | Individual's Role in Preparing for & Recovering from a Disaster      | <b>Create an education campaign for increased self reliance after a disaster:</b> Encourage residents and businesses to start disaster savings (future possibility of Congress making tax-free disaster savings accounts) for their insurance deductibles, temporary housing needs, and other costs. Also stress need to acquire property or rental insurance that covers appropriate hurricane damages. These longer-term preparedness issues can be included with education on family evacuation plans, longer food and water supplies, and keeping personal medical/prescription records.  | NA             | Countywide             | Immediate.   | Partner with media outlets and financial service firms. |
| Health & Human Services       | SE-25 | Adequate Health and Mental Health Services Available During Recovery | <b>Assess capabilities of hospital system and medical transport services to cope with non-operational hospitals:</b> Due to the vulnerable location of some hospitals in Palm Beach County there is the possibility of in a major disaster certain hospitals may not be operational not just during immediate response but for a longer-term. The ability of the other hospitals to deal with increased demand in this case should be assessed including their financial capabilities to deal with increased uninsured patients. Also the need for mutual aid agreements to borrow helicopters or other transport services to deal with increased distances to operational emergency rooms should be assessed. A mock-disaster training session including detailed risk assessments for the hospital system could be a useful tool. | NA             | Countywide             | Begin assessment prior to next hurricane season.   | In-house staffing.                                      |

| Responsible Working Group*                 | ID    | Issue Topic  | Action   | Disaster Level | Jurisdictions Involved                 | Approx. Timeframe   | Funding Consideration  |
|--|-------|--|--|----------------|--|---|--|
| Public/Private Infrastructure & Facilities | SE-16 | Water Pollution from Sewer System Failures         | <b>Create Surface water cleanup procedures:</b> Surface waters, including streams, canals, rivers, lakes, and the ocean, can all be contaminated by sewer system failures. Contingency plans for quick clean up should be in place to prevent or slow widespread contamination. It is a two-part clean up, including solids and bacterial particles.   | NA             | Unincorp. County and XX Municipalities | As soon as possible.  | Staff time in coordination with the SFWMD and USACE.                       |
| Land Use                                   | SE-17 | Increased Fuel for Wildfires on Conservation Lands | <b>Identify properties with potential for wildfire risk if there is a hurricane:</b> Using conservation lands and Property Appraiser GIS shape files create a list of property owners and contact information within 1,000 ft. of wooded, conservation tracts. The list will be used to raise awareness about increased risk of wildfire due to hurricane debris during the recovery period after a hurricane.   | NA             | Countywide                             | List should be prepared annually prior to hurricane season. | Minimal staff time will be required to use GIS to prepare the list.        |
| Health & Social Services                   | SE-22 | Unhealthy Levels of Mold in Damaged Structures     | <b>Educate the public of the health risks of mold:</b> Include educational information in hurricane preparation materials and through the media about identifying mold problems, avoiding structures with large concentrations of mold, and hiring mold remediate's. Special-needs individuals who are more susceptible (i.e. home oxygen users) should receive high priority in education efforts. Creative methods for reaching these groups should be developed (such as vendors of oxygen equipment).  | NA             | Countywide                             | As soon as possible.  | In-house staffing; can be added to existing hurricane education materials. |
| Land Use                                   | RM-8  | Ensuring Strong Code Enforcement                   | <b>Revise "Post-Disaster Temporary Permit Suspension" (Building Moratorium) ordinance (Article XII, Sec. 7):</b> Create a rolling moratorium, based on DAT reports, that utilizes the existing triaged damage assessment approach. Those areas which experience the most severe damage will have the suspension lifted later. This allows less affected areas to begin the rebuilding process. Also, place activation/deactivation authority in the hands of the Building Division Director, who will better recognize the personnel workload and backlog. | NA             | Unincorp. County                       | Immediate. One-time Action.                                 | In-house staffing.   |

| Responsible Working Group* | ID    | Issue Topic   | Action   | Disaster Level | Jurisdictions Involved | Approx. Timeframe | Funding Consideration   |
|----------------------------|-------|---|--|----------------|------------------------|-------------------|---|
| Health & Social Services   | RM-25 | Communicating with & Involving the public in Recovery and Redev. Issues | <b>Encourage faith and community organizations to collect evacuation contact information:</b> These groups could ask their members to provide email addresses and phone numbers (i.e., cell numbers or out of state family) they could be reached through in the event of long-term evacuation. The groups could then assist in getting messages about repopulation and rebuilding out during the recovery period.                                 | NA             | Countywide             | Immediate.        | In-house staffing.  |
| Land Use                   | RM-17 | Including Mitigation in Rebuilding                                      | <b>Partner with home improvement stores and major home builders to advocate structural hazard mitigation:</b> By spreading information about mitigation techniques in the places where homeowners are turning to start repairs they could be persuaded to include mitigation while they are making repairs. Stores and contractors can be armed ahead of time with educational materials to offer customers during redevelopment after a disaster. | NA             | Countywide             | Immediate.        | In-house staffing and educational materials. Solicit partner companies to pay the cost of printing. |

\* See page 33 for a list of Working Group Chairpersons or pages 35-42 for a suggested list of Working Group contributing members

\*\* See Appendix IX for funding source information.

LG= Local Government Recovery Issues (Section 2.1), EP= Economic and Private Sector Issues (Section 2.2), SE= Social and Environmental Issues (Section 2.3), RM= Redevelopment and Mitigation Issues (Section 2.4)

Pre-disaster Long-Term Actions

| Responsible Working Group* | ID    | Issue Topic   | Action  | Disaster Level | Jurisdictions Involved | Approx. Timeframe | Funding Consideration  |
|----------------------------|-------|---|---|----------------|------------------------|-------------------|--|
| Land Use                   | LG-18 | Debris Management and Disposal  | <b>Establish housing demolition protocols:</b> Protocols for demolition of destroyed homes for absent property owners should be established so that these unsafe, blighted structures do not remain for too long. Lobbying efforts should focus on making the process of financial reimbursement from FEMA for demolition easier for local governments. Also, the demolition process should include detailed documentation, i.e. photos, of the structures prior to demolition for insurance purposes of the owners if they are not able to return prior to demolition. Once procedures are developed, send information out with property tax statements to inform owners of the demolition protocols and the timeframe involved for them to return or contact the local government about the destroyed structure after a disaster. The property owners should be solicited to provide voluntary contact information such as cell phone number or email address where they could be reached after a disaster in the case of their structure being on the demolition list. This could be added to the current property appraiser database. | NA             | Countywide             | Immediate.        | In-house staffing.   |
| Economic Redevelopment     | EP-1  | Ability of Small Business to Stay Afloat until Adequate Financial Assistance is Available | <b>Assist small business with continuity planning and mutual aid agreements:</b> Through the Private-Public Network and other business organizations as well as at the time of applying for an occupational license, make available templates and other information about how to create a business continuity plan for small businesses. Also, introduce the idea in the business community of mutual aid agreements between businesses. Provide continuity training sessions and presentations at chamber meetings or as special workshops in addition to website and print materials.   | NA             | Countywide             | Immediate.        | In-house staffing. Grants for temporary positions to educate business community. |



| Responsible Working Group* | ID    | Issue Topic  | Action   | Disaster Level | Jurisdictions Involved | Approx. Timeframe   | Funding Consideration   |
|----------------------------|-------|--|--|----------------|------------------------|---|---|
| Government/Housing         | SE-4  | Reducing Incidence of Fraudulent & Unethical Practices               | <b>Preventing Predatory Real Estate investment and 'house flipping':</b> Investigate creative options to decrease the financial burden on low-income homeowners attempting to reestablish themselves in the County. Could take the form of reducing or waiving property taxes, or working with local banks and lending institutions to deter, reduce, or waive mortgages for a certain amount of time after a disaster impacts the County.   | NA             | Countywide             | Immediate.  | In-house staffing and coordination with local lending/banking institutions.                         |
| Health & Social Services   | SE-26 | Adequate Health and Mental Health Services Available During Recovery | <b>Lobby the State to establish an online database of medical records and recent prescriptions:</b> A dispersed population, new medical personnel, and fragmented filing are encumbrances to efficient post-disaster medical care. An integrated electronic database of records, prescriptions, allergies, etc. will allow physicians to access records from afar or for patients with whom they have no prior experience. Louisiana and other states have done this after the problems they encountered with Katrina. There are many privacy issues that would need to be addressed, however. | NA             | Countywide             | Coordinate with AMA and local medical community and suggest prior to next hurricane season. | In-house staffing.  |
| Health & Social Services   | SE-27 | Adequate Health and Mental Health Services Available During Recovery | <b>Encourage Employee Assistance Programs to address post-disaster mental health:</b> Employers (including local governments) can provide free and confidential counseling through an employee assistance program to assist with post-disaster stress. Also employees can be educated to be sensitive of signs of possible post-disaster stress in their co-workers.   | NA             | Countywide             | Immediate.  | In-house staffing and outreach through private-public partnership and other business organizations. |
| Environment Restoration    | SE-9  | Coastal and Aquatic Restoration                                      | <b>Ensure FDEP files/permits are up to date:</b> FDEP must have approved beach/dune design templates on file to expedite post-disaster nourishment project approval. Inspections are also necessary for upland sand sources.   | NA             | Countywide             | Annual.   | In-house staffing.  |

| Responsible Working Group* | ID    | Issue Topic  | Action  | Disaster Level | Jurisdictions Involved                 | Approx. Timeframe  | Funding Consideration                        |
|----------------------------|-------|--|---|----------------|--|--|--|
| Environment Restoration    | SE-10 | Coastal and Aquatic Restoration                    | <b>Revise beach/dune templates as necessary:</b> FDEP approves the design templates for approx. 5 years, but this period can be shortened when severe erosion is experienced.   | NA             | Countywide                             | 3-5 year cycles depending on erosion rates.  | In-house staffing.                           |
| Environment Restoration    | E-18  | Increased Fuel for Wildfires on Conservation Lands | <b>Promote Management Plans for Conservation Areas with emphasis on dealing with hurricane debris:</b> Amend County Parks management plans to include strategies for dealing with increased wildfire fuel from hurricane debris. Require through comprehensive plan policy that conservation easements include language for fuel maintenance, particularly after a hurricane. Coordinate with state-owned conservation areas to ensure management plans address hurricane debris. | NA             | Unincorp. County and XX Municipalities | Adoption or amendment of management plans and inclusion of comp plan policies should occur ASAP. This is not a recurring action. | In-house staffing.                           |
| Land Use                   | RM-1  | Ability to Rebuild Stronger Structures             | <b>Amend Homeowner &amp; Neighborhood Association covenants:</b> Restrictive covenants often preclude the introduction of valuable hazard mitigation measures. The covenants can be amended to improve disaster resiliency. This can be done voluntarily through public education or, in newly proposed areas, require all new covenants to address mitigation.   | NA             | Unincorp. County and XX Municipalities | Immediate. Begin education and attempts to amend.  | In-house staffing; education outreach costs. |
| Land Use                   | RM-2  | Ability to Rebuild Stronger Structures             | <b>Bring Structures into Compliance with current building codes:</b> Structures that exceed the 50% threshold for substantial damage shall be required to come into compliance with the current regulations of the Florida building code. Lowering the threshold for substantial damage to 45% or 40% could increase future resiliency and improve insurance rate premiums.   | NA             | Unincorp. County and XX Municipalities | Immediate.   | In-house staffing.                           |

| Responsible Working Group* | ID    | Issue Topic                               | Action   | Disaster Level       | Jurisdictions Involved                 | Approx. Timeframe  | Funding Consideration                  |
|----------------------------|-------|---|--|----------------------|--|--|--|
| Land Use/PDRP Staff        | RM-3  | Ability to Rebuild Stronger Structures    | <b>Increase skilled construction workforce:</b> In order to meet the demand for reconstruction, coordinate with local community college or vocational schools to offer construction and trades classes. Include accreditation courses on the FL Building Code, which could be conducted by the Building Code Education & Outreach Council.   | Major & Catastrophic | Unincorp. County and XX Municipalities | Create framework for quick post-disaster implementation. | Seek state assistance.                 |
| Land Use                   | RM-4  | Ability to Rebuild Stronger Structures    | <b>Increase Wind Load Velocity regulations:</b> Pursue legislation to introduce more stringent wind load velocity (156 mph) regulations for Palm Beach County in the Florida Building Code.  | NA                   | Countywide                             | Immediate.   | In-house staffing, lobbying costs.     |
| Land Use                   | RM-5  | Ability to Rebuild Stronger Structures    | <b>Expand V-Zone regulations to A-Zones:</b> Stringent flood prevention regulations directed toward V-Zones should be expanded to structures found in A-Zones. Structures could come into compliance voluntarily or once hazard related damages exceed the 50% threshold. A-Zones often experience similar flood, surge, and wind hazards but do not currently meet most protective development standards.   | NA                   | Unincorp. County and XX Municipalities | Immediate.   | In-house staffing.                     |
| Land Use/Public Outreach   | RM-6  | Ability to Rebuild Stronger Structures    | <b>Public education to promote hardening and mitigation:</b> Conduct workshops or public education campaigns to encourage citizens to build structures that exceed the Florida Building Code and include hardening and mitigation advances.  | NA                   | Unincorp. County and XX Municipalities | Immediate.   | Add to LMS for funding opportunities.  |
| Land Use                   | RM-11 | Limiting Redevelopment in Hazardous Areas | <b>Create non-conforming structure inventory:</b> Non-conforming structures -- those built prior to adoption of Comp. Plan/ULDC regulations of area, height, lot coverage, yard setbacks, lot location, parking, or other dimensional requirements -- are not allowed to be rebuilt to the previous standards upon reaching the 50% damage threshold. Maintaining an inventory will speed the decision making process for redevelopment orders and permitting. | NA                   | Unincorp. County and XX Municipalities | Immediate.   | In-house staffing or consultant costs. |

| Responsible Working Group*  | ID    | Issue Topic  | Action  | Disaster Level | Jurisdictions Involved                 | Approx. Timeframe           | Funding Consideration                                       |
|---|-------|--|---|----------------|--|-----------------------------|---|
| Public/Private Infrastructure & Facilities/ Governmental Operations | RM-12 | Limiting Redevelopment in Hazardous Areas              | <b>Petition FDCA for expedited Comprehensive Plan amendment review/approval:</b> In order to redevelop quickly and in a smarter fashion, the Comprehensive Plan may require amendments. The county could lobby FDCA to establish a temporary county office during redevelopment to attend planning meetings and charettes and rapidly process amendments.   | NA             | Unincorp. County and XX Municipalities | Immediate.                  | None.   |
| Land Use  | RM-13 | Limiting Redevelopment in Hazardous Areas              | <b>Renew funding for Conservation Land Acquisition Selection Committee (CLASC) purchases:</b> The CLASC could play a role in post-disaster land acquisition if properly funded. Also, selection criteria should be expanded to include mitigation against natural hazards. Acquisition could allow the County to assemble parcels for inclusion in the open space program and it will enable the County to avoid the same amount of destruction in future storm events.       | NA             | Unincorp. County and XX Municipalities | Immediate.                  | In-house staffing, bond referendum or other funding source. |
| Land Use  | RM-20 | Including Affordable Housing in Redevelopment Projects | <b>'No Net Loss' Resolution adopted:</b> Jurisdictions can pass a resolution to show support for all citizens to return after a major or catastrophic disaster and the intent to provide housing for a mixture of income levels. Any measure more stringent may encounter property rights issues.   | NA             | Unincorp. County and XX Municipalities | Immediate. One-time action. | None.   |
| Housing Recovery  | RM-21 | Including Affordable Housing in Redevelopment Projects | <b>Address Post-disaster Redevelopment in the County Workforce Housing Program regulations:</b> Include provisions in the County workforce housing program addressing redevelopment. The program could require workforce housing be included in those apartment/condo buildings and/or developments which experience damages in excess of 50% of the total value. Also, all new post-disaster construction must be in compliance with the existing workforce housing program. | NA             | Unincorp. County                       | Immediate.                  | None.   |

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Post-disaster Long-Term Recovery Actions

| Responsible Working Group* | ID    | Issue Topic  | Action  | Disaster Level       | Jurisdictions Involved                 | Approx. Timeframe   | Funding Consideration  |
|----------------------------|-------|--|---|----------------------|--|---|--|
| Housing Recovery           | LG-9  | Availability of Temporary Housing/ Long-term sheltering                    | <b>Subsidize long-term temporary housing:</b> Staff could identify and disburse emergency rental housing assistance funds through the Community Redevelopment Centers for citizens awaiting the restoration of permanent residences. (Predicted as a preferred FEMA approach in future.)  | Major & Catastrophic | Unincorp. County and XX Municipalities | Disbursal will begin with cessation of gov't provided sheltering. End point dependent on funds.                   | Financial assistance: FEMA, State, Disaster Recovery Fund Processing; In-house staffing.   |
| Economic Redevelopment     | EP-9  | Avoiding Permanent Relocations of Core Businesses Outside of the Community | <b>Create Business Improvement Districts (BID) in downtown and retail centers:</b> BIDs can provide a way for businesses to pool resources to encourage people to return to these areas to shop, eat, etc. With cuts to local government resources, repairing the appearance of these areas to attract customers may be a low priority.   | All                  | Countywide                             | Soon after the disaster.  | In-house staffing to assist in creating BIDs.  |
| Public Outreach            | EP-10 | Avoiding Permanent Relocations of Core Businesses Outside of the Community | <b>Advertise the quick recovery and resumption of business to the nation:</b> Once it is safe for people to return and businesses reopen, especially retail/restaurants, make sure the nation is aware of the recovery to avoid stagnation of the local economy and invite returning seasonal residents. If a major disaster strikes, the news coverage of the devastation will remain in many peoples' minds and slow investment in the area unless counteracted with positive images of recovery. | Major & Catastrophic | Countywide                             | Depending on the level of disaster but after enough time has elapsed for businesses to have reopened.             | In-house staffing to produce press releases and work with reporters. Possibly produce and run commercials with State assistance. |
| Economic Redevelopment     | EP-11 | Avoiding Permanent Relocations of Core Businesses Outside of the Community | <b>Produce statistics for post-disaster economic environment for better marketing business opportunities and discovering needs:</b> The demographics and economic environment is likely to have dramatic changes after a disaster. For businesses to access the market and the workforce capabilities they will need new population and economic statistics. The County can assist by having a post-disaster report done and distributing to the business community.                                | Major & Catastrophic | Countywide                             | Depending on the level of disaster but after enough time has elapsed for some of the population to have returned. | Would most likely be done through a consultant. Grants or state money may be available but may not want to wait for these.       |

| Responsible Working Group* | ID    | Issue Topic  | Action  | Disaster Level       | Jurisdictions Involved | Approx. Timeframe   | Funding Consideration   |
|----------------------------|-------|--|---|----------------------|------------------------|---|---|
| Economic Redevelopment     | EP-12 | Avoiding Permanent Relocations of Core Businesses Outside of the Community | <b>Hold an Economic Development Charette for the business community after a disaster:</b> Due to unforeseen changes from a disaster, the current economic development plans may need updating to reflect changed conditions. To do this, a charette could be held to solicit creative solutions to rebuilding the economy - industry, tourism, medical, retail, and research and development.   | Major & Catastrophic | Countywide             | Depending on the level of disaster but after enough time has elapsed for some of the population to have returned. | In-house staffing and facilitation services.                    |
| Economic Redevelopment     | EP-13 | Avoiding Permanent Relocations of Core Businesses Outside of the Community | <b>Beautification/landscaping for tourism:</b> Landscaping and other physical attributes which add to a sense of place and attract tourist and seasonal residents, needs to be replaced. While not an immediate need, these little touches should not be forgotten if the County also is working on repopulation.   | All                  | Countywide             | Within a year after the disaster.   | Local volunteer groups and grants such as Urban Forestry Grant. |
| Economic Redevelopment     | EP-14 | Avoiding Permanent Relocations of Core Businesses Outside of the Community | <b>Adjusting Incentive Packages:</b> Businesses that received incentive packages as a means to lure economic development to the County could be granted a waiver on measurable objectives they must achieve before collecting the full package. Previously decided upon criteria could become a disincentive for the business to remain and redevelop. The waiver could provide more time to achieve the objectives or reduce the objective while maintaining the same timeframe. | Major & Catastrophic | Countywide             | Analyze need for such a program within a few months after the disaster.   | In-house staffing.  |
| Economic Redevelopment     | EP-25 | Avoiding Permanent Relocations of Core Businesses Outside of the Community | <b>Develop special post-disaster incentive packages to entice business to remain in Palm Beach County:</b> The County can utilize current programs or develop new programs to provide incentive packages to businesses to redevelop and restore operations, rather than relocate to unaffected areas.   | Major & Catastrophic | Countywide             | Analyze need for such a program within a few months after the disaster.   | In-house staffing.  |

| Responsible Working Group*                 | ID    | Issue Topic   | Action  | Disaster Level | Jurisdictions Involved                 | Approx. Timeframe  | Funding Consideration  |
|--|-------|---|---|----------------|--|--|--|
| Public/Private Infrastructure & Facilities | EP-19 | Rapid Restoration of Power & Private Utilities          | <b>Build in Mitigation during reconstruction of utilities:</b> Underground utilities have a high up-front cost but will ultimately lower expenditures and assist in a more rapid restoration of power after disasters. Other mitigation efforts can focus on hardened, stronger designs for the infrastructure, such as stormwater, water, and wastewater facilities and systems. | All            | Countywide                             | Implement after DAT findings are analyzed.               | Private utilities assume costs but could be assisted or loaned funds through the Disaster Recovery Fund.                 |
| Health & Social Services                   | SE-7  | Restoring Educational, Cultural, and Historic Amenities | <b>Assisting Educational and Cultural Facilities find funding for repairs and restoration:</b> After the disaster, local governments should designate staff to assist in finding grants and other assistance for these facilities.  | All            | Unincorp. County and XX Municipalities | After immediate response activities have been completed. | In-house staffing.   |
| Health & Social Services                   | SE-8  | Restoring Educational, Cultural, and Historic Amenities | <b>Tax breaks for Historic Structure Restoration:</b> Providing property tax breaks for proper restoration of historic structures damaged by the disaster.  | All            | Unincorp. County and XX Municipalities | Prior to property taxes coming due.                      | Will be a slight decrease in revenues.   |
| Environment Restoration                    | SE-11 | Coastal and Aquatic Restoration                         | <b>Coordinate with FDEP &amp; USACE to conduct erosion assessment:</b> This is the first step in securing approval and funding to undertake nourishment projects.   | All            | Countywide                             | Immediately following the storm event.                   | In-house staffing.   |
| Land Use                                   | SE-12 | Coastal and Aquatic Restoration                         | <b>Reassess CCCL:</b> In a catastrophic, 100-year storm event, the erosion will be so great to warrant reassessing and possibly moving the demarcation landward.  | Catastrophic   | Countywide                             | Begin following the FDEP erosion assessment.             | In-house staffing and surveying costs.   |
| Environment Recovery                       | SE-14 | Coastal and Aquatic Restoration                         | <b>Assess and restore damaged coral reefs:</b> Using volunteers from local scuba dive organizations survey possible damage to local coral reefs. Where severe damage has been found secure grants to restore reefs as these are a major tourism draw and are already highly threatened.   | All            | Countywide                             | After immediate response activities have been completed. | Volunteers for initial survey and contract for restoration work. Grants through national organizations may be available. |

| Responsible Working Group* | ID    | Issue Topic   | Action   | Disaster Level       | Jurisdictions Involved                 | Approx. Timeframe   | Funding Consideration   |
|----------------------------|-------|---|--|----------------------|--|---|---|
| Environment Restoration    | SE-15 | Coastal and Aquatic Restoration   | <b>Marine debris cleanup:</b> Hurricane debris finds its way into the intracoastal waterway, ocean, and connected waterbodies. Clearing large or toxic debris is necessary for public safety as well as environmental protection. Coordination with the Coast Guard, USACE, and Lagoon Keepers is recommended.   | All                  | Countywide                             | After immediate response activities have been completed.  | Grants are available through NOAA and other organizations.                            |
| Land Use                   | RM-7  | Ability to Rebuild Stronger Structures                                  | <b>Conduct Building Code effectiveness analysis:</b> County should <i>continue</i> to conduct analysis of the adopted building code in search of areas that can be improved as a means to increase public safety.  | Major & Catastrophic | Unincorp. County and XX Municipalities | After deactivation of plan.   | In-house staffing or partner with local universities to conduct research.             |
| Land Use                   | RM-10 | Communicating with & Involving the public in Recovery and Redev. Issues | <b>Utilize Visioning Process for severely impacted areas:</b> The Visioning Process found in Appendix D should be utilized to avoid piecemeal redevelopment and include citizen participation.   | Major & Catastrophic | Unincorp. County and XX Municipalities | After completion of damage and habitability assessments.  | In-house staffing. Funding needed for advertising and facilitation/planning services. |
| Land Use                   | RM-14 | Limiting Redevelopment in Hazardous Areas                               | <b>Establish Revitalization, Redevelopment, &amp; Infill Overlays (RRIO) in areas that experienced severe wind damage:</b> This mechanism for redevelopment already exists within the Comprehensive Plan. Establishing RRIOs in those areas damaged significantly by a storm event (but not due to surge or flood) could encourage redevelopment and designate them as preferred receiving area for the County's TDR program. Incentives or grants for redevelopment could be prioritized for these areas. | Major & Catastrophic | Countywide                             | Immediately following analysis of DAT findings.   | In-house staffing.  |
| Land Use                   | RM-15 | Limiting Redevelopment in Hazardous Areas                               | <b>Down-zoning undeveloped parcels in hazard-prone areas:</b> Where parcels have not been permitted for development and remain vacant (or where the parcel's existing use is not as high as the allowable use), post-disaster down-zoning should be explored as a means to reduce vulnerability to hazards. The post-disaster period provides an opportunity for the County to achieve a valid redevelopment and mitigation initiative.  | Major & Catastrophic | Countywide                             | Immediately following analysis of DAT findings. Include as part of community visioning process. | In-house staffing.  |



| Responsible Working Group* | ID    | Issue Topic  | Action   | Disaster Level       | Jurisdictions Involved                 | Approx. Timeframe   | Funding Consideration   |
|----------------------------|-------|--|--|----------------------|--|---|---|
| Land Use                   | RM-16 | Limiting Redevelopment in Hazardous Areas              | <b>Initiate municipal cooperation in Transfer of Development Rights program:</b> The county Comprehensive Plan commits to establishing a countywide, multi-jurisdictional TDR program (FLUE, Policy 2.6-p). With the vast majority of coastal properties in municipalities, the County should explore transferring the development rights of damaged coastal properties to the less vulnerable inland locales.                               | All                  | Countywide                             | Immediately following analysis of DAT findings. Include as part of community visioning process. | In-house staffing.  |
| Environment Restoration    | RM-19 | Including Mitigation in Rebuilding                     | <b>Institute landscaping &amp; invasive vegetation public education campaign:</b> Non-natives are poorly adapted to the local environment and are more likely to topple or become wind borne, thus causing damage during storm events. Preventing citizens from purchasing and landscaping with them will create a safer, redeveloped community. PBC could team with major lawn and garden centers to reach more citizens (Art. 14 of ULDC). | All                  | Countywide                             | Once commercial/retail centers are again operational.   | Printing costs for educational materials could be solicited from partner companies. Cooperate with environment. & ag. groups on outreach efforts. |
| Land Use                   | RM-23 | Including Affordable Housing in Redevelopment Projects | <b>Create Community Land Trusts:</b> County can promote & assist in the formation of CLTs to preserve existing and reconstruct lost affordable housing. The CLTs can be used in post-disaster visioning process as a vehicle for implementation.   | Major & Catastrophic | Countywide                             | During redevelopment visioning process.   | Typically funded through grants to start. Disaster Recovery Fund could provide some assistance.   |
| Land Use                   | RM-24 | Disaster Resistant Public Funding Decisions            | <b>Public Facility retrofits/repairs built to exceed current standards:</b> When retrofitting/reconstructing public facilities, the County can exceed current FBC standards in order to improve mitigation efforts, secure publicly funded investments, and set an example for citizens.   | All                  | Unincorp. County and XX Municipalities | After completion of damage and habitability assessments.  | Increased costs but may lower insurance and future repair costs.  |

\* See page 33 for a list of Working Group Chairpersons or pages 35-42 for a suggested list of Working Group contributing members

\*\* See Appendix IX for funding source information.

LG= Local Government Recovery Issues (Section 2.1), EP= Economic and Private Sector Issues (Section 2.2), SE= Social and Environmental Issues (Section 2.3), RM= Redevelopment and Mitigation Issues (Section 2.4)

## Appendix IV: Sea Level Rise

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### Overview of Local, Regional, State Activities Related to Sea Level Rise

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Sea level rise has been a topic of interest for many years in South Florida. Until recently, however, research and protective actions have been largely sporadic, independent, and unplanned. As awareness, consensus of opinion, and scientific evidence have grown, there has been a move in Southeast Florida toward multi-jurisdictional and multi-disciplinary collaboration and coordination. This shift has greatly accelerated progress in assessing vulnerabilities and developing appropriate community adaptation strategies and action plans.

#### **Principal Organizations Focusing on Sea Level Rise in South Florida:**

##### Southeast Florida Regional Climate Change Compact (SFRCCC)

In October 2009 Broward County hosted a well-attended Regional Climate Leadership Summit. The purpose of this precedent setting summit was to develop a regional collaboration that would support a coordinated climate change strategy. A major product of the summit was a four county compact executed in January 2010. The mission of the Southeast Florida Regional Climate Change Compact is to coordinate mitigation and adaptation activities across county lines. The Compact represents a form of regional climate governance designed to allow local governments to set the agenda for adaptation while providing an efficient means for state and federal technical assistance and support.

In its short existence the Compact has accomplished several initiatives relevant to sea level rise and other climate related hazards. Some of these initiatives are described in the special reports section of Appendix A.



#### Florida Department of Economic Opportunity and Florida Division of Emergency Management

The Department of Economic Opportunity (FDEO) and the FDEM are principals in the State's Post-Disaster Redevelopment Planning Initiative. Following publication of its groundbreaking *Post-Disaster Redevelopment Planning: A Guide for Florida Communities* it was concluded that PDRPs represented excellent platforms for encouraging and facilitating sea level rise adaptation initiatives. FDEO, FDEM, and Calvin-Giordano and Associates, Inc collaborated on preparing an Addendum document on sea level rise. The Addendum document provides broad guidance on integrating sea level rise into PDRPs and other community plans and policies. Excerpts from the Addendum report are contained in Appendix A.

As part of their planning initiative, FDEO and FDEM selected Palm Beach County to be a demonstration case study. Products of this effort include detailed analysis and recommendations dealing with vulnerability assessment, plan integration, strategy development, and action planning which not only benefits Palm Beach County but will be useful to other Florida communities.



#### FAU -Florida Center for Environmental Studies & the ICCE

Impacts of climate change has been designated a Florida Atlantic University-wide Research Priority. FAU's Florida Center for Environmental Studies is the home of The Integrative Collaborative on Climate and Energy (ICCE).

Launched by Florida Atlantic University in the spring of 2009, the Integrative Collaboration on Climate and Energy (ICCE) is a cross-university program creating relevant linkages across disciplines. With FAU as the lead institution ICCE includes more than 80 faculty members in a multitude of climate change-related disciplines. Collectively, they have strong collaborative linkages with local, state and federal governmental and non-governmental organizations, the business community, and public. Other University collaborators include: University of South Florida, Florida Gulf Coast University, and Columbia University. ICCE's goals include:

- The use of the extensive knowledge base of ICCE members, partners, and networks to develop unique interdisciplinary teams to advance basic and applied climate change research, linking science, social science, and policy.
- The practical application of research conclusions by gathering, distilling, and disseminating information about current and potential climate change impacts on south Florida and mitigation and adaptation priorities.
- Education and outreach activities in kindergarten through university, decision-makers, and the business community.

On June 21 and 22, 2012, The Florida Center for Environmental Studies hosted the "Risk and Response" Sea Level Rise Summit in Boca Raton, Florida with over 300 attendees from private and public agencies. The summit was sponsored by USGS, Florida Sea Grant, The Flora foundation, USF's Patel School for Global Sustainability, Coastal Areas Climate Change Education (CACCE), NOAA, Wells Fargo, NRDC, The Community Foundation of Palm Beach and Martin Counties, Renaissance, The Northeast Regional Council, and The Florida Climate Institute. The purpose of the summit was three-fold:

- To highlight the interrelationships between sea level rise, saltwater intrusion into fresh water aquifers and water management in Florida;
- To share the ongoing responses and adaptation planning of agencies, institutions and civic societies to sea level rise; and
- To compare Florida's challenges and responses with other vulnerable localities in the US and worldwide.

#### Treasure Coast Regional Planning Council (TCRPC)

As part of an ongoing program evaluating global climate change, the Environmental Protection Agency has initiated a nationwide project promoting planning for and awareness of sea level rise. In 2000, the EPA issued a grant to the South West Florida Regional Planning Council (SWFRPC) to participate in this program and coordinate the study of sea level rise throughout the State of Florida. In 2002, the TCRPC entered into a contract with SWFRPC to conduct a study of sea level rise within the Treasure Coast Region. Excerpts from this study are contained in Appendix A of this PDRP.

#### South Florida Water Management District (SFWMD)

South Florida Water Management District, through its Interdepartmental Climate Change Group, continuously monitors research and developments in the areas of sea levels, temperatures, rainfall patterns, and tropical storms in order to perform its water management mission. In monitoring the changes of rising and falling temperatures, precipitation, extreme events, and other climate factors, the SFWMD notes that many recent changes appear to be outside normal historical ranges of variability.

SFWMD predicts, rising seas will likely have direct impacts on coastal beaches, infrastructure, and wetlands due to high tides and storm surges. Urbanized areas along the coasts may be more prone to flooding. Coastal water supplies could be impacted by accelerated saltwater intrusion. Natural systems may suffer significant impacts.

In its 2009 publication *Climate Change and Water Management in South Florida*, SFWMD suggests the following potential scenarios:

- Relative to 1990 level, a rise of 5 inches to 20 inches in sea levels by 2060. This range provides lower and upper bounds for planning purposes until better and more specific regional information on future sea level rise is available.
- An increase in air temperatures of up to 7°F and evapotranspiration up to 15 percent by 2100.
- A change in rainfall of up to ±20 percent.
- A change in the strength and frequency of tropical storms and hurricanes. Exact extent of the changes due to global warming is not clear at this time.

### Select Reports: Sea Level Rise in Palm Beach County

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A significant number of special reports have and will continue to be prepared by researchers and subject experts on the potential impacts of sea level rise in Palm Beach County and South Florida. Brief summaries of select reports relevant for County planners, decision makers, and emergency managers are presented below. These reports, in their entirety or in the form of excerpted highlights, are contained in Appendix A.

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**Title:** *Post-Disaster Redevelopment Planning: Addressing Sea Level Rise During Long-Term Recovery*

**Author(s):** FDEO; FDEM; Calvin, Giordano and Associates, Inc.

**Purpose:** Designed as an Addendum or companion document to *Post-Disaster Redevelopment Planning: A Guide for Florida Communities*. It is intended to augment best practices guidance related to coastal communities, considering how sea level rise adaptation strategies should be integrated into the long-term recovery and redevelopment process. The addendum focuses largely on Palm Beach County who served as a pilot community for Phase V of the state's post-disaster planning initiative.

The Addendum explores a range of adaptation strategies which may be employed in the post-disaster environment to enhance sustainability and disaster resilience. It provides an assessment of how sea level rise scenarios may alter the impacts of future storms and provides recommendations for local decision makers to consider when addressing long-term sustainability in the aftermath of a large scale disaster.

**Major Topics:** Chapter 2 provides guidance on how to assess existing plans, policies, and programs that may exist within your community and support community adaptation. The Comprehensive Plan, the Local Mitigation Strategy, Economic Development Strategies, and Capital Improvement Plans are examples of plans which may incorporate specific policies, funding strategies, or initiatives aimed to enhance long-term community sustainability.

This chapter also describes the process used for conducting a hazard vulnerability analysis to assess the risks and vulnerabilities posed by augmented hurricane storm surge due to the sea level rise. This hazard vulnerability analysis were used to produce a series of Geographic Information System based maps detailing vulnerable areas, structures, and facilities.

Chapter 3 explores a range of policy recommendations for long-term inclusion of sea level rise strategies within the post-disaster redevelopment planning process. The goal is to ensure that the full ranges of strategies are comprehensively addressed across organizations, jurisdictions, and disciplines. The chapter also offers sample policy language which each organization may **consider** during the plan update process.

Chapter 4 reflects upon opportunities to support the post-disaster implementation of sea level rise adaptation strategies.

The Addendum contains a detailed description of vulnerability assessment methodology and assumptions used for the pilot study and how describes how resulting Geographic Information System (GIS) based maps can be used to identify and describe potentially vulnerable areas, develop adaptation strategies and develop and implement informed action plans.

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**Title:** *Sea Level Rise Vulnerability & Redevelopment Assessments & Strategies: Palm Beach County*

**Author(s):** FDEO; FDEM; Calvin, Giordano and Associates, Inc.

**Purpose:** This vulnerability assessment examines the influence of sea level rise on Palm Beach County's vulnerability to hurricane storm surge hazards as a basis for addressing sea level rise adaptation during post-disaster redevelopment efforts.

The report provides in-depth discussions of a full range of potential adaptation strategies.

**Methodology:** Assessments contained in the report model the potential increases of storm surge inundation in a hypothetical context of a three foot rise in sea levels.

Adaption response options are considered in three strategy areas, including protective strategies, retreat strategies and accommodation strategies.

This assessment evaluated the data from the Sea, Lake, and Overland Surges from Hurricanes (SLOSH) model provided by the U.S. National Hurricane Center (NHC), National Oceanic and Atmospheric Administration (NOAA) to determine storm surge zones. SLOSH modeling integrates the maximum surge height for hurricanes of Saffir–Simpson Categories 1, 3, and 5. The model outputs were then converted by Geographic Information System (GIS) tools into raster grids. GIS tools were employed to delineate the effect of sea level rise on hurricane storm surge by enhancing the projected storm surge by an estimated three foot sea level rise projection. GIS was then employed to identify damages to critical facilities, groundwater, inland canals, property and infrastructure to future hurricane storm surge inundation. These data outputs provided a basis for an initial analysis of the impacts of sea level rise in Palm Beach County and provides a basis for community leaders and planners to discuss possible implications for adaptive response to create a more disaster resilient and sustainable community.

Using maps with inundation overlays and a series of tables and graphs, the hazard vulnerability analysis examined the following areas and offered post-disaster redevelopment and adaptation recommendations assuming a three (3) foot rise in sea level and Categories 1, 3, and 5 storm surge increases:

- **Transportation:** This included ports/marinas, airports, roads, bridges, railways and Tri-Rail Stations, and bus routes.
- **Water infrastructure:** This included water supply treatment plants, wastewater treatment plants, water pumping stations, well field protection areas, and water control structures and systems.

- Land and Environment: This included Future Land Use composite, Land Use/Cover, Managed Natural Areas, Vulnerable Species, Critical Beach Erosion, and Beach Access.
- Public facilities and privately owned facilities important to community redevelopment: This included emergency shelters, fire and police stations, and other government buildings such as hospitals, adult living facilities, hospice, skilled nursing facilities, city halls, libraries, courthouses, and emergency operations centers.

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**Title:** *Southeast Florida Regional Climate Change Compact First Annual Progress Report (Select Excerpts)*

**Author(s):** Southeast Florida Regional Climate Change Compact

**Purpose:** Provides a description of activities and accomplishments for year one of the Compact. Topics include:

An overview of regional climate change vulnerabilities, a description of the County by County survey of resources, development of a greenhouse emissions inventory, a description of vulnerability analysis workshops, and results of efforts to agree on a unified projection of sea level rise for the region.

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**Title:** *Analysis of the Vulnerability of Southeast Florida to Sea Level Rise – Palm Beach County*

**Author(s):** Inundation Mapping and Vulnerability Assessment Work Group of the Southeast Florida Regional Climate Change Compact

**Purpose:** Provides a geographic representation of sea level rise inundation flooding on maps using a simple bath tub analysis for three sea level scenarios of 1', 2' and 3', without consideration of other flooding impacts from hurricane storm surge, hydrological losses through canal structures, etc.

The report assesses and describes the vulnerability of county infrastructure, critical facilities, and a full range of other physical features to sea level rises of 1', 2', and 3'.

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**Title:** *Impacts of Sea Level Rise on Florida's Domestic Energy and Water Infrastructure (Excerpts from Dr. Leonard Berry's Testimony to the United States Senate Committee on Energy and Natural Resources)*

**Author(s):** Dr. Leonard Berry, Director of the Florida Center for Environmental Studies, Distinguished Professor of Geosciences at Florida Atlantic University and Co-Director of the Climate Change Initiative of the University.

**Purpose:** Dr. Berry's testimony provides a succinct overview of the threat of Sea Level Rise to South Florida and adaptation responses taking place or needing attention.

His testimony describes multiple complications sea level rise is already creating, including coastal and inland flooding, flood control issues, and salinization of aquifers and well fields.

Dr. Berry discusses expected future impacts that have major technical and cost implications for water, energy and resource management. He also recognizes some of the proactive measures taking place in Florida and identifies gaps requiring attention.

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**Title:** *Draft Regional Climate Change Action Plan (Excerpts)*

**Author(s):** Southeast Florida Regional Climate Change Compact

**Purpose:** The plan provides for steps to move towards resiliency and reduce emissions through exploring alternatives and decreasing the use of Energy and Fuel. The plan builds upon regional strength as effective emergency responders and integrates climate change hazards in Risk Reduction and Emergency Management planning. Finally, the Regional Climate Action Plan creates a common vocabulary for public Outreach and Public Policy development to effectively communicate the steps from risk to resiliency with the general public, voters, elected officials, and decision makers in Southeast Florida, the state and the nation.

The specific recommendations put forth in this plan were developed through a collaborative process involving nearly 100 subject matter experts, including not only climate professionals but professionals from the public and private sectors, area universities, and not-for-profit organizations. These stakeholders brought to the table the knowledge of their “craft” as well as information on successful initiatives already underway locally or in other communities. Many of the recommendations build upon best practices sprinkled throughout the region, such as regional collaboration on transportation planning and land use regulations that foster walkable and healthy communities. Others delve into “new” frontiers in calling for the integration of climate change into planning and decision making processes in ways that no local government has yet implemented.

There are more than 100 action items detailed in the plan’s six goal areas to be accomplished over the next five years with annual reports to mark progress. The six goal areas include:

- Sustainable Communities and Transportation Planning
- Water Supply, Management and Infrastructure
- Natural Systems and Agriculture
- Energy and Fuel
- Risk Reduction and Emergency Management
- Outreach and Public Policy

Policy recommendations will be implemented through several approaches including:

- the development of policy guiding documents by local and regional governing bodies;
- the development of operational guidance documents;



- the development of consistent goals and measures throughout the various governments in the region;
- a coordinated multi-disciplinary outreach and education program; and
- processes for focused and prioritized investments

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**Title:** *Treasure Coast Vulnerability Analysis for Post-Disaster Redevelopment* (Excerpts relating to Palm Beach County)

**Author(s):** Treasure Coast Regional Planning Council (TCRPC)

**Purpose:** The TCRPC vulnerability analysis focuses on the Treasure Coast counties of Palm Beach, Martin, St. Lucie and Indian River.

For this analysis, the worst case scenario of a two foot rise in sea level by the year 2060 was used to be consistent with the Southeast Florida Regional Climate Change Compact. A planning horizon of 50 years is particularly relevant for considering infrastructure vulnerability. In the context of the PDRP, a 50 year planning horizon could assist in making decisions regarding the cost effectiveness of rebuilding infrastructure damaged by a disaster to the same standards if it is going to be at increasing risk from sea level rise in the future since the lifespan of the infrastructure project may well be beyond 2060.

This analysis also examines the increased storm surge that could result from a two foot rise in sea level by mapping estimated increases in storm surge for Category 3 and 5 hurricane scenarios. While permanent inundation from a two foot sea level rise scenario will have limited impacts on current development in the region, an increase in the area at risk from storm surge could be much more detrimental. Furthermore, the SFWMD found that using the low range of the Compact projections (i.e. 9 inches rather than 24 inches) that the probability of a one in 50 year storm surge can be expected to occur within a five year period.

The two foot Inundation Zone was developed consistent with the methodology used by the Southeast Florida Regional Climate Change Compact and the mapping process used by the NOAA Coastal Services Center. The analysis used a digital elevation model (DEM) derived from the latest available Light Detection and Ranging (LiDAR) data in addition to NOAA's VDatum Tool to create a tidal surface. The two foot rise in sea level was mapped on top of Mean Higher High Water (MHHW). Inundation Zones for Category 3 and Category 5 Storm Surge under the Sea Level Rise (2ft) Scenario were generated using the Statewide Regional Evacuation Study Surge Model Tool Version 2.9i6, created by Marshall Flynn with the Tampa Bay Regional Planning Council and used previously to produce the County level Storm Atlases of the Statewide Regional Evacuation Study Program.

The report analyzes the vulnerability of various types of residential, commercial, agricultural, institutional, and governmental structures and their value in dollars at risk by county and municipal jurisdictions under each of the five categories of hurricanes.

**Title:** *Statewide Post-Disaster Redevelopment Planning Initiative: Sea Level Rise Integration: A Pilot Study for Palm Beach County*

**Author(s):** Florida Department of Economic Opportunity; Calvin, Giordano and Associates, Inc.

**Purpose:** This report describes the pilot case study done for Palm Beach County by the Florida Department of Economic Opportunity demonstrating opportunities for integrating sea level rise into county and municipal plans. It provides planning and policy considerations for Palm Beach County to incorporate the potential long-term impacts of hurricane storm surge increased by sea level rise.

The initial section evaluates existing plans and policies and begins to identify adaptation and mitigation policies within existing plans, policies, and procedures currently in force in Palm Beach County and among potentially impacted coastal municipalities. Plans reviewed for integration opportunities include: County and municipal Comprehensive Plans, the PDRP, the Unified Local Mitigation Strategy (LMS), National Flood Insurance Program documents and the Palm Beach County Strategic Economic Development Plan.

The second section provides recommendations for long-term inclusion of sea level rise strategies within each of the existing planning documents to ensure that strategies are comprehensively addressed across organizations, jurisdictions, and disciplines. The chapter also offers sample policies and language which organizations may consider during their respective plan update processes.

### Integrating Sea Level Rise into Local Plans

According to the Palm Beach County Local Mitigation Strategy, Sea Level Rise is a relatively new hazard for the County and much of the Atlantic Coast resulting in increasing flooding frequency in coastal communities. The County did not monitor or record any incidents of Sea level Rise before 2013. High tide flooding which results in public inconveniences, often termed “nuisance flooding” or “sunny-day flooding,” is increasing in frequency as sea level rises. Sea level rise is defined as a mean rise in sea level. Since 1870, global sea level has risen by about eight (8) inches. Nationally, sea level has risen 6.5 inches since 1950, and the rate of increase is accelerating with sea levels now rising by an average of one (1) inch every five (5) years (NOAA Tides and Currents). As coastal populations increase, vulnerability of those populations to sea level rise increases as well.

In late 2011 the Florida Department of Economic Opportunity selected Palm Beach County to serve as a demonstration case study for plan integration. With the assistance of Calvin, Giordano and Associates, Inc. a full range of relevant county and municipal policies and plans were reviewed to identify appropriate opportunities for integration of sea level rise language and recommended policies, priorities, and guidelines that have emerged from the work of the County and Regional Compact. Among the plans reviewed were: County and municipal Comprehensive Plans, the PDRP, the LMS, National Flood Insurance Program documents and the County’s Strategic Economic Development Plan. The case study also developed and drafted sample policies and language for consideration during plan updates.

A comprehensive report of case study findings and recommendations is presented in a special report, *Statewide Post-Disaster Redevelopment Planning Initiative: Sea Level Rise Integration: A Pilot Study for Palm Beach County*. The report should be an invaluable tool for plan integration.

### PDRP Plan Integration Analysis/Sea Level Rise

The PDRP acts as a guide for utilizing the policies and procedures found in other documents when making post-disaster redevelopment decisions.

The objective of the PDRP 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 LMS, the CEMP, and other relevant plans or codes such as the Long Range Transportation Plan, land development regulations, floodplain management plans and activities, 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 PDRP 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 PDRP and its implementation strategy should include specific actions for integrating long-term redevelopment considerations into other local plans, as applicable.

### Status and Plans for PDRP Integration with Palm Beach County Plans

Plan integration in Palm Beach County began with development of the County's PDRP in 2005 and 2006. At this writing, language directly acknowledging and linking the PDRP is included in the following County level plans:

- Comprehensive Plan
- CEMP
- LMS
- Recovery Plan
- Strategic Economic Development Plan

Language recognizing the provisions and objectives of the PDRP is also prevalent in the County's Hazard Specific Plans; Recovery Branch organizational and operational documentation; in documents relevant to the County's participation in the National Flood Insurance Program; and Community Rating System, and is integral to the collaborative community resilience, economic redevelopment, and disaster recovery initiatives being pursued by the County and its partners.

Plans call for strengthening the integration and coordination language in these plans and expanding integration to other plans and documents which address topics such as growth management, capital planning, social services, environmental stewardship, housing, health emergency plans, continuity of government plans, etc.

#### The PDRP and Recovery Plan

Palm Beach County's Recovery Plan is an important companion document to the PDRP. It provides organizational and operational guidance for early recovery activities leading up to long-term community recovery, reconstruction, and economic redevelopment. The Recovery Plan focuses heavily on activities necessary for reestablishment of essential public health and safety services, restoring interrupted utility and other essential services, reestablishing transportation routes, providing food and shelter for those displaced by the disaster, arranging for immediate assistance, and other priority activities necessary to establishing tolerable, manageable levels of physical, economic, social, and political stability and functionality.

Linkages with the PDRP are cited throughout the Recovery Plan. The Concept of Recovery Operations section, in particular, addresses plan interrelationships and the phased organizational and operational transition processes from short-term recovery to long-term recovery and redevelopment.

#### Sea Level Rise Integration Project

In the Spring of 2011, the Florida Department of Community Affairs (now Division of Economic Opportunity) and the FDEM asked Palm Beach County to be part of a multi-organizational, multi-disciplinary project team charged with developing and testing methodologies for integrating sea level rise adaptation strategies into PDRPs.

At the time, Palm Beach County was actively engaged in revising and enhancing its 2006 PDRP and was (and is) an active community partner in the South East Florida Regional Climate Change Compact doing state-of-the art research and planning on the subject of sea level rise in southeast Florida. Because of these two concurrent activities, the State believed Palm Beach County was uniquely positioned and qualified to be a principal in a sea level rise integration demonstration project.

The product of this work, a model for integrating sea level rise adaption strategies into PDRPs, is described in the balance of this section.

Key players in the project were:

- Florida Division of Economic Opportunity (DEO)
- Calvin, Giordano and Associates (contracted consultant to DEO)
- County members of the S.E. Florida Regional Climate Change Compact
- Palm Beach County DEM

Several departments of the County participated in planning discussions, supplied technical and administrative information and guidance, and were instrumental in reviewing draft documents and maps. A technical and administrative challenge was developing a product which at the same time would realistically meet the needs of the County in addressing sea level rise and serve as a practical

actionable model for other communities. As the impacts of sea level rise in Palm Beach County are expected to be somewhat less than in several other coastal communities in the state, a “worst case” scenario was necessary to demonstrate the multiplicity of factors to be considered.

Sea Level Rise Plan Integration: A Pilot Study for Palm Beach County

Following is a special report prepared by the Florida Department of Economic Opportunity as part of Phase V of the State’s Redevelopment Planning Initiative. Released in September 2011 the study identifies and analyzes opportunities for integrating sea level rise adaptation and mitigation language and policies into key plans, policies and procedures of Palm Beach County and its municipalities.

Statewide Post-Disaster Redevelopment Planning Initiative: Phase V  
 Sea Level Rise Integration: A Pilot Study for Palm Beach County  
 October 2011

Florida Department of Economic Opportunity

**Contents**

**Chapter Overview ..... 4**

**Section I: Review of Community Resilience Strategies in Existing Plans ..... 6**

    Palm Beach County Comprehensive Plan ..... 6

        Introduction and Administrative Element ..... 6

        Intergovernmental Coordination Element ..... 6

        Health and Human Services Element ..... 7

        Historic Preservation Element ..... 7

        Housing Element ..... 7

        Future Land Use Element ..... 7

        Transportation Element ..... 8

        Utility Element ..... 8

        Coastal Management Element ..... 9

        Conservation Element ..... 10

    National Flood Insurance Program ..... 18

    Municipal Comprehensive Plans ..... 10

    Palm Beach County Capital Improvement Element (CIE) of the Comprehensive Plan  
 and Capital Improvement Program (CIP) ..... 18

    Palm Beach County Post-Disaster Redevelopment Plan ..... 11

        Social and Environmental Issues ..... 11

        Redevelopment and Mitigation Issues ..... 12

    Palm Beach County Local Mitigation Strategy ..... 15

        Goals, Objectives, and Benefits ..... 15

        Hazard Vulnerability Analysis ..... 15

        Flood ..... 16

        Hurricanes ..... 16

        Beach and Soil Erosion ..... 16

        Intergovernmental Coordination ..... 16

    Palm Beach County Strategic Economic Development Plan (March 2007) ..... 19

**Section II: Recommendations for Future Sea Level Rise Plan Integration ..... 21**

    Palm Beach County Comprehensive Plan Integration ..... 21

        Introduction and Administrative Element Recommendations ..... 21

        Comprehensive Plan, Land Use Designations Recommendations ..... 23

        Comprehensive Plan Land Acquisition Element Recommendations ..... 27

        Comprehensive Plan Transfer of Development Rights Recommendations ..... 28

Comprehensive Plan Housing Element Recommendations .....29

Comprehensive Plan, Recreation and Open Space Element Recommendations ..30

Comprehensive Plan Transportation Element Recommendations .....31

Comprehensive Plan, Utility Element Recommendations.....32

Comprehensive Plan, Coastal Management Element Recommendations.....34

Health and Human Services Element Recommendations .....34

Comprehensive Plan Intergovernmental Coordination Element Recommendations  
.....36

Palm Beach County Capital Improvement Element (CIE) of the Comprehensive Plan  
and Capital Improvement Program (CIP) Recommendations.....37

Palm Beach County Post-Disaster Redevelopment Plan Integration .....38

Local Mitigation Strategy Integration .....39

    Local Mitigation Strategy Intergovernmental Coordination Recommendations.....39

    Local Mitigation Strategy Hazard Vulnerability Analysis Recommendations .....41

    Local Mitigation Strategy, Repetitive Loss Properties Recommendations .....42

    Local Mitigation Strategy Public Outreach and Education Recommendations .....42

    Local Mitigation Strategy, Fiscal Impact Recommendations.....43

Palm Beach County Strategic Economic Development Plan (March 2007) .....44

**Sea Level Rise Integration and Community Resilience**

Executive Summary

This model case study represents the fifth phase of the Statewide Post-Disaster Redevelopment Planning Initiative. The initial four phases provided vulnerable communities a planning process to guide post-disaster redevelopment activities that enhance community sustainability and ensure resilient redevelopment after a large scale disaster. The purpose of this planning phase is to augment the planning guidance, specifically to vulnerable coastal communities, to also consider the potential impacts of hurricane storm surge augmented by sea level rise within their post-disaster redevelopment efforts. This case study focuses specifically on Palm Beach County, Florida to explore a range of adaptation strategies which may be employed in the post-disaster environment to enhance community sustainability. This case study provides a preliminary assessment of how sea-level-rise predictions may alter the impacts of future storms and provides strategic recommendations for local decision makers to consider in balancing community resilience and long-term community sustainability in the aftermath of a large scale disaster.

Palm Beach County was selected the pilot community for the following reasons:

- Palm Beach County was one of the first communities within the State of Florida to develop a comprehensive PDRP which pre-dated the Statewide Post-disaster Redevelopment Planning Initiative.
- The executive leadership within Palm Beach County demonstrated a strong level of support and understanding of the importance of post-disaster redevelopment planning and community sustainability initiatives.
- Palm Beach County is part of a larger regional effort, the Southeast Florida Regional Climate Change Compact which has devoted extensive research and consensus building

effort to document sea level rise scenarios that could be applied to hurricane storm surge vulnerability modeling.

- Without a need to build consensus on the sea level rise scenarios, planning efforts may focus on exploring adaptation strategies and policy options which may be integrate into Post-Disaster Redevelopment Planning efforts.
- Palm Beach County was in the early stages of their PDRP update process so integration was timely.

This planning initiative represents the fifth phase of the Statewide Post-Disaster Redevelopment Planning Initiative sponsored by the Florida Department of Economic Opportunity in partnership with the FDEM and the Florida Department of Environmental Protection with funding through grants from the National Oceanic and Atmospheric Administration and the Federal Emergency Management Agency.



## Appendix V: Key Redevelopment Issues and Priorities

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### The Challenge of Governance during Long-Term Recovery

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Among the most important requirements for successful long-term recovery are: having a clear vision and well-executed plan; the availability and management of broad and diverse funding to finance the recovery; establishing and maintaining effective working relationships at the local, state, and federal level; and fostering a supportive and involved community. The single most important requirement for making this happen is effective local leadership.

In his book *Managing for Long-Term Community Recovery in the Aftermath of Disaster*, Daniel Alesch offers important insights into the post-disaster pressures faced by local government officials. Some of these observations, derived from years of on the ground interviews and research following extreme disaster events, are summarized below.

#### Government Recovery First

Like all organizations, local governments experience losses from major disasters. Governmental buildings and infrastructure are damaged or lost, financial arrangements are disrupted, data and files may be lost or destroyed, and employees may not return to work. In order for the County and municipal governments to help the community recover, they, themselves, must recover sufficiently to be effective recovery agents.

#### Increasing Workload Demands

Major disasters trigger exceptional workloads for public officials and employees. These heavy workloads, accompanied by periods of high stress, likely will begin before the event occurs and persist throughout long-term recovery.

Lack of experience at all levels in disaster management necessitates “on the job” training. Role conflicts may arise as those accustomed to working in relative isolation are asked to work cooperatively with others to solve complex problems.

Illustrative of these workload demands are the following:

#### New/Additional Responsibilities

Local officials find themselves dealing with two sets of demands at the same time, the regular local government functions that must continue, and a new set of unfamiliar disaster-related activities. The demands are intense and will continue for months without letup. Dealing with rotating staffs of state and federal agencies, many temporary help, often produces changing and conflicting answers to questions. Rules and regulations for various federal programs are often complex and change almost continually. Frustration often builds among local, state and federal officials, sometimes to the point of boiling into conflict.

#### Dissatisfaction with the Pace of Recovery

Decision makers invariably feel that progress isn't being made quickly enough and that outcomes are not satisfactory. Elected officials, in particular, feeling pressure from constituents, may have unreasonable expectations about the pace of recovery and about what the local government staff is capable of accomplishing.

### The Blame Game

To meet the public's demand for accountability, fundamental attribution errors will be made, assuming that others are personally responsible for mistakes that are made, discounting the role of external factors or misfortune.

### Balancing Work and Personal Responsibilities

In addition to the increased workload and the new problems that emerge daily, many public employees must confront the personal, inner conflict between the need to help strangers and the pressure to help their families at home. Employees, many unaccustomed to the recovery role, will be expected to remain at their posts as needed during emergency situations, even when their homes and families need attention.

### Dealing with Burnout and Stress Related Turnover

The pressures passed on by elected officials by increased workloads, unresolved issues, and personal problems, may lead to burnout and stress related turnover. City managers, finance officers, and building officials are particularly vulnerable. Worker performance is likely to decline in the face of extreme and prolonged stress. Employees faced with the same, seemingly intractable problems day after day, will burnout and may look for an escape. Some may be fired, many may leave in frustration.

### Ensuring Continuity of Leadership

Palm Beach County and most of its neighboring municipal jurisdictions maintain Continuity of Operations Plans (COOPs) covering a full range of critical functional areas. The County's COOP focuses on the functions of the Board of County Commissioners and County Administration. Depending on the extent of physical damage and operational disruption, the use of COOP plans, particularly County Administration's plan, may extend well into long-term recovery. The purpose of the COOP is to sustain, to the greatest extent possible, the capability to continue mission-essential business and functions. In the case of PBC Administration, this involves providing uninterrupted leadership in conducting necessary County business as well as guiding and overseeing community recovery.

Key elements of the COOP include:

- Identification of mission-essential functions
- Orders of succession in county leadership
- Authorities, including emergency powers and authorities
- Alternate facilities
- Vital records and databases
- Resource inventories
- Staff rosters and capabilities

Beyond internal solutions, the use of standby officers and/or temporary officers could be employed.

### Augmenting Staff

Exhaustion from long hours and a shortage of requisite skills invariably require local governments to augment their capacity through mutual aid, contracted help, and/or temporary workers. The federal government will almost always cover the cost of people who are working on eligible recovery work, but it will not pay for people doing the routine business of running a local government.

### Documenting Reimbursable Expenses

Federal project funds will generously flow into the community following declared major disasters. But after the money is gone and projects are completed (or in the process of being completed) the federal government auditors will arrive looking for documentation of eligible expenditures, for expenditures ineligible under the terms of the grants, for errors and mistakes made by local officials, and for assurances that procedures were followed precisely. The auditors demand not just complete records on how every dime was spent, but compelling evidence that every dime was spent in compliance with program regulations. If they don't get the evidence they seek, they will seek to get some or all of the money back from the community.

Keeping track of expenditures following major events is not a simple task. The local government staff will be dealing with situations that it has not previously encountered, trying to do the job that it did before the disaster while also dealing with new demands that it has never faced before. Moreover, most federal program rules are complex, and not all agencies apply the same procedures. In addition, federal agencies may hire temporary personnel less knowledgeable about rules and regulations, raising the possibility for contradictory information.

Some communities have spent years and millions of dollars trying to resolve financial issues.

### Dealing with Lengthy, Questioned Reimbursements

The federal government doesn't advance funds; it reimburses after expenditures have been made. Delays in reimbursement are common, particularly where state level involvement is required. Managing cash flow and arranging for bridge financing can become a problem.

Maintaining an overall view of local government finances and keeping the jurisdiction within safe limits requires more than accounting skills; it requires an understanding of finance, management, intergovernmental relations, and how the political system works.

### Minimizing Nonessential Bureaucracy

Recovery requires local government to be flexible and adaptive. Managers and staff must be able to do things they have not done before and do things in ways they have never done them before. It is far easier to simplify processes beforehand, when there is time to give them serious thought, than to waive them or ignore them in time of crisis. In the aftermath there are not enough resources to do things that don't need to be done or that can be done more simply, and there is certainly not much time for contemplation or indecision.

### Understanding and Capitalizing on Assistance Programs

A whole host of assistance programs are available from federal, state, and private sources. Rather than waiting until after the event to find out which programs are available, local officials need to

ensure every organization and person in the community understands which programs exist, what their eligibility requirements are, what their basic application and administration rules and regulations are, and how to maximize the probability of getting assistance from them. Some sort of clearinghouse should be set up at a central site or online. Of course, the best approach is to do a lot of the research up front, preferably before a disaster threatens. FEMA's *Public Assistance: A Guide to Recovery Programs* (FEMA-229) is an especially useful reference for locating recovery assistance programs.

#### Rebuilding a Financial Base for Sustainable Government

Long-term recovery of both the community and the local government require either rebuilding or developing anew a base of wealth, income, and business activity that is adequate to provide the needed revenue for collective recovery actions. Unless that is accomplished, when the federal aid ends, the community and the local government will struggle and recovery will be slowed or stall.

#### Sustaining Essential Government Services in the Face of Post-Disaster Economic Crisis

Relatively minor disasters like Hurricanes Frances, Jeanne, and Wilma create scattered damages and short-lived, easily recoverable interruptions to local economies and government operations. Catastrophic disasters, on the other hand, can devastate local economies and greatly impair a community's ability to sustain or resume even the most basic governmental services.

All or some combination of the following economic and service impacts can be expected to accompany catastrophic events. Victimized local governments will suffer post-disaster staff shortages due to casualties and relocation at the time they are most needed. Payrolls will be jeopardized by depleted financial reserves. Tax bases will not be replenishable because of interrupted revenue. Cash flow and consumerism will be interrupted by business closures. Governmental priorities will have to be reassessed and services scaled back. Resources may need to be redeployed in light of post-disaster needs. Relief, recovery, and reconstruction efforts will sap available capital. Credit ratings may plummet. Borrowing power may be reduced. Public service and debt obligations will continue and probably increase. It will be easy to get caught up in a vicious downward economic spiral.

Even if it is in a relatively strong pre-disaster financial position going into the event, Palm Beach County will likely require outside emergency financial assistance. Some smaller, more economically vulnerable, municipal jurisdictions almost certainly will become insolvent.

In short, catastrophic disasters cause serious and long-term disruptions to much of the core economic activity necessary to sustain essential governmental services. Unfortunately, such disruptions do not relieve local governments of their public service and financial obligations. In fact, these obligations will increase significantly in the aftermath of the event. With tax bases in disarray and reserves and insurance sapped or depleted, local governments must meet the three-fold challenge of continuing to provide services, rebuilding damaged infrastructure, and servicing existing debt.

Almost immediately after a catastrophic event and well into the recovery period, difficult decisions need to be made by the County and each local government as to how to replenish revenue bases

or to otherwise compensate for shortfalls. With reserves and insurance depleted, recovery may take months or years. Redevelopment of a fully sustaining revenue flow can take a very long time. As with Hurricane Andrew, Hurricane Katrina and other catastrophic events, the economic landscape may never be the same and economic redevelopment may resemble a patchwork quilt.

On top of local concerns, Congress and the tax-exempt bond community will question to what extent tax base erosion may impair the ability of impacted local communities to make payments on outstanding debt and to issue new debt. A predictable outcome of a catastrophic disaster is being placed on CreditWatch with negative implications. In less than three months, Hurricane Katrina's economic dislocation prompted Standard & Poors and Moody's to cut the ratings of New Orleans and other regional issuers to below investment grade. General obligation debt, limited-tax debt and pension debt, in particular, took a big hit.

While there is precedent for imposing a short-term moratorium on enforcement of outstanding short-term obligations to avoid destructive actions (e.g., liens and judgments) during the time a city requires to regain its financial health, arguments for such protection are controversial and take considerable time to resolve. After much debate, rulings and appeals, the State of New York enacted an Emergency Moratorium Act for New York City to relieve it of certain short term financial obligations when it experienced grave financial difficulties in the mid 1970s. Whether such actions could be taken in Florida in response to a disaster is not known.

The unexpected loss of revenue due to catastrophic disaster damage, coupled with the increased financial burden of humanitarian relief, reconstruction, and economic redevelopment will almost certainly require local governments to turn to state and federal government for financial assistance.

FEMA's Public Assistance Program provides supplemental Federal disaster grant assistance for the repair, replacement, or restoration of disaster-damaged, publicly owned facilities and infrastructure, but it cannot be applied toward operational costs. The Stafford Disaster Relief and Emergency Assistance Act also authorizes the President to "make loans to any local government which may suffer loss of tax and other revenues as a result of a major disaster, and has demonstrated a need for financial assistance in order to perform its governmental functions." The Community Disaster Loan Act, signed into law in October 2005, and subsequently proposed supplemental appropriations and interim rules, demonstrated Congress' acknowledgement that catastrophic events, like Hurricane Katrina, warrant special attention to the financial plights of local governments and extraordinary levels of assistance as authorized by the Stafford Act.

The Disaster Recovery Reform Act (DRRA) was signed into law in 2018. The DRRA amended the Stafford Act requiring FEMA to implement 56 distinct provisions in policy or regulation changes for full implementation. The DRRA, through dedicated funding for proactive disaster mitigation, empowers building resilient communities before disaster strikes. The DRRA adjusted the language of the Hazard Mitigation Grant Program ("HMGP") to permit the federal government to "contribute up to 75% of the cost of hazard mitigation measures which the President has determined are cost effective and which substantially reduce the risk of, or increase resilience to, future damage . . . in any area affected by a major disaster." The DRRA also provides states, tribes, territories, and localities with new authority to rebuild buildings according to the latest building codes so that they are more resilient to future natural disasters. In response

to changes in the DRRRA, FEMA launched the Building Resilient Infrastructure and Communities (“BRIC”) Program.

While federal programs ultimately provide critical financial assistance, it is often too little, too late for economically fragile communities and always comes with a lot of strings attached. Less than two months after Hurricane Katrina, and unable to sustain its payroll, New Orleans was forced to cut its city staff by 3,000 people (a 50% cut) and to seriously reduce its services while waiting for assistance through the Community Disaster Loan Program. Such actions are obviously contrary to the needs for recovery.

Palm Beach County communities are advised to consider other, more quickly implementable strategies that may help to relieve financial shortfalls in the near-term until federal help arrives.

### Municipal Insolvency

By virtue of their size, limited reserves, and limited revenue sources, many Palm Beach County municipalities, unless well insured, will likely have difficulty weathering the economic impacts of extreme disaster events on their own. What do municipalities do when they suddenly become insolvent and the prospects of recovery through traditional revenue sources or tax increases have been blown away?

#### Florida Financial Emergencies Legislation

In 1979, the Florida legislature adopted a local government financial emergencies statute (§218.503). This legislation, one of the most specific of its kind in the nation, was developed not because of any local government financial emergency existing or threatened in Florida at the time, but in response to the problems of New York City, Cleveland, and other cities that were then in the midst of or had recently experienced a severe financial emergency. Since the statute has been in place, two major local governments - the City of Miami and Escambia County - have required state intervention, and the provisions of the act have been employed effectively in several smaller governments. According to recent Auditor General reports, more and more local governments have been deemed to be in or approaching financial emergencies. The deep recession of the past several years has no doubt driven more local governments to the brink. What then would the added impact of a catastrophic event bring?

The financial emergency statute is intended for matters where financial management decisions and actions have been a problem. While no specific language or reference to disaster-caused financial emergencies is contained in the statute, it is assumed that the legislation and subsequent state actions would similarly apply if the following standard criteria are met:

Section 218.503(1), Florida Statutes, states that local governmental entities shall be subject to review and oversight by the Governor when any one of the following conditions occurs:

- Failure within the same fiscal year in which due to pay short-term loans or failure to make bond debt service or other long-term payments when due, as a result of a lack of funds.

- Failure to pay uncontested claims from creditors within 90 days after the claim is presented, as a result of a lack of funds.
- Failure to transfer at the appropriate time, due to lack of funds:
  - Taxes withheld on the income of employees; or
  - Employer and employee contributions for
    - Federal social security; or
    - Any pension, retirement, or benefit plan of an employee
- Failure for one pay period to pay, due to lack of funds:
  - Wages and salaries owed to employees; or
  - Retirement benefits owed to former employees.
- An unreserved or total fund balance or retained earnings deficit, or unrestricted or total net assets deficit, as reported on the balance sheet or statement of net assets on the general purpose or fund financial statements, for which sufficient resources of the local governmental entity, as reported on the balance sheet or statement of net assets on the general purpose or fund financial statements, are not available to cover the deficit. Resources available to cover reported deficits include net assets that are not otherwise restricted by federal, state, or local laws, bond covenants, contractual agreements, or other legal constraints. Fixed or capital assets, the disposal of which would impair the ability of a local governmental entity to carry out its functions, are not considered resources available to cover reported deficits.

Pursuant to Section 218.503(2), Florida Statutes, whenever it is determined by a local governmental entity that one or more of the above conditions have occurred or will occur if action is not taken to assist the local governmental entity, the local entity shall notify the Governor and the Legislative Auditing Committee. Upon notification that one or more of the above conditions exist, the Governor or his or his or her designee shall contact the local governmental entity to determine what actions have been taken by the local governmental entity to resolve the condition. The Governor shall determine whether the local governmental entity needs state assistance to resolve the condition. If state assistance is needed, the local governmental entity is considered to be in a state of “financial emergency.”

The Auditor General, after reviewing the audited financial statements of local governmental entities, is responsible for notifying the governor and the Legislative Auditing Committee of any government whose report contains a statement by the independent auditor that the government is in a state of financial emergency.

When the Governor's office has been notified by local government officials or the Auditor General that a jurisdiction is in a state of financial emergency, it is then charged with the responsibility of determining what level of state assistance, if any, is appropriate and needed.

Municipal governments in Florida enjoy broad home-rule powers: they have the responsibility and authority to determine services, set service levels, and provide for the funding of such services. The financial emergencies statute, recognizing this relationship, does not provide for the removal of municipal government responsibility in an identified financial emergency. The state's role,

rather, is to ensure that local governments take the appropriate steps to eliminate the financial emergency. It is difficult for the state to step in before problems become emergencies without being accused of imposing on home-rule authority.

The Governor has the authority to implement measures as set forth in ss. 218.50-218.504 to assist the local governmental entity in resolving the financial emergency. Such measures may include, but are not limited to:

- Requiring approval of the local governmental entity's budget.
- Authorizing a state loan to a local governmental entity and providing for its repayment.
- Prohibiting a local governmental entity from issuing bonds, notes, certificates of indebtedness, or any other form of debt until such time as it is no longer subject to this section.
- With the cooperation of local officials, making such inspections and reviews of records, information, reports, and assets of the local governmental entity.
- Consulting with officials and auditors of the local governmental entity and the appropriate state officials regarding any steps necessary to bring the books of account, accounting systems, financial procedures, and reports into compliance with state requirements.
- Providing technical assistance to the local governmental entity.
- Establishing a financial emergency board to oversee the activities of the local governmental entity.

Failure to pay obligations (wages, retirement benefits, debt service, etc.) or to have sufficient reserves to cover a deficit can bring a determination of "financial emergency" under Florida law and bring the municipality under close state scrutiny and control, including the establishment of a Financial Emergency Board to oversee the operations of the local governmental entity or school board. If a financial emergency board is established for a local governmental entity, the Governor shall appoint board members and select a chair. If a financial emergency board is established for a district school board, the State Board of Education shall appoint board members and select a chair. The financial emergency board shall adopt such rules as are necessary for conducting board business.

Emergency Boards are empowered to change local priorities and to change fiscal decisions coming from the local political processes. The imposition of such Boards would likely create a degree of discomfort for local officials.

The Board, in collaboration with the local government develops a plan that must include: (1) provision of payment in full of all payments due or to come due on debt obligations, pension payments, and all payments and charges imposed or mandated by federal and state law and for all judgments and past due accounts, as priority items of expenditure; (2) establishment of a basis for priority budgeting; and (3) the prohibition of a level of operation which can be sustained only with nonrecurring revenues.

The primary emphasis of the Financial Emergency Board process is debt settlement and budgeting. It is not designed or well suited to meet the needs of community economic recovery and



redevelopment. While Emergency Board actions usually presume issues of local fiscal mismanagement, it is uncertain at this writing whether the same provisions and priorities would apply after a catastrophic disaster event. In all likelihood, state officials, in the application of financial emergency provisions in a post catastrophic disaster environment, would be highly sensitive to the importance of economic redevelopment as a condition for ultimately satisfying debt obligations.

Because of their taxing authority, municipalities don't go out of business. Unlike corporations, municipalities are not allowed to liquidate their assets to pay off debts. Municipalities usually craft their plans for adjusting their debts by either refinancing or extending debt maturities or reducing the amount of their principal or interest.

Typically municipalities obtain debt financing through two different means: (1) General Obligation Debt backed by the taxing power of the entity; or (2) Revenue Bond Financing involving the dedication of a particular stream of revenues to the municipality's debt service.

### Municipal Options

Faced with problems of a similar scope, a private sector entity might well consider bankruptcy among its top options. Some analysts suggest that severely distressed local governments should have the same option. However, the bankruptcy option has been pretty much removed from the table for local governments by state officials concerned about the stigma of bankruptcy and its potential impact on other governmental entities in the state. To date it has been seldom used and is considered an "option of last resort." According to recent articles and reports, there is reason to think thinking may be changing.

Fiscally distressed local governments can turn to a number of options short of default or bankruptcy to put their fiscal house in order. These include:

- cutting expenditures
- raising taxes
- postponing payment of obligations
- drawing down reserves
- renegotiating debt obligations to reduce or defer payments
- borrowing from government entities or commercial lenders.

Some of these solutions available to local governments, such as borrowing, refinancing bonds, or postponing payments on other obligations, provide temporary relief but may increase costs in the long run. For local governments that are experiencing only a temporary disruption in cash flow, these options can provide the needed cover until their normal revenue streams are restored. In the case of a public entity with longer-term problems, short-term fixes may just delay the day of reckoning and compound the problem.

Other remedies, such as raising taxes or cutting services, may actually hinder the municipality's ability to stabilize itself and recover. This would occur where taxes rise or services fall to a level that discourages investment or results in disinvestment. Under those circumstances, the disadvantages of default or bankruptcy must be weighed against the cost of the municipality

continuing to meet its obligations. Where the cost to the community's health is too high, bankruptcy may necessarily become an option to consider.

#### Municipal Bankruptcy: Option of Last Resort?

Dealing with municipal insolvency through Bankruptcy Protection under Chapter 9 has been a seldom used option. Fewer than 500 governments have filed for Chapter 9 protection since the laws were revised in 1937 and most have involved small entities such as irrigation districts. However, there is evidence which suggests the trend may be changing. Catastrophic disasters are but one factor that may necessitate seeking Chapter 9 protection. In today's changing economic climate some rethinking may be in order.

Municipal bankruptcy under Chapter 9 provides local governments with a means to refinance or reduce debt and to obtain relief from burdensome contracts. It does not wipe the slate clean.

Following are some of the factors that may explain the scarcity of approved filings:

- States, which ultimately must approve the use of municipal bankruptcy, traditionally do not favor bankruptcy because of the stigma of bankruptcy and its potential impact on other governmental entities in the state. (This stems primarily from financial mis-management issues, not unavoidable costs associated with disaster recovery)
- The threshold requirements for municipal bankruptcy are high. The entity must be insolvent, and its state must specifically authorize the filing.
- The municipality is required, as a precondition to filing, to engage in negotiations with its creditors or to be excused from such negotiations for reasons specified in the statute. The negotiations may lead to a resolution of the problem outside of court.
- To meet the requirements for court approval of a bankruptcy, municipalities are required to engage in self-help remedies, such as using their borrowing capacity or raising taxes to the extent practical. Thus, municipal bankruptcy cannot be used to avoid politically unpleasant but reasonable actions.
- Municipalities are not exposed to some of the risks that lead other creditors to seek bankruptcy protection. As mentioned earlier, their assets are not subject to seizure.
- Municipalities, like businesses, are concerned about the ramifications of bankruptcy on their ability to borrow and the cost of borrowings if approved.
- Some of the relief that is theoretically possible, such as abrogating union contracts, may not be achievable as a practical matter, given the requirement for state authorization.
- The process is expensive.

Despite the limitations and possible fall-out from bankruptcy, it can help a municipal debtor in critical ways:

- It provides immediate relief by staying the municipality's obligation to make payments on debt other than special revenue bonds.
- It provides a means of obtaining long-term relief, including reduction in debt and other obligations that will bind a dissenting minority if a majority of creditors consent.
- Bankruptcy can protect a municipality and its residents from untenable levels of taxation by blocking creditor lawsuits seeking to force officials to raise taxes to support debt.

- Because post-filing borrowings to support the entity's operations are given a higher priority than pre-filing borrowings, it can in some cases facilitate borrowing.
- It provides immediate relief by staying the municipality's obligation to make payments on debt other than special revenue bonds.
- It provides a means of obtaining long-term relief, including reduction in debt and other obligations that will bind a dissenting minority if a majority of creditors consent.
- Bankruptcy can protect a municipality and its residents from untenable levels of taxation by blocking creditor lawsuits seeking to force officials to raise taxes to support debt.
- Because post-filing borrowings to support the entity's operations are given a higher priority than pre-filing borrowings, it can in some cases facilitate borrowing.
- Under Chapter 9 a municipality retains control over its political and governmental decisions. It is free to spend tax revenues on current expenditures, without regard to past debts. Municipal property is free from attachment and seizure.
- It can provide access to credit to meet its immediate operating needs.

When all other short-term options have been exhausted, it is useful to have access to the bankruptcy process. Municipal bankruptcy is not a perfect solution for a governmental entity's fiscal problems, but it can provide breathing room while other long-term options are pursued. Local governments must continue functioning and temporary or partial relief from heavy debt service obligations can make a difference.

Ideally a fundamental objective of Chapter 9 is to provide court protection that would allow financially distressed municipalities to continue to provide essential public services to its residents while it develops and negotiates a plan for adjusting its debts. The municipality receives 1) a breathing spell through an automatic stay against the actions of creditors, and 2) the power to adjust its debts through the bankruptcy plan negotiated with creditors.

In order to file for Chapter 9 bankruptcy, a municipal entity must meet a number of statutory requirements. In particular it must:

- Qualify as a municipality.
- Obtain state authorization.
- Be insolvent and be committed to settling its debt.

What constitutes municipal insolvency? Insolvency means the municipality either is not paying its debts or will not be able to pay its debts as they come due. Because municipal assets are not subject to seizure and sale, insolvency of a municipality is not determined simply by examining its current balance sheet. Determination of a municipality's insolvency requires a comprehensive cash flow analysis of factors including multi-year cash flows, available reserves, ability to reduce expenditures or borrow, and legal opportunities to postpone debt payments. The municipality is expected to continue operating and to provide at least a minimal level of services. A municipality's taxing capacity also enters into the analysis of insolvency. Although a municipality need not exercise its taxing authority to the fullest extent possible before a court can deem it insolvent, a failure to consider any reasonable tax increase may lead a court to conclude that the good faith requirement has not been met.

States can condition the ability of their municipalities to seek Chapter 9 protection. The state may attach preconditions to state authorization provided such requirements do not undercut the efficacy of Chapter 9. According to State Statute 28 local governmental entities may not seek application of laws under the bankruptcy provisions of the United States Constitution except with the prior approval of the Governor.

While retaining its independent objectivity and not necessarily endorsing bankruptcy, the Bureau of Government Research and the Public Affairs Research Council of Louisiana (2006) offered the following observation: “For a devastated community, continuing to shoulder pre-event debt loads and obligations may interfere with its ability to create the conditions needed for recovery. In that context, bankruptcy is a legitimate line of inquiry and should not be ruled out as an option. While its limitations and negative implications must be carefully considered, the drag of outsized debt, reduced services, and elevated tax rates on redevelopment should also be analyzed. It becomes a matter of a hard-nosed cost-benefit analysis.”

#### Municipal Consolidations, Mergers, and Dissolution

Finally, municipalities functionally and economically devastated by disasters might entertain legal reorganizations as a means of providing essential services to residents and businesses and increasing the capacity to resolve otherwise overwhelming fiscal problems. Guidance for such actions is provided in Chapter 165, Florida Statutes.

Typically these reorganizations would take one or more of the following forms:

Consolidation: The combining of two or more municipalities which results in the termination of the existence of each of the municipalities and the creation of a new municipality.

Merger: The combining of two or more municipalities which results in the termination of the existence of all but one, with the surviving municipality absorbing and assuming jurisdiction over the municipalities which have been terminated,

Dissolution: A municipal charter may be revoked and a municipality dissolved either by a special act of the Florida Legislature or by an ordinance approved by the city council and by voters in a referendum subject to the restrictions outlined in Chapter 165, Florida Statutes.

Final Observation: No specific policies and procedures relating to dealing with insolvent municipalities in a post-catastrophic disaster environment were found in state or local level literature or statutes during the writing of this PDRP. It would be advantageous for the State to work proactively with the League of Cities and municipalities to develop practical guidance on the subject.

## Appendix VI: Major Post-Disaster Redevelopment Goals and Issues

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This section of the plan provides a narrative discussion of the broad issues under which redevelopment actions identified are structured. The issues are grouped into four major topics: 1) local government recovery issues, 2) economic and private sector issues, 3) social and environmental issues, and 4) redevelopment and mitigation issues. Each topic begins with a goal to guide countywide actions on these issues. During the planning process, the issues in this section were voted on at a public workshop (Part 3) to determine which ones were most important to Palm Beach County. The result was a prioritized list of the ten most important post-disaster issues:

1. Availability of Temporary Housing/Long-term Sheltering
2. Rapid Restoration of Power and other Private Utilities
3. Adequate Health and Mental Health Services available during Recovery
4. Including Affordable Housing in Redevelopment Projects
5. Debris Management and Disposal
6. Critical Infrastructure and Facility Repair
7. Sustaining Essential Governmental Services
8. Ability to Rebuild with Stronger Structures
9. Water Pollution from Sewer System Failures
10. Shortage of Contractors/Supplies Slows Repairing of Homes and Businesses

Subsequent to a workshop/symposium in April 2009 that involved urban planners, economists, housing experts, and emergency management professionals working in the Gulf recovery efforts and 178 public and private sector stakeholders, Economic Redevelopment emphasizing the use of local resources over outside contractors was added to the list.

### Local Government Recovery Issues

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***GOAL: Rapid, Successful Recovery. The County and other participating jurisdictions and agencies shall strive to provide services in a manner that speeds the ability of residents and businesses to recover from a disaster. Intergovernmental coordination, public-private collaboration, and effective communication will be core methods for achieving this goal.***

#### Availability of Temporary Housing / Long-term Sheltering

The lack of temporary housing or long-term shelters can be a serious issue in a post-disaster situation. If people whose homes are uninhabitable do not have an alternate place to reside after a major or catastrophic disaster, then repopulation and resumption of businesses will greatly suffer. The aftermath of Hurricane Katrina is a prime example of this issue. Inhabitable residential units in New Orleans were in high demand which was reflected in the cost of living in them. Much of the low-income population had to start over in the towns to which they were evacuated or where they have friends or family. The population of New Orleans was a fraction of what it was following Hurricane Katrina and employees for businesses were in short supply.

Another major reason for having adequate temporary housing is to minimize the time emergency shelters need to stay operational long after the danger of the storm has passed. In Palm Beach County, public schools double as emergency shelters, and for the schools to reopen, those who have nowhere to go until their homes are repaired or they find new permanent housing will be forced to find other accommodations outside the impact area.

The identification of temporary housing and long-term sheltering requires planning at the local, regional, and state level and is not something that should be left up to federal officials alone. As was seen with the “FEMA city” in Charlotte County after Hurricane Charley, simply finding space and running utilities for Federal Emergency Management Agency (FEMA) trailers may not always be the best solution. It can lead to crime and serious depression for those who must live in that situation (Kaufman, 2005). Another issue with relying solely on trailers and other outside assistance after the storm is that temporary solutions may become long-term necessities if reconstruction is slow and lengthy. This has been a problem in Florida, and caused worry in the Gulf Coast, as temporary mobile homes could experience another tropical storm or hurricane. Often, sites for temporary housing eventually become permanent residential areas, and the community may want to designate areas for temporary housing that are compatible with residential uses (Florida Department of Community Affairs, 2006).

In its Temporary Housing Plan for Catastrophic Events, Palm Beach County largely relies on vacant residential structures, such as apartment complexes, condominiums, and motels/hotel rooms, as temporary housing. The county’s 139 mobile home and RV parks are also given high priority because of their existing infrastructure. The plan also identifies a number of vacant parcels throughout the county it deems suitable for sitting trailers and/or tents for temporary housing. These parcels, pared from an original list of 78, were reviewed for access to infrastructure, community needs, and land use suitability. Additional actions can and should be taken to further strengthen the Temporary Housing Plan.

#### Debris Management and Disposal

Debris removal is generally considered to be one of the first things that must be finalized before recovery and redevelopment can progress. Major disasters, however, can generate massive quantities of debris that will exceed local capabilities to manage and take months to clear and dispose of. Hurricane Andrew, a relatively compact hurricane, generated an unimaginable 43 million cubic yards of disaster debris in Miami-Dade County.

Debris management, especially involving construction and demolition debris easily extends into the long-term recovery and redevelopment period. Palm Beach County maintains a comprehensive debris management plan which is based on a Category 4 hurricane scenario. Under the plan, Palm Beach County’s Engineering Department (PBCENG) will coordinate with and support the Solid Waste Authority (SWA) in the permanent removal, storage, grinding, and disposal of all disaster-related debris from public property. Private property debris management commonly slows and complicates removal. The disposal of private debris is often seen as a responsibility of local government. However, it can become a contentious issue when dealing with gated communities or private streets since the local government may not be reimbursed for collection there.

Debris clearance from Palm Beach County roadways and PBC public property will be accomplished using a combination of county crews and equipment, mutual aid providers, and private contractor resources. Municipalities are responsible for coordinating the permanent removal, storage, recycling and disposal of all debris within their jurisdictions. The SWA has entered into Interlocal Agreements with municipalities in Palm Beach County to allow for a cooperative effort in the management of disaster debris and securing reimbursement for eligible debris management costs from appropriate federal, state and local agencies.

Countywide critical facility sites that affect public safety have top priority for clearance, whereas private debris is collected later.

Disposal sites, such as landfills or composting areas, can quickly exceed normal capacity during recovery activities. Therefore, the plan divides the county into 12 debris zones, each with a corresponding collection site. For the most part these sites are current or future parks and recreation facilities or landfills. The Florida Department of Environmental Protection regulates these sites and attempts to ensure debris composting and collection does not adversely affect the lands for future uses.

Recycling and separation of debris types must be a focus of debris management as well. By keeping organic debris, such as tree limbs, separate local governments can then turn this into mulch, which can then be offered to citizens for landscaping projects after the storm. In addition, building materials are often mixed in with other debris, but items such as bricks could be salvaged. Finally, hazardous materials such as asbestos should not be mixed in with other debris. Education prior to a storm or immediately after a storm is the best way to accomplish debris separation so that more can be recycled and save room in landfills.

Debris accumulation can present its own hazards. These risks can be partially mitigated prior to the disaster event through landscaping regulations and maintenance and building codes that address wind-borne objects. Large piles of organic debris can become public health concerns, providing a haven for rodents and pests. Once dry, debris becomes fuel for urban and wildfires. On conservation or rural lands the accumulation of debris becomes fuel for wildfires, another natural disaster in itself. The cost to collect and dispose of some debris can be defrayed through Public Assistance (PA) grants from FEMA. Debris located on public lands and right-of-ways are eligible, as is debris deemed to be a threat to public health and safety or economic recovery. The grant requires matching funds from the county for up to 25 percent of the cost for contracted or regular staff debris services.

Those involved in long-term recovery and redevelopment are encouraged to familiarize themselves with the County's Debris Management Plan which can be found on the SWA's website.

#### Critical Infrastructure and Facility Repair

The repair of critical infrastructure and facilities will be paramount to establishing normal operations within communities. Many times major roads, bridges, and facilities such as wastewater treatment plants, as well as other utilities, will be significantly damaged during a disaster event. Often these facilities serve "mission essential" functions within the community and, when not in operation, can debilitate the community's ability to recover. When planning for critical infrastructure and facility repair, local governments should consider how repairs to these functions will be prioritized. The County's CEMP and Recovery Plan address the need to prioritize infrastructure and facility repairs. Swift and immediate response in restoring these systems is essential to future redevelopment activities. Another component of facilities repair is the designation of alternative locations for essential functions to be carried out while repairs are

being made to damaged facilities. This should be covered by each organization's Continuity of Operations Plan (COOP).

Beyond the immediate response duties addressed in the CEMP, the County can incorporate mitigation actions into annual preparations for the hurricane season. Rather than reconstructing the same infrastructure system that was damaged or destroyed by the disaster event, jurisdictions should explore new, innovative designs. Analyzing weak structural links in the systems or reviewing maintenance records that reveal aging systems could expose areas that are susceptible to failure. Where funds are available, these areas could be upgraded pre-disaster. However, when disasters strike before proper mitigation retrofits can be implemented, the County should be prepared with pre-approved new system designs. Preparedness will ensure a quick recovery and one which will promote mitigation against future disaster events.

#### Fair and Equitable Distribution of Disaster Assistance

The Federal government has stated through law the intent to ensure that all relief and assistance is provided in an equitable and impartial manner (42 USC Ch. 68). Palm Beach is the largest county in Florida by area, with population centers scattered throughout. Distributing disaster assistance equitably will be logistically difficult. The county has separated communities, far inland from the population concentration on the coast. There are also disparities in economic status, which, as was evident in New Orleans, will likely require increased assistance for special needs populations. Citizens who remained in the City were largely lower income residents who lacked personal automobiles needed to evacuate. Likewise, certain demographic segments of Palm Beach County will require a greater amount of assistance in the post-disaster period. The perception of inequality can raise tensions in an already tense post-disaster atmosphere. Communication and public involvement in how community assistance funds are used can help alleviate some of this tension.

#### Sustaining Essential Governmental Services in the Face of a Post-Disaster Economic Crisis

Relatively minor disasters like Hurricanes Frances, Jeanne, and Wilma create scattered damages and short-lived, recoverable interruptions to local economies. Catastrophic disasters, on the other hand, cause unprecedented damages, including loss of lives, widespread physical damage, and massive dislocations of residents and businesses. They also cause serious and longer-term disruption to much of the core economic activity that generates the local tax and revenue bases necessary to sustain essential governmental services. Such disruptions, of course, do not relieve local governments from their public service and financial obligations. In fact, these obligations invariably increase in the aftermath of a disaster.

Almost immediately after a catastrophic event, difficult decisions need to be made by local governments as to how to replenish revenue bases or to otherwise compensate for shortfalls. Reserves and insurance are depleted quickly and recovery may take months or years. Redevelopment of a fully sustaining revenue flow can take a very long time. State and federal assistance can help to some degree, but are often too little, too late or come with cumbersome strings attached. Less than two months after Hurricane Katrina, New Orleans was forced to cut its city staff by 3,000 people (a 50% cut) and to seriously reduce its services while waiting for assistance through FEMA's Community Disaster Loan Program. A large concern with such



decreased resources is how to keep the city safe. They have had to resort to calling in the National Guard multiple times to protect those who have remained.

Another obstacle to a local government trying to sustain its essential services is the reduction in county or city credit ratings that a catastrophic disaster can often cause. This can affect the local government's bonding capacity and other financial resources, making recovery even more difficult. Communities are wise to proactively explore other, quickly implementable strategies that may help to relieve financial shortfalls in the near-term until federal help arrives. (Truesdale, public presentation, 19 April 2006)

#### Avoiding Erosion of Local Control with Influx of Federal and State Assistance

After a declared disaster event, and especially one of catastrophic proportions, state and federal agencies move in to assist and, if local capabilities and plans are inadequate, may sometimes need to take over or lead recovery efforts. The very concept of a major disaster is that local capacity to respond is overwhelmed. Local officials, staff, and their families are victims themselves of the disaster event, and help from nearby communities cannot be provided because they are usually impacted as well. A major or catastrophic disaster is also a matter of media and political attention and the Governor and President need to be involved at least symbolically to show support and assure stability (Quarantelli, 2005). While occasionally this sort of outside assistance can create territorial tensions, it is generally welcomed and not questioned. This can become a problem, however, if some local presence is not integrally involved to guide outsiders on issues specific to the area. It becomes particularly problematic if outside control persists beyond response and immediate recovery phases into redevelopment decisions. New Orleans, with hardly any local staff left due to an inability to pay them, was forced to rely heavily on outside assistance during the early stages of planning recovery and redevelopment. With a plan in place prior to a disaster, Palm Beach County should have a better chance of retaining or regaining control of decisions that have important implications for its future.

FEMA is the federal entity most likely to be mobilized if the County and state request federal assistance. It is the primary arm of the federal government that can arrange for and coordinate a full range of federal agencies in providing technical, operational and financial assistance. It behooves the County to establish a working relationship with FEMA and its federal primary and support agencies to understand in advance what will be needed to work productively with them from day one.

Another erosion of local control occurs through financial assistance. Federal and State grants and loans often come with strings attached. Some of these strings may be beneficial and promote mitigation efforts, but there may be instances where the implications of the assistance are not consistent with the needs and wants of local government and the citizenry.

#### Municipal Insolvency Following a Disaster

As we witnessed in Louisiana and Mississippi, catastrophic disaster events put a tremendous strain on local economies. There, because of the massive areas rendered uninhabitable for extended periods of time, communities experienced a surge in tax delinquencies, bond defaults, bankruptcies and mortgage foreclosures. Unaccustomed to financial emergencies of this magnitude, what do

municipalities do when they suddenly become insolvent and the prospects of recovery through traditional revenue sources or tax increases become unlikely?

In Palm Beach County there are 39 municipalities, some of which have a population of less than 1,000 residents. Many of these incorporated areas are almost entirely residential and their revenue sources would be greatly limited after a disaster. In addition, many of these smaller municipalities might not be capable of offering the services that will be needed during disaster recovery. In such cases the responsibility will likely fall to the County and state to do so.

Because of their taxing authority, municipalities do not go out of business. Unlike corporations, municipalities are not allowed to liquidate their assets to pay off debts. Municipalities usually craft their plans for adjusting their debts by either refinancing, extending debt maturities, or reducing the amount of their principal or interest. Municipalities obtain debt financing through two different means: 1) General Obligation Debt backed by the taxing power of the entity; or 2) Revenue Bond Financing involving the dedication of a particular stream of revenues to the municipality's debt service. These options may be limited if the credit rating of the city plummets after the disaster.

A seldom used option for dealing with municipal insolvency is Bankruptcy Protection under Chapter 9. Fewer than 500 governments have filed for Chapter 9 protection since the laws were revised in 1937. The fundamental objectives of Chapter 9 are providing court protection that allows financially distressed municipalities to continue to provide essential public services to their residents while they develop and negotiate plans for adjusting debts. However, Florida has a stricter set of conditions that it imposes on financially distressed municipalities. Failure to pay obligations (wages, retirement benefits, debt service, etc.) or to have sufficient reserves to cover a deficit can bring a determination of "financial emergency" under Florida law and bring the municipality under close state control, including the establishment of an Emergency Board to oversee the operations of the locality and to provide assistance. (Truesdale, public presentation, 19 April 2006)

#### Use of Local Business Capabilities in the Disaster Recovery Process

Often, businesses and employees remaining in the impacted area after a disaster event continue to have some level of operational capability, but they usually have to sit idly by while outside volunteers and contractors perform recovery work. Where skills and resources are available and intact locally, it makes little sense to wait for outside businesses to complete recovery tasks or for employees to collect unemployment if they are able and willing to be part of their own community's rebuilding process. Early use of local private sector resources is a key strategic element in rebooting local economies.

Many area businesses provide goods and services which have direct or indirect relevance to recovery needs. Some may require outside assistance in amassing needed equipment and materials or may need a base facility from which to work. Given the proper information prior to a disaster and a line of communication to those in charge of recovery work, many businesses would be able to speed recovery efforts and at the same time reduce their disruption losses from the event. Those companies who are unable to assist in recovery may have skilled employees who could benefit from recovery work until they are able to return to their jobs. Use of a local labor force may

minimize the post-disaster skill drains that often occur when workers with marketable skills leave to pursue work outside the impact area. (Truesdale, public presentation, 19 April 2006)

### Economic and Private Sector Issues

***GOAL: Economic Vitality, Health and Resilience. Through policy and support of the local business community, Palm Beach County shall work to preserve and restore the industry, agriculture, and tourism bases critical to a sustaining a healthy local economy and supporting a high quality of life for its residents.***

#### Availability and Affordability of Property Insurance

As most homeowners in Florida are well aware, property insurance premiums are increasing substantially as adequate coverage becomes harder to find. Many private insurance companies are not able to insure additional homeowners in high risk areas and are having to raise rates because of the increased risk of high hurricane activity. Other insurance companies are actually dropping customers and discontinuing coverage in the state. Many homeowners who cannot find coverage in the private market are turning to the public Citizens Property Insurance Corporation created by Florida Statute 627.351(6). However, Citizens itself is having problems making up for its 2004 \$515 million deficit and the likely deficit from 2005. The Corporation is required by law to reduce its exposure through depopulation of its policies but they are being forced to pay private insurers to pick up some of these policies. In addition, to deal with the deficit, Citizens is assessing all private homeowner's insurers working in the state, which in turn place a surcharge on policy premiums to recoup the assessed amount. This is causing a further financial burden for property owners, even those who are not in high hazard areas. (Insurance Information Institute, 2006)

The Florida Hurricane Catastrophe Fund, a state-run reinsurance pool for high hurricane damage losses, is also running into trouble. Member insurance companies pay premiums into the pool and when losses reach a set trigger level companies pay a deductible to get reinsurance funds. Building construction shortages caused claims to be higher than expected for the past couple hurricane seasons, and the legislature passed changes to the fund in 2005 to lower the trigger level for insurers due to the burden of subsequent storms. These issues, along with massive losses from the 2004 and 2005 hurricanes, have caused the fund to run out of money. To try to solve this problem, the legislature increased the bonding capacity of the fund; however, the bonds are paid for through assessments on insurers in the state, which pass the cost on to their policyholders. (Insurance Information Institute, 2006)

In May, 2022 Florida adopted Senate Bill 2 to help alleviate rising insurance costs, increase insurance claim transparency, and crack down on frivolous lawsuits which drive up costs. Provisions of the bill include:

- \$2 billion in reinsurance relief through the Reinsurance to Assist Policy (RAP) program to benefit policyholders over the next two years.
  - Requires insurance companies to file a supplemental rate filing once enrolled in the program to provide relief to policyholders.
- \$150 million for the My Safe Florida Home Program to provide grants to Florida homeowners for hurricane retrofitting, making homes safer and more resistant to

hurricane damage which can result in premium discounts for those who participate in the program.

- Prohibits insurance companies from denying coverage solely based on the age of a roof if the roof is less than 15 years old or if the roof is determined to have at least 5 years of useful life remaining.
- Requires insurance companies to provide policyholders with a reasonable explanation if they deny or partially deny a claim and provides consumers with greater access to information during the claim adjustment process.
- Creates a new standard for application of attorney fee multipliers which have been liberally applied, resulting in increased costs to consumers.
- Limits the assignment of attorney's fees in property insurance cases, disincentivizing frivolous claims.

Senate Bill 4, also signed into law in May 2022, included insurance reforms to increase safety of condominiums. The bill includes provisions that:

- Require inspections for all condominiums and cooperative buildings that are three stories or higher.
- For buildings within three miles of the coast, Phase 1 inspections must occur 25 years after initial occupancy and every 10 years after.
- For all other buildings, Phase 1 inspections must occur 30 years after initial occupancy and every 10 years after.
- If a Phase 1 inspection reveals substantial structural deterioration, a more intensive Phase 2 inspection is required.
- Require condominiums and cooperatives to conduct structural integrity reserve studies for buildings three stories or higher to ensure the funding necessary for future structural repairs is available and prohibits waiver of funding for certain structural reserves.
- Increase transparency by requiring all structural inspections reports and reserve studies to be part of the associations' official record and must be provided to potential purchasers of a unit.

While local governments have no direct control over state and private property insurance, these policies have a direct impact on how disaster-resilient and affordable the County can expect to become. Palm Beach County should keep abreast of legislative intentions for property insurance and make itself heard through local legislators and lobbying organizations such as the League of Cities.

#### Ability of Small Businesses to Stay Afloat until Adequate Financial Assistance is Available

Business interruptions and failures stemming from disaster events deal a severe blow to local economies in terms of lost productivity and employment. Research from a variety of sources, including the U.S Department of Labor Statistics, consistently reports that 50% to 70% of businesses either never reopen after a major disaster or fail after reopening. Small businesses are represented disproportionately higher among the business casualties. In Palm Beach County, approximately 80% of businesses have fewer than 10 employees (Truesdale, 2006).

The reasons for post-disaster business failures are numerous and complex. The extent of damage to critical production and service capacity, inventory, and capital assets are some factors. Other factors involve the amount of financial resources a business can quickly obtain for recovery; these usually include insurance, reserves, and loans. Time is especially critical to small businesses. Even short periods without cash flow can be damaging. Prolonged interruptions waiting for insurance settlements and loan approvals can be catastrophic. Too often small businesses waste valuable time applying for Small Business Administration (SBA) loans only to be turned down or approved too late. Almost a third of SBA applications are turned down and another 10% are still pending months after applications are submitted. Most businesses receive only a portion of what they apply for. Studies indicate the median percentage of business losses covered by approved loans was about 50%. A major problem involves collateral requirements when homes and workplaces have been damaged or destroyed. Service businesses that rent and have few tangible assets also are at a disadvantage. (Truesdale, public presentation, 19 April 2006).

Small business owners, in a rush to reopen and get back to normal, often fail to consider other business options such as reinventing their business or establishing a new business that better suits the changed post-disaster business environment (Alesch & Holly, 2002). This can be especially true for the tourism industry. After a disaster, it may be some time before tourists return to the area in the same numbers that proved profitable before. (Truesdale, public presentation, 19 April 2006)

In the event of a disaster, the Governor of Florida has the option to activate the Department of Economic Opportunity (DEO) Emergency Bridge Loan Program by Executive Order. The purpose of the Emergency Bridge Loan Program is to provide a source of expedient cash flow to Florida small businesses impacted by a disaster. These short-term, interest-free working capital loans are intended to "bridge the gap" between the time a major catastrophe hits and when a business has secured longer term recovery resources, such as sufficient profits from a revived business, receipt of payments on insurance claims or federal disaster assistance. The program provides a short-term loan of State of Florida public funds, not a grant, with the expectation that repayment will be made out of receipts from other sources of longer term disaster recovery assistance.

Loans are available up to \$50,000 per eligible applicant. Loans made under this program are short-term, personal loans using State of Florida funds – they are not grants and must be repaid. Florida Small Business Emergency Bridge Loans require repayment by the approved applicant. Owners may utilize funding from longer term financial resources, such as U.S. Small Business Administration economic injury disaster loans, to repay the Emergency Bridge Loan. A number of state and federal assistance programs may become available following a disaster. These are described in the assistance section. Finally the County and regional private-public partnerships are pursuing a number of business helping business assistance initiatives to offer small businesses.

#### Avoiding Permanent Relocations of Core Businesses Outside of the Community

As exemplified by Hurricane Andrew, September 11<sup>th</sup>, and Hurricane Katrina, virtually all major disasters are accompanied by business relocations, some temporary, but many permanent. These losses can be devastating to local economies. Replacement of key businesses can be extremely

time consuming, costly, and difficult. And, such occurrences often permanently change the social and economic chemistry of the community.

The effects of post-disaster relocations on the Gulf region are not fully understood at this point. New York City suffered an estimated 138,000 displaced jobs after September 11<sup>th</sup>. It is not clear how much coordination occurred between the public and private sectors regarding these relocations from New York City. Businesses often took care of themselves or relied on the good will and generosity of others in the private sector. For a variety of reasons, many businesses have no plans or intentions of returning to the City. Today, New York City laments the loss of businesses and is still dealing with the economic void. (Truesdale, public presentation, 19 April 2006)

Regardless of size and financial health, businesses face significant challenges including the inability to operate, lost customers or markets, employee issues, cost concerns, and the grim prospects for business resumption and long-term recovery. Faced with unusable buildings and equipment, damaged infrastructure, extended outages of critical services, displaced or victimized employees, and accessibility issues, businesses are faced with critical and time sensitive decisions to make.

Concerted efforts need to be made by community leaders to retain core businesses and to support their recovery. Planning and preparation need to occur well before a disaster strikes in order to accomplish this. Incentives and the availability of temporary workspace and temporary housing for employees may be factors that determine whether a business can stay or leave after a disaster. Workforce development efforts can also entice a company to remain in the area by assuring them that efforts are being made to retain skilled workers and train others. Assistance with business continuity planning before a disaster can also be an effective strategy. (Truesdale, public presentation, 19 April 2006)

#### Shortage of Contractors/Supplies Slows Repairing of Homes and Businesses

The high demand for supplies needed to do repair work and the shortages of contractors result in a sharp rise in prices for services and material after a disaster strikes. This can be localized, but in an era of increased hurricane activity, storm damage in one section of the country will divert supplies from other locales. For example, the Gulf Coast area continues to rebuild in the wake of Hurricanes Katrina and Rita, causing construction material prices to soar throughout the country (Christie, 2005). The increases in construction prices also affect the overall real estate market and can negatively impact the availability of affordable homes.

Contractors are stretched thin during a post-disaster period. In addition to construction activities, residents seek repair estimates from contractors before accepting their insurance claim settlement. The high demand for estimates and construction tasks translates into long delays before estimates are provided or work crews are available. In addition to the post-disaster demand for building materials, the United States has experienced a surge in construction over the last several years that further reduce available supplies (Insurance Information Institute, 2006). The delays in supplies and contractor services for repairing structures can be very exasperating for residents and business owners who are trying to return their lives and businesses to normal. Many people also become frustrated when they cannot get their building repaired but see new

construction resuming after a disaster. Long delays in repairing damaged homes and businesses also put inhabitants of these structures at risk from mold-related illnesses and/or from increased vulnerability to wildfires as embers can more easily enter a structure with damaged eaves or siding (Florida Division of Forestry, 2005). The market should begin to correct for the shortages in supplies as more contractors and suppliers begin to understand the increase in hurricane activity. Incentives for contractors to do small repair jobs before resuming large construction contracts after a major hurricane should be explored as well as increasing contractor classes and offering expedited post-disaster training addressing Florida-specific building regulations for out of state contractors coming in to help.

#### Rapid Restoration of Electrical Power and other Private Utilities

As anyone who has lived in Palm Beach County during hurricane season knows, recovery from a hurricane really cannot begin until major utilities, especially electricity, are restored. Simply trying to get somewhere in the County can be difficult when most traffic signals are out and curfews due to dark and dangerous streets are a constant reminder to residents of their inability to return to normal daily life. Power and telecommunication outages keep most businesses from operating and result in large disruption costs that business owners must absorb. Telephone and cell phone, water, and sewer service failures are also issues that may slow recovery.

In 2004, four hurricanes disrupted power supplies in 62 Florida counties. Telecommunication systems were also affected by hurricane forces. Approximately 18,000 utility crew members were called in from around the Southeast, in accordance with mutual aid agreements. Still, the repair process required more than 2 weeks to complete. Floridians were asked to be patient as the late summer heat made conditions nearly unbearable (Florida Department of Environmental Protection, 2004). In 2005, Hurricane Wilma caused power outages to 3.2 million of Florida Power and Light's (FPL) 4.3 million customer accounts. It was the largest outage in company history at that time and required almost 19,000 workers and several weeks to restore power to all customers. (Swartz, 2005) The good news is that through all of the practice at restoring power, FPL and other utilities have learned some lessons and are working to not only restore utilities quicker but also communicate with the public as they are doing so. They are also hardening their systems to weather future disasters. Following Hurricane Irma, FPL reported more than 5 million outages, however within a day was able to restore power to 1.1 million customers with what was considered to be the largest restoration workforce in U.S. history.

Pressures to rapidly restore utilities discourage or complicate system improvements, often requiring utility providers to rebuild systems with essentially the same designs that were in place prior to a disaster. The need to service customers almost always trumps mitigation. However, long-term recovery in uninhabitable areas may provide important windows of opportunity for mitigation. Investment in pre-disaster mitigation by utilities remains a critical element in enhancing recovery.

#### Agricultural Losses from Hurricane Damage or Lake Okeechobee Dike Breach

With an estimated \$1.397 in total agricultural sales for 2017-18, Palm Beach County leads the State of Florida, all counties east of the Mississippi River, and is one of the ten largest in the United States. Palm Beach County leads the nation in the production of sugarcane, fresh sweet corn, and sweet bell peppers. It leads the State in the production of rice, lettuce, radishes,

Chinese vegetables, specialty leaf, and celery.

In 2017-18, the 451,375 acres dedicated to agriculture represent 36% of the total land mass in the county. Palm Beach County is third in the state in nursery production. It leads the state in agricultural wages and salary with over \$316 million.

According to recent land use analysis, 16,298 acres of the unincorporated agricultural lands are located in flood zones; all of the acres are subject to high winds from hurricanes (Florida Department of Community Affairs, 2006). The incessant rains associated with tropical storms and hurricanes can cause severe flood damage to crops.

Flooding caused by a major failure in the Herbert Hoover Dike would have catastrophic economic consequences for farmers, their employees, and the local economy, perhaps even impacting the national food supply. While little can be done to prevent such agricultural losses, besides ongoing efforts to strengthen the dike, the government can assist by ensuring agricultural recovery is treated as a high recovery priority and fully leveraging financial assistance programs for farmers and the workers who will be essential to rebuilding the industry. Small farm operations cannot be overlooked.

### Social and Environmental Issues

***GOAL: Social Justice and Environmental Restoration. Palm Beach County shall promote social equity and environmental quality in all post-disaster recovery and redevelopment. Prevention of degradation will be the aim.***

#### Social Vulnerability Index (SVI)

According to the US Center for Disease Control, social vulnerability is defined as the characteristics of a person or group in terms of “their capacity to anticipate, cope with, resist and recover from the impact” of a discrete and identifiable event in nature or society. Characteristics that influence social vulnerability for the US population; among the most commonly accepted ones are age, gender, race, socioeconomic status, medical status, disability, and English language proficiency. The degree to which a community exhibits certain social conditions, including high poverty, low percentage of vehicle access, or crowded households, may affect that community’s ability to prevent human suffering and financial loss in the event of disaster. These factors describe a community’s social vulnerability.

As of this writing, FEMA has not developed guidance indicating how SVI will influence disaster recovery. Possible guidance could influence FEMA and other Federal recovery programs and funding. Until FEMA guidance is developed and released, the Florida Division of Emergency Management recommends awareness of the CDC SVI model and data.

#### Reducing the Incidence of Fraudulent and Unethical Practices

Unfortunately, some people see a disaster as an opportunity to make money; usually at the expense of victims. Fraud is rampant after a disaster, from internet scams misrepresenting the collection of donations to volunteers stealing donated items as seen recently in the Katrina Red Cross scandal (CBS News, 2006). Price gouging is also a common occurrence, although the State of Florida passed a law after Hurricane Andrew prohibiting price gouging after a declared disaster and set up



a hotline for reporting any occurrences (Florida Attorney General's Office, n.d.). There are also problems with unlicensed contractors taking people's money without finishing the job or doing shoddy work. The State issues badges to insurance adjusters to prevent hurricane victims from being taken advantage of by imposters (Insurance Information Institute, 2006). The insurance companies, FEMA, and the Red Cross are often the victims of fraudulent claims. These activities have the potential to negatively impact true disaster victims because some forms of assistance may be used up before they can be helped or the procedures for claiming assistance must become more rigorous. This could keep some people from being able to obtain assistance as quickly, or at all. This also creates more desperate disaster victims who may fall prey to predatory lenders as they try to make ends meet financially.

Another unethical practice that often occurs in a post-disaster environment involves the real estate market. Speculators often attempt to capitalize on an impacted coastline and offer quick money to devastated homeowners who either do not understand the true value of their property after a disaster or are so upset from the situation that they hastily wish to move far away to somewhere that seems safer (Musgrave, 2004). This is especially an issue for low-income and/or minority coastal communities. There is a constant pressure of gentrification in these areas even before a disaster but many of the residents are unwilling to sell because their family has always lived there or because of the sense of community they find there. After a disaster, left with very few possessions and perhaps unemployed, some see no choice but to sell. This was prevalent in the Gulf Coast in places such as Biloxi, where working class bungalow neighborhoods along the coast quickly disappeared (Apuzzo, 2005). The area is losing historic and unique neighborhoods, while a majority of the residents are not receiving fair compensation for their properties. Education prior to a disaster and available assistance after a disaster is needed in all these instances. Post-disaster outreach centers and hotlines can be important in advising people on their options and perhaps preventing decisions that will be regretted later.

#### Individual's Role in Preparing for and Recovering from a Disaster

A recent buzz phrase introduced by the White House surrounding public disaster awareness is "culture of preparedness." The *Federal Lessons Learned Report* recognized that "A Culture of Preparedness must build a sense of shared responsibility among individuals, communities, the private sector, NGOs, faith-based groups, and Federal, State, and local governments." "Individuals must play a central role in preparing themselves and their families for emergencies (The White House, n.d.)."

If individuals are prepared before a disaster strikes, the recovery process can be accelerated. Simple things, such as preparing a survival kit with a 10 day or more food and water supply, having a family evacuation or shelter plan, and businesses preparing continuity plans, could result in a less chaotic response period and allow government leaders and emergency managers to begin recovery efforts sooner. In addition, individuals or businesses could speed recovery if they had savings or emergency funds that could be used to make repairs or to acquire temporary or new permanent accommodations until assistance or insurance payments are received. On the federal level, a number of bills have been introduced in the House of Representatives, including H.R. 2818 Disaster Savings Accounts Act of 2017 and H.R. 1449 Emergency Savings Account Act of 2021. In the Senate, similar bills have been introduced recently including S. 1870 Enhancing Emergency and Retirement Savings Act of 2021. However, no such legislation has passed beyond introduction

in either chamber. This legislation would allow assistance to be targeted for those more in need who lack the financial ability to possess insurance or significant savings prior to a disaster event.

#### Adequate Health and Mental Health Services Available During Recovery

Local health and mental health facilities and services may be compromised and not be readily available following a disaster event. However, these services are especially critical and present an immediate need following a disaster. It has been documented that most hurricane-related deaths and injuries actually occur after the storm has passed during cleanup activities. There are numerous public health concerns in the post-disaster environment, including unsafe drinking water, carbon monoxide poisoning from improper operation of generators, lack of access to medications, and contaminated food supplies, among others. Unfortunately, there will likely be fewer health professionals to handle these issues and the increased occurrence of injuries. Securing assistance of doctors and nurses from hospitals or clinics in unaffected jurisdictions of the state will be vital to providing health services. (Hurricane-related Information for Health care Professional, n.d.)

Counseling is always a major need after a disaster as people try to cope with their losses. Cases of depression and domestic abuse are often much higher after a disaster. Drugs and alcohol are sometimes employed as a means to handle stress and trauma, opening the door for possible abuse. Mental health workers are rarely sought out by disaster victims as daily recovery and clean-up tasks take top priority. Assistance needs to be offered within the community and services need to be tailored to best serve the citizens. The county can explore the outreach potential of national organizations, such as the American Psychological Association to bolster counseling shortages.

#### Restoring Educational, Cultural, and Historic Institutions and Amenities

Palm Beach County has an abundance of educational, cultural, and historic amenities that contribute to its quality of life and attraction as place to live, work, and visit. Many, if not all of these prized, often irreplaceable, assets are at risk from disasters.

Educational institutions should be among the top priorities for restoration. Palm Beach County has ten institutions of higher learning; Palm Beach State College, Florida Atlantic University, and Palm Beach Atlantic University being the largest. Damage and closures of colleges and universities in the Gulf Coast area presented significant recovery problems, including enrollment, economic and research losses following Hurricane Katrina.

The County boasts being the “Cultural Capital of Florida” and the place where “Culture has Found its Place in the Sun.” Rich with more than 300 cultural venues, including renowned museums, art centers, centers for the performing arts, sports, nature and recreational venues and amenities, it is also ripe for suffering potentially significant economic and tourism losses if they are not preserved and redeveloped.

Historic downtowns, neighborhoods and museums, also abundant throughout the county, once destroyed, would be lost forever. If these amenities are overlooked during long-term recovery efforts repopulation of the area and resumption of tourism will greatly suffer.

### Coastal and Aquatic Restoration

Coastal erosion, a constant and familiar occurrence in Palm Beach County, is exacerbated by storm-caused disasters. Average annual erosion rates along the Atlantic shoreline range from two to three feet. This is a larger concern for barrier islands, which absorb the brunt of wave energy and experience increased erosive processes. The Florida Department of Environmental Protection has designated 33 miles of Palm Beach County's 47 miles of coastline as "critically eroded". Coastal storms and hurricanes can change the shoreline dramatically in a short period of time. In addition to sand erosion, coastal storms can also strip away protected mangroves and cut swaths through productive wetlands. Again, barrier islands are highly susceptible to erosion, as storm surge pushes sand beyond the dune system in a process sometimes referred to as the island "rolling over itself". Sand over-wash is problematic for coastal land owners because it can inundate properties and increase vulnerability by removing the beach as a defensive barrier (Beatley, et. al, 2002). Damaged coastal wetlands and mangroves can also increase the vulnerability of coastal development and increase erosion. Storms can also scour the sea floor causing damage to already endangered coral reefs.

In Florida, the Coastal Construction Control Line (CCCL) is intended to prevent development seaward of the extent of erosion caused by a 100-year storm. This regulatory boundary is established by the State and periodically re-evaluated to adjust for any changes to the coastline from additional erosion. Hardening practices, such as engineered jetties, groins, and seawalls, only exacerbate the problem, trading short-term protection for increased erosion rates in the long term (Beatley, et al, 2002). Nourishment projects are the most cost-effective and environmentally sensitivemethod to counter natural erosion. The Palm Beach County Department of Environmental Resources Management has project designs approved by the Florida Department of Environmental Protection and U.S. Army Corps of Engineers for nourishment, dune restoration, and stabilization. They also have annual contracts established for beach and dune restoration with pre-approved upland sand sources to facilitate a quick response for emergency repairs after a storm. These preparations for responding to erosion are essential but after a disaster, the possibility of larger setbacks or land acquisition should also be considered as a longer-term solution in areas of severe erosion. Whereas, impacted wetlands and mangrove stands may require widespread re-planting projects for shore stabilization.

### Adaptation to the Consequences of Sea Level Rise and Climate Change

Palm Beach County and its partners in the Southeast Florida Regional Climate Change Compact have recently launched an organized, collaborative effort to research and discuss the developing threats of climate change and sea level rise on the county and region and to begin developing adaptation strategies and action plans to minimize or mitigate future impacts. Several appendices throughout this PDRP provide detailed descriptions of the findings and actions to date and adaptation strategies.

### Water Pollution from Sewer System Failures

Sewer system failures in the aftermath of a major disaster are commonly attributed to pump station electrical outages. In areas of little relief and flat topography, pump stations are needed to move waste to the treatment plants. Another concern during a hurricane event is wastewater outflow. When a treatment plant exceeds capacity with inordinate amounts of storm water inflow, intake lines overflow into surface water bodies. In each case, inability to treat wastewater will

result in the pollution of natural resources and warnings to avoid water bodies for economic and recreational purposes. The contaminants typically include bacteria, nitrates, metals, trace quantities of toxic materials, and salts. These contaminants can destroy productive aquatic habitats. Humans also must avoid contaminated waters, as bacteria can spread disease from the ingestion of microorganisms such as *E. coli*, *Giardia*, *Cryptosporidium*, and Hepatitis A (Oregon State University Extension Service, 1997). In Palm Beach County, where tourism is a major part of the economy, contaminated waters can result in beach closures and fishing prohibitions. Such orders can last days or weeks depending on the severity and quantity of the contamination. Of particular concern are low-income individuals who often fish for their meals in county waterways. Addressing weaknesses in the systems prior to a disaster and using generators or other means to prevent water pollution is, of course, ideal. When pollution does occur after a disaster, rapidly identifying the source and stopping it are the main courses of action in addition to notifying the public and monitoring the situation.

#### Increased Fuels for Wildfires on Conservation Lands

Palm Beach County's risk of catastrophic wildfires from a disastrous storm event will increase due to down trees and vegetation. The accumulation of vegetation debris will dry out and be very conductive as fuel to ignite wildfires. The dry debris will increase fire intensity, hazards, and create obstacles for the Florida Forest Service and local firefighters to suppress wildfires. The risk of destruction from wildfires in Palm Beach County Natural Areas due to an increase of dry fuels due to storm event may increase vulnerability of private property and occurrence unhealthy durations of smoke. To mitigate the risk of wildfires post storm, education of the public and a coordinated effort of mechanical fuel reduction must be a strategic priority.

Hurricane debris also hinders fire suppression efforts by Division of Forestry and local firefighters. One of the main wildfire suppression strategies is to create fire lines using tractors to contain the fire. The size of the downed trees and the way they have become piled on the ground make it difficult to plow a fire line and navigating through the debris slows down the process. These obstacles can also be a safety hazard for fire fighters retreating from a blaze. While wildfires are always a concern in Palm Beach County forests, the large increases in dry fuels have greatly increased the vulnerability of area homes. (Yunas, public presentation, 22 March 2006) To effectively deal with the increased risk of wildfire that can occur after a hurricane, prior planning, education, and a coordinated strategy to reduce the added wildfire fuels are recommended strategies.

#### Unhealthy Levels of Mold in Damaged Structures

Post-disaster mold problems have become an increased concern following recent disasters. Mold growth often starts in homes that have been flooded or have structural leaks caused by wind damage. New Orleans was a worst case scenario for mold contamination. Up to 80% of residential structures sustained severe flood damage. (Centers for Disease Control and Prevention, 2005) Extended flooding and the delay in cleanup after the flood waters had receded resulted in such high levels of mold that many structures had to be demolished or completely gutted. A study done in Central Florida after the 2004 hurricane season found 38% of structures tested to be contaminated with the *Stachybotrys* mold genus which is associated with high water damage and produces dangerous mycotoxins (Cortes, 2005). Most Palm Beach County mold situations have

been caused by unaddressed post hurricane roof leaks, although inland flooding is also a factor. The poor and elderly are often the most affected.

There are many species of mold that can cause respiratory infection and immunosuppressed people have a higher risk of infection. Exposure to mold can lead to asthma attacks, eye and skin irritation, and allergic reactions. It can lead to severe infections in people with weakened immune systems (Centers for Disease Control and Prevention, July 28, 2020). It is generally recommended that all visible mold should be cleaned from inside structures using proper protective gear and that certified professionals should be used to clean extensive mold damage. Property owners must be careful of mold remediation scams, however. Florida Statute 468.8419 requires any mold assessment to be performed, or offered to be performed, by an assessor with documented training in water, mold, and respiratory protection. A mold remediators must be licensed by the State of Florida.

Palm Beach County can work to educate homeowners and employers of the health risk for anyone exposed to mold for extended periods. Renters and employees can also be empowered through education so that they do not impair their health due to the negligence of the property owner. Preventing mold from getting a foothold in a structure is the best solution and can be accomplished through education in addition to speeding repairs to structures.

### Redevelopment and Mitigation Issues

***GOAL: Disaster Resilience. Palm Beach County shall endeavor to redevelop in a sustainable manner by institutionalizing hazard resilience and mitigation. Public participation and the efficient use of public funds will be standard features of redevelopment.***

#### Ability to Rebuild Stronger Structures

Recent hurricane impacts highlight the value of stronger building codes since most of the severely damaged structures were built prior to introduction of post-Hurricane Andrew standards and practices. After Andrew, the insurance industry created the Institute for Business and Home Safety (IBHS) which has been educating people on mitigation techniques and studying ways to further enhance structures' ability to withstand hurricane force winds (Insurance Information Institute, 2006). Also, the State legislature adopted a statewide Florida Building Code (FBC), which recognized the threat of hurricanes and the need to harden structures against such events. Broward and Miami-Dade Counties operate under a slightly different code, including a higher wind load standard, than Palm Beach County. Given the predicted increase in occurrence and intensity of hurricanes in the coming decade, the County would be wise to consider raising its wind load standards to a comparable level.

Although the County is unable to independently alter the code, as new advances in construction take place, Palm Beach County and its municipalities can encourage the legislature to increase the stringency of the FBC. The county analyzes areas impacted by storm events to record the effectiveness of the FBC versus those structures erected prior to adoption of the more stringent code (R. Caldwell, personal communication, May 11, 2006). This program should be continued and its findings used to justify the need to assist homeowners of substandard housing. Policy guides what level of damage to a structure warrants bringing a structure up to current codes. Currently the FBC and Palm Beach County's Comprehensive Plan (Coastal Management Element

Policy 2.5-b) require a structure that is damaged 50% or more of its value be brought up to code during repairs (Palm Beach County, 2005). An incentive for voluntary strengthening of structures beyond code is another way the County could encourage disaster resilience. Model homes for the IBHS Fortified for Safer Living program cost from four percent to nine percent more to build, but surveys show that on average people are prepared to pay up to six percent more for a disaster-resistant dwelling (Insurance Information Institute, 2006). However, the current real estate market in Palm Beach County makes any increase in housing costs another hurdle to those seeking affordable housing. Education on the benefits of stronger building codes should be a priority during reconstruction efforts. The FBC will be required of new and rebuilt structures, but education programs can motivate homeowners to take the next step toward disaster resilience.

### Ensuring Strong Code Enforcement

After Hurricane Andrew, questions were raised as to why there was so much destruction when South Florida had some of the strongest building codes in the country. A Dade County Grand Jury determined that lax code enforcement was a major culprit. Experts estimated that between 25% and 40% of the losses were avoidable. (Insurance Information Institute, 2006)

Since Andrew, the Insurance Service Office has developed a building code effectiveness rating for local governments which takes into account such things as the building code enforcement budget and the qualifications of building inspectors. This Building Code Effectiveness Grading Schedule (BCEGS) is then taken into consideration in determining property insurance rates (Insurance Information Institute, 2006). In the rush to rebuild, there is always the possibility that lax code enforcement could again come into play and could hinder efforts at disaster resilience. The BCEGS grade is only reevaluated every five years by the Insurance Service Office. To make sure standards do not slip between grading and in the busy rebuilding phase after a disaster, the County and municipalities could require internal reports to the commission or council annually along with specialized training for code enforcement officers on mitigation issues. It is also important to make sure that non-local inspectors who may be brought in to assist after a disaster through a mutual aid agreement are as well trained in the FBC and as stringent as local inspectors. In addition, making sure only certified contractors who are also trained in the FBC and the latest mitigation techniques are employed in the county will assist the County in achieving disaster resilience.

### Communicating with and Involving the Public in Recovery and Redevelopment Issues

“At no time is the opportunity for public involvement in decision making greater than when a community is faced with the practical problems of recovering from a disaster (Natural Hazards Center, 2001).”

Redevelopment after a disaster opens up many opportunities to change problems that existed in the community before the disaster as well as simply rebuilding. Citizens must be involved in these important decisions if the community wants to better itself and avoid a disenfranchised citizenry in the future. “Public buy-in is essential to avoid making decisions in the immediate aftermath of a disaster that may compromise what the community might achieve in the long term (Natural Hazards Center, 2001).” A participatory approach to making redevelopment decisions is not easy, however, and will require time and resources. Also, if the public is going to be asked for their input, there should be an actual desire to use the input in the plans and not simply disregard it.

Community involvement is not feasible in the immediate recovery stage after a disaster due to communication, mobility, displacement, and basic needs constraints. The media and community outreach centers, though, can be used to advertise the intent to involve the public in decisions once recovery is further along. Simply keeping the public updated on what decisions have or have not yet been made will promote involvement. Awareness programs prior to the storm can make citizens aware of the recovery timeline that may occur after the storm.

In the Gulf Coast, community-based recovery and outreach centers have been created through assistance from non-governmental organizations to try to receive input and educate citizens on recovery efforts. Poor communities have been the targeted audiences for these outreach centers. Also, due to so many residents still being displaced far from their cities and homes, efforts have been made to involve these people as well (Oxfam America, n.d.). Recovery outreach centers and alternative means of communicating with displaced persons must be considered should Palm Beach County ever experience a disaster as well.

#### Limiting Redevelopment in Hazardous Areas

Decisions on locations of allowable redevelopment will set the stage for future disaster events. In this regard, post-disaster redevelopment is the connection to the community's mitigation efforts. Citizen demands can create political pressures to allow a complete recreation of that which was destroyed. Allowing complete reconstruction can ease the administrative hassles that typically accompany limitations on development, such as moratoria or increased setbacks. However, allowing wholesale redevelopment foregoes the opportunity to reassess the hazard exposure and vulnerability of commercial and residential areas, as well as the locations of public infrastructure. Other potential missed opportunities include, implementing mitigation initiatives, increasing public safety, and fulfilling a previously formulated vision for community redevelopment (FDCA, 2006). Allowing redevelopment in areas that have been destroyed without including enhanced mitigation, or at least assessments, puts the burden of paying for future disasters on taxpayers who have to assume some of the response and recovery costs from those hazardous development decisions. New Orleans had heated battles over allowing redevelopment everywhere, as Mayor Nagin promised his constituents, or creating smart land use patterns to replace development in extreme hazard areas with green space as an advisory committee suggested (Roberts, 2006).

Attempting to establish and implement policies limiting redevelopment in hazardous areas prior to a disaster can be politically volatile. However, post-disaster these decisions may be unavoidable. Public education and consideration of policy options prior to a disaster may help to lessen public and political pressures when an event occurs and allow for more rational and disaster resilient choices. Public participation in redevelopment decisions is key and can be carried out through a visioning process during the post-disaster recovery period. The Florida Department of Community Affairs is prepared to assist with expedited review of land use amendments, allowing the County to act quickly during redevelopment. Securing funding for strategic land acquisition after a disaster is also essential.

#### Including Mitigation in Rebuilding

After a disaster, there may be a rush to rebuild as people wish to return to some sense of normalcy. Often in this rush, they pass on opportunities to include hazard mitigation so that the same destruction does not happen again. During this period of increased extreme events, it is imperative

that people begin to realize the benefit of mitigating the problem rather than just rebuilding exactly as before. Education and financial assistance are essential to incorporating mitigation into rebuilding. Many people may not be aware of simple or cost-effective mitigation techniques that could be included as they repair their homes and businesses. Others may be aware of mitigation solutions but do not feel they have the financial means to include them. Addressing these gaps is both a pre-disaster and post-disaster concern. The Local Mitigation Strategy program is the County's preferred mechanism for developing and delivering education campaigns for hazard mitigation prior to a disaster. It is after a disaster, however, when a homeowner already has to make repairs or rebuild, that they may be more receptive to undertaking mitigation projects. Reaching these people quickly before they begin rebuilding is necessary and could be done by providing education material and experts to answer questions at recovery outreach centers and local hardware stores. Also, education of contractors so that they inform property owners of mitigation techniques that could be used is a good outreach method. Offering grants, loans, or other incentives to address the added cost of mitigation is another way to encourage inclusion of mitigation during redevelopment. Combining mitigation with investments in energy saving systems and features that can help offset mitigation costs can be an attractive option for property owners to consider.

#### Including Affordable Housing in Redevelopment Projects

Palm Beach County has experienced a chronic shortage of affordable, workforce housing. Although the County has supported an ambitious workforce housing program designed to ensure an adequate supply of available affordable housing, a lack of affordable housing continues to be an issue. Affordable residences are disproportionately damaged during hurricanes. Consequently, the need for affordable housing becomes even more acute after a disaster and can lead to socioeconomic crisis if not dealt with proactively and quickly. To make matters worse, workforce housing is especially important for firefighters, police, teachers, service workers and other members of the general workforce who will play key roles in rebuilding the community. A lack of available affordable housing could greatly jeopardize the ability of a service intensive community such as Palm Beach County to retain workers and bounce back after a major disaster.

Palm Beach County developed a vision for its land use planning efforts years ago that has revolved around maintaining a diverse community that includes urban and rural communities and all levels of income households. To maintain that vision after a disaster will mean that affordable housing continues as a community priority both pre and post-disaster.

#### Disaster-Resilient Public Funding Decisions

The public expenditure of funds on capital improvements (e.g., roads, wastewater treatment and other public facilities) in hazard areas can encourage and facilitate growth, and thus increase the population exposed in hazard areas. Repairing existing infrastructure that supports development in hazardous areas spreads the burden of paying for possibly repetitive repairs due to hazard damage to all of the taxpayers and subsidizes those who choose to live in the hazardous area. These public funding decisions impair the ability of the County to become more disaster-resilient and are not efficient uses of public money. Of course, in most cases repairs must be made to infrastructure damaged by a hurricane simply because the development already exists and services cannot be denied to those residents. Subsidizing those who live in the hazard area may be an option, however. Special taxing districts could be created for areas with recurring funding needs



for hazard damage. Also, after a disaster outside assistance from the state or federal government may be available to make it feasible for the local government to make a more disaster resilient choice. Outside money may be available to undertake projects that were previously considered infeasible financially, such as elevating a damage-prone road, relocating a police station, or flood-proofing a sewage treatment plant (Natural Hazards Center, 2005). Having a current assessment of at-risk public facilities, mitigation options and/or potential alternative locations for each might make post-disaster decisions about how to use funding in a more disaster resilient fashion more feasible.

## Appendix VII: Observations/Guidance of Key Recovery Issues

This section provides detailed discussions and guidance on select key topic issues relevant to post-disaster long-term recovery in Palm Beach County. In addition to information adapted from the 2012-2013 PDRP, it also incorporates largely verbatim descriptions, analysis and guidance on key topic issues offered in the state's *Post-Disaster Redevelopment Planning: A Guide for Florida Communities*. Information has been edited and tailored to be consistent with the Palm Beach County's organizational capabilities, concept of operation and post-disaster redevelopment program and plan.

The issues have been classified using Department of Community Affairs's suggested phasing typology:

*Phase 1 - actions that should be undertaken at a minimum in the initial phase of recovery and redevelopment. Indicated with a prefix as (1)*

*Phase 2 - actions that should be undertaken as soon as resources are available (simultaneously with Priority 1 actions or in the subsequent planning phase). Indicated as (2)*

*Phase 3 - actions that should be addressed as soon as a solid foundation for recovery and mitigation can be established. Indicated as (3)*

Following is a summary listing of the key issues selected for discussion, with their phased classifications. The balance of the section provides detailed description of each topic issue.

### Government Recovery Issues

- (1) Fair and equitable distribution of disaster assistance
- (2) Potential threat of municipal insolvency
- (2) Avoiding erosion of local control with the influx of federal/state assistance
- (3) Sustaining essential government services in the face of economic crisis

### Infrastructure and Public Facilities

- (1) Rapid restoration of power and other private utilities
- (1) Infrastructure for temporary recovery operations
- (1) Debris management
- (1) Financing infrastructure and public facilities repair
- (2) Infrastructure and public facilities mitigation and historic considerations
- (3) Relocation of vulnerable infrastructure and public facilities
- (3) Regional infrastructure consideration
- (3) Enhanced infrastructure capacity to priority redevelopment areas

### Land Use

- (1) Phased reconstruction and streamlined permitting
- (1) Build back standards for nonconforming and substantially damaged structures
- (2) Controlling long-term post-disaster blight

- (2) Reducing disaster vulnerability through voluntary mitigation programs
- (3) Prioritizing areas to focus redevelopment
- (3) Historic preservation and restoration

#### Housing

- (1) Availability of temporary housing/long-term sheltering
- (1) Temporary housing siting criteria, provision, and removal
- (1) Ability to reconstruct homes rapidly
- (2) Transitioning residents back to permanent housing
- (3) Rebuilding affordable housing
- (3) Encouraging homeowners to incorporate mitigation during rebuilding

#### Economic Redevelopment

- (1) Resumption and retention of major employers
- (1) Small business assistance
- (1) Preferential use of local/regional business capabilities and workers in recovery
- (2) Workforce retention
- (2) Tourism renewal
- (3) Physical economic redevelopment projects
- (3) Agricultural losses from hurricane damage or dike breach
- (3) Opportunities to sustainably restore economic vitality

#### Health and Social Services

- (1) Health facility restoration
- (1) Social services to socioeconomic vulnerable populations
- (1) Re-establish public safety service levels
- (1) Public safety service levels re-established throughout the community
- (1) Coordination and assistance for non-governmental organizations and volunteers
- (1) Provide for special needs populations throughout long-term redevelopment
- (1) Public transportation restoration and improvement
- (2) Reopening schools
- (2) Behavioral health assistance
- (2) Medical personnel retention and recruitment
- (3) Reducing Incidence of fraudulent and unethical practices
- (3) Health-related pollution and environmental justice
- (3) Quality of life factors
- (3) Preserving the county's rich culture and heritage
- (3) Restoring institutions of higher education

#### Environmental Preservation and Restoration

- (1) Beach and dune restoration
- (1) Environmental contamination
- (1) Environmental and historical review of temporary sites
- (2) Natural land and habitat restoration
- (3) Green rebuilding
- (3) Parks and Urban Forest Restoration

- (3) Water Pollution from Sewer System Failures
- (3) Preventing/Slowing Salt Water Intrusion into Fresh Water Sources
- (3) Increased Fuels for Wildfires on Conservation Lands

### Local Government Recovery Priorities

Local government has the primary role of planning and managing all aspects of the community's recovery. Individuals, families, and businesses look to their local government to articulate recovery plans and needs. Plans should include a *Continuity of Government (COG)* and *Continuity of Operations (COOP)* elements. If local government becomes overwhelmed, it may need to request and secure backup staffing, recovery expertise, leadership, or other forms of assistance. State and Federal officials are available to assist and support development and implementation of local recovery plans and activities within their charters when needed and requested. The majority of mitigation measures are adopted, codified and enforced at the local level through the Local Mitigation Steering Committee. It is up to local government officials to ensure State and Federal standards relating to recovery are adopted and to enforce them. Examples include participation in the *National Flood Insurance Program (NFIP)* and enforcing building codes.

Leadership in preparing hazard mitigation and recovery plans, raising hazard awareness, and educating the public on available tools and resources to enhance future resilience (e.g., Chapter 7 of the *Americans with Disabilities Act (A D A) Best Practices Tool Kit*, concerning emergency preparedness and people with disabilities) is also a responsibility of local government. Finally, county and municipal governments, as employers, need to oversee implementation of plans to ensure employees are protected and assisted during emergencies. Seizing opportunities to share public information on the recovery process, status, and plans is important to maintaining community coordination and focus.

Representative agencies and organizations that will play a major role include:

#### *Federal/State/Regional Agencies and Organizations*

- FEMA (including FEMA (ESF #14))
- Federal Assistance Agencies
- Florida Division of Emergency Management
- Florida Department of Economic Opportunity
- Regional Metropolitan Planning Organizations (TCRPC)
- Florida Department of Financial Management & Budget
- Florida Department of Financial Services

#### *Local Government Departments*

- Board of County Commissioners/City Councils
- County Administration/City Managers
- League of Cities
- County and Municipal Departments
- Department of Public Safety/DEM
- PDRP Executive Committee/Working Groups

- Legislative and public Affairs

#### *Other Organizations*

- Treasure Coast Regional Planning Council

Among the post-disaster responsibilities of local governments are such things as:

- Organize, develop, implement and modify recovery, mitigation, and land use plans as needed.
- Ensure integrated efforts across government offices, the private sector, and nongovernmental organizations (NGOs) during the formulation and implementation phase of recovery projects and activities, including raising and leveraging recovery funds.
- Lead efforts to restore and revitalize all sectors of the community, including local critical infrastructure and essential services, business retention, and the redevelopment of housing units damaged, disrupted, or destroyed by the disaster.
- Manage rebuilding so that risk reduction opportunities are optimized and comply with standards for accessible design.
- Communicate and coordinate with other levels of government involved in recovery.
- Establish metrics to evaluate and communicate progress and the achievement of local disaster recovery objectives to all populations.

Following are key issues that will be faced by the County and municipal governments:

#### Sustaining Essential Government Services in the Face of Economic Crisis (3)

Catastrophic disasters cause serious and long-term disruptions to much of the core economic activity necessary to sustain essential governmental services. Unfortunately, such disruptions do not relieve local governments of their public service and financial obligations. In fact, these obligations will increase significantly in the aftermath of the event. With tax bases in disarray and reserves and insurance sapped or depleted, local governments must meet the three-fold challenge of, continuing to provide services, rebuilding damaged infrastructure, and servicing existing debt.

Almost immediately after a catastrophic event and well into the recovery period, difficult decisions need to be made by the County and each local government as to how to replenish revenue bases or to otherwise compensate for shortfalls. With reserves and insurance depleted, recovery may take months or years. Redevelopment of a fully sustaining revenue flow can take a very long time. As with Hurricanes Andrew, Katrina and other catastrophic events, the economic landscape may never be the same and economic redevelopment may resemble a patchwork quilt.

The unexpected loss of revenue due to catastrophic disaster damage, coupled with the increased financial burden of humanitarian relief, reconstruction and economic redevelopment will almost certainly require local governments to turn to state and federal government for financial assistance.

#### The Potential Threat of Municipal Insolvency (2)

By virtue of their size, limited reserves, and limited revenue sources, many Palm Beach County municipalities, unless well insured, will likely have difficulty weathering the economic impacts of extreme disaster events on their own. What do municipalities do when they suddenly become

insolvent and the prospects of recovery through traditional revenue sources or tax increases have been blown away?

What constitutes municipal insolvency? Insolvency means the municipality is either is not paying its debts or will not be able to pay its debts as they come due. Because municipal assets are not subject to seizure and sale, insolvency of a municipality is not determined simply by examining its current balance sheet. Determination of a municipality's insolvency requires a comprehensive cash flow analysis of factors including multi-year cash flows, available reserves, ability to reduce expenditures or borrow, and legal opportunities to postpone debt payments. The municipality is expected to continue operating and to provide at least a minimal level of services. A municipality's taxing capacity also enters into the analysis of insolvency. Although a municipality need not exercise its taxing authority to the fullest extent possible before a court can deem it insolvent, a failure to consider any reasonable tax increase may lead a court to conclude that the good faith requirement has not been met.

When the Governor's office has been notified by local government officials or the Auditor General that a jurisdiction is in a state of financial emergency, it is then charged with the responsibility of determining what level of state assistance, if any, is appropriate and needed.

Distressed local governments can turn to a number of options short of default or bankruptcy to put their fiscal house in order. These include:

- cutting expenditures
- raising taxes
- postponing payment of obligations
- drawing down reserves
- renegotiating debt obligations to reduce or defer payments
- borrowing from government entities or commercial lenders.

Some of these solutions available to local governments, such as borrowing, refinancing bonds, or postponing payments on other obligations, provide temporary relief but may increase costs in the long run. For local governments that are experiencing only a temporary disruption in cash flow, these options can provide the needed cover until their normal revenue streams are restored. In the case of a public entity with longer-term problems, short-term fixes may just delay the day of reckoning and compound the problem.

Other remedies, such as raising taxes or cutting services, may actually hinder the municipality's ability to stabilize itself and recover. This would occur where taxes rise or services fall to a level that discourages investment or results in disinvestment. Under those circumstances, the disadvantages of default or bankruptcy must be weighed against the cost of the municipality continuing to meet its obligations. Where the cost to the community's health is too high, bankruptcy may necessarily become an option to consider.

#### Fair and Equitable Distribution of Disaster Assistance (1)

By law the Federal government and thus state and local government are charged with ensuring that all relief and assistance is provided in an equitable and impartial manner (42 USC Ch. 68).

Nevertheless several recent disasters, including the World Trade Center attack and Hurricane Katrina, have led government officials, public health agencies, and emergency planners to conclude that further improvement in national, state, and local emergency planning and response and recovery practices are needed to ensure equitable access to disaster assistance.

Palm Beach County is the largest county in Florida by area, with widely dispersed population centers of varying sizes and makeup. Distributing disaster assistance equitably will be logistically difficult and an administrative challenge, particularly with regard to some of the more geographically isolated communities and open space areas and special needs populations. There are significant disparities in economic status, as was evident in New Orleans following Hurricane Katrina, which will necessitate increased and/or specialized assistance for special needs populations. Certain demographic segments, especially low income, non-English speaking, the elderly, and physically handicapped will require greater attention and assistance in the post-disaster period.

The perception of inequality can raise tensions in an already tense post-disaster atmosphere. Communication and public involvement in how community assistance funds are used can help alleviate some of this tension.

#### Avoiding Erosion of Local Control with Influx of Federal and State Assistance (2)

After a declared disaster event, and especially one of catastrophic proportions, state and federal agencies move in to assist and, if local capabilities and plans are inadequate, may sometimes need to take over or lead recovery efforts. The very concept of a major disaster is that local capacity to respond is overwhelmed. Local officials, staff, and their families are victims themselves of the disaster event, and help from nearby communities cannot be provided because they are usually impacted as well. A major or catastrophic disaster is also a matter of media and political attention and the Governor and President need to be involved at least symbolically to show support and assure stability (Quarantelli, 2005). While occasionally this sort of outside assistance can create territorial tensions, it is generally welcomed and not questioned. This can become a problem, however, if some local presence is not integrally involved to guide outsiders on issues specific to the area. It becomes particularly problematic if outside control persists beyond response and immediate recovery phases into redevelopment decisions. New Orleans, with hardly any local staff left due to an inability to pay them, was forced to rely heavily on outside assistance during the early stages of planning recovery and redevelopment. With a plan in place prior to a disaster, Palm Beach County should have a better chance of retaining or regaining control of decisions that have important implications for its future.

FEMA ESF #14, Long-Term Community Recovery, is the federal entity most likely to be mobilized if the County and state request federal assistance. It is the primary arm of the federal government that can arrange for and coordinate a full range of federal agencies in providing technical, operational and financial assistance. It behooves the County to establish a working relationship with ESF #14 and its federal primary and support agencies to understand in advance what will be needed to work productively with them from day one.

## Infrastructure and Public Facilities

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Restoration of infrastructure and critical public facilities after a disaster is a prerequisite for recovery. Such priorities are addressed in local government and private utility and infrastructure companies' emergency response and short-term recovery plans. There are long-term redevelopment considerations for infrastructure restoration, however, that must be weighed in conjunction with land use, environment, housing, and economic redevelopment issues. Taking advantage of opportunities to upgrade, mitigate, or even relocate infrastructure or public facilities after a disaster should be addressed. Advanced planning allows a community to make deliberate decisions about redevelopment that they may otherwise have had less opportunity to do during the post-disaster rush to rebuild. Decisions about infrastructure reconstruction will influence private redevelopment decisions, and using disaster repairs as an opportunity to include hazard mitigation allows a local government to lead by example.

There are many agencies, jurisdictions, and stakeholders involved in providing infrastructure, public facilities, and utility services. Before and after a disaster, these private and public entities need to establish communication and coordination procedures to ensure that long-term recovery and redevelopment occurs in an efficient and organized manner. Each agency or company should have its own recovery plan; however, if any opportunities for directing redevelopment are to be pursued then coordination and communication are critical.

Representative agencies and organizations that will play a major role include:

### *State/Regional Agencies and Organizations*

- Florida Department of Transportation
- Florida Division of Emergency Management
- Regional Metropolitan Planning Organizations

### *Local Government Departments*

- Environmental Protection
- Facility Management
- Historic Preservation
- Parks and Recreation
- Public works
- Solid waste/ Sewer/water Resources
- Transportation

### Rapid Restoration of Power and other Private Utilities (1)

As anyone who lived in Palm Beach County during the 2004 and 2005 hurricanes can attest, recovery cannot begin in earnest until major utilities, especially electricity, are restored. Simply trying to get somewhere in the county can be difficult when most traffic signals are out and curfews due to dark and dangerous streets are a constant reminder to residents of their inability to return to normal daily life. Power and telecommunication outages keep most businesses from operating and result in large disruption costs that business owners must absorb. Telephone and cell phone, water, and sewer service failures are also issues that may slow recovery



In 2004, four hurricanes disrupted power supplies in 62 Florida counties. Telecommunication systems were also affected by hurricane forces. Approximately 18,000 utility crew members were called in from around the Southeast, in accordance with mutual aid agreements. Still, the repair process required more than two weeks to complete. Floridians were asked to be patient as the late summer heat made conditions nearly unbearable (Florida Department of Environmental Protection, 2004). In 2005, Hurricane Wilma caused power outages to 3.2 million of Florida Power and Light's (FPL) 4.3 million customer accounts. It was the largest outage in company history at that time and required almost 19,000 workers and several weeks to restore power to all customers. (Swartz, 2005). The good news is that through all of the practice at restoring power, FPL and other utilities have learned some lessons and are working to not only restore utilities quicker but also communicate with the public as they are doing so. They are also hardening their systems to weather future disasters. Following Hurricane Irma, FPL reported more than 5 million outages, however within a day was able to restore power to 1.1 million customers with what was considered to be the largest restoration workforce in U.S. history.

Pressures to rapidly restore utilities discourage or complicate system improvements, often requiring utility providers to rebuild systems with essentially the same designs that were in place prior to a disaster. The need to service customers almost always trumps mitigation. However, long-term recovery in uninhabitable areas may provide important windows of opportunity for mitigation. Investment in pre-disaster mitigation by utilities remains a critical element in enhancing recovery.

#### Infrastructure for Temporary Recovery Operations (1)

After a disaster, temporary recovery needs for infrastructure arise, particularly related to temporary housing. The long-term implications of temporary recovery operations are often related to the precedent set by providing infrastructure to a location. For instance, a temporary housing group site that is placed in a green field outside of the jurisdiction's urban service area could easily lead to public pressure to develop the area since it is demonstrated that infrastructure can be extended, and the site has already been cleared and given transportation access. Using infrastructure in a temporary manner is wasteful when the expense of placing that infrastructure could have been spent on placing or enhancing infrastructure capacity to a site encouraged for permanent development. Local government utilities and public works staff can collaborate with emergency managers to come up with creative ways that temporary recovery operations could be preplanned in a way that would also benefit community capital investment goals. The need for flexibility and to use property that is available to meet unique post-disaster demands will require that this sort of collaboration happen on an annual basis to brainstorm scenarios for creative, temporary infrastructure re-use depending on current opportunities.

#### Debris Management (1)

Debris removal is one of the first things that must be finalized before recovery and redevelopment can progress. Major disasters, however, can generate massive quantities of debris that will exceed local capabilities to manage and take months to clear and dispose of. Hurricane Andrew, a relatively compact hurricane, generated an unimaginable 43 million cubic yards of disaster debris in Miami-Dade County.

Debris management, especially involving construction and demolition debris easily extends into the long-term recovery and redevelopment period. Palm Beach County maintains a comprehensive debris management plan which is based on a Category 4 hurricane scenario. Under the plan, Palm Beach County's Engineering Department (PBCENG) will coordinate with and support the SWA in the permanent removal, storage, grinding, and disposal of all disaster-related debris from public property. Private property debris management commonly slows and complicates removal. The disposal of private debris is often seen as a responsibility of local government. However, it can become a contentious issue when dealing with gated communities or private streets since the local government may not be reimbursed for collection there.

Debris clearance from PBC roadways and PBC public property will be accomplished using a combination of county crews and equipment, mutual aid providers, and private contractor resources. Municipalities are responsible for coordinating the permanent removal, storage, recycling and disposal of all debris within their jurisdictions. The SWA has entered into Interlocal Agreements with municipalities in Palm Beach County to allow for a cooperative effort in the management of disaster debris and securing reimbursement for eligible debris management costs from appropriate federal, state and local agencies.

Countywide critical facility sites that affect public safety have top priority for clearance, whereas private debris is collected later.

Disposal sites, such as landfills or composting areas, can quickly exceed normal capacity during recovery activities. Therefore, the plan divides the county into 12 debris zones, each with a corresponding collection site. For the most part these sites are current or future parks and recreation facilities or landfills. The Florida Department of Environmental Protection regulates these sites and attempts to ensure debris composting and collection does not adversely affect the lands for future uses.

Recycling and separation of debris types must be a focus of debris management as well. By keeping organic debris, such as tree limbs, separate local governments can then turn this into mulch, which can then be offered to citizens for landscaping projects after the storm. In addition, building materials are often mixed in with other debris, but items such as bricks could be salvaged. Finally, hazardous materials such as asbestos should not be mixed in with other debris. Education prior to a storm or immediately after an event is the best way to accomplish debris separation so that more can be recycled and save room in landfills.

Debris accumulation can present its own hazards. These risks can be partially mitigated prior to the disaster event through landscaping regulations and maintenance and building codes that address wind-borne objects. Large piles of organic debris can become public health concerns, providing a haven for rodents and pests. Once dry, debris becomes fuel for urban and wildfires.

On conservation or rural lands, the accumulation of debris becomes fuel for wildfires, another natural disaster in itself. The cost to collect and dispose of some debris can be defrayed through Public Assistance (PA) grants from FEMA. Debris located on public lands and right-of-ways are eligible, as is debris deemed to be a threat to public health and safety or economic recovery. The

grant requires matching funds from the county up to 25 percent of the cost for contracted or regular staff debris services.

Debris will need to be properly disposed of to prevent long-term impacts. Depending on the type of debris being handled, precautions have to be taken to limit soil and water contamination as well as air pollution. Debris that contains chemical contaminants will require separate processing and disposal. Coastal and waterway debris can pose a threat to plant and animal species, block water channels, and disrupt navigational operations. Landfill capacity is often limited, and incineration is not always an option due to emissions standards and the potential for air pollution. Debris removal should ensure that environmental areas do not suffer from prolonged exposure to pollutants, and clean-up procedures should consider sensitive environmental areas to minimize additional impacts. Where practical and appropriate, debris may be processed through a recycling and reuse program. Engineering and the SWA have a comprehensive state-of-the-art debris management plan.

Those involved in long-term recovery and redevelopment are encouraged to familiarize themselves with the County's Debris Management Plan which can be accessed on SWA's website.

### Financing Infrastructure and Public Facilities Repair (1)

When the County starts to make decisions about which structures to relocate after a disaster or which mitigation projects it should invest in pre-disaster, it needs to consider funding availability. Knowing where to prioritize spending requires some basic knowledge of what is covered under insurance policies; which projects will be eligible for federal reimbursement through the Public Assistance Program; which projects can be funded through grant programs; and if there are financial reserves that can be targeted for grant matching funds or local investment. When the County begins to address its infrastructure issues as part of the initial planning process or as a pre-disaster implementation action, it should launch an assessment of county or municipal insurance policies to determine which facilities are covered and for what extent of damage. The County can then use this assessment to make decisions about increasing coverage or financing repairs to uninsured structures. The County can also determine whether mitigation enhancements would be covered under current policies and Public Assistance or whether additional funding, such as HMGP, would be needed. The assessment should be updated periodically.

### Use of Public Assistance for Improved/Alternate Projects

County applicants may determine that improvements should be made while restoring a damaged facility or that the public would not be best served by restoring a damaged facility or its function at all. FEMA refers to these projects respectively as improved and alternate. Public Assistance possibly might be granted to approved projects such as:

#### Alternate Projects

- Repair or expansion of other public facilities;
- Construction of new public facilities;
- Purchase of capital equipment
- Funding of hazard mitigation measures in the area affected by the disaster.

### Possible Improved Projects

- Relocation of public facilities;
- Using improved materials;
- Capacity expansion
- Rebuilding to higher codes and standards

### Infrastructure and Public Facilities Mitigation (2)

Impacted communities can capitalize on opportunities post-disaster to mitigate damaged infrastructure and public facilities so that they are more resilient to future disasters. With pre-planning, mitigation can be included during repairs or rebuilding of the facility. If it is a critical infrastructure or facility that must be rapidly restored, the repairs can be done with the knowledge that they are going to be temporary until a more comprehensive rebuild can be done. For less critical facilities that are priorities for mitigation, the potential for delaying restoration in order to include mitigation should be considered in coordination with any plans for phasing private redevelopment as discussed in the Land Use section.

There are several funding sources available for infrastructure mitigation depending on the specific project the community is pursuing. FEMA's Hazard Mitigation Grant Program (HMGP) and Pre-Disaster Mitigation (PDM) Program can both provide assistance to conduct infrastructure retrofitting, as long as, 1) the project's end result is to protect and mitigate public/private property from natural hazards, and 2) there is a clear cause and effect relationship between the natural hazard and the damage. Infrastructure retrofit projects include measures that reduce risk to existing utility systems, roads and bridges.

### Relocation of Vulnerable Infrastructure and Public Facilities (3)

In order to prevent repetitive damage to infrastructure and public facilities, consideration should be given to relocating severely damaged infrastructure to less vulnerable areas instead of rebuilding in the same location. Relocating infrastructure may also serve community goals to direct development away from vulnerable locations such as the Coastal High Hazard Area. While relocation decisions ultimately will need to be made after a disaster, communities are encouraged to develop standards or criteria pre-disaster in order to assist in making post-disaster decisions about which facilities should be relocated based on factors such as damage, cost, and location. Preliminary plans for new facilities can even be drafted pre-disaster to speed relocation in the event of a disaster. Local government staff can also prepare for relocation opportunities by being aware of eligible funding requirements. A community could also consider investing in relocation projects for vulnerable facilities identified in the planning process before a disaster instead of funding major renovation or maintenance projects for those facilities.

### Regional Infrastructure Considerations (3)

After a major disaster, smaller communities will be dependent on the ability of larger communities that are home to regional infrastructure systems to recover quickly and efficiently before they can recover. The speed of restoration for facilities, such as international airports and seaports, and infrastructure, such as bridges and truck routes, in neighboring jurisdictions can greatly impact the timing of your community's recovery. In addition, some communities will become host to long-term evacuees from neighboring jurisdictions, which may require increased infrastructure

capacity. A best practice for post-disaster redevelopment planning is to coordinate regionally; this is especially important for infrastructure and public facility recovery.

The FEMA-sponsored Florida Catastrophic Planning Initiative may be a resource for understanding and integrating regional planning on infrastructure and facility restoration into long-term recovery plans.

### Enhanced Infrastructure Capacity to Priority Redevelopment Areas (3)

Assuming sustainable Priority Redevelopment Areas have been identified, advanced planning for equipping these areas with the infrastructure necessary to support targeted redevelopment after a major disaster will probably be important to the strategy's success. Priority Redevelopment Areas may require new infrastructure service or enhanced capacity if the intensity or density of development is to be increased to accommodate the transfer of population and businesses from more hazardous areas of the community (or neighboring communities) to sustainable redevelopment areas. Communities may be able to enhance or mitigate infrastructure and facilities in Priority Redevelopment Areas with post-disaster funding and waive impact fees as an incentive for residents and businesses to relocate to sustainable areas.

### Land Use

Land use is a central topic to address in the plan. Post-disaster redevelopment can provide communities the opportunity to change previous development decisions that may no longer be desired, leap forward in implementing its vision for the future, and become more resilient to disasters by avoiding or mitigating development in hazardous locations. Waiting until after a disaster to make land use decisions, the community may not be able to take advantage of these opportunities. On the other hand, making detailed decisions on where and what to rebuild before a disaster occurs is not always practical since the specific areas that actually become a so-called "clean slate" for redevelopment may not be the same as the pre-disaster projections. Implementing changes in land use after a disaster also must recognize private property rights and the financial burden that disaster survivors may face if required to rebuild to a higher standard. The land use actions of the PDRP should establish a flexible strategy for redeveloping in a way consistent with the comprehensive plan and in a manner that will increase the resiliency of the community to future disasters.

Representative agencies and organizations that will play a major role include:

#### *State/Regional Agencies and Organizations*

- Florida Department of Economic Opportunity
- Florida Department of State, Division of Historical Resources
- Regional Planning Councils

#### *Local Government Departments*

- Building and Code Enforcement
- Hazard Mitigation/Floodplain Management
- Historic Preservation
- Legal
- Parks, Recreation, and Natural Resource Management

- Planning/Growth Management/Community Development
- Zoning/Permitting

#### *Other Organizations*

- Community Redevelopment Associations
- Environmental Preservation Organizations
- Historic Preservation Organizations
- Local Mitigation Strategy working Group/Committee
- Property Rights or Developer Associations

#### **Phased Reconstruction and Streamlined Permitting (1)**

An established provision for a phased post-disaster temporary permit suspension (aka building moratorium) or other temporary restrictions on processing development orders is a vital tool for a local government after a major disaster. Temporarily modifying the local permitting process can provide for rapid disaster repairs while maintaining a reasonable amount of time for permitting officials and property owners to assess the situation and make smart redevelopment decisions. If there are no procedures in place for differentiating between the types of permit applications and when they will be processed, local government staff could be overwhelmed and the critical permits that need to be processed for recovery to advance could be delayed. It is very important to establish temporary post-disaster permitting procedures during “blue skies” so that public outreach can be conducted to ensure there are no misconceptions.

Moratoria should be phased based on the level of damage and/or the location so that structures or areas with light to moderate damage can quickly proceed with necessary repairs while those with severe damages can consider options for rebuilding to different standards or relocating. For instance, a developed barrier island could be designated to have a longer, temporary moratorium on building permit applications than less hazardous areas of the jurisdiction to allow the necessary time for infrastructure to be repaired and opportunities for hazard mitigation to be explored. Another option is to base the moratorium on the degree of damage to the individual structure. Hillsborough County Ordinance 93-20, for example, provides for an initial moratorium of 72 hours in the case of a disaster declaration, which is then followed by moratoria for destroyed structures (30 days), major damaged structures (10 days), minor damaged structures (four days), and new development (30 days).

#### **Build Back Standards for Nonconforming and Substantially Damaged Structures (1)**

Nonconforming and substantial damage policies generally state that a structure must be rebuilt to current adopted standards once it meets a certain damage threshold. Requiring post-disaster rebuilding to meet current safety codes and floodplain regulations is essential to building a more disaster-resilient community, but other standards might not be as necessary and could be a burden to disaster recovery efforts. Many communities require different aesthetic standards and other non-essential requirements, such as yard setbacks or commercial building design, in their land development regulations that a substantially damaged structure may be required to meet depending on the community’s build back policy.

Nonconforming uses could also be forced to conform after a disaster depending on the community’s policies. It is often unclear what standards a community will enforce concerning

nonconformities when rebuilding after a disaster and, in some cases, there may be conflicting standards among community plans. A review of policies and codes is recommended so that hard choices between what is fair to disaster survivors and moving the community further down the road to its vision for the future can be decided pre-disaster. Whatever is decided, it is important that build-back standards are clearly understood before a disaster occurs to ensure that they are enforced and do not become a matter that delays the redevelopment process.

Jim Schwab, senior research associate with the American Planning Association and principal author of *Planning for Post-Disaster Recovery and Reconstruction* (1998) has offered the following opinion regarding compromising for nonconforming issues: “In the aftermath of a disaster, it is both politically and practically unlikely that the community will want to take an uncompromising stand against allowing the repair and reconstruction of all nonconforming uses. Disasters may pose an opportunity to eliminate nonconforming uses or even reshape existing patterns of development along lines deemed more desirable, but they also generate enormous pressures from property owners to allow the re-establishment of the existing development pattern, complete with nonconforming buildings and uses... Under such circumstances, the community may need to face the question of where and how to compromise and for what reasons. Establishing clear criteria for allowing the re-establishment of nonconforming uses under disaster-related circumstances is recommended.”

### Controlling Long-Term Post-Disaster Blight (2)

After a major disaster, some residents may choose to not return to their homes or lack the necessary funds to repair them and many damaged commercial spaces may remain damaged and vacant as tenants go out of business or relocate to better locations and newer buildings – resulting in sporadic blight throughout the community. This could lead to weakness in investor confidence as well as public safety concerns and the inability of area residents to feel a return to normalcy. Blight abatement after a major disaster could be beyond the capability of traditional local code enforcement procedures. The county should review its protocols for the demolition of destroyed structures for opportunities to streamline the process so that unsafe, blighted structures do not remain in neighborhoods for unacceptable timeframes. Consideration should also be given to alternative methods for demolition cost reimbursement since the typical method of property liens may not be adequate to maintain demolition operations if condemnations are widespread and extended beyond Federal reimbursement program timeframes. Pre-disaster public awareness as well as outreach early on in post-disaster recovery will be integral to successful blight removal timelines. A key issue in dealing with blight is also ensuring that the abandoned property is made available to those who can and will rebuild it. Local government attorneys will need to determine the best way of streamlining the acquisition and reselling of adjudicated blight properties after a disaster.

### Reducing Disaster Vulnerability Through Voluntary Mitigation Programs (2)

Community resilience to future disasters can be greatly increased by taking advantage of post-disaster opportunities to build back differently in high hazard locations. This can be accomplished through regulations or through voluntary programs, such as acquisition, transfer of development rights, and mitigation incentives, thereby avoiding concern over private property rights infringement. A major opportunity to reduce vulnerability may result from hazard mitigation grant funding for land acquisition of highly vulnerable or damaged properties after a disaster or even

pre-disaster. These properties can be used to further efforts of environmental restoration or public recreation as well. Similar results can be obtained by establishing a transfer of development rights program that includes criteria for decreasing development rights in hazardous locations by transferring them to more sustainable areas. A key issue that all coastal communities must deal with in post-disaster redevelopment planning, however, is the difficult paradox that the most valuable real estate is also the most hazardous area of the community (Godschalk, 1985). The ability of coastal communities to make major increases in disaster resilience is limited by a strategy that only utilizes acquisition or transfer of development rights due to the high costs of compensating coastal property owners and the difficulty in finding willing sellers.

Another method of reducing vulnerability is to offer incentives for structural hazard mitigation during reconstruction. For each hazard, there is a multitude of proven building techniques that can mitigate disaster damages but are typically not required during repairs or reconstruction. Post-disaster monetary incentives in addition to education is a recommended strategy to encourage enough property owners to voluntarily rebuild to a higher standard such that it results in a discernible reduction in the community's vulnerability. This type of strategy would be an ideal crossover initiative between the LMS and Post-Disaster Redevelopment Plan, using the LMS as the tool for obtaining funding and for a pre-disaster education campaign while the PDRP lays out the strategy for preparing and implementing the post-disaster actions.

### Prioritizing Areas to Focus Redevelopment (3)

Limited time, funds, and materials are going to make simultaneous redevelopment of all damaged areas difficult. County communities may want to encourage redevelopment in areas that correspond to their vision for the future and those less vulnerable to disasters by prioritizing and incentivizing development in these areas. The best way to build resiliency to disasters is to direct future development to safe locations while minimizing or mitigating highly vulnerable types of development in hazardous areas. After a disaster, targeted sustainable redevelopment areas can provide immediate opportunities for redevelopment since they will have sustained less damage and can be prioritized for infrastructure restoration and expedited permitting. Allowing for rapid redevelopment in safe areas intended for increased future development can provide time to minimize vulnerable redevelopment or plan the sustainable reconstruction of areas severely impacted from the disaster. Designated priority recovery and redevelopment areas can also provide opportunities to locate temporary post-disaster uses more efficiently and consistent with future land uses.



#### Typology for Priority Redevelopment Areas

A Priority Redevelopment Area (PRA) is a regional or community center or a critical installation essential for disaster recovery and consistent with future land use plans. Priority Redevelopment Areas will receive focused and prioritized attention during the short-term recovery and long-term redevelopment periods and will serve one or more of the following redevelopment functions:

1. Rapidly restore centers of economic activity and critical facilities,
2. Provide a staging area for restoring nearby impacted communities,
3. locate recovery services in efficient and convenient hubs, and
4. Facilitate growth into disaster resilient centers.

Sustainable Priority Redevelopment Areas are areas that can be sustainably redeveloped to a higher intensity than current conditions and are a focus of future land use plans for the jurisdiction. These areas are consistent with regional visions for economic development and public transit. Most importantly, they meet the following resilience criteria:

1. Not in a floodplain or include minimal flood-prone property that can be addressed through best practice hazard mitigation techniques.
2. Not vulnerable to storm surge from a tropical storm or Category 1-3 hurricane (outside Category 3 evacuation zone).
3. Include a substantial amount of structures that meet current Florida Building Code standards and would be less likely to have severe wind damage.
4. Include infrastructure and services that have been assessed for their ability to be rapidly repaired and restored.

Vulnerable Priority Redevelopment Areas contain essential location-dependent facilities, are well-established community centers integral to economic recovery and returning to normalcy, and/or are planned growth areas critical to regional visions for the future. Vulnerable PRAs, as the name implies, are more vulnerable to severe disaster damage than the Sustainable PRAs due to location and/or lack of resiliency factors. These areas may take longer to recover than Sustainable Priority Redevelopment Areas because damages will most likely be more severe. It is the intention that any area designated as a Vulnerable Priority Redevelopment Areas will also be a priority for pre- and post disaster hazard mitigation investments to build disaster resilience and enable future redevelopment of these Priority Redevelopment Areas to be even more rapid after a disaster. The emphasis on Vulnerable PRAs will be to function as recovery hubs and restore economic vitality, not necessarily to facilitate increases in density from redevelopment.

### **Historic Preservation and Restoration (3)**

The loss of historic resources due to a disaster can have a major impact on the community. Some losses may be unavoidable, but others could occur accidentally during recovery operations if procedures are not in place to watch for these concerns. Details on developing expedited historic preservation review procedures and restoration tools and considerations are included in the guidebook *Disaster Planning for Florida's Historic Resources* (see Resources section for more information). Historic structures can be particularly vulnerable to damage due to their age, and repair of these structures must meet certain requirements to maintain their character and historic designation. Due to considerations for historical integrity, historic structures have more options for meeting Florida Building Code standards during repair than non-historical buildings. There may also be funding opportunities before or after a disaster for implementing mitigation measures to prevent further damages to historic resources. Engagement of local historic preservation organizations into the planning and implementation process can ensure that the unique considerations involved with preserving and restoring historic structures and archeological sites are included in planned actions.

The Florida Division of Historical Resources has identified common concerns regarding post-disaster historical preservation, including:

- Restorable buildings being torn down.
- Irreplaceable architectural elements that could be salvaged being carted away with debris.
- Property owners making hasty decisions and inappropriate repairs.
- Archaeological resources being disturbed by heavy equipment.
- Construction applications overburdening officials; e.g., insufficient staff to carefully review all the applications.
- Inspections being done by persons lacking qualifications for preservation of historic resources.

## Housing

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After a disaster, one of the most basic foundations of community recovery is the timely provision of temporary housing and rapid repair and reconstruction of permanent housing that meets the needs of all residents' income levels. Housing disaster survivors is a prerequisite to all other components of long-term post-disaster recovery. At the same time, the success of housing recovery efforts depends on other aspects of post-disaster redevelopment such as infrastructure restoration, job recovery, social service provision, and land use controls. In order to take advantage of opportunities to do more than just replace the damaged housing to pre-disaster conditions, such as providing safer and more affordable and sustainable housing options, public outreach and intergovernmental and stakeholder coordination are essential components of the process.

Representative agencies and organizations that will play a major role include:

### *State/ Regional Agencies and Organizations*

- Florida Community Loan Fund
- Florida Department of Economic Opportunity, Division of Housing and Community Development
- Florida Department of Financial Services
- Florida Home Partnership
- Florida Housing Finance Corporation
- Florida Insurance Commissioner's Office
- Florida Manufactured Housing Association
- Florida Retailers Association
- Volunteer Florida

### *Local Government Departments*

- Affordable Housing
- Building/Construction Services
- Code Enforcement
- Historic Preservation
- Homeless Services
- Housing Authority

- Planning/Growth Management/Community Development
- Zoning/Permitting

#### *Other Organizations*

- Apartment Associations
- Builders/Contractors Associations
- Non-Governmental Organizations
- Realtor Associations
- United Way, etc.

#### Availability of Temporary Housing/Long-term Sheltering (1)

The lack of temporary housing or long-term shelters can be a serious detriment to post-disaster recovery. If people whose homes are uninhabitable do not have an alternate place to reside after a major or catastrophic disaster, then repopulation and resumption of businesses will greatly suffer. The aftermath of Hurricane Katrina is a prime example of this issue. Inhabitable residential units in New Orleans were in high demand which was reflected in the cost of living in them.. Much of the low-income population had to start over in the towns they were evacuated to or where they have friends or family. The current population of New Orleans is a fraction of what it was and employees for businesses were in short supply.

Having adequate temporary housing is also critical to minimizing the time emergency shelters need to remain. Because county public schools double as emergency shelters, in order for the schools to reopen, those who have nowhere to go until their homes are repaired or they can find new permanent housing will be forced to find other accommodations outside the impact area.

The identification of temporary housing and long-term sheltering requires planning at the local, regional, and state level and is not something that should be left up to federal officials alone. As was seen with the “FEMA city” in Charlotte County after Hurricane Charley, simply finding space and running utilities for Federal Emergency Management Agency (FEMA) trailers may not always be the best solution. It can lead to crime and serious depression for those who must live in that situation (Kaufman, 2005). Another issue with relying solely on trailers and other temporary outside assistance after the storm is that temporary solutions may become long-term necessities if reconstruction is slow and lengthy. This has been a problem in Florida, and caused worry in the Gulf Coast, as temporary mobile homes could experience another tropical storm or hurricane. Often, sites for temporary housing eventually become permanent residential areas, and the community may want to designate areas for temporary housing that are compatible with residential uses (Florida Department of Community Affairs, 2006).

The county’s Temporary Housing Plan for Disaster Events details the processes, systems, and concepts associated with transitional, interim, and permanent housing strategies in the aftermath of a disaster. During the early phases of the long-term recovery and redevelopment process transitional housing (depending on hotels, motels, community centers and convention centers) and interim housing (depending heavily on rental units, vacant homes and condos, travel trailers, mobile homes, public gathering sites, parks and campuses, and vacant commercial and industrial properties) will likely be prevalent.

The county's mobile home and RV parks are also given high priority because of their existing infrastructure. The plan identifies a number of vacant parcels throughout the county deemed suitable for siting trailers and/or tents for temporary housing. Identified parcels, were selected based on such criteria as access to infrastructure, community needs, and land use suitability. The Temporary Housing Plan is periodically reviewed, updated, and enhanced by the Department of Housing and Community Development.

### Temporary Housing Siting Criteria, Provision, and Removal (1)

A quick and efficient transition of residents out of shelters and into safe, interim housing following a disaster is imperative to prevent the emigration of population to other communities. A best practice, when safe and feasible, is for communities to allow individual placement of interim housing on private property during repair and rebuilding as well as allowing employer-supplied temporary housing on commercial properties. Temporary group housing sites will be necessary for disaster victims that live in areas where on-site interim housing is not logistically feasible (e.g., infrastructure is severely damaged or the area is within the 100-year floodplain) and to accommodate displaced renters. Although temporary in nature, group sites may be active for two or more years and can require a large investment in infrastructure, including roads, sewer and water treatment, and electric distribution. To ensure that interim housing is well placed, communities can choose sites before a disaster or develop siting criteria that can be used to guide the designation of these sites to the optimal locations after a disaster. Criteria can be used to ensure that housing sites are consistent with the Future Land Use Maps, are located near employment centers, and have access to public transportation. The ideal scenario are temporary group housing sites that can do double duty – provide temporary housing to disaster survivors and then transition into a permanent, affordable housing development (affordable because the developer could save money on site preparation and infrastructure previously paid for through disaster funding). Indiantown Non-Profit Housing, Inc. partnered with FEMA to attempt such a project in Martin County after the 2004 hurricanes, but unfortunately the final permanent development was unable to come to fruition immediately afterward. It is also important to ensure that disaster housing is, in fact, temporary and that removal timeframes and procedures are in place and enforced. Experience shows that assistance in transitioning to permanent housing may need to be provided to disaster survivors to ensure that interim housing can be removed in a timely manner.

### Ability to Reconstruct Homes Rapidly (1)

Having an adequate supply of materials and labor is important to prevent delays during reconstruction. The high demand for supplies needed for repair work after a disaster often results in a sharp rise in prices for materials as well as shortages. This coupled with the high demand for licensed contractors and skilled construction workers to do repair work after a disaster, could result in a lag in the rebuilding progress. During short-term recovery, efforts to recruit qualified workers to the area, process their credentials, and educate residents on hiring licensed contractors is an important factor in setting the speed of redevelopment. An organized volunteer force can assist in this initial push for speedy repairs, and the PDRP Executive Committee and Housing Working Group serve a critical role in planning for volunteer resource use. Long-term rebuilding, however, provides an opportunity for retaining or developing a local construction workforce that can help to revitalize the disaster-weakened economy.

Expedited post-disaster repair permitting and inspection processes can increase the community's ability to reconstruct homes rapidly. An important pre-disaster action is to analyze permitting and

inspection procedures for opportunities to make temporary changes post-disaster that will allow for faster operations without compromising quality. Augmented staffing will likely be necessary post-disaster. Memorandums of agreement with other local governments can be pursued as well as cross-training of other local government staff for short-term increases while new, temporary hires may be needed for the duration of the redevelopment period.

The State of Florida requires that contractors be licensed in state (with exceptions for post-disaster volunteers). One strategy to ensure that residents are able to find qualified contractors is to create an easy system that allows residents to post their needs and contractors to advertise their skills. Local government-regulated message boards or databases in public places like Disaster Recovery Centers could offer residents the assurance that they are dealing with properly licensed contractors and give contractors a simple way to find business. These locations are ideal to disseminate other helpful information to the public, such as resources available through the Florida Disaster Contractors Network website ([www.dcnonline.org](http://www.dcnonline.org)) and license verification offered through the Florida Department of Business and Professional Regulation (<http://www.myfloridalicense.com>)

Palm Beach County's Private-Public Partnership supported Florida International University's development of the Business Continuity Information Network which, among other things, provides for the posting of needs and services. In addition, one of the planned initiatives of the partnership is working with roofer and contractor associations to develop a rapid contractor mobilization system with prequalified local, regional and state firms, including mutual aid agreements with chapters throughout the state.

### Transitioning Residents Back to Permanent Housing (2)

Many residents will have the means to repair or rebuild their homes on their own, but will need clear guidance from local government on the process and methods they can use. Others in the community will require much more assistance on issues such as understanding disaster assistance programs, navigating insurance claims, finding reputable contractors, understanding their renters' rights, and making decisions on whether to rebuild. Navigating insurance matters and Federal assistance can be complicated, and even more so following a disaster. Community outreach and counseling services, such as legal assistance to survivors in interpreting insurance policies to help ensure that the maximum benefit can be obtained from their claim, are important for the success of housing recovery. The plan can include a local strategy to organize and target various resources for public education, counseling, and case management throughout long-term redevelopment to ensure that government assistance is fairly and equitably provided to disaster survivors who need help moving out of temporary housing.

The issue of transitioning residents back to permanent housing is inextricably tied to many other post-disaster redevelopment issues, particularly socioeconomic issues. After the 2004 and 2005 hurricane seasons, there was a jump in homelessness relatively consistent with heavily damaged counties and some people were without homes for years after the events (Skoloff, 2006). Numerous homeowners and renters may find that they are underinsured after a disaster and cannot afford the necessary repairs or replace the destroyed contents of their homes. The average FEMA individual assistance grant is between \$5,000 and \$6,000, with a maximum grant being only \$29,900 for a household. Small Business Administration (SBA) loans can provide additional funds; however, there are credit requirements that, while less stringent than private loan eligibility, may still be unattainable for some portions of the population. Voluntary Organizations Active in

Disasters (VOADs), Long-Term Recovery Organizations (LTROs), and other community-driven funding sources are essential in providing case management to assist low-income and under-insured residents with locating and transitioning back into permanent housing. These organizations' roles should be pre-identified and their capabilities assessed and enhanced appropriately.

In 2004 and 2005, the Florida legislature appropriated one-time hurricane housing recovery funds. These were administered by the Florida Housing Finance Corporation through two main programs:

- Rental Recovery Loan Program, established to leverage existing Federal rental financing programs to provide additional rental stock to the areas of Florida hurt by the 2004 hurricanes.
- Hurricane Housing Recovery Program, established to accommodate the different housing needs of each impacted community through the State Housing Initiatives Program for households with incomes up to 120% of the area median income, with 30% of program funds reserved for low-income households.

The Florida Housing Finance Corporation also created the HOME Again Program in 2004 to provide up to \$21 million statewide for the repair, reconstruction, or replacement of homes damaged during the storms. In 2006, the Florida legislature passed an affordable housing bill (Ch. 2006-69, s. 31, laws of Fla.) that also contained funding for two more hurricane housing-related programs: 1) Farmworker Housing Recovery Program and 2) Special Housing Assistance and Development Program.

### Rebuilding Affordable Housing (3)

The affordable housing gap will be wider after a disaster. Low-cost housing tends to be concentrated in older buildings of substandard construction and older sections of town, is often disproportionately damaged, and displaced persons from this type of housing might not be able to afford rents in repaired or rebuilt buildings (Spangle et al., 1991). The sense of community and neighborhood fabric could be destroyed if widespread displacement or gentrification occurs after a disaster. In order for the recovery process to meet the needs of the community, a proportion of redevelopment projects should include construction of affordable housing units. Therefore, an effort needs to be made to replace affordable housing, especially in areas that may see a jump in property values after a disaster. There may also need to be post-disaster monitoring of whether the demand for rental housing units is being met. In addition to providing affordable alternative housing to low-income disaster survivors, actions need to be taken to prevent widespread gentrification of damaged neighborhoods through programs that assist low income homeowners in repairing or rebuilding their homes so that they can remain in them (see previous issue discussing the transition back to permanent housing).

### Encouraging Homeowners to Incorporate Mitigation During Rebuilding (3)

One of the main purposes of the Post-Disaster Redevelopment Plan is to further disaster resiliency goals. Efforts to include hazard mitigation in the repair and reconstruction of disaster-damaged housing stock are integral to building a more resilient. After a disaster, there will be a rush to rebuild, as residents wish to return to normalcy. Due to this rush, a lack of information, or the perceived costs, residents may overlook opportunities to include hazard mitigation and prevent

repetitive loss. The window of opportunity for encouraging homeowners to voluntarily exceed building requirements and include more mitigation only lasts a short time after a disaster. There are a multitude of proven and cost-effective hazard mitigation techniques and information, educational materials, and even training available through several nonprofit organizations and government agencies (e.g., FEMA, Institute for Business and Home Safety, Federal Alliance for Safe Homes, Firewise, etc.). The county should explore the possibility of promoting mitigated rebuilding by offsetting the add-on cost of mitigation with energy saving construction.

A public outreach strategy for reaching homeowners at the right moment with hazard mitigation information and technical assistance should be developed and articulated. The strategy should be integrated with pre-disaster education strategies in the LMS and relevant short-term recovery operations detailed in the Recovery Plan should be coordinated with the long-term strategy.

### Economic Redevelopment

The ability of a local economy to rebound after a disaster dictates the success of the community's long term recovery. The return of jobs, tourism, capital investments, consumerism, and other indicators of economic health are interdependent with housing recovery, infrastructure restoration, environmental restoration, and social service provision. The involvement of the private sector in the post-disaster planning process is imperative for determining the priorities and actions that will be beneficial in restoring your local economy. Consideration must be given to the different obstacles that could potentially hinder economic recovery such as those that small businesses will face; decisions large employers will have to make on whether to relocate; opportunities for sustainable diversification of the economic base; as well as job training and workforce recruitment to meet changed market conditions after a major disaster.

Representative agencies and organizations that will play a major role include:

#### *State/Regional Agencies and Organizations*

- Enterprise Florida, Inc.
- Florida Department of Agriculture and Consumer Services
- Florida Department of Financial Services
- Florida Hotel and Lodging Association
- Florida Office of Tourism, Trade, and Economic Development
- Florida Retail Association
- Florida Small Business Development Center Network
- Regional Planning Agencies
- Workforce Florida

#### *Local Government Departments*

- Economic Development Office
- Business and Industry Unit
- Small Business Assistance Office

#### *Other Organizations*

- Business Development Board
- Private Public Partnership

- Chambers of Commerce
- Community Redevelopment Agencies
- Economic Development Council/Commission
- Local or regional tourism organizations
- Port Authorities
- Small and minority-owned business assistance organizations
- Workforce assistance organizations
- Small Business Development Centers

### Resumption and Retention of Major Employers (1)

Rapid resumption of major employers is key to economic recovery after a disaster. Many major employers in the county have established business continuity plans. Especially when these firms have ongoing business obligations outside the impacted area and/or see that recovery will be slow and protracted, these continuity plans may call for the temporary or permanent relocation of all or parts of their business operations. Loss of large employers can have a profound impact on the local economy for years in terms of employment, lost sources for goods and services, disruptions to core target industries, lost tax revenue, and damage to community image and quality of life. Replacement of lost businesses, even if possible, can take years.

A key element to business resumption and retention will be the preventing the escalation of damage. Early access to facilities following major disasters is critical to damage assessment; the salvaging and securing of critical assets; taking actions to prevent further damage and losses; and planning and initiating business recovery actions. Credentialing for early reentry is an important, but often contentious matter, balancing safety and security concerns with expediency. However, credentialing of major employers' Business Continuity Managers or other safety qualified personnel can be underestimated in its importance and should be a priority.

Another key in exercising business continuity options is getting realistic estimates on utility outages, road clearances, etc. Without this important information, relocation decisions may be hastened, unnecessarily.

Expedited permitting of disaster repairs for large, service critical, resource-rich businesses can kick start the economic "rebooting" process by generating cash flow business activity, getting people back to work, reducing dependence on outside assistance, and creating demand for smaller businesses as customers, suppliers, vendors, etc.

If businesses do not feel a sense of connection to the community or fear that recovery will not be successful, they may relocate their company elsewhere after a disaster. This is especially the case for corporate headquarters and industries that are not location-dependent or whose location choice is tied to quality of life factors. The organized, holistic approach to recovery and redevelopment reflected by the PDRP can provide the private sector with confidence in the community's ability to recover and continue providing the market environment necessary for them to conduct their business.



Timely and forthright pre- and post-disaster communication on redevelopment goals and expectations can be a powerful influence in retaining businesses. Ultimately, incentives may be required to ensure retention of certain key businesses.

The long-term success of economic recovery relies on strong pre- and post-disaster support and communication between the public and private sectors. Palm Beach County's leading edge private-public partnership and the South Florida Disaster Resiliency Coalition are key mechanisms for ensuring the productive engagement of the business community in the entire emergency management process, especially long-term recovery. These partnerships, made up of local, regional, state, and national business, government, and NGO partners, increase the County's capacity to protect its business base and to mobilize its exceptional resources and expertise for community and economic recovery and redevelopment.

The partnerships, independently and in collaboration with the County's business and industry unit (ESF 18) function, plan and undertake private sector led initiatives designed to build a more disaster resilient community and to facilitate post-disaster recovery. Initiatives completed or in process include a web based private-public portal system (Business Continuity Information Network); legislation to ensure the availability of fuel on evacuation routes; private sector provided emergency housing for victimized first responders and their families; workshops and symposia on critical business preparedness subjects; pre- and post-disaster communication protocols; and much more. At this writing efforts were progressing to create a companion regional public-private partnership to share ideas, collaborate on initiatives and establish a foundation for business mutual aid. Government participation in the partnerships is coordinated by the regional Divisions of Emergency Management.

### Small Business Assistance (1)

Small businesses comprise the majority of businesses in the Palm Beach County and the state. They provide the majority of jobs and are key contributors to the economy. They are more likely than large businesses to either not reopen after a major disaster or fail after reopening. Several factors may be involved in these failures, including the extent of damage to the community, the time until they can reopen, changing demands for goods and services, underinsurance, and lack of financial reserves.

Short periods without cash flow can be catastrophic to small businesses. Small businesses often find that restrictions and timing of loans and other assistance offer too little, too late or come with too many strings attached to meet their needs. The Florida Small Business Emergency Loan Program can assist businesses in the struggle to stay afloat until survivable economic conditions resume or a longer-term loan can be secured. It offers state-funded bridge loans to businesses with 100 or fewer employees, lending companies up to \$25,000 interest free for six months. However, in order to qualify for a bridge loan, a business must have suffered substantiated "physical" damage (e.g., damage to a facility, loss of equipment, inventory, etc.). Small businesses without interruption insurance and who experience only indirect disaster impacts may still struggle to survive and recover. The SBA gives disaster loans to small businesses with up to 500 employees that qualify. Qualifying businesses must have reasonably good credit; but, if the business has assets and credit that exceed a certain threshold, the business may be required to secure a commercial loan. Loans are typically based on the pre-event business and tax returns of the firm

and require extensive collateralization. Post-disaster market changes, however, may mean the company isn't able to do as well as it did pre-disaster, and the loan, even at below-market interest rates, sometimes becomes a burden to the long-term survivability of the business (Alesch et al., 2001).

There are not a lot of federal or state assistance programs available for small businesses. The Small Business Administration offers some helpful services to small businesses, but a lot of the recovery burden ultimately falls to self-help; local and state programs, if available; and businesses helping businesses.

A key planned initiative of the private-public partnership in Palm Beach County is to build on the SBA's Small Business Development Center Network concept to establish plans and procedures for the opening post-disaster "business recovery centers"... full service, one stop locations where a full complement of financial, counseling and other services is made available to businesses and their employees.

### Workforce Retention (2)

Post-disaster recovery must be accomplished in an environment of rapidly changing labor conditions. Jobs will be lost from temporary or permanent business closures and relocations. Workers and their families may flee the county before or after the disaster for safety reasons or to avoid post-disaster chaos and stress. Some who evacuate may never return; others may wait for certain recovery milestones to occur (e.g., available housing, school re-openings, business re-openings, etc.) before returning.

At the same time unemployment rises, some businesses and industries will face shortages in needed skill areas, particularly skills needed to perform recovery work. Worker retention in certain service and critical skill businesses will be a major challenge.

A number of actions may be needed to deal with the mismatch of worker needs and available workers. Key among these are:

- Actions such as ensuring that schools reopen as soon as possible and childcare is available, allowing temporary on-site housing for employees, and communication of a community's post-disaster plans can assist in getting employees back to jobs as soon as the businesses reopen.
- To assist in meeting changes in labor demand and to ensure that local workers are given "first preference" in filling recovery and post-disaster jobs, certain rapidly organized and executed workforce training programs may be needed. Workforce stakeholders and local education and training institutions and trade schools should be prepared to offer a full range of emergency programs.
- Consider workforce retention strategies beyond training, including temporary wage subsidies and other creative solutions. Workers will move, if necessary, where there is available employment after a disaster in order to support their families and themselves. The provision of wages – even on a temporary basis – may be key to retaining the community's skilled labor force.

After September 11, 2001 federal funds were used to provide wage compensation for employees of small and medium-sized businesses directly impacted by the attacks. Regardless of whether they were working or not, employees received wages for up to six months. Businesses noted that this retention program was key to helping them keep the doors open and transition into recovery.

Because of its strong, diversified economy, its base of well-positioned growth industries, its skilled labor force, and its outstanding quality of life features, Palm Beach County should have the potential to recover its business base quickly, while retaining a quality workforce.

### Preferential Use of Local/Regional Business Capabilities and Workers in Recovery (1)

Time and time again we see examples of businesses idled by disasters and unemployed workers sitting on the sidelines while outsiders are brought in to perform recovery work only to take their money outside the local economy when they leave. This does nothing to return the economy to health and creates a lingering dependency on outside assistance. The quickest way of rebooting an ailing post-disaster economy is to jumpstart cash flow as soon as possible through productive activity. Often, businesses and employees remaining in the impacted area after a disaster event continue to have some level of operational capability and resources usable for recovery work. Where skills and resources are available and intact locally, it makes little sense to wait for outside businesses to perform recovery tasks or for employees to collect unemployment if they are able and willing to be part of their own community's rebuilding process.

Many area businesses provide goods and services which have direct or indirect relevance to recovery needs. Some may require outside assistance in amassing needed equipment and materials or may need a base facility from which to work. Given the proper information prior to a disaster and a line of communication to those in charge of recovery work, many businesses would be able to speed recovery efforts and at the same time reduce their disruption losses from the event. Those companies who are unable to assist in recovery may have skilled employees who could benefit from recovery work until they are able to return to their jobs. Similarly, they may have equipment, facilities or systems that could be used for recovery purposes. Use of a local labor force may also minimize the post-disaster skill drains that may occur when workers with marketable skills leave to pursue work outside the impacted area. (Truesdale, public presentation, 19 April 2006)

As described earlier, in an effort to engage the area's exceptional private sector resources and capabilities, Palm Beach County has played a key role in efforts to establish two private-public partnerships (a county partnership and a regional private-public partnership) comprised of business, government and non-governmental entities dedicated to building more disaster resilient communities and increasing local disaster management capacity through private sector led initiatives. Among the initiatives planned by these partnerships are: the development of procedures that will enable the rapid mobilization of local and regional resources following disasters; establishment of relationships with FEMA's Private Sector Office and FEMA NDRF/ESF #14 (Long-Term Community Recovery); development of interactive systems which allow recovery needs to be matched with available local resources, and a number of businesses helping businesses programs.

### Tourism Renewal (2)

Tourists are naturally apprehensive about planning vacations to a community that has recently experienced a disaster; however, Palm Beach County's economy is highly dependent on tourism and the need to reestablish this revenue stream as soon as possible will be pressing. Redevelopment priorities and strategies will need to consider aspects of the community that draw tourism, i.e. its natural attractions such as beaches, its resorts and hotels, its recreational activities such as boating and fishing, and its entertainment and cultural attractions. "There must be a commitment by both public and private entities to rebuild recreational amenities and arts, culture, and conference facilities that draw tourists and business travelers back to the region in the months and years after a hurricane." (Puszkin-Chevlin et. al., 2007)

Coastal communities need to assess whether tourism-based businesses, such as accommodation and service industry establishments, need assistance in understanding land use strategies to reduce vulnerability and finding ways to assist them in rebuilding in a less vulnerable way.

Palm Beach County must be prepared to launch aggressive and creative marketing campaigns to build public confidence in the recovery efforts and to advertise that the community is open for business. These campaigns will need to more than offset the tendency of media outlets to emphasize visual images, negative reports, and shortfalls in response more than reporting progress in the recovery process. The state PDRP guidebook points out that while local festivals and cultural activities may seem like a low priority in the aftermath of a disaster, such events can be good opportunities to attract positive media attention and tourists to the area while showcasing the successes of recovery and redevelopment efforts. They can also help in restoring a sense of normalcy to the community. A successful example was the "Florida Live" campaign launched by Visit Florida after the Deepwater Horizon oil spill.

### Physical Economic Redevelopment Projects (3)

Opportunities may arise after a disaster to move forward with planned physical economic development projects or to create new projects that take advantage of post-disaster funding, available land, and/or public will. Economic development projects that are disaster-resilient and fill a need in the community after a disaster should be a priority for post-disaster funding. In addition, the community should consider prioritizing projects that incorporate energy efficiency and other "green" building design considerations. Community Redevelopment Agency districts, Enterprise Zones, and other business districts might be prime locations for focusing post-disaster redevelopment projects since these districts offer financial tools or incentives such as tax increment financing, reductions on impact fees, and state tax incentives. Economic leaders should also consider ways to expand these business districts and leverage funding that would be available through disaster programs from several federal agencies, including the Community Development Block Grant program and Economic Development Administration disaster assistance program.

### Agricultural Losses from Hurricane Damage or Lake Okeechobee Dike Breach (3)

Representing over two billion dollars in economic impact to the County, and encompassing approximately 36% of the total land in the County, commercial agriculture is one of the County's core industries and major employer. (Palm Beach County Cooperative Extension Services/UF-IFAS, 2011)

With an estimated \$1.397 billion in total agricultural sales for 2017-18, Palm Beach County leads the State of Florida, all counties east of the Mississippi River, and is one of the ten largest producers in the United States. Palm Beach County leads the nation in the production of sugarcane, fresh sweet corn, and sweet bell peppers. It leads the State in the production of rice, lettuce, radishes, Chinese vegetables, specialty leaf, and celery. Palm Beach County is third in the state in nursery production. It leads the state in agricultural wages and salary with over \$316 million per year.

According to recent land use analysis, 16,298 acres of the unincorporated agricultural lands are located in flood zones; and all of the acres are subject to high winds from hurricanes (Florida Department of Community Affairs, 2006). The incessant rains associated with tropical storms and hurricanes can cause severe flood damage to crops.

Flooding caused by a major failure in the Herbert Hoover Dike would have catastrophic economic consequences for farmers, their employees, and the local economy, perhaps even impacting the national food supply. While little can be done to prevent such agricultural losses, besides ongoing efforts to strengthen the dike, the government can assist by ensuring agricultural recovery is treated as a high recovery priority and by fully leveraging financial assistance programs for farmers and the workers who will be essential to rebuilding the industry. Small farm operations, nurseries, etc. cannot be overlooked.

### Opportunities to Sustainably Restore Economic Vitality (3)

Retaining existing businesses is the first priority after a disaster; however, post-disaster redevelopment may also present an opportunity for businesses to reassess their long-term applicability in the local market and take advantage of any changes in demographics, and/or business incentives that may occur due to disaster impacts and the influx of outside funding into the area. A business that was struggling before the disaster and faces a continued gloomy outlook in the post-disaster environment, might seize the opportunity to rethink its business plan and use the disaster as an entrepreneurial impetus to reinvent itself to better match the needs and demands of the new economic environment. “Businesses whose owners were able to adjust to changes in consumer demand were much more likely to survive than those whose owners simply pursued their pre-disaster activities in the same old way.” (Alesch et al., 2001)

Inevitably, some large and small businesses that receive a significant amount of damage or indirect losses are going to fail or choose to relocate after a major disaster. This will affect the unemployment rate of the County unless new businesses replace them. Ideally, local communities will have sufficiently diverse spectrums of businesses that if one industry sector is severely impacted by a disaster, the majority of the workforce will not be affected.

Efforts to diversify the local economy with industries that are less vulnerable to disasters should be integrated with other ongoing economic development activities. Industries targeted for attraction and incentive programs after a disaster ideally should be those that will contribute to a more disaster-resilient and sustainable economy and are appropriate for the post-disaster circumstances. Many of the leading industry clusters outlined in the County’s *Strategic Economic Development Plan* are sustainable with appropriate business continuity and mitigation planning. Some of these are very dependent on a skilled workforce and will require quality of life factors that can attract talented workers.

## Health and Social Services

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The socially and economically vulnerable are invariably among the most severely affected by disaster events. Researchers have found that while disasters do not create or fundamentally change the existing social and economic trends in communities, they do magnify them (Kates, 1977). Each community's level of social vulnerability and the extent to which health and social services are effectively delivered will greatly influence the success of long-term community recovery.

Each community will need to address its own set of issues based on the current demographic and socioeconomic characteristics of its residents. Post-disaster redevelopment actions and strategies should address long-term recovery health and social needs, particularly those that have been exacerbated by the disaster, and ensure the best possible services are provided. A challenge for communities will be ensuring a smooth transition of health and social services from short-term recovery operations to long-term redevelopment assistance.

Each community's planning and preparations should consider the following questions:

- Are your health care facilities likely to sustain major physical damage during a disaster?
- Does a significant proportion of your population currently depend on social services?
- Does your community contain a large percentage of socially vulnerable populations, including the disabled, senior citizens, racial and ethnic minorities, language isolated, single parents, impoverished, etc.?
- Do socially vulnerable populations reside in areas likely to be devastated by a disaster?
- Does your community have the capacity and procedures in place to coordinate a large influx of volunteers throughout long-term redevelopment?

Representative agencies and organizations that will play major roles include:

### State/Regional Agencies and Organizations

- Florida Department of Children and Families
- Florida Department of Education
- Florida Department of Elder Affairs
- Florida Department of health

### Local Government Departments

- Agency for Persons Living with Disabilities
- Aging Services
- Children and Family Services
- Health Department
- Homeless Services
- Public Transit
- School District
- Social Services Agency

### Other Organizations

- Palm Beach County Long Term Recovery Coalition
- Local private advocacy/philanthropy groups

- Local volunteer organizations, including Community Emergency Response Teams (CERTs) and Community Organizations Active in Disaster (COADs)
- Major local health and medical facilities

### Health Facility Restoration (1)

Medical services will be in great demand following major disasters but providers may experience a number of factors which can inhibit their ability to keep pace with community needs and demands. Staff shortages, facility damages, and inadequate financial resources all may be significant limiting factors. Other factors that could potentially influence the ability to restore health services include how quickly essential utilities and infrastructure are repaired, changes in the patient demographics, the location of the facility in relation to population densities, and the availability of qualified contractors.

The reconstruction period can offer opportunities to fix and upgrade existing health and medical systems that will benefit residents long-term. During response and short-term recovery, there will likely be temporary medical service increases, including temporary public and faith-based clinics. Integration of temporary resources, labor, or funding into the existing local healthcare structure can improve local capacity and prevent disruptions during long-term redevelopment when the temporary increases are terminated.

### Social Services to Socioeconomic Vulnerable Populations (1)

Socially and economically vulnerable populations (including the financially disadvantaged, homeless, children, senior citizens, racial and ethnic minorities, single-parent households, etc.) are likely to become more dependent on assistance after a disaster event and their needs will change throughout the different phases of redevelopment. Potential challenges to successful service provision include the lack of available programs and insufficient access. Systems that are functioning to maximum capacity before a disaster will become overwhelmed as more residents need assistance. The county needs to be prepared to increase capacity and adapt services, as necessary to meet changes in need and access needs to be maintained as programs change during long-term redevelopment. Populations also may shift locations during the redevelopment period. Access to adequate transportation options will be critical.

As a Post-Disaster Redevelopment Plan evolves into a more complex plan, the issue “Social Service Provision to Socioeconomic Vulnerable Populations” may need to be broken down into more focused issues, each with a topic-specific strategy. The issues will vary by community, depending on the specific population and its needs. Some of these issues that a community may want to address include the following:

- Low-income assistance – Low income residents are often the hardest hit by disasters and require more government assistance than usual. This may require increased numbers of social service personnel and additional funding for assistance programs.
- Households and businesses at higher socioeconomic levels are more likely to recover to pre-disaster levels, and those who are better integrated into economic and social networks will recover faster. Conversely, those with fewer resources often get less attention from aid organizations and get it later. Lower income groups tend to have a weaker voice in

recovery decisions, unless explicitly integrated into the decision processes (Olshansky, 2006).

- Homeless programs – There is often an increase of the homeless population after a major disaster due to the destruction of a significant amount of affordable and older housing stock. The already existing homeless population should not be overlooked during post-disaster recovery.
- Children and family services – Disasters may cause an increase in the number of families seeking assistance, at a time when personnel and resources may be in short supply. A number of new disaster-related problems also may arise as a result of anxiety and stress. For example cases of domestic abuse often increase during the stressful recovery period after a disaster. Children may have adjustment problems such as performing poorly in school, as a result of changed living circumstances.
- Targeted assistance for senior citizens – Over 22% of the population of the County is over the age of 65 and potentially less able to successfully recover from a disaster due to financial or health reasons. Many senior citizens live on fixed incomes and may not have resources for home rebuilding or preparatory measures. Also, there is an increased likelihood that seniors may be more susceptible to fraud and exploitation than other populations during times of crisis. They may need additional assistance due to a variety of chronic health problems, including cognitive impairments and diminished mobility.
- Assistance programs targeted towards racial and ethnic minorities – While racial and ethnic minority concentration alone is not an indicator of social vulnerability, racial and ethnic minority populations are likely to be more vulnerable to disasters due to factors such as economic situation, housing patterns, building construction, community isolation, and cultural insensitivities (Fothergill et al., 1999). Language can be a barrier impeding some ethnic minority concentrations from adequately accessing and navigating the available relief system. Public outreach initiatives will need to be translated into other languages for those whose native language is not English.
- Services for women – Research has shown that the experience of women and men differ in the post-disaster environment; however, most disaster work assumes a gender-neutral social system. (Morrow,1996) Female-headed households may need targeted assistance post-disaster. Of the thousands who lost their jobs after Hurricane Andrew, women were not likely to find substitute work related to clean-up and reconstruction activities. Most women held lower-wage jobs with working conditions that allowed little job security, making them particularly vulnerable after a disaster. While few were able to find work related to recovery, in general, it was much harder for women to find replacement employment (Morrow, 1996).

### Re-establish Public Safety Service Levels (1)

Public safety service must be quickly reestablished after a disaster. This may necessitate a temporary increase in local safety personnel despite revenue losses that may strain resource availability and public safety funding during long-term recovery. Public safety facilities are sometimes located in areas that are vulnerable to severe damage during a disaster event. Communities can use the recovery period to reconsider the location of public safety facilities and capitalize on opportunities to permanently move them if they are temporarily unable to operate.



### Coordination and Assistance for Non-Governmental Organizations and Volunteers (1)

Immediately following a major disaster, there will be an influx of volunteers to aid in short-term recovery efforts. With organization and coordination this can be a substantial asset to the recovery process. Volunteer Florida is a resource that can be tapped to help with this coordination.

Typically, as media attention wanes after the initial response and recovery, so does the interest of potential volunteers. However, if a volunteer effort is particularly well-promoted and organized, it can be helpful well into the long term redevelopment phase. Palm Beach County has extensive long-term recovery organizations such as the Long Term Recovery Coalition, Community Emergency Response Teams (CERTs), unmet needs committees, etc. that can be utilized to help organize a sustainable volunteer effort. The capacity of these groups should be bolstered periodically to ensure they can provide optimal services when a disaster occurs.

Long-term recovery organizations are critical to the recovery of the community. Not only do they provide a mechanism to assist individual survivors directly, but particularly progressive organization may be able to take on advanced redevelopment functions, including: coordinating Community Development Block Grants on behalf of local governments, taking responsibility for FEMA travel trailers, assisting in the rebuild of permanent housing stock and implementing mitigation measures for the economically disadvantaged. Long-term recovery organizations that are able to effectively express their future actions and needs to the volunteer community, with help from the volunteers and donations support functions, can be helpful in securing additional donations and volunteer assistance to address long-term needs.

### Provide for Special Needs Populations Throughout Long-Term Redevelopment (1)

Special needs populations, including those living in nursing homes and assisted-living facilities as well as homebound populations will require distinct assistance after a major disaster. Disabled populations are going to need special accommodations and temporary housing during evacuation and recovery. There may be many residents, beyond the County registration list, that will need long-term assistance. Attention will need to be given to nursing home and assisted-living facility residents during long-term redevelopment as evacuated residents return to their home facilities. There is likely to be a shortage of qualified staffing and suitable facilities. The return of residents will need to be closely coordinated with emergency management personnel. Some financial assistance or mutual aid agreements may be needed.

According to Global Action on Aging, after Hurricane Katrina medical clinicians in Louisiana reported that the health status of patients returning to their care had declined significantly. Facilities will need to take into consideration the length of time it takes to improve the health status of many returning nursing home evacuees (especially those who may be experiencing functional and mental decline) in determining the number of staff, facilities and required expertise they need to have on hand throughout the redevelopment phase.

### Public Transportation Restoration and Improvement (1)

After a disaster, changes in the locations of housing and employment centers (temporary or permanent) may alter public transit needs, with the likely probability that greater numbers of people will depend on public transit. Post-disaster redevelopment projects may present unique opportunities to expand existing transit capabilities consistent with the multimodal needs of the

long-range transportation plans. Any changes to public transit should be closely coordinated with stakeholders having expertise in land use and infrastructure.

### Reopening of Schools (2)

Beyond its importance to educational continuity, quickly reopening schools and institutions of higher education will be important to establishing a sense of normalcy and providing some semblance of consistency in lives of students. The transition of residents from public shelter schools to interim housing should be handled as soon as possible. Except where severely damaged, schools used as emergency public shelters should be cleared and available for repairs and reopening during the short term recovery. Inhabitable schools will likely need to accommodate a higher capacity of students post-disaster, in order to accommodate the school facilities damaged during the event.

While the redevelopment process will provide an opportunity to reevaluate the locations of damaged schools and consider alternative sites, schools should be urged to maintain continuity of operation plans that incorporates long-term recovery issues, including potential secondary locations.

Reopening schools is a state priority. Despite the complete destruction of seven schools in Charlotte County in 2004 by Hurricane Charley, the state worked closely with the Department of Education, FEMA, and local officials to secure portable classrooms, school buses, books and other instructional materials, furnishings and computers for affected schools. The Governor signed an executive order allowing waivers of certain requirements in order to expedite the reopening process. The county should consider the feasibility of similar arrangements in the event of a major disaster.

### Behavioral Health Assistance (2)

In any major disaster, loss and trauma will directly affect many people. Additionally, some individuals who will be emotionally impacted simply by being part of the affected community. Witnessing massive destruction and terrible sights evokes deep feelings and reactions. Residents of disaster stricken communities experience disturbing feelings of grief, sadness, anxiety, and anger even if they themselves are spared from much of the loss. Responses to such trauma are most often natural, transitory reactions, not symptomatic of pathology and thus may require practical rather than traditional clinical assistance. Trauma usually takes two basic forms and which will occur jointly and continuously during the post-disaster recovery process:

- Individual trauma manifests itself in the stress and grief reactions which individual survivors experience.
- Collective trauma is a “blow to the basic tissues of social life that damages the bonds attaching people together and impairs the prevailing sense of community.” Collective trauma can sever the social ties of survivors with each other and with the locale.

Grief reactions are a normal part of the recovery from disaster. Not only may individuals lose loved ones, homes and treasured possessions, but hopes, dreams, and assumptions about life and its meaning may be shattered. The grief response to such losses are common and are not pathological (warranting therapy or counseling), unless the grief is an intensification, a prolongation or an inhibition of normal grief.

According to the *Nebraska Behavioral Health All-Hazards Disaster Response and Recovery Plan*, the traditional, office-based approach to mental health assistance is of little use in disaster. Very few people will come to an office or approach a desk labeled “mental health.” Most often, the aim will be to provide human services for problems that are accompanied by emotional strain. It is essential, the plan points out, not to use words that imply emotional problems, such as counseling, therapy, psychiatric, psychological, neurotic, or psychotic.

Behavioral health staff need to use an active outreach approach. They must go out to community sites where survivors are involved in the activities of their daily lives. Such places include impacted neighborhoods, schools, disaster shelters, Disaster Application Centers, meal sites, hospitals, churches, community centers, and the like.

Many people equate “mental health services” with being “crazy.” To offer behavioral health assistance to a disaster survivor may seem to add insult to injury – “First I have lost everything and now you think I’m mentally unstable.” In addition, most disaster survivors will be overwhelmed with the time-consuming activities of putting the concrete aspects of their lives back together. Counseling or support groups may seem esoteric in the face of such pragmatic pressures. Very effective behavioral health assistance can be provided while the worker is helping survivors with concrete tasks. Most disaster survivors are people who are temporarily disrupted by a severe stress, but can function capably under normal circumstances. Much of the behavioral health work at first will be to give concrete types of help. Behavioral health personnel may assist survivors with problem solving and decision-making. They can help them to identify specific concerns, set priorities, explore alternatives, seek out resources and choose a plan of action. Behavioral health staff will need to inform themselves about resources available to survivors, including local organizations and agencies in addition to specialized disaster resources. Behavioral health workers may need to help directly with some problems outside the realm of behavioral counselors, such as providing information for filling out forms, helping cleanup, locating health care or child care, and finding transportation. They may also make referrals to specific resources such as assistance with loans, housing, employment, permits.

In less frequent cases, some individuals will experience more serious psychological responses such as severe depression, disorientation, immobilization, or an exacerbation of prior mental illness diagnosis. These situations will likely require referral for more intensive psychological counseling. The role of the disaster behavioral health worker is not to provide treatment for severely disturbed individuals directly, but to recognize their needs and help link them with an appropriate treatment resource. Disaster behavioral health services need to be uniquely tailored to the communities being served.

The demographics and characteristics of the communities affected by disaster must be considered when designing a behavioral health program. Urban, suburban, and rural areas have different needs, resources, traditions, and values about giving and receiving help. It is essential that programs consider the ethnic and cultural groups in the community and provide services that are culturally relevant and in language of the people. Disaster recovery services are best accepted and utilized if they are integrated into existing, trusted community agencies and resources. In addition, programs are most effective if workers are from the community and its various ethnic and cultural groups are integrally involved in service delivery.

Behavioral health staff will need to set aside traditional methods, avoid use of “mental health” labels, and use an active outreach approach to intervene successfully in disaster.

The most important support group for individuals is the family. Workers should attempt to keep the family together (in shelters and temporary housing, for example). Family members should be involved as much as possible in each others’ recovery.

Disaster relocation and the intense activity involved in disaster recovery can disrupt people’s interactions with their support systems. Encouraging people to make time for family and friends is important. Emphasizing the importance of “rebuilding relationships” in addition to rebuilding structures can be a helpful analogy.

For people with limited support systems, disaster support groups can be very helpful. Support groups help to counter isolation. In addition, behavioral health workers may need to involve themselves in community organization activities.

A key element of the long-term recovery process will be ensuring that public and private sector behavioral health assistance providers have the resources they need to deal with the likely influx of patients suffering post-disaster anxiety and depression and stress.

#### Medical Personnel Retention and Recruitment (2)

Staffing healthcare facilities is a critical component of the recovery and redevelopment process. The ability to provide healthcare is necessary for residents to return and for temporary workers to do their jobs; it is also a cornerstone of efforts to make the community livable again. Given the high likelihood that there will be chronic shortages of physicians and other healthcare providers and a pressing need to fill any gaps quickly, incentive programs of one type or another will almost certainly be required in order to retain and attract qualified people. Such incentive are always very expensive and do not necessarily attract a stable workforce will to make a long-term commitment to the community.

Physicians face the temptation of relocating after a major disaster, especially when their patients vanish overnight. Many Florida hospitals that have survived big storms say it's imperative to promptly provide financial support to physicians. Some say they footed the bill for temporary physician offices for as long as two years following hurricanes (Colias, 2005).

After Hurricanes Frances and Jeanne in 2004, Health First’s Cape Canaveral Hospital in Cocoa Beach put tarps over more than 200 employees’ houses, provided shelter for displaced staff, offered dry locations to store furniture to prevent water damage, distributed cash advances, and provided free 24-hour childcare (Cassidy, 2004).

In many communities, attracting sufficient qualified medical personnel is an issue even during pre-disaster periods, and this trend can be exacerbated in the post-disaster environment, especially during long-term redevelopment after the initial influx of emergency medical professionals has dissipated. Communities may also have a difficult time keeping health care facilities open, especially neighborhood doctor offices and clinics, if medical professionals have not returned to the area. Recruitment programs that can be used post-disaster may need to target a range of positions, including but not limited to providers, nursing, mental health, laboratory, radiology,

pharmacy, administrative, financial, and facility as well as any other specialized or general occupations.

Long-term, the availability of local medical professionals is tied to the continuation of medical education and training in the post-disaster environment. National health and medical organizations such as the Medical Reserve Corps can provide assistance, volunteers, and resources to help prevent lapses in education programs after a disaster.

Some incentives commonly used in an attempt to retain healthcare workers have included: loan forgiveness/repayment programs; scholarships in healthcare professions; housing reconstruction subsidies; various forms of financial assistance such as dependent care benefits and financial support for children's' education; pay raises; and career development incentives.

In addition to incentives other strategies for recruiting temporary and permanent healthcare professionals include outreach advertising, the use of recruiters and the recruitment of foreign graduates who may be eager to work in the United States.

A number of factors can conspire against retaining and attracting healthcare professionals. First, they themselves and their families may be victims. Practices may quickly lose their regular patient base. Personal and professional losses can be significant. Office staff may be unwilling or unable to return to the area and to work. With the loss of jobs after the hurricanes, the numbers of patients covered by Medicaid or having no coverage at all will increase dramatically. Opportunities elsewhere may ultimately provide an irresistible escape from the stress and rigors of the post-disaster environment.

### Reducing the Incidence of Fraudulent and Unethical Practices (3)

Unfortunately, some people see a disaster as an opportunity to make money at the expense of victims. Fraud is rampant after a disaster, from internet scams misrepresenting the collection of donations to volunteers stealing donated items as seen recently in the Katrina Red Cross scandal (CBS News, 2006). Price gouging is also a common occurrence, although the State of Florida passed a law after Hurricane Andrew prohibiting price gouging after a declared disaster and set up a hotline for reporting any occurrences (Florida Attorney General's Office, n.d.). There also are problems with unlicensed contractors taking people's money without finishing the job or doing shoddy work. The State issues badges to insurance adjusters to prevent hurricane victims from being taken advantage of by imposters (Insurance Information Institute, 2006). The insurance companies, FEMA, and the Red Cross are often the victims of fraudulent claims. These activities have the potential to negatively impact true disaster victims because some forms of assistance may be used up before they can be helped or the procedures for claiming assistance must become more rigorous. This could keep some people from being able to obtain assistance as quickly, or at all. This also creates more desperate disaster victims who may fall prey to predatory lenders as they try to make ends meet financially.

Another unethical practice that often occurs in a post-disaster environment involves the real estate market. Speculators often pounce on an impacted coastline and offer quick money to devastated homeowners who either do not understand the true value of their property after a disaster or are so upset from the situation that they hastily wish to move far away to somewhere that seems safer (Musgrave, 2004). This is especially an issue for low-income and/or minority coastal

communities. There is a constant pressure of gentrification in these areas even before a disaster but many of the residents are unwilling to sell because their family has always lived there or because of the sense of community they find there. After a disaster, left with very few possessions and perhaps unemployed, some see no choice but to sell. This was prevalent in the Gulf Coast in places such as Biloxi, where working class bungalow neighborhoods along the coast quickly disappeared (Apuzzo, 2005). The area is losing historic and unique neighborhoods, while a majority of the residents are not receiving fair compensation for their properties. Education prior to a disaster and available assistance after a disaster is needed in all these instances. Post-disaster outreach centers and hotlines can be important in advising people on their options and perhaps preventing decisions that will be regretted later.

### Health-Related Pollution and Environmental Justice (3)

A major contributor to post-disaster health issues that may not be obvious or thought to be a health hazard immediately is mold. Mold can quickly grow to unhealthy levels in a home, business, or public building that has had flood damage. Other environmental health concerns include contact with hazardous water or soil; disposing of household hazardous waste; problems with private water wells; and poor air quality due to demolition, construction dust, debris reduction, or other causes. It is often low-income housing and neighborhoods that are impacted the worst by health-related problems, and these areas are often the slowest to receive immediate attention. According to the U.S. Environmental Protection Agency, “environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies... It will be achieved when everyone enjoys the same degree of protection from environmental and health hazards and equal access to the decision-making process to have a healthy environment in which to live, learn, and work” (U.S. Environmental Protection Agency, 2010). Environmental justice can become a significant issue post-disaster in regards to the clean-up of health-related pollution. In order to stop unhealthy conditions before they can begin, special consideration must be given to planning for timely cleanup and remediation, especially among the economically disadvantaged.

### Quality of Life Factors (3)

Quality of life factors encompass a breadth of topics that vary widely in every community. Some examples include the restoration of recreation and cultural activities, community wellness programs, neighborhood and, after school activities, child care programs, and other features and amenities that provide community residents with a sense of well-being and make the community a desirable place to live. Restoring quality of life after a disaster is an imperative step to attract displaced residents, eventually revive population growth, and rebuild social networks. After a disaster, communities have the opportunity to incorporate healthy community principles into redevelopment plans as opposed to rebuilding previously unhealthy infrastructure that limits opportunities for daily exercise, creates inefficiencies, and challenges maximizing the health of its residents. The U.S. Department of Health and Human Services defines a healthy community as one that embraces the belief that health is more than merely an absence of disease; a healthy community includes those elements that enable people to maintain a high quality of life and productivity. For example, a healthy community offers access to healthcare services that focus on both treatment and prevention for all members of the community; a healthy community is safe; a healthy community has infrastructure, including roads, schools, playgrounds, and other services to

meet the needs of the people in that community; and a healthy community has a healthy and safe environment (U.S. Department of Health and Human Services, 2001).

### Preserving the County's Rich Culture and Heritage (3)

Palm Beach County possesses a wide range of cultural and historical resources central to its quality of life and which serve as a magnet, attracting new residents and businesses, visitors, tourists, and special events. Among these resources are: museums of art (including the famous Norton Art Gallery), history, science, trains, the ocean, museums for children; historic downtowns, neighborhoods and structures (many listed on the National Register); world renown equestrian, polo and other sports venues; and a full range of quality eco-tourism attractions, to name a few. Many of these resources are priceless and/or irreplaceable. They deserve and require special attention, support and care during the post-disaster recovery process.

### Restoring Institutions of Higher Learning (3)

Palm Beach County contains campuses of eight institutions of higher learning, with Palm Beach State College, Florida Atlantic University, and Palm Beach Atlantic University being the largest. The colleges and universities in the Gulf Coast area have been struggling since Hurricane Katrina. Most students were forced to transfer to other colleges, at least for a semester, or take a semester off. Returning to prior enrollment rates is a problem for these colleges and has stunted them financially as well. The amount of research lost from the event is also a tragedy and a loss of revenue for these schools.

### Environmental Preservation and Restoration

Coastal and inland ecosystems throughout Florida provide numerous ecological services and contribute to the quality of life enjoyed by residents and tourists. Natural areas such as waterways, woodlands, beaches, dunes, and wetlands protect communities from flooding, buffer coasts from storm surge, filter environmental pollutants, and provide prime habitat for a variety of species. These natural areas also support a host of industrial, commercial, and recreational activities that are essential to the economic livelihood of the County. Major events such as a coastal storms, catastrophic wildfire, or storm surge can damage these ecosystems. The risk of pollution, debris accumulation, and other disaster impacts is a threat to wildlife, public safety, and activities dependent on natural areas. Restoring the natural environment in the aftermath of a disaster is a key component of ensuring a community's long-term recovery. The progressive development of sea level rise promises to gradually erode coast lines, increase the impacts of tides and storm surge on coastal habitats and plant life, cause salt water contamination of fresh water bodies and wells and otherwise intrude on valued ecological assets.

Representative agencies and organizations that will play major roles include:

#### State/Regional Agencies and Organizations

- Florida Department of Community Affairs
- Florida Department of Environmental Protection
- Florida Division of Emergency Management
- Florida Division of Forestry
- Florida Fish and wildlife Conservation Commission
- South Florida Water Management District

#### Regional Branches of Federal Agencies

- National Marine Fisheries Service
- U.S Army Corps of Engineers, Jacksonville District
- U.S. Coast Guard, Florida Sectors
- U.S. Environmental Protection Agency, Region 4
- U.S. Fish and Wildlife, Region 4

#### Local Government Departments

- Emergency Management
- Environmental Resources Management (ERM)
- Health and Public Safety
- Parks and Recreation Departments
- Planning/ Growth Management/ Community Development
- Public Works Departments

#### Other Organizations

- Local Mitigation Strategy
- Port Authorities

All applicants seeking federal reimbursement are required to comply with the National Environmental Policy Act (NEPA), as well as all other federal, state and local environmental laws and regulations. The FDEM has environmental specialists available to provide technical assistance in meeting these requirements.

#### **Beach and Dune Restoration (1)**

Beach and dune systems provide natural protection from coastal flooding, particularly on barrier islands, among other economic and ecological services such as providing nesting grounds for endangered sea turtles. Storm surge and wave action can cause extensive erosion to beach systems. Although erosion is a natural process to these dynamic systems, heavy shoreline development and the construction of navigation inlets have impaired their natural ability to recover. Acceleration of sea level rise over the coming years will exacerbate erosion, increase the vulnerability of coastal development and damage the environmental benefits of the beaches and dunes. Without a recovery strategy, tourism, recreation, and the protection that the beach and dunes provide coastal development will also be severely impacted.

Post-disaster redevelopment policies should emphasize non-structural methods of mitigating beach erosion, and public outreach should be conducted to discourage post-disaster demands for emergency armoring that can result in long-term negative impacts. The Coastal Construction Control Line (CCCL) Program is an important element in enforcing beach and dune protection after a disaster.

To receive funding for beach renourishment projects under FEMA's Public Assistance Program, a beach must be improved and routinely maintained – meaning that the beach is designed and constructed by placement of imported sand of a proper grain size and a maintenance program is established to preserve the original design. Unimproved or natural beaches are not eligible for



funding for renourishment, but may be eligible for emergency placement of sand if necessary to protect improved property. Creative partnerships can also be forged between local, state, and other federal entities to secure funding for beach renourishment projects.

A potential issue for beach restoration projects is limitation of federal funding. The Coastal Barrier Resources Act (CBRA) was established to encourage conservation of barrier islands by restricting federal expenditures within designated units. Planners should consider these restrictions when thinking about implementing beach restoration projects in CBRA zones.

### Environmental Contamination (1)

High winds, storm surge, and flooding can cause spills, leaks, or discharges of toxic chemicals into the environment. Seaports that handle hazardous material cargos, such as petroleum-based products, chemicals, or other environmental pollutants, are particularly vulnerable given their coastal location. Other sources of environmental pollution include wastewater treatment facilities and runoff from inland agricultural areas that process heavy fertilizer loads and gasoline from vehicles or boats. Contamination can lead to the degradation of water, wetlands, soil, and habitats. It also poses a significant public health threat. Certain disaster circumstances may dictate the need to conduct sampling to test contamination levels prior to permitting occupancy by residents. Site contamination often requires a lengthy and costly clean-up process and may impede long-term redevelopment efforts. Existing brownfield and hazardous material programs may be able to be adapted to this potential post-disaster scenario.

### Environmental and Historic Review of Temporary Sites (1)

After a major disaster, sites are often needed for temporary housing, businesses, and debris management as well as other recovery staging activities. These temporary uses will leave varying degrees of long-term impacts on the sites depending on the precautions taken. As a result of recent disasters, procedures and guidance have been increasing on methods to prevent environmental and historic degradation from recovery operations. For instance, the Florida Department of Environmental Protection and the State Historic Preservation Office must approve sites and any ground-disturbing activity. The FDEM's *Florida Greenbook: Environmental and Historic Preservation Compliance* can provide stakeholders with the foundation to determine if any actions related to this issue need to be incorporated into the Plan.

### Natural Land and Habitat Restoration (2)

Natural, undeveloped lands are vital to Palm Beach County communities. Tidal wetlands, marshes, swamps, and mangroves protect against the inundation of flood waters and act as natural filtration system for pollutants and excess nutrients. These natural ecosystems as well as coral reefs, hardwood hammocks, pinelands, and scrubs serve as vital habitats for plants and animals, including endangered and threatened species. These lands also provide passive recreation and environmental education opportunities for the community. A natural disaster can devastate these areas, jeopardizing fragile ecosystems and the species that depend on them. Habitat areas at highest risk to disaster impacts include coastal high hazard areas, areas located near potential sources of debris or contamination, areas prone to flooding, and areas with a high risk for severe wildfires. Progressive sea level rise further threatens coastal habitats through inundation, increased salinity levels, and increased exposure to storm surge. Programs to protect, re-establish, and restore critical habitats will be essential to their long-term recovery.

There are programs through the Florida Department of Environmental Protection's Northwest District Ecosystem Restoration Section for restoration of coastal habitats. Funding comes from various grants obtained from agencies such as the U.S. Fish and Wildlife Service, NOAA, and the Northwest Florida Water Management District.

[www.dep.state.fl.us/northwest/Ecosys/section/restoration.htm](http://www.dep.state.fl.us/northwest/Ecosys/section/restoration.htm)

### Green Rebuilding (3)

According to the U.S. Environmental Protection Agency, "green building is the practice of creating structures and using processes that are environmentally responsible and resource-efficient throughout a building's lifecycle from siting to design, construction, operation, maintenance, renovation and deconstruction. This practice expands and complements the classical building design concerns of economy, utility, durability, and comfort." (EPA, 2009). Green building encompasses measures to make homes and businesses more energy and water efficient, utilize renewable energy and sustainable building materials and construction, and improve indoor air quality. The need for large-scale reconstruction in a community post-disaster provides an opportunity to make strides in achieving goals of sustainability and incorporating green and healthy design components into a large number of both private and public rebuilding projects. Communities can consider offering incentives after a disaster such as fast-tracking major redevelopment projects that meet green standards. Clean technology, which includes environmentally-friendly and alternative energy industries, is one of the leading industry clusters for recruitment in Florida and Palm Beach County. Green construction projects may provide a way to create employment and grow this field in Palm Beach County.

### Parks and Urban Forest Restoration (3)

A major wind, fire, or storm surge event can severely damage parks and urban forests. A significant loss of mature trees has economic implications, presents public health and safety concerns, and has environmental impacts – urban trees and forests help reduce energy consumption, filter pollutants from the air and water, recharge aquifers, and provide habitats for many species. The restoration of parks and urban forests will affect the quality of life of residents and can be a symbol of recovery and return to normalcy. Some communities will need to restore local parks and urban forests to attract tourists as soon as the community is ready to bring them back. During the short-term post-disaster recovery period, activities related to tree restoration include a damage assessment, immediate treatment, clean up, and debris removal. Professional foresters, debris removal contractors, and recovery crews will need to coordinate their activities. For example, identifying salvageable trees by professional teams should be performed prior to clean up to avoid unnecessary removal of trees. Vegetation distress from uprooting or saltwater exposure will also require quick treatment to avoid further losses. Long-term redevelopment efforts require professional care and citizen education to address tree replacement selection, proper re-planting methods, pruning, and maintenance. Re-planting trees quickly without a broader strategy can increase vulnerability to the next storm and produce an even-aged stand of trees that lacks visual variety. Communities may have local groups such as 4-H or gardening clubs that have the expertise and interest to become involved in restoration activities.

### Water Pollution from Sewer System Failures (3)

Sewer system failures in the aftermath of a major disaster are commonly attributed to pump station electrical outages. In areas of little relief and flat topography, pump stations are needed to move waste to the treatment plants. Another concern during a hurricane event is wastewater

outflow. When a treatment plant exceeds capacity with inordinate amounts of stormwater inflow, intake lines overflow into surface waterbodies. In each case, inability to treat wastewater will result in the pollution of natural resources and warnings to avoid waterbodies for economic and recreational purposes. The contaminants typically include bacteria, nitrates, metals, trace quantities of toxic materials, and salts. These contaminants can destroy productive aquatic habitats. Humans also must avoid contaminated waters, as bacteria can spread disease from the ingestion of microorganisms such as *E. coli*, *Giardia*, *Cryptosporidium*, and Hepatitis A (Oregon State University Extension Service, 1997). In Palm Beach County, where tourism is a major part of the economy, contaminated waters can result in beach closures and fishing prohibitions. Such orders can last days or weeks depending on the severity and quantity of the contamination. Of particular concern are low-income individuals who often fish for their meals in county waterways. Addressing weaknesses in the systems prior to a disaster and using generators or other means to prevent water pollution is, of course, ideal. When pollution does occur after a disaster, rapidly identifying the source and stopping it are the main courses of action in addition to notifying the public and monitoring the situation.

### Preventing/Slowing Salt Water Intrusion into Fresh Water Sources (3)

When fresh water is withdrawn at a rate faster than it can be replenished, a draw down of the water table occurs, resulting in a decrease in the overall hydrostatic pressure. When this happens near the ocean, salt water from the ocean intrudes into the fresh water aquifer contaminating it with salt water. When saltwater intrusion encroaches inland until it reaches pumped wells, saltwater unfit for human consumption or irrigation can render wells useless. This is happening in many communities along the Atlantic and Gulf coasts, including a few in Palm Beach County.

Saltwater intrusion is presently a problem in several wellfields in Palm Beach County and is expected to become a problem at other wellfields in the future. Saltwater intrusion in the County can occur from the ocean and Intracoastal Waterway (Lake Worth) to the east, from residual saltwater to the west and from the Loxahatchee River to the northeast. This intrusion can be caused by wells located too close to the saltwater front or as a result of regional declines in the groundwater level. Regional declines in water levels may be caused by the cumulative impacts of many wellfields or by decreased aquifer recharge. However, proper water supply planning will help to minimize the impacts associated with increased groundwater withdrawals as population and development increase.

Salt contamination of coastal well fields could force coastal cities to abandon primary drinking wells or install new treatment systems. At this writing, at least nine well fields, from south Miami-Dade to Palm Beach, were considered “at risk”. If ground water levels fall low enough to allow an underground wedge of sea water to push deeper inland.

Salt intrusion looms as a major threat to the regional water supply, already so low that drought effects could linger for years, even with a good rainy season. If wells get too salty to supply water that meets state health standards, it could force cities to look for other sources and further strain a scarce resource.

Well fields in Riviera Beach, Manalapan, Boynton Beach, Delray Beach, Highland Beach, and Boca Raton all reside east of or near the saltwater intrusion line running through coastal Palm

Beach County. A wedge runs from the ocean into the porous coastal rock, gravel, and sand, where it lurks beneath a layer of fresh water that supplies the wells.

Thus far Jupiter, Manalapan and Highland Beach and Lake Worth have built or plan to build reverse-osmosis plants to strip the chloride from the salty deep aquifer. Other coastal communities are likely to soon follow.

As it continues to develop, sea level rise promises to become an even greater contributor to the salt intrusion problem. Preventive measures and adaptation strategies for mitigating the effects of sea level rise are contained throughout this PDRP.

### Increased Fuels for Wildfires on Conservation Lands (3)

Palm Beach County has been more vulnerable to wildfires in recent years because of hurricane debris that has not been cleared out of natural areas and vacant properties. The 2004 and 2005 hurricane season resulted in widespread destruction to vegetation throughout the County. On many conservation and vacant lands, these downed trees have since dried out and become dangerous wildfire fuels. Man-made debris, which accumulates in the forest lands, can contain toxic materials and increase fire intensity. The tangled debris in area forests also create “ladder fuels” which enable a forest fire to climb from the ground level to the tree crowns where it becomes much more intense and difficult to suppress as embers can be blown farther. Where trees have been toppled, removing the crowns, ground-level wind speeds increase, resulting in rapid rates of fire spread. (Florida Division of Forestry, 2005)

The hurricane debris also hinders suppression by Division of Forestry and local firefighters. One of the main wildfire suppression strategies is to create fire lines using tractors to contain the fire. The size of the downed trees and the way they have become piled on the ground make it difficult to plow a fire line and navigating through the debris slows down the process. These obstacles can also be a safety hazard for fire fighters retreating from a blaze. While wildfires are always a concern in Palm Beach County forests, the large increases in dry fuels have greatly increased the vulnerability of area homes. (Yunas, public presentation, 22 March 2006). To deal with the increased risk of wildfire that can occur after a hurricane, prior planning, education, and a coordinated strategy to reduce the added wildfire fuels are recommended strategies.

## Appendix VIII: PDRP Priority Issues & Strategies by Topic Area

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### Housing Recovery

- Temporary housing provision and removal
  - Current policy & procedures
  - Disaster temporary housing plan
  - Unified Land Development Code
  - Manufactured housing vendors
  - Plan for temporary housing removal
  - Program to assist residents' transition back to permanent housing
- Rapid repair permitting
  - Current policy and procedures
  - Review existing processes for streamlining
  - Opportunities to incentivize redevelopment and disaster resilience
  - Create consistency & clarity in disaster permitting processes
  - Pre and post-disaster education on permitting procedures
- Temporary housing siting criteria
  - Current policy & procedures
  - FEMA guidelines regarding temporary housing siting
  - Unified Land Development Code
  - Disaster temporary housing plan
  - Incorporate into priority redevelopment areas
  - Temporary sites transition into permanent uses
  - Procedures for permitting employer on-site temporary housing
  - Adopt overall temporary housing siting criteria
  - Annually update a listing of potential sites for different disaster scenarios
  - Post-disaster coordination
- Funding assistance and insurance problems
  - Current policy & procedures
  - Florida hurricane deductibles
  - Florida legislature appropriations
  - Pre-disaster education
  - Post-disaster education
  - Assistance for renters
  - Individual rebuilding assistance & prioritization
  - Incentives for developers
- Non-conforming structures/substantial damage
  - Current policy & procedures
  - Substantial damage/improvement
  - Residential Substantial Damage Estimator
- Code enforcement and contractor licensing
  - Current policy & procedures
  - Contractor licensing
  - Code enforcement
- Available contractors and skilled construction workers

- Rebuilding enhanced and sustainable homes and neighborhoods
  - Current policy & procedures
    - Historic home repair
      - Protecting & restoring historic homes
    - Condemnation & demolition procedures
    - Hazard mitigation
    - Green building
    - Affordable housing redevelopment
    - Neighborhood preservation & gentrification
    - Removing & redeveloping blight

#### Public/Private Infrastructure and Facilities

- Security of critical infrastructure information
  - Current policy & procedures
    - PDRP policies
- Infrastructure services to priority redevelopment areas and other areas of new service resulting from redevelopment
  - Current policy & procedures
    - TECO policy
- Infrastructure services to interim redevelopment needs
  - Current policy & procedures
    - TECO policy
- Infrastructure and public facility repair
  - Current policy & procedures
    - TECO policies
- Communication and coordination among agencies, jurisdictions, and stakeholders

#### Economic Redevelopment

- Business resumption and retention
  - Pre-disaster business outreach/education
  - Identify most vulnerable industries & expected impacts
  - Post-disaster business communication & assistance center
  - Supporting employees return to work
  - Post-disaster financial assistance
  - Post-disaster relocation & rebuilding assistance
  - Retention program & incentives
- Small business assistance
  - Bridge loan program
  - Post-disaster financial assistance
  - Florida Business Continuity & Risk Management Program (BCRM)
  - Pre-disaster survival planning & preparation
  - Post-disaster counseling/training
- Addressing changes in market and workforce composition
  - Centrally located employment announcement
  - Employee counseling services
  - Workforce training

- National emergency grants
- Tourism renewal
  - Marketing campaigns
  - Resumption of events
  - Maintain availability of accommodations & convention facilities
  - Outreach to national and international tourist industry
- Business replacement attraction/incentives
  - Market/recruit targeted industries with incentives
  - Workforce incentives
  - Creative/flexible use of disaster funding
  - Business incubators
- Community Redevelopment Agency and other economic/multi-use redevelopment Projects
  - FEMA ESF #14; National Disaster Recovery Framework

### Land Use

- Prioritize areas to focus rebuilding, reconstruction, and redevelopment
  - Define priority redevelopment areas
    - Sustainable regional PRAs
    - Sustainable community PRAs
    - Vulnerable priority redevelopment areas
- Build-back standards
  - Current policy
  - Propose a unified build-back policy
  - Public education on build-back policy
- Develop policies for redeveloping land areas that have sustained repeated damages from storm events
  - Target areas for decreasing or mitigating development
  - Analyze target areas for best method of vulnerability reduction
  - Identify or create acquisition programs for hazard mitigation

### Health and Social Services

#### Health and Medical

- Hospital, clinic, and medical office restoration
  - Facilities restoration
  - Systems restoration
  - Funneling resources to Existing Facilities
- Medical personnel retention and recruitment
- Mental health assistance
- Assisted living and nursing home safety
- Long-term assistance for special needs population
- Health-related pollution and environmental justice
- Community redevelopment from a “Healthy Communities” perspective

### Safety and Security

- Public safety service levels reestablished throughout county
  - Coordinate Plans & Procedures
  - Reconsider facility locations
  - Extending the presence of responders during transition

### Education

- Schools, higher education reopened
- Daycare, after-school, and teen programs restored
- Recreation, cultural activities restored

### Social Services

- Public transportation restoration and improvement
- Children and family services
- Low-income assistance
- Homeless programs
- Coordination and assistance for nongovernmental organizations and volunteers

### Environmental Restoration

- Hazardous materials, debris contaminants
  - Current policies & procedures
  - Facilities relocation
  - Disposal
  - Monitoring for environmental safety & easing public concern
- Environmental review of temporary sites
  - Current policy & procedures
  - Environmental testing
- Waterway debris removal, pollution
  - Current policy & procedures
- Wetland restoration
  - Current policy & procedures
  - Erosion stabilization
  - Sea level rise impacts on coastal landscape
- Habitat restoration on conservation lands
  - Current policy & procedures
- Urban forest restoration
  - Current policy & procedures
  - Pre-disaster inventory, assessment, mitigation
  - Post-disaster damage assessment, cleanup, and removal
  - Post-disaster long-term canopy restoration, maintenance
- Environmental review of housing sites/neighborhoods
  - Current policy & procedures
  - Communicating with the public



### Financial Administration

- Project revenue shortfalls
  - Revenue impact analysis
- Coordinate private and public funding
  - Assess staff levels & administrative procedures
- Pre-develop options for sustainably cutting services or finding other funding sources
  - Contingency planning
  - Research available funding sources
    - PDRP Funding Resources Companion Handbook*
    - Financial & Technical Assistance for Municipalities* (Florida League of Cities)
    - The Patchwork Quilt: A Creative Strategy for Safe and Long-term Post-Disaster Rebuilding*
- Retain high bond ratings
  - Current policy & procedures
  - Debt management policy
  - Issuing bonds to meet match requirements
- Enforce equitable disaster assistance
- Modify purchasing and contracting procedures to expedite emergency purchases.
- Adopt a repair and reconstruction ordinance to facilitate use of FEMA public assistance dollars
- Establish an internal claims reimbursement process for FEMA funds.
- Adopt a local hazard mitigation plan as part of the general plan to facilitate access to additional FEMA funds.

### Governance

- Sustaining governmental capacities and services in the face of economic crisis and staffing shortages
- Emergency financial management
- Mobilizing local and regional resources
- Maintenance of local control over recovery actions and priorities
- Securing and managing outside financial and non-financial assistance
  - Federal & State Assistance
  - Private Sector Assistance
- Municipal financial and non-financial assistance
  - Municipal insolvency/staff shortages
- Public Information

## Appendix IX: Funding & Assistance Sources for Community Redevelopment

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A broad range of pre- and post-disaster funding is available from local, state, federal, private sector, foundations and non-governmental sources that can be used to increase community disaster resilience as well as assist and facilitate post-disaster recovery and redevelopment. It falls upon local officials to identify, understand, and secure these funds to meet local needs. In many cases, especially where large or multiple events are involved, the County may be competing with other communities for the same monies and will need to distinguish itself as a good investment. Often valuable funding sources have been overlooked or sub-optimized by victimized communities because of a lack of information and poor preparation and planning.

It is critical that County and municipal staffs familiarize themselves with potential funding assistance sources. Ideally, this should be done in an unrushed, studied manner in a “blue skies” environment well before disasters threaten. In order to take full advantage of opportunities to secure and optimally benefit from assistance funding, it is recommended that local officials and staff establish pre-event relationships with key funding organizations. Proactive partnering and conversations with these funding organizations provides the community with an understanding of the organization’s policies, timelines, funding uses and restrictions, types of aid, and recipient and project eligibility.

Local governments may also be required to provide local matches under the rules of certain funding sources. Frequently these matches can be in the form of in-kind services. Some funding organizations might allow waivers of certain criteria or allow creative financing solutions depending on the type or magnitude of the disaster, so it is advisable to explore whether these options are available.

The first part of this section provides a listing of potential funding sources taken from the *Financial Resource Companion to PDRP* administered by the Florida Division of Economic Opportunity in coordination with the FDEM. It provides funding resources that are available pre and post-disaster for the following topical areas:

- Hazard Mitigation and Risk Reduction
- Individual Assistance
- Public Facilities and Infrastructure
- Emergency Management
- Environmental
- Economic Redevelopment
- Historic Preservation
- Agriculture
- Other

Also included is a listing extracted, in part, from FEMA’s *Disaster Assistance: A Guide to Recovery Programs*. Although there is some overlap in the programs covered, it is recommended they be used in tandem to make decisions and take actions.

The second part of this section outlines some strategies and guidance for local officials responsible for securing funding for long-term recovery and redevelopment projects.

Before presenting the lists of potential sources, three lesser known sources should be given special attention:

### Florida Disaster Recovery Fund

The Florida Disaster Recovery Fund was originally founded in 2004 to provide assistance to hurricane victims for losses not covered by immediate recovery groups, insurance or government funding. The fund, managed by the Volunteer Florida Foundation, works with non-profit organizations in affected communities. Donations come from a variety of sources including corporations and private foundations. Goals of the Disaster Fund include:

- Stretching recovery dollars by providing needed financial assistance where insurance and government help leaves off.
- Helping rebuild communities and lives by providing funds to help local organizations working in recovery and by helping non-profits and faith-based organizations rebuild their own structures so they can continue to assist in rebuilding communities.

### Potential Federal and State Recovery/Redevelopment Funding Sources

The federal government helps states and localities to prepare for disasters by providing financial and technical assistance for emergency planning and training, conducting exercises of plans, and building and maintaining an emergency management infrastructure.

In a catastrophic or major disaster incident, the National Response Framework, a national approach to domestic incident management, will be activated. This interagency plan describes the resources that Federal agencies can mobilize to support initial emergency functions and how they will integrate with state, local, private sector, and non-governmental resources. It outlines planning assumptions, policies, a concept of operations, and organizational structures.

*Disaster Assistance: A Guide to Recovery Programs* supports the National Response Framework and the National Disaster Recovery Framework as a resource for federal, state, local, and non-governmental officials. It contains brief descriptions and contact information for federal programs that may be able to provide disaster recovery assistance to eligible applicants.

The programs described in the guide may all be of assistance during disaster incident recovery. Some are available only after a Presidential declaration of disaster, but others are available without a declaration. Individual program descriptions are detailed in the guide.

A Governor may request a Presidential declaration in the event of a disaster incident in which state and local emergency resources are overwhelmed. The request must satisfy the provisions of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended, which is the primary legislative authority for the Federal Government to assist State and local governments in carrying out their responsibilities for disaster response and recovery.

The Guide presents an array of programs that may be of assistance during disaster recovery, depending upon the circumstances, community needs, and available resources. Please verify the applicability of a particular program with the responsible agency.

The following table lists potential recovery assistance programs contained in the Guide.

FEMA grants are found here: <https://www.fema.gov/grants>

**Recovery Funding Assistance Programs**

*The following abbreviations are used throughout this matrix: Presidential declaration (PD); available without declaration (AWD); Federal agency (F); State agency (S); locality (L); individual/family (I); nonprofit organization (N); Indian Tribe (T); business (B); and not provided (N/P).*

| <b>Program</b>  | <b>Agency</b>  | <b>Assistance Provided</b>  | <b>Activating Mechanism</b>  | <b>Eligibility</b> |
|---|--|---|--|--------------------|
| <b>Emergency Haying and Grazing</b>                         | Dept. of Agriculture (USDA), Farm Service Agency (FSA) | Emergency authority to harvest hay or to graze land devoted to conservation and environmental uses under the Conservation Reserve Program.  | AWD  | I/B                |
| <b>Emergency Loans</b>                                      | USDA, FSA  | Low-interest loans to family farmers and ranchers for production losses and physical damage.  | PD; designated by Secretary of Agriculture or Administrator, FSA (physical losses only). | I/B                |
| <b>Noninsured Crop Disaster Assistance Program</b>          | USDA, FSA  | Direct payments to reduce financial losses resulting from a natural disaster that causes production loss or prevents planting of crops grown commercially for food or fiber, for which Federal crop insurance is not available.   | AWD  | I                  |
| <b>Emergency Conservation Program</b>                       | USDA, FSA  | Cost-share payments to rehabilitate farmlands damaged by natural disasters and to carry out emergency water conservation or water-enhancing measures during times of severe drought, in cases when the damage or drought is so severe that Federal assistance is necessary. | AWD  | I/B                |
| <b>Agricultural Marketing Transition Act (AMTA) Program</b> | USDA, FSA  | Direct payments to eligible producers of program crops that comply with AMTA requirements.  | AWD  | I/B                |
| <b>Conservation Reserve Program (CRP)</b>                   | USDA, FSA  | Voluntary program that offers annual rental payments, incentive payments for certain activities, and cost-share assistance to establish approved cover on eligible cropland.  | AWD  | I/B                |
| <b>Farm Operation Loans</b>                                 | USDA, FSA  | Loans and loan guarantees to be used for farm operating costs.  | N/P  | I                  |
| <b>Farm Ownership Loans</b>                                 | USDA, FSA  | Direct loans, guaranteed loans, and technical assistance for farmers in acquiring or enlarging farms or ranches; making capital improvements; promoting   | AWD  | I                  |

|  |   |  |   |           |
|--|---|--|---|-----------|
|  |   | soil and water conservation; and paying closing costs.   |   |           |
| <b>Emergency Food Assistance (Emergency Food Stamp and Food Commodity Program)</b> | USDA, Food and Nutrition Service (FNS)              | Direct payments to States for specified uses.  | PD; declaration by the Secretary of Agriculture.                                      | S/I       |
| <b>Food Distribution</b>   | USDA, FNS   | Donations of USDA-purchased food.  | PD; declaration by Secretary of Agriculture and compliance with eligibility criteria. | F/S/L/N   |
| <b>Emergency Watershed Protection (EWP)</b>  | USDA, Natural Resources Conservation Service (NRCS) | Direct payments and technical assistance to install structural and nonstructural measures to relieve imminent threats to life and/or property, and to purchase floodplain easements. Technical assistance such as site evaluations, design work, and installation inspections also are provided through the program.   | AWD; triggered by NRCS State Conservationist.   | S/L/N/B/I |
| <b>Water Resources</b>   | USDA, NRCS  | Project grants for the installation of preventive measures such as dams, channels, flood warning systems, purchasing easements, floodplain delineation, and land treatment. Advisory and counseling services also are available.   | N/P   | S/L/N     |
| <b>Resource Conservation and Development (RC&amp;D)</b>                            | USDA, NRCS  | Technical assistance and loans to finance local project costs. Projects may include land and water conservation, resource improvements, recreational development, and waste disposal projects.   | AWD   | L/N       |
| <b>River Basin Project</b>   | USDA, NRCS  | Technical assistance. Special priority is given to projects designed to solve problems of upstream rural community flooding, water quality improvement that comes from agricultural nonpoint sources, wetlands preservation, and drought management for agricultural and rural communities. Special emphasis is placed on helping State agencies develop strategic water resource plans. | AWD; triggered by NRCS State Conservationist.   | F/S/L     |
| <b>Soil Survey</b>   | USDA, NRCS  | Technical assistance. Objective is to maintain up-to-date, published surveys (and soil survey data in other formats) of counties or other areas of comparable size for use by interested agencies, organizations, and individuals; and to assist in the use of this information.   | N/P   | S/L/N/B/I |
| <b>Federal Crop Insurance Program</b>  | USDA, Risk Management Agency (RMA)                  | Direct payments of insurance claims. Insurance against unavoidable causes of loss such as adverse weather conditions,  | No activating mechanism is needed, but  | I         |

|  |   |  |  |                         |
|--|---|--|--|-------------------------|
|  |   | fire, insects, or other natural disasters beyond the producer’s control.   | availability is based on crop-specific sales, closing dates, and the availability of crops in particular counties. |                         |
| <b>Business and Industrial Loan Program (B&amp;I)</b>                      | USDA, Rural Business Service  | Guaranteed and direct loans up to \$10 million. Possible disaster uses include drilling wells, purchasing water, or tying into other water programs.   | AWD  | B/N/T and public bodies |
| <b>Farm Labor Housing and Grants</b>                                       | USDA, Rural Housing Service (RHS)   | Loans and grants to provide housing and related facilities for domestic farmers.   | No deadlines.  | I/B                     |
| <b>Rural Housing Site Loans</b>  | USDA, RHS   | Loans for the purchase and development of housing and necessary equipment that becomes a permanent part of the development (e.g., water and sewer lines).  | AWD  | N                       |
| <b>Rural Rental Housing Loans</b>  | USDA, RHS   | Loans for the purchase, building, or repair of rental housing. Funds can also be used to provide water and waste disposal systems.   | AWD  | I/S/L/B                 |
| <b>Emergency Community Water Assistance Grants (ECWAG)</b>                 | USDA, Rural Utilities Service (RUS)   | Project grants to help rural residents obtain adequate water supplies.   | PD   | S/L/N                   |
| <b>Water and Waste Disposal Loans and Grants</b>                           | USDA, RUS   | Project grants and direct and guaranteed loans to develop, replace, or repair water and waste disposal systems in rural areas and towns having populations of 10,000 or less.  | AWD  | L/N/T                   |
| <b>Voluntary Organizations Recovery Assistance</b>                         | American Red Cross, Mennonite Disaster Service, Salvation Army, and member organizations of the National Voluntary Organizations Active in Disaster | Mass care (shelter and feeding), welfare inquiries, health and mental health services, child care, home repairs (labor and funding), emergency communications, debris removal, burn services, cleaning supplies, personal property, distribution of supplies, transportation, loan personnel, and other specialized programs and services. | Disaster event.  | I                       |
| <b>Economic Adjustment Program — Disaster Economic Recovery Assistance</b> | Dept. of Commerce (DOC), Economic Development Administration (EDA)  | Planning and technical assistance grants to State and local governments for strategic recovery planning and implementation to focus on job retention/creation to help offset the economic impacts of a major disaster.   | PD; requires supplemental appropriation (SA).  | S/L/N/T                 |
| <b>Economic Adjustment Program — Disaster Economic Recovery Assistance</b> | DOC, EDA  | Revolving loan fund grants to State and local governments to provide a source of local financing to support business and economic recovery after a major disaster where other financing is insufficient or unavailable.  | PD; SA   | S/L/N/T                 |
| <b>Economic Adjustment</b>   | DOC, EDA  | Infrastructure construction grants to address local recovery implementation  | PD; SA   | S/L/N/T                 |

|   |  |   |  |                            |
|---|--|---|--|----------------------------|
| <b>Program — Disaster Economic Recovery Assistance</b>                |  | needs for new or improved publicly owned infrastructure after a major disaster, support job creation and retention, leverage private investment, and help accelerate and safeguard the overall economic recovery of the disaster-impacted area.   |  |                            |
| <b>Corporation for National Service (CNS) Programs</b>                | CNS  | Volunteers of all ages/backgrounds provide short/long-term response and recovery assistance. They are available through the community or national deployment.   | PD   | F/S/N/T                    |
| <b>Legal Services</b>   | FEMA   | Free legal advice and referrals. Assistance includes help with insurance claims, counseling on landlord-tenant and mortgage problems, assistance with home repair contracts and consumer protection matters, replacement of legal documents, estate administration, preparation of guardianships and conservatorships, and referrals. | PD, designation for individual assistance.   | I                          |
| <b>National Flood Insurance Program (NFIP)</b>                        | FEMA   | Insurance benefits against losses from floods, mudflow, or flood-related erosion.   | AWD  | I/B/S                      |
| <b>NFIP, Community Assistance Program</b>                             | FEMA   | Grants to States for technical assistance to resolve floodplain management issues.  | AWD  | S/L                        |
| <b>Public Assistance Program</b>                                      | FEMA   | Project grants. Funds can be used for clearing debris, emergency measures, and repairing or replacing damaged structures, roads, utilities, public buildings, and infrastructure.   | PD, designation for public assistance.   | L/N, via S                 |
| <b>Disaster Housing Program</b>                                       | FEMA   | Direct-payment grants and services. Grants include transient accommodation reimbursement, and home repair, rental, and mortgage assistance. Services may include a mobile home.   | PD, designation for individual assistance.   | I                          |
| <b>Regulatory Relief for Federally Insured Financial Institutions</b> | Federal Deposit Insurance Corporation (FDIC) and other Federal regulatory agencies | Specialized services. Supervisory agencies can grant regulatory relief to insured institutions. Regulatory relief includes lending assistance, extensions of reporting and publishing requirements, waivers from appraisal regulations, and implementation of consumer protection laws.   | PD; other disaster that affects the ability of a federally insured financial institution to provide normal services. | N/B                        |
| <b>Donation of Federal Surplus Personal Property</b>                  | General Services Administration (GSA)  | Donations of surplus personal property to eligible recipients.  | N/P  | S/L/N/<br>public airports. |
| <b>Disposal of Federal Surplus Real Property</b>                      | GSA  | Sale, exchange, or donations of property and goods.   | N/P  | S/L/N                      |
| <b>Disaster Assistance for Older Americans</b>                        | HHS, Administration on Aging   | Direct payments to State agencies focused on aging-related services.  | PD   | I, via S                   |

|   |  |  |   |          |
|---|--|--|---|----------|
| <b>Mental Health Disaster Assistance</b>  | HHS, Public Health Service   | Project grants to provide emergency mental health and substance abuse counseling to individuals affected by a major disaster.  | Supplemental appropriation by Congress relating to PD.                      | I, via S |
| <b>Community Development Block Grant (CDBG) Program — Entitlement Grants</b>                          | Dept. of Housing and Urban Development (HUD), Community Planning and Development (CPD) | Formula grants to entitlement communities. Preferred use of funding is for long-term needs, but funding may also be used for emergency response activities.  | Supplemental appropriation by Congress relating to PD.                      | L        |
| <b>CDBG — State’s Program</b>   | HUD, CPD   | Formula grants to States for non-entitlement communities. Preferred use of funding is for long-term needs, but funding may also be used for emergency response activities. States establish methods of fund distribution.  | Supplemental appropriation by Congress relating to PD.                      | L, via S |
| <b>Mortgage Insurance for Disaster Victims Program (Section 203 (h))</b>                              | HUD  | Provides mortgage insurance to protect lenders against the risk of default on loans to qualified disaster victims whose homes are located in a presidentially designated disaster area and were destroyed, requiring reconstruction/replacement. Insured loans may be used to finance the purchase or reconstruction of a one-family home that will be the principal residence of the homeowner. | PD  | I        |
| <b>Reclamation States Emergency Drought Relief Act of 1991</b>  | Dept. of the Interior (DOI), Bureau of Reclamation                                     | Loans, grants, use of facilities, construction, management and conservation activities, and purchase of water for resale or for fish and wildlife services. Temporary drought assistance may include the drilling of wells, installation of equipment, improved reporting of conditions.   | Request for drought assistance and approval by Commissioner of Reclamation. | F/S/N/I  |
| <b>Disaster Unemployment Assistance (DUA)</b>   | Dept. of Labor (DOL); FEMA   | Direct payments of DUA benefits and reemployment assistance services. Objective is to provide assistance to individuals who are ineligible for regular unemployment compensation programs and who are left jobless after a major disaster.   | PD, designation for individual assistance. PD may be limited to DUA only.   | I, via S |
| <b>Employment: Job Training Partnership Act (JTPA), National Reserve Emergency Dislocation Grants</b> | DOL, Employment and Training Administration  | Program provides States with grant money to provide individuals with temporary jobs and/or employment assistance.  | PD  | I, via S |
| <b>Price-Anderson Act</b>   | American Nuclear Insurers and Nuclear Regulatory Commission (NRC) (for commercial      | Payment of liability claims that arise from a nuclear power reactor accident. Insurance-provided assistance may compensate victims for increased living expenses after an evacuation, unemployment, business losses,   | AWD   | I        |



|   |  |  |   |     |
|---|--|--|---|-----|
|   | nuclear power plants); Dept. of Energy (for DOE facilities)          | environmental cleanup, reduced property values, and costs associated from bodily injury.   |   |     |
| <b>Price-Anderson Act</b>                       | NRC  | Insurance reimburses States and municipalities for costs necessarily incurred in providing emergency food, shelter, transportation, or police services in evacuating the public after a nuclear power reactor accident.  | AWD   | S/L |
| <b>Economic Injury Disaster Loans (EIDLs)</b>   | Small Business Administration (SBA)                                  | Direct long-term, low-interest loans to small businesses and agricultural cooperatives. Loans are only available to applicants with no credit available elsewhere, and the maximum amount of an EIDL is \$1.5 million.   | PD; declaration of a disaster by the Secretary of Agriculture and/or SBA-declared disaster. | B   |
| <b>Physical Disaster Loans (Business)</b>       | SBA  | Direct long-term, low-interest loans to businesses and nonprofit organizations. Loans provided to repair or replace uninsured property damages caused by disasters. Loans limited to \$1.5 million.  | PD or SBA declaration.  | N/B |
| <b>Physical Disaster Loans (Individual)</b>     | SBA  | Direct long-term, low-interest loans to homeowners and renters to repair or replace uninsured damages caused by disasters to real and personal property. Loan amounts limited to \$200,000 to repair or replace real estate, and to \$40,000 to repair or replace personal property.                       | PD or SBA declaration.  | I   |
| <b>Social Security Assistance</b>               | Social Security Administration (SSA)                                 | Advisory and counseling services to process SSA survivor claims, assist in obtaining necessary evidence for claim processing, resolve problems involving lost or destroyed SSA checks, and reprocess lost or destroyed pending claims.   | PD; AWD   | I   |
| <b>International Donations</b>                  | Dept. of State   | Donations including goods and cash.  | Request for international coordination assistance from FEMA's Donations Coordinator.        | I   |
| <b>Transportation: Emergency Relief Program</b> | Dept. of Transportation (DOT), Federal Highway Administration (FHWA) | Formula and project grants to repair roads. FHWA can provide: (1) up to \$100 million in funding to a State for each natural disaster or catastrophic failure; and (2) up to \$20 million in funding per year for each U.S. territory. Special legislation may increase the \$100 million per State limit. | PD; AWD   | F/S |
| <b>Alcohol and Tobacco Tax Refund</b>           | Dept. of the Treasury, Bureau of Alcohol,                            | Specialized services to provide Federal alcohol and tobacco excise tax refunds to businesses that lost assets in a disaster.   | PD  | B   |

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|   | Tobacco, and Firearms   |   |   |     |
| <b>Savings Bonds Replacement or Redemption</b>                                  | Treasury, Bureau of Public Debt   | Specialized services. Bureau of Public Debt expedites replacement of U.S. Savings Bonds lost or destroyed as a result of a disaster.  | PD  | I   |
| <b>Taxes: Disaster Assistance Program</b>                                       | Treasury, Internal Revenue Service (IRS)  | Advisory and counseling services. IRS provides information about casualty loss deductions, claim procedures, and reconstruction of lost financial records.  | PD  | I/B |
| <b>Forbearance on VA Home Loans</b>   | Dept. of Veterans Affairs (VA)  | Encourage lenders to extend forbearance to any borrowers who have VA home loans and who are in distress as a result of disaster; provide incentives to such lenders.                                  | PD  | I   |
| <b>Coastal Zone Management; Hazards, Environmental Recovery, and Mitigation</b> | DOC, National Oceanic and Atmospheric Administration (NOAA)   | Assistance to State and local governments in mitigation and recovery/restoration planning, post event permitting assistance, water-level data for storm-surge and flooding prediction and mitigation. | PD for post event; AWD from coastal State(s) for pre-event planning.  | S   |
| <b>DOC, NOAA</b>  | Provision of survey mark data to local and State agencies for re-establishing their geodetic control networks; re-establishment of national network if warranted. | Re-establishing Local Survey Networks   | PD; AWD depending on funding availability.  |     |
| <b>DOC, NOAA</b>  | Grants to States for the management of coastal development to protect life and property from coastal hazards.   | Coastal Zone Management Administration Awards   | AWD requires supplemental appropriation by Congress relating to PD for poststorm coastal hazard mitigation and recovery activities. |     |
| <b>DOC, NOAA</b>  | Emergency grants to State coastal zone management agencies to address unforeseen or disaster-related circumstances.   | Coastal Zone Management Fund  | AWD subject to amounts provided in appropriation acts. No funds currently appropriated.   |     |
| <b>DOC, NOAA, National Weather Service</b>                                      | Technical assistance for weather, water, and climate warning systems and critical information dissemination systems. Post storm data                              | Technical Support   | AWD   |     |

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|                          | acquisition activities.                             |  |  |
| <b>Technical Support</b> | DOC, National Institute of Standards and Technology | Disaster damage surveys, assistance in procurement of consulting services, evaluation of structural and fire performance of buildings and lifelines. | Federally declared disasters to buildings and lifelines, on cost-reimbursable basis. |

**Potential Federal and State Recovery/Redevelopment Funding Sources**

| <b>Agency/Program/ Information Link</b>  | <b>Description of Assistance</b>   |
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| <b>Individual Assistance</b><br><br><a href="http://www.fema.gov/rrr/inassist.shtm">http://www.fema.gov/rrr/inassist.shtm</a>  | Individual Assistance programs assist people and businesses following a disaster and help them get back on their feet.   |
| <b>Public Assistance</b><br><br><a href="http://www.fema.gov/rrr/pa">http://www.fema.gov/rrr/pa</a>  | The Public Assistance Program provides supplemental federal disaster grant assistance to help state and local governments and certain private non-profit organizations rebuild. FEMA's Public Assistance Grant Program is one way federal assistance gets to the state and local governments and to certain private nonprofit organizations. These grants allow them to respond to disasters, to recover from their impact and to mitigate impact from future disasters. While these grants are aimed at governments and organizations -- their final goal is to help a community and all its citizens recover from devastating natural disasters. |
| <b>FEMA Regional Support</b><br><br><a href="http://www.fema.gov/regions">http://www.fema.gov/regions</a>  | Regional FEMA staff work directly with states to help plan for disasters, develop mitigation programs, and meet needs when major disasters occur.  |
| <b>National Flood Insurance Program Increased Cost of Compliance Coverage (ICC)</b><br><br><a href="https://www.fema.gov/floodplain-management/financial-help/increased-cost-compliance">https://www.fema.gov/floodplain-management/financial-help/increased-cost-compliance</a> | Owners of homes and businesses damaged by a flood, may be required to meet certain building requirements in your community to reduce future flood damage before you repair or rebuild. To help you cover the costs of meeting those requirements, the National Flood Insurance Program (NFIP) includes Increased Cost of Compliance (ICC) coverage for all new and renewed Standard Flood Insurance Policies.  |
| <b>Flood Mitigation Assistance (FMA)</b><br><br><a href="https://www.fema.gov/grants/mitigation/floods">https://www.fema.gov/grants/mitigation/floods</a>  | FMA, through the National Flood Insurance Fund, provides funding to assist States and communities in implementing measures to reduce or eliminate the long-term risk of flood damage to buildings, manufactured homes, and other structures insurable under the National Flood Insurance Program.  |

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| <p><b>Hazard Mitigation Grant Program (HMGP)</b></p> <p><a href="https://www.fema.gov/grants/mitigation/hazard-mitigation">https://www.fema.gov/grants/mitigation/hazard-mitigation</a></p> | <p>Authorized under Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, the Hazard Mitigation Grant Program (HMGP) administered by the Federal Emergency Management Agency (FEMA) provides grants to States and local governments to implement long-term hazard mitigation measures after a major disaster declaration. The purpose of the program is to reduce the loss of life and property due to natural disasters and to enable mitigation measures to be implemented during the immediate recovery from a disaster.</p>  |
| <p><b>Pre-Disaster Mitigation (PDM) Grant Program</b></p> <p><a href="https://www.fema.gov/grants/mitigation/pre-disaster">https://www.fema.gov/grants/mitigation/pre-disaster</a></p>      | <p>The Pre-Disaster Mitigation (PDM) program was authorized by §203 of the Stafford Act. Funding for the program is provided through the National Pre-Disaster Mitigation Fund to assist States and local governments (to include Indian Tribal governments) in implementing cost-effective hazard mitigation activities that complement a comprehensive mitigation program. The PDM program will provide funds to states, territories, Indian tribal governments, and communities for hazard mitigation planning and the implementation of mitigation projects prior to a disaster event. PDM grants are to be awarded on a competitive basis and without reference to state allocations, quotas, or other formula-based allocation of funds.</p> |
| <p><b>Economic Development Administration (EDA)</b></p> <p><a href="https://eda.gov/disaster-recovery/">https://eda.gov/disaster-recovery/</a></p>  | <p>The Economic Development Administration (EDA) helps distressed communities address problems associated with long-term economic distress, as well as sudden and severe economic dislocations including recovering from the economic impacts of natural disasters, the closure of military installations and other Federal facilities, changing trade patterns, and the depletion of natural resources.</p>   |
| <p><b>Environmental Protection Agency (EPA)</b></p> <p><a href="http://www.epa.gov">http://www.epa.gov</a></p>  | <p>The U.S. Environmental Protection Agency (EPA) was established to protect human health and the environment. EPA leads the nation's environmental science, research, education and assessment efforts.</p>   |
| <p><b>Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS)</b></p> <p><a href="http://www.nrcs.usda.gov">http://www.nrcs.usda.gov</a></p>                         | <p>The National Resources Conservation Service (NRCS) provides planning assistance for watershed protection projects, water quality improvement projects, wetland preservation, and management for agricultural and rural communities.</p>   |
| <p><b>Department of Agriculture (USDA) Rural Development Assistance</b></p> <p><a href="http://www.rurdev.usda.gov">http://www.rurdev.usda.gov</a></p>                                      | <p>The Rural Development (RD) agency of USDA helps rural areas to develop and grow by offering Federal assistance that improves quality of life. Rural Development provides financial programs to support essential public facilities and services as water and sewer systems, housing, health clinics, emergency service facilities and electric and telephone service. Rural Development also promotes economic development by providing loans to businesses through banks and community-managed lending pools, while also assisting</p>   |

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|  | communities to participate in community empowerment programs.   |
| <p><b>Housing &amp; Urban Development (HUD)</b><br/> <b>Community Development Block Grants (CDBG)</b></p> <p><a href="http://www.hud.gov">http://www.hud.gov</a></p> | <p>Community Development Block Grants (CDBG) are administered by State community development agencies and local governments on the behalf of the U.S. Department of Housing and Urban Development (HUD) to provide decent housing and a suitable living environment, principally for low-to-moderate income individuals. CDBG activities may include the acquisition, rehabilitation, and reconstruction of disaster-damaged properties and the redevelopment of disaster-affected neighborhoods.</p> |
| <p><b>National Oceanic &amp; Atmospheric Administration (NOAA)</b></p> <p><a href="http://www.noaa.gov">http://www.noaa.gov</a></p>                                  | <p>Within NOAA, the Office of Ocean and Coastal Resource Management (OCRM) is responsible for administering the Coastal Zone Management Act and a leader on the Nation's coastal, estuarine and ocean management issues.</p>  |
| <p><b>Small Business Administration (SBA)</b></p> <p><a href="http://www.sba.gov/disaster_recov/ind ex.html">http://www.sba.gov/disaster_recov/ind ex.html</a></p>   | <p>The Small Business Administration (SBA) provides low-interest disaster assistance loans for the repair or replacement of a primary residence; household and personal property; and for business owners and non-profit organizations for the repair, rehabilitation, or replacement of property.</p>  |

Appendix X: State and Key Outside Economic Redevelopment Organizations/Agencies

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| <p><b>OTTED<br/>Office of Trade &amp; Tourism<br/>Development</b></p> | <ul style="list-style-type: none"> <li>• Participates in agency network conference calls pre- and post- event.</li> <li>• Initiates pre-event contact with all OTTED partners to ensure correct identification of projected needs for response.</li> <li>• If needed, initiates contract and budget amendment preparation for Loan Program implementation.</li> <li>• Executes contract(s) with administrative entities.</li> <li>• Coordinates Office-specific and partner- specific media releases.</li> <li>• Conducts local training for participants implementing the loan program</li> <li>• Schedules and conducts loan committee meetings.</li> <li>• Generates appropriate reports on loan activity.</li> <li>• Coordinates assistance to businesses regarding permitting and regulatory issues through Economic Development Liaisons.</li> <li>• Assists in staffing the State ESF-18.</li> </ul> |
| <p><b>Agency for Workforce Innovation</b></p>                         | <ul style="list-style-type: none"> <li>• Provides labor market information and census data.</li> <li>• Mobilizes agency’s One-Stop Mobile Units</li> <li>• Initiates the disaster unemployment assistance program, if deemed appropriate.</li> <li>• Operates the national emergency grants jobs program, if deemed appropriate.</li> <li>• Assists with labor exchange – matching workers with employers</li> <li>• Assists in staffing the State ESF 18.</li> <li>• Participates in post-disaster economic recovery workshops.</li> <li>• Coordinates the delivery of intermediate and long term economic impact statements</li> </ul>  |
| <p><b>Department of Agriculture and Consumer Services</b></p>         | <ul style="list-style-type: none"> <li>• Provides applicable information about agricultural sectors.</li> <li>• Assists in coordinating with agricultural associations.</li> <li>• Assists with the development of any recovery program guidelines relating to agricultural producers.</li> <li>• Identifies applicable program(s) that will aide Florida's agricultural sectors.</li> <li>• Participates in business assistance workshops and business assistance centers, as needed.</li> </ul>   |

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|  | <ul style="list-style-type: none"> <li>• Coordinates with the Palm Beach County Extension Service on relief and recovery</li> <li>• Provides outreach to agency stakeholders.</li> <li>• Assists in staffing the State EOC.</li> <li>• Participates in the development of intermediate and long term economic impact statements.</li> </ul>   |
| <b>Department of Business and Professional Regulation (DBPR)</b> | <ul style="list-style-type: none"> <li>• Participates in public forums to provide information and assistance to businesses and professionals.</li> <li>• After an event, assists with the economic disaster assessment process.</li> <li>• Provides outreach to professions and businesses before, during and after an event.</li> <li>• Assists in staffing the ESF 18.</li> <li>• Assists with dispute resolution related to our licensed businesses and professions.</li> </ul>  |
| <b>Department of Financial Services</b>                          | <ul style="list-style-type: none"> <li>• Provides education on insurance and financial issues</li> <li>• Provides assistance with insurance contacts (short term recovery)</li> <li>• Monitors insurance and banking industries response in providing services.</li> <li>• Assists with financial disputes resolution relating to banking or insurance issues.</li> <li>• Provides information to the business community on insurance companies, adjustors and agent information.</li> <li>• Identifies fraud and insurance trade/claim practice violations.</li> <li>• Continues outreach with the business community.</li> <li>• Participates in post-disaster economic recovery workshops, business recovery centers, etc.</li> <li>• Provides outreach to agency stakeholders.</li> <li>• Assists in staffing the ESF 18.</li> <li>• Participates in the development of intermediate and long term economic impact statements.</li> </ul> |
| <b>Department of Management Services</b>                         | <ul style="list-style-type: none"> <li>• Provides services and support in the areas of human resource management, retirement benefits, health benefits, real-estate management, specialized services, state purchasing and technology.</li> </ul>   |
| <b>Department of Revenue</b>                                     | <ul style="list-style-type: none"> <li>• Assists in staffing the State EOC.</li> <li>• Participates in the development of intermediate and long term economic impact statements.</li> <li>• Participates in post-disaster economic recovery workshops, business recovery centers, etc.</li> </ul>   |
| <b>Enterprise FL</b>   | <ul style="list-style-type: none"> <li>• Coordinates pre- and post- event conference calls with local economic development and business support partners to maximize input on damage assessment, need identification, and resource delivery.</li> <li>• Coordinates business impact and damage assessment.</li> <li>• Assists local economic development organizations compile information necessary to request implementation of Loan Program, including</li> </ul>  |

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|  | <p>legislative letters of request, Business Recovery Surveys, and media releases.</p> <ul style="list-style-type: none"> <li>• Coordinates resources for establishment of small business assistance centers and/or workshops.</li> <li>• Assists in implementation of Loan Program.</li> <li>• Identifies/helps coordinate assignment of volunteer staff from economic development partners to affected organizations.</li> <li>• Locates sources of equipment needed by affected economic development organizations or business groups to assist recovery efforts.</li> <li>• Assists local economic development organizations or major employers needing immediate assistance for displaced workers.</li> <li>• Assists local economic development organization or major employers identify short- and long- term employment needs.</li> <li>• Assists in staffing the State ESF 18.</li> <li>• Participates in the development of intermediate and long term economic impact statements.</li> </ul>  |
| <p><b>Small Business Development Centers Network</b></p> | <ul style="list-style-type: none"> <li>• Coordinates statewide pre- and post- event workshops for educating and training businesses in disaster preparation, continuity planning and recovery.</li> <li>• Supports development and training of a pool of qualified Florida businesses capable of responding to public and private sector needs (products and services) and contract solicitations.</li> <li>• Works with the Dept. of Management</li> <li>• Services to enhance the pool of "certified" businesses listed on <a href="http://myfloridamarketplace.com">myfloridamarketplace.com</a></li> <li>• Deploys Mobile Assistance Centers (MACs) and teams of Business Recovery SBDC analysts to affected communities.</li> <li>• Provides technical assistance for economic business damage assessments.</li> <li>• Provides technical assistance and</li> <li>• communication linkages between SEOC and affected business communities through the MACs satellite communications capability.</li> <li>• Provides assistance to affected businesses in the preparation for state and SBA loan applications.</li> </ul> |
| <p><b>Visit Florida</b></p>                              | <ul style="list-style-type: none"> <li>• Provides outreach via web site, visitor hotline and welcome centers.</li> <li>• Coordinates pre-and post- event conference calls with tourism and industry partners.</li> <li>• Maintains tourism-marketing opportunities before, during and after the event.</li> <li>• Coordinates with Visit Florida partners to identify temporary lodging and housing for evacuees or others displaced by the event and emergency responders.</li> </ul>  |



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|  | <ul style="list-style-type: none"> <li>• Provides information for reports</li> <li>• Assists in staffing the EOC.</li> <li>• Participates in the development of intermediate and long term economic impact statements.</li> </ul>  |
| <b>Volunteer Florida</b>                             | <ul style="list-style-type: none"> <li>• Works with local long-term recovery organizations to ensure private donations are targeted to areas of need.</li> </ul>   |
| <b>Workforce Florida</b>                             | <ul style="list-style-type: none"> <li>• Coordinates with Regional Workforce Boards to identify impact on local employers and employees.</li> <li>• Identifies opportunities to assist impacted employers and employees with training programs to support recovery.</li> <li>• Assists in staffing the State EOC.</li> </ul>                       |
| <b>Associated Industries of Florida</b>              | <ul style="list-style-type: none"> <li>• Supports economic redevelopment through its membership.</li> </ul>  |
| <b>Florida Chamber</b>                               | <ul style="list-style-type: none"> <li>• Supports local business interests through its extensive pool of legislative, grassroots, and political tools.</li> </ul>  |
| <b>Florida Council of 100</b>                        | <ul style="list-style-type: none"> <li>• Works with the Governor’s Office, Chief Justice, and Legislature to support economic redevelopment.</li> </ul>  |
| <b>Florida Restaurant &amp; Lodging Association</b>  | <ul style="list-style-type: none"> <li>• Represents interests of the hospitality industry through its local chapters and state organization.</li> </ul>  |
| <b>Florida Retail Federation</b>                     | <ul style="list-style-type: none"> <li>• Provides ESF18 staffing assistance.</li> <li>• Provides outreach vial Web site and member industry communications.</li> <li>• Coordinates communication between SEOC (State ESF 7 Logistics) and Florida retailers.</li> <li>• Trouble-shoots for priority retailers of essential commodities.</li> </ul> |
| <b>National Federation of Independent Businesses</b> | <ul style="list-style-type: none"> <li>• Represents interests of small and independent businesses and professional practices at the state and federal levels.</li> </ul>   |

## Appendix XI: Engaging Private Sector Resources in Community Recovery

After decades of oversight and inaction, the need for engaging the private sector in community disaster recovery is now widely recognized and being acted upon at all levels of government and by the private sector.

The primacy of early engagement of local and regional business resources and capabilities is critical to economic redevelopment, reestablishment of critical services, and quality of life. State resources and capabilities are the second line of defense, capable of leveraging established relationships with key private sector organizations, contractors, and federal agencies. The National Disaster Recovery Framework and national private sector organizations such as the U.S. Chamber of Commerce's Business Civic Leadership Center provide access to a broad range of government and private sector assistance and resources. FEMA's Private Sector Office is also a valuable source of information on private sector engagement.

Following are some key resources to be considered following major disasters to engage private sector resources and capabilities in community resilience and recovery.

### **Local/Regional/State Resources:**

#### Business and Industry Unit (ESF 18)

The purpose of the ESF 18 is establishing productive working relationships between local government and the business community that can facilitate disaster resilience and recovery. The ESF #18 desk in the EOC is staffed by private sector and government agency personnel with private sector interests during Level 4 activations. During long-term recovery most, if not all of the ESF #18 staff will assume recovery roles at the Recovery Operation Center.

#### Contacts:

Business & Industry Unit Leader (ESF #18 Coordinator),  
Director of Emergency Management  
ESF #18 Desk (Activations Only)

#### Business Development Board

The mission of the Business Development Board is to stimulate economic energy, promote business diversity and enrich the vitality of Palm Beach County through relocation, retention and expansion of companies to the area. Among its post-disaster services is coordination with Enterprise Florida and other state agencies for bridge loans and other assistance grants/ services.

#### Contact:

President & CEO  
V.P. Business Retention and Expansion

#### State ESF #18

The purpose of Emergency Support Function (ESF) 18 is to coordinate local, state and federal agency actions that will provide immediate and short-term assistance for the needs of business, industry and economic stabilization, and to support SERT efforts by facilitating and coordinating the delivery intermediate and long term economic recovery assistance.

Coordination of local, state and federal business assistance is done primarily through networks of local and regional economic, workforce and tourism development partners, as well as business support organizations who determine the most efficient and effective ways to manage the access to these services at the local and regional level.

The coordination of state agencies and organizations involved in assisting local economic development, workforce, tourism and other business support agencies and organizations includes the performance of tasks related to preparedness, response, recovery and mitigation where local resources are not sufficient and local government requests state assistance.

**Contacts:**

State ESF #18 Coordinator  
State Emergency Management Operations Center (SEOC)  
Governor's Office of Tourism, Trade and Economic Development (OTTED)  
Florida Department of Revenue (DOR)

Small Business Development Center (SBDC) at Florida Atlantic University

The Small Business Development Center (SBDC) at Florida Atlantic University is part of a national network that has more than 1,100 business development centers nationwide and is a member of the Florida SBDC Network and ASBDC. SBDCs represent the largest service delivery network of the U.S. Small Business Administration.

The SBDC is a cooperative effort of the private sector, the educational community and federal, state and local governments. It enhances economic development by providing small businesses with management and technical assistance, including assistance during post-disaster recovery. Contact: [sbdc@fau.edu](mailto:sbdc@fau.edu)

Enterprise Florida

Enterprise Florida Inc. (EFI) is a public-private partnership serving as Florida's primary organization devoted to statewide economic development. Florida's disaster response programs serve as a model for the nation. Preparation and planning are key elements in keeping Florida open for business after a disaster. Enterprise Florida provides a list of state and federal resources available for businesses to utilize in recovery activities:

Florida's Emergency Management Division (FDEM) annually updates a statewide Comprehensive Emergency Management Plan (CEMP) with the goal that Florida's citizens and businesses receive state of the art assistance during and after an emergency.

Florida Emergency Small Business Bridge Loan Program State of Florida Emergency Bridge Loan Program from the State of Florida. \$25,000 in short term 0% interest loans for 90 to 180 days for businesses to use while waiting for insurance or other assistance. (850) 681-3601

Florida Department of Economic Opportunity administers state and federal programs and initiatives to help visitors, citizens, businesses, and communities to achieve the state's economic development goals. These programs include the Low-income Home Energy Assistance Program,

Weatherization Program, Community Services Block Grant Program, community planning and development programs and services, and various workforce programs and services.  
Contact: (850) 245-7105 [floridajobs.org](http://floridajobs.org)

#### Florida Small Business Resource Network

The Small Business Continuity Services Resource Network (SBCSRN) is a database of Florida identified to fill niche areas for recovery technical assistance in support of small business and the Florida economy.  
(904) 620-2489 [www.sbrn.org](http://www.sbrn.org)

#### Florida Department of Agriculture and Consumer Services

License, insurance and consumer complaint information on building contractors.  
(800) 435-7352 [fdacs.gov](http://fdacs.gov)

#### Florida Department of Environmental Protection

An order can be given to reduce regulatory processes and provide flexibility for restoring services quickly during a disaster.  
(850) 245-2118 - [www.floridadep.org](http://www.floridadep.org)

#### Florida Division of Insurance Agent and Agency Services

Provides Small Business Insurance information assistance.  
877-693-5236 – [myfloridacfo.com](http://myfloridacfo.com)

#### Florida Department of Management Services

Florida Emergency Network Secure site

Logs in for State agencies, EOC offices, City, and County to order supplies during a declared emergency.

[Dms.myflorida.com/fensecure](http://Dms.myflorida.com/fensecure)

The Florida Emergency Supplier Network (Vendors):

Identifies and groups needed commodities and services by type and/or distribution channel, based on experience. Coordinate suppliers of emergency commodities and services for membership in the FESN. Also collect and organize the information and make it accessible to government buyers during emergency operations

[dms.myflorida.com/fesn](http://dms.myflorida.com/fesn)

The Florida Emergency Purchasing Network (Volunteers)

Coordinates purchasing volunteer efforts during declared emergencies, organizes the delivery of specialized training through the FDEM. Also collects and organizes FEPN information and make it accessible to emergency logistics officials requiring procurement assistance during emergency operations.

[Dms.myflorida.com/fesn](http://Dms.myflorida.com/fesn)

#### Florida Department of Revenue

The Florida Department of Revenue will waive penalties and interest during the period of emergency for taxpayers who are unable to file returns and/or make payment of taxes on time.

Contact: [emailDOR@floridarevenue.com](mailto:emailDOR@floridarevenue.com) [floridarevenue.com](http://floridarevenue.com)

### Visit Florida

Visit Florida adopts complimentary Cover Your Event (CYE) Insurance. This supplemental insurance covers any costs directly related to re-booking a meeting should it be displaced due to a named hurricane/disaster.

Contact: (888) 735-2872 <https://www.visitflorida.com/contact/>

### FEMA Private Sector Division

FEMA established a Private Sector Division within the Office of External Affairs in October 2007. The division's overarching goals include improving information sharing and coordination between FEMA and the private sector during disaster planning, response and recovery efforts. The FEMA Private Sector Division cultivates public-private collaboration and networking in support of the various roles the private sector plays in emergency management, including: impacted organization, response resource, partner in preparedness, and component of the economy. The division also fosters internal collaboration and communication among FEMA programs that have an interest in private sector engagement

Contact: (202-646-3444 [nbeoc@max.gov](mailto:nbeoc@max.gov))

### Business Civic Leadership Center (U.S. Chamber of Commerce)

BCLC's Disaster Response and Recovery Program helps businesses communicate and collaborate with each other and with the nonprofit and government sectors to make disaster relief, recovery, and reconstruction activities more effective. With a focus on community resilience before disasters and long-term economic recovery afterwards, the program is a mechanism for sharing the latest ideas on disaster assistance, practicing recovery plans, highlighting the good work of corporate citizens, and helping to rebuild the livelihoods of people affected by extreme events.

BCLC's National Disaster Help Desk for Business (Supported by the Office Depot Foundation) is designed to enhance community economic recovery after a disaster. The Help Desk provides on-the-ground coordination of information among businesses, local chambers of commerce, NGOs, government responders, and disaster recovery specialists.

After a major disaster, contact the Help Desk if: You are in the impact area and want help with FEMA, SBA, and other assistance programs (or for international disasters, if you want help coordinating with U.S.-based NGOs and U.S. government aid agencies); you want information about recovery best practices; you want to support the recovery process and connect with chambers or businesses in the impact area.

BCLC's Jobs4Recovery is a free service provided by the Chamber BCLC and IBM, powered by the Direct Employers Association. It provides access to job opportunities in the affected communities that are grappling with the economic crisis and striving for economic recovery, as well as geographies that are severely affected by natural disasters'

BCLC also provides an online corporate aid tracker.

## Appendix XII: National Disaster Recovery Framework (NDRF)

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Issued by the Department of Homeland Security in 2010, and the Second Edition in 2016, the *National Disaster Recovery Framework* establishes a common platform and forum for how the whole community builds, sustains, and coordinates delivery of recovery capabilities. Resilient and sustainable recovery encompasses more than the restoration of a community's physical structures to pre-disaster conditions. Through effective coordination of partners and resources, we can ensure the continuity of services and support to meet the needs of affected community members who have experienced the hardships of financial, emotional, and/or physical impacts of devastating disasters.

The NDRF describes principles, processes, and capabilities essential for all communities to more effectively manage and enable recovery following an incident of any size or scale. This framework defines how the whole community, including emergency managers, community development professionals, recovery practitioners, government agencies, private sector, nongovernmental organization (NGO) leaders, and the public, will collaborate and coordinate to more effectively utilize existing resources to promote resilience and support the recovery of those affected by an incident. The National Preparedness Goal defines resilience as “the ability to adapt to changing conditions and withstand and rapidly recover from disruption due to emergencies.”

The NDRF establishes scalable, flexible, and adaptable coordinating platforms that align key roles and responsibilities across the whole community and depicts a process in which a community fully engages and considers the needs of all its members. A key element of the process is that the community assumes leadership in developing recovery priorities and activities that are realistic, wellplanned, and clearly communicated.

Palm Beach County recognizes that the engagement of the private sector is critical to enhancing community and business survival/retention rates and to effectively utilizing local and regional business resources and capabilities in support of community disaster recovery and economic redevelopment.

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Federal Agencies & Assistance Programs/Services

| Agency/Program/ Information Link   | Description of Assistance   |
|--|---|
| Individual Assistance<br><a href="http://www.fema.gov/rrr/inassist.shtm">http://www.fema.gov/rrr/inassist.shtm</a>   | Individual Assistance programs assist people and businesses following a disaster and help them get back on their feet.  |
| Public Assistance<br><a href="http://www.fema.gov/rrr/pa">http://www.fema.gov/rrr/pa</a>   | The Public Assistance Program provides supplemental federal disaster grant assistance to help state and local governments and certain private non-profit organizations rebuild. FEMA's Public Assistance Grant Program is one way federal assistance gets to the state and local governments and to certain private nonprofit organizations. These grants allow them to respond to disasters, to recover from their impact and to mitigate impact from future disasters. While these grants are aimed at governments and organizations -- their final goal is to help a community and all its citizens recover from devastating natural disasters.  |
| FEMA Regional Support<br><a href="http://www.fema.gov/regions">http://www.fema.gov/regions</a>   | Regional FEMA staff work directly with states to help plan for disasters, develop mitigation programs, and meet needs when major disasters occur.   |
| National Flood Insurance Program<br>Increased Cost of Compliance Coverage (ICC)<br><a href="http://www.fema.gov/nfip/icc.shtm">http://www.fema.gov/nfip/icc.shtm</a> | Owners of homes and businesses damaged by a flood, may be required to meet certain building requirements in your community to reduce future flood damage before you repair or rebuild. To help you cover the costs of meeting those requirements, the National Flood Insurance Program (NFIP) includes Increased Cost of Compliance (ICC) coverage for all new and renewed Standard Flood Insurance Policies.   |
| Flood Mitigation Assistance (FMA)<br><a href="http://www.fema.gov/fima/fma.shtm">http://www.fema.gov/fima/fma.shtm</a>   | FMA, through the National Flood Insurance Fund, provides funding to assist States and communities in implementing measures to reduce or eliminate the long-term risk of flood damage to buildings, manufactured homes, and other structures insurable under the National Flood Insurance Program.   |
| Hazard Mitigation Grant Program (HMGP)<br><a href="http://www.fema.gov/fima/mitgrant.shtm">http://www.fema.gov/fima/mitgrant.shtm</a>                                | Authorized under Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, the Hazard Mitigation Grant Program (HMGP) administered by the Federal Emergency Management Agency (FEMA) provides grants to States and local governments to implement long-term hazard mitigation measures after a major disaster declaration. The purpose of the program is to reduce the loss of life and property due to natural disasters and to enable mitigation measures to be implemented during the immediate recovery from a disaster.  |
| Pre-Disaster Mitigation (PDM) Grant Program<br><a href="http://www.fema.gov/fima/pdm.shtm">http://www.fema.gov/fima/pdm.shtm</a>                                     | The Pre-Disaster Mitigation (PDM) program was authorized by §203 of the Stafford Act. Funding for the program is provided through the National Pre-Disaster Mitigation Fund to assist States and local governments (to include Indian Tribal governments) in implementing cost-effective hazard mitigation activities that complement a comprehensive mitigation program. The PDM program will provide funds to states, territories, Indian tribal governments, and communities for hazard mitigation planning and the implementation of mitigation projects prior to a disaster event. PDM grants are to be awarded on a competitive basis and without reference to state allocations, quotas, or other formula-based allocation of funds. |
| Economic Development Administration (EDA)<br><a href="http://www.fema.gov/fima/pdm.shtm">http://www.fema.gov/fima/pdm.shtm</a>                                       | The Economic Development Administration (EDA) helps distressed communities address problems associated with long-term economic distress, as well as sudden and severe economic dislocations including   |



| Agency/Program/ Information Link  | Description of Assistance   |
|---|---|
|   | recovering from the economic impacts of natural disasters, the closure of military installations and other Federal facilities, changing trade patterns, and the depletion of natural resources.   |
| Environmental Protection Agency (EPA)<br><a href="http://www.epa.gov">http://www.epa.gov</a>  | The U.S. Environmental Protection Agency (EPA) was established to protect human health and the environment. EPA leads the nation's environmental science, research, education and assessment efforts.   |
| Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS)<br><a href="http://www.nrcs.usda.gov">http://www.nrcs.usda.gov</a>           | The National Resources Conservation Service (NRCS) provides planning assistance for watershed protection projects, water quality improvement projects, wetland preservation, and management for agricultural and rural communities.   |
| Department of Agriculture (USDA) Rural Development Assistance<br><a href="http://www.rurdev.usda.gov">http://www.rurdev.usda.gov</a>                        | The Rural Development (RD) agency of USDA helps rural areas to develop and grow by offering Federal assistance that improves quality of life. Rural Development provides financial programs to support essential public facilities and services as water and sewer systems, housing, health clinics, emergency service facilities and electric and telephone service. Rural Development also promotes economic development by providing loans to businesses through banks and community-managed lending pools, while also assisting communities to participate in community empowerment programs. |
| Department of Energy (DOE) Technical Assistance Program<br><a href="http://www.energy.gov/engine/content.do">http://www.energy.gov/engine/content.do</a>    | The Technical Assistance Program provides services to communities for the revitalization of single-family, multifamily, and commercial buildings  |
| Department of Energy (DOE) Center for Excellence for Sustainable Development<br><a href="http://www.sustainable.doe.gov">http://www.sustainable.doe.gov</a> | The Department's Center for Excellence for Sustainable Development, works with communities to help them define and implement sustainable development strategies as part of their comprehensive community planning efforts.  |
| Department of Transportation (DOT) Transportation Enhancement Funding<br><a href="http://www.enhancements.org">http://www.enhancements.org</a>              | The U.S. Department of Transportation's Federal Highway Administration (FHWA) oversees a special fund, known as Transportation Enhancement Funding, used to encourage States to dedicate transportation money to projects that enhance local communities.   |
| Housing & Urban Development (HUD) Community Development Block Grants (CDBG)<br><a href="http://www.hud.gov">http://www.hud.gov</a>                          | Community Development Block Grants (CDBG) are administered by State community development agencies and local governments on the behalf of the U.S. Department of Housing and Urban Development (HUD) to provide decent housing and a suitable living environment, principally for low-to-moderate income individuals. CDBG activities may include the acquisition, rehabilitation, and reconstruction of disaster-damaged properties and the redevelopment of disaster-affected neighborhoods.  |
| National Oceanic & Atmospheric Administration (NOAA)<br><a href="http://www.noaa.gov">http://www.noaa.gov</a>   | Within NOAA, the Office of Ocean and Coastal Resource Management (OCRM) is responsible for administering the Coastal Zone Management Act and a leader on the Nation's coastal, estuarine and ocean management issues.   |
| Small Business Administration (SBA)<br><a href="http://www.sba.gov/disaster_recov/index.html">http://www.sba.gov/disaster_recov/index.html</a>              | The Small Business Administration (SBA) provides low-interest disaster assistance loans for the repair or replacement of a primary residence; household and personal property; and for business owners and non-profit organizations for the repair, rehabilitation, or replacement of property.   |

### Appendix XIII: Post-Disaster Visioning and Community Participation Process Guide

In the event some areas may have suffered concentrated destruction to a degree that major redevelopment of that sector of the community is necessary. Rather than allow this redevelopment to happen piecemeal or, even worse, let the area remain in a prolonged neglected state, a transparent visioning process with community participation could result in an opportunity to make the impacted area better than before. The following process outlines some important steps in involving the residents and businesses of an impacted area in decisions for the future during what could be a difficult recovery period. The appropriate PDRP Working Group to oversee each action is cited.

#### *Determining areas that may need a visioning process for redevelopment*

- Based on damage assessments GIS can be used to determine if there are areas of concentrated substantial damage. These areas may result from storm surge, excessive flooding, tornadoes, or simply high winds in relation to a hurricane or could be an area impacted by a catastrophic urban/ wildfire or other type of hazard capable of large paths of destruction.
- If a sector of the community with substantial damage to a majority of structures is identified, the appropriate County or city staff should create maps showing the boundaries of the area and the damage it sustained, the future land use for the area, and what the existing uses were. All of this should be available as GIS layers depending on the jurisdiction. If the area of impact is large it should be split into neighborhood units to better enable community participation during the visioning process.
- This information should be taken to the PDRP Executive Committee with the recommendation of the planning staff of the jurisdiction as to whether this area is in need of a visioning process before redevelopment is allowed. If the Executive Committee decides that it should go through a visioning process then the Executive Committee Chair(s) should get approval from the Board of County Commissioners or if the area is in a municipality they should recommend this action to the city council.
- The area should also be given an extended moratorium to allow time to prepare for a visioning process and make any needed land use or regulation changes before rebuilding begins there.
- Once a sector has been approved for a post-disaster visioning process, a press release of the County or city's intentions should be prepared that includes a description of the area and asks for residents and businesses from that area to participate. The visioning process can be conducted via a. resource center, website, meetings, etc... The communication should note that the process is not intended to keep people from returning to their neighborhoods and that their right to return is a priority.

### Gathering Input and Preparing for a Charette

- Several PDRP actions in this PDRP recommend the creation of regional public information/resource centers throughout the County in the aftermath of a major or catastrophic disaster. These centers may serve several purposes such as disaster financial assistance, temporary housing assistance, mitigation and rebuilding information, and permitting assistance once the moratorium for that area has been lifted. For any area declared for visioning, a resource center should be located there that has information on the visioning process and timeline. Maps, such as those cited above, should be displayed and staff or volunteers should be able to answer questions and record comments. Questionnaires, comment sheets, and maps with markers should be out for interested persons to submit ideas or concerns. Information at the resource center should be available in languages appropriate for the demographics of the impacted area.
- A website should be created with the same information available at the resource center and a means by which people can submit comments as well as a phone number for questions. This will provide a way for those citizens who have not returned to the County to begin participating.
- Analyze the risk of rebuilding (by parcel if possible) and make recommendations if mitigation through current standards will prevent a repeat of the destruction or if some areas of the sector are inappropriate for the current future land use designation. Present these findings to the Executive Committee, and after reaching consensus, make available to the public as a technical report to be used in the charette discussions.
- Perform a brief economic analysis of the impacted community as it was before the disaster and determine if there may be substantial changes due to the disaster. Should the area focus economic development in a different direction? Draft a technical report with recommendations to be used in a charette.
- Stakeholder meetings can be scheduled to focus on the above technical reports and gather public input on how these recommendations could be incorporated into redevelopment plans. These meetings should be facilitated and invite all stakeholders who have returned (residents, businesses, schools, religious institutions, homeowner associations, etc). Media involvement in these meetings should be encouraged to provide information for those who were unable to attend. Proceedings should also be posted on the website.
- Based on public input and technical reports, visual vision alternatives should be prepared for the impact area that can be debated at the charette. Assistance from experts should be enlisted in preparing these alternative visions. The Treasure Coast Regional Planning Council, Florida Department of Community Affairs, professors and their students from Florida graduate planning and/or urban design departments, American Planning Association, and Urban Land Institute are just a few places where expertise could be obtained. The alternative visions should try to incorporate some of the relevant redevelopment opportunities listed in the next section.

### Holding a Charette

- Once there has been enough time for displaced persons to return and general input from the public has been developed into alternative visions, a charette can be scheduled for the impacted area. It should be held in a large meeting space as near the area as possible with appropriate audio-visual equipment. The time and date should be chosen to allow as many to participate as possible. During the day on Saturday may be appropriate if there are still safety issues from the hurricane with travel at night. The scheduled charette should be announced in a press release and advertised through signs in the affected area for several weeks prior.
- Professional facilitation services should be procured (could be a pre-disaster agreement) if staff expertise is not available. The visioning charette should create a picture of redevelopment goals for the next 20 or more years. It should be sensitive to private property rights and the possibility of citizen distrust in the process.

### Implementing the Vision

- Once a vision has been accepted by the charette attendees, or if necessary a series of charettes, any necessary Comprehensive Plan amendments or Land Development Code changes that would be required to implement the vision should be drafted and reviewed by the legal department in an expedited manner. These should be presented to the Board of County Commissioners, or municipal equivalent where applicable.
- After local approval has been obtained, expedited review and approval by the State should be requested so that the moratorium on this area can be lifted and rebuilding can begin in a managed manner.

### Ideas for Redevelopment Opportunities in Post-disaster Visioning

If major redevelopment were necessary following a disaster, an ideal redevelopment project might include some of the following components:

#### Open space

- Use hazardous land (i.e. surge/flood risk) for open space uses. These areas could be used for parks, habitat conservation, or simply aesthetic public spaces to enhance the new development.
- Natural drainage areas, beach dunes, and wetlands could be preserved or restored while development is clustered elsewhere. Transfer of development rights or land acquisition programs can be used to compensate landowners.

#### Mixed-uses

- Redevelopment can turn previous single-use areas into vibrant mixed-use neighborhoods. By mixing commercial with residential, residents can cut the amount of automobile trips and enjoy the healthy convenience of walking to the corner store, café, or perhaps their office.

### Mixed-incomes

- Redevelopment projects should provide housing options for mixed-income populations. Including workforce housing helps correct the jobs-housing balance within our community. It also helps to ensure that those displaced by the disaster can afford to return to Palm Beach County.

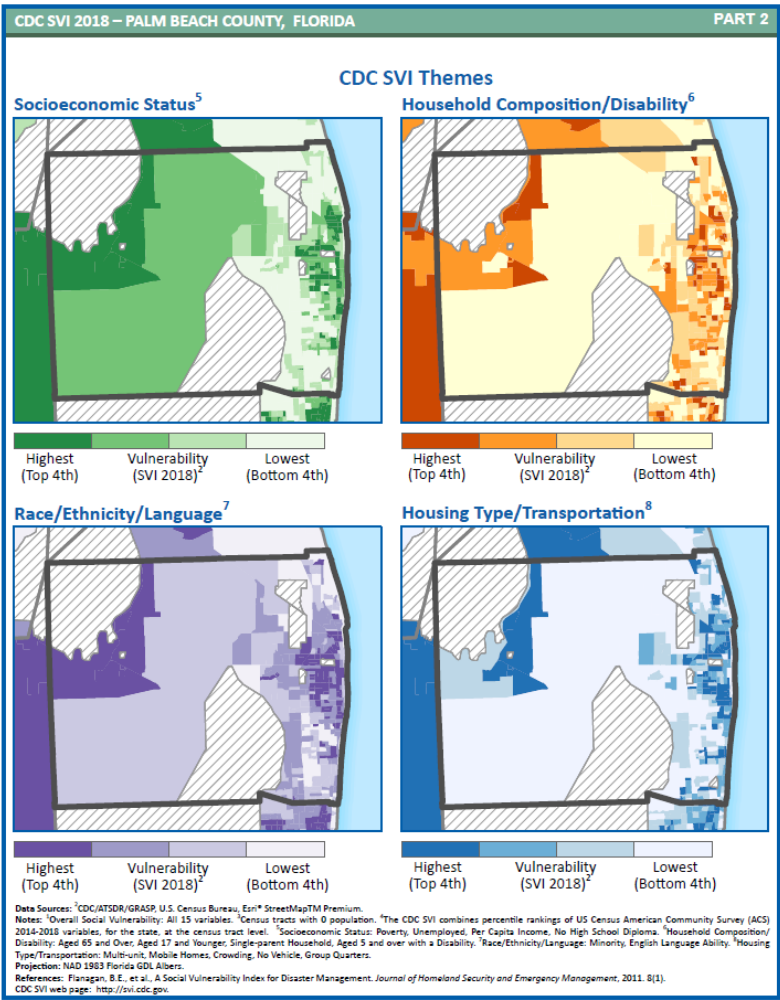
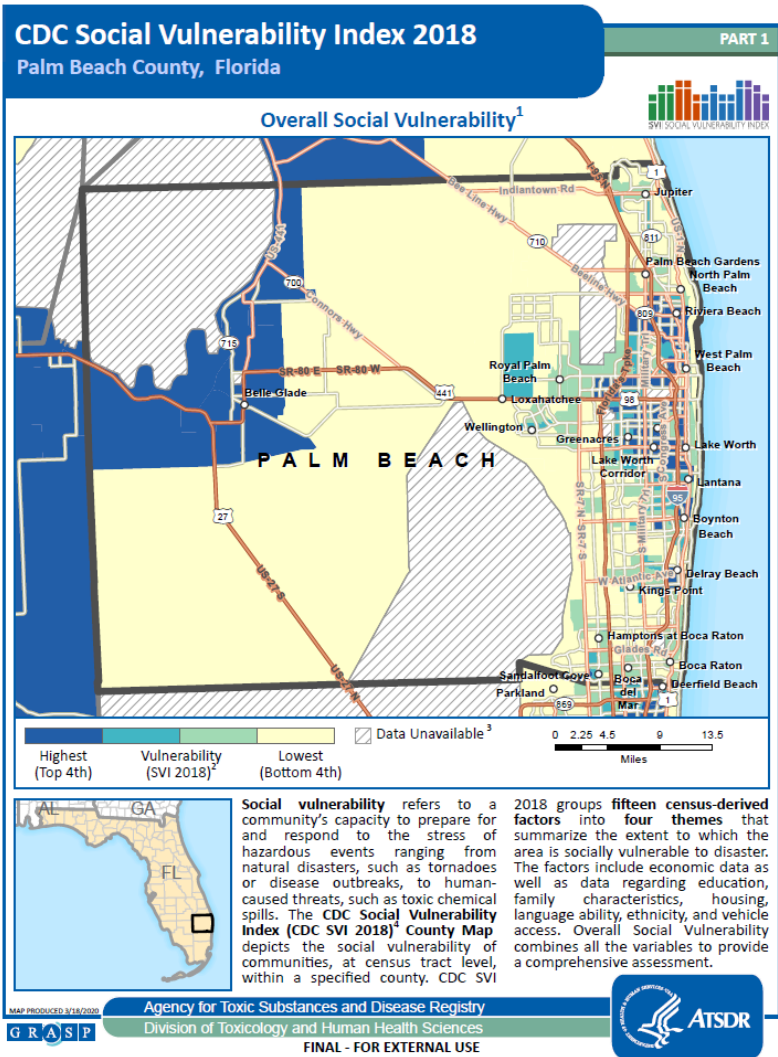
### Alternative transportation designs

- Transit and pedestrian oriented developments use human-scale designs rather than catering to automobile needs. Smaller streets and parking lots, continuous bike lanes/paths, and plentiful sidewalks with access to mass transit encourage healthy lifestyles and reduce pollution and energy consumption.

### Safe and green buildings

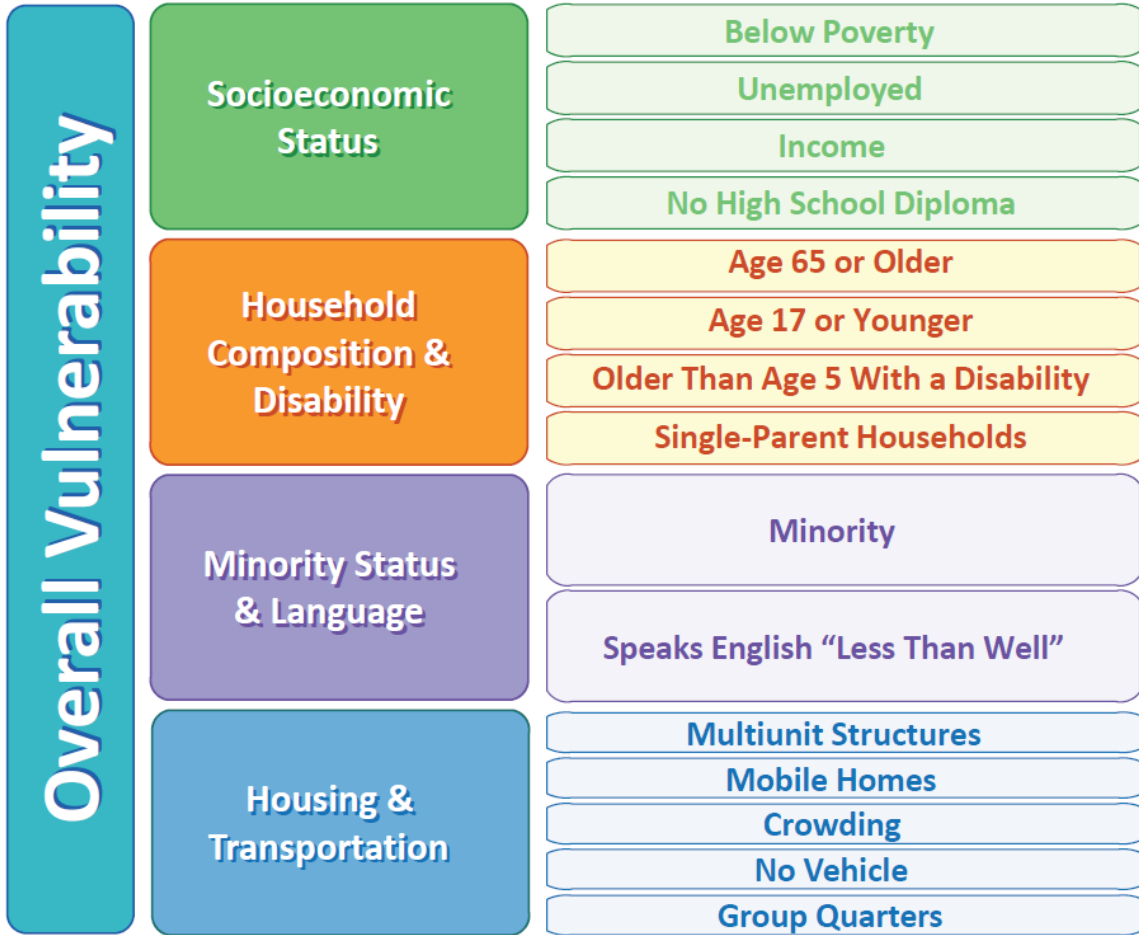
- Environmentally friendly buildings cut energy consumption by providing natural lighting and other innovative solutions such as green roofs. Combining these innovations with hazard mitigation techniques would result in ideal structures- capable of withstanding hurricanes while also conserving natural resources.

Appendix XIII: Social Vulnerability Index



FINAL - FOR EXTERNAL USE

**Variables and Themes Included in the Social Vulnerability Index Databases**



Agency for Toxic Substances and Disease Registry (ATSDR) at the Centers for Disease Control and Prevention (CDC).

## GLOSSARY

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**Acceptable Risk:** Degree of human and material loss that is perceived by the community or relevant authorities as tolerable in actions to minimize disaster risk. (U.N., 1992)

**Accommodation:** A sea level rise adaptation strategy wherein coastal jurisdictions choose not to retreat but rather to continue to use areas that will be impacted by hurricane storm surge increased by sea level rise. Planners may wish to reconsider construction standards and more appropriate uses. Other accommodation strategies may include converting land use to uses that are water dependent, adaptable, or evolve as sea levels rise.

**Adaptation:** Actions taken to help communities and ecosystems moderate, cope with, or take advantage of actual or expected changes in weather and climate conditions. (Modified from IPCC, 2007)

**Adaptation Action Areas:** Florida Statutes Chapter 163.3177(6) (g) (10) states that local communities may develop an adaptation action area designation for those low-lying coastal zones that are experiencing coastal flooding due to extreme high tides and storm surge and are vulnerable to the impacts of rising sea level. Local governments that adopt an Adaptation Action Area may consider policies within the coastal management element to improve resilience to coastal flooding resulting from high tide events, storm surge, flash floods, stormwater runoff, and related impacts of sea level rise. Criteria for the adaptation action area may include, but need not be limited to, areas for which the land elevations are below, at, or near mean higher high water, which have a hydrologic connection to coastal waters, or which are designated as evacuation zones for storm surge.

**Adaptation Strategies:** Strategies for adapting to sea level rise, most commonly involving actions in one or more categories of protection, accommodation and retreat.

**Catastrophic Disaster:** Any natural or manmade incident, including terrorism, that results in extraordinary levels of mass casualties, damage, or disruption severely affecting the population, infrastructure, environment, economy, national morale, and/or government functions.” It produces an overwhelming demand on State and local response resources and mechanisms; causes a severe long-term effect on general economic activity; and severely affects State, local, and private sector capabilities to begin and sustain response activities.

**Catastrophe:** Quarantelli’s 6 criteria:

- In catastrophes most or all of a community built structure is impacted, including facilities of emergency response organizations.
- Local response personnel are unable to assume normal roles due to losses of personnel and/or facilities & equipment.
- Help from nearby or even regional communities is not available because all are affected by the same event.
- Most, if not all, of the everyday community functions are sharply and concurrently interrupted.



- News coverage is more likely to be provided by national organizations over a longer period of time.
- National government and very top officials become directly involved

**Category 1 Hurricane:** The lowest of five levels of relative hurricane intensity on the Saffir/Simpson hurricane scale. A Category 1 hurricane is defined by winds of 74 to 95 MPH, or a storm surge of 4 to 5 feet above normal. This category normally does not cause real damage to permanent structures, although damage to unanchored mobile homes, shrubbery, and trees can be expected. Also some coastal road flooding and minor pier damage. (Notification Manual)

**Category 2 Hurricane:** The second of five levels of relative hurricane intensity on the Saffir/Simpson hurricane scale. A Category 2 hurricane is defined by winds of 96 to 110 MPH, or a storm surge of 6 to 8 feet above normal. This category normally causes some roofing material, door, and window damage to buildings. Considerable damage to vegetation, mobile homes, and piers can be expected. Coastal and low lying escape routes can be expected to flood 2 to 4 hours before arrival of storm center. Small craft in unprotected anchorages will bread mooring. (Notification Manual)

**Category 3 Hurricane:** The third of five levels of relative hurricane intensity on the Saffir/Simpson hurricane scale. A Category 3 hurricane is defined by winds of 111 to 130 MPH, or a storm surge of 9 to 12 feet above normal. This category normally does some structural damage to small residences and utility buildings, with a minor amount of curtain wall failures. Mobile homes are destroyed. Flooding near the coast can be expected to destroy smaller structures, with larger structures damaged by floating debris. Terrain continuously lower than 5 feet above sea level may be flooded inland as far as 6 miles. (Notification Manual)

**Category 4 Hurricane:** The fourth of five levels of relative hurricane intensity on the Saffir/Simpson hurricane scale. A Category 4 hurricane is defined by winds of 131 to 155 MPH, or a storm surge of 13 to 18 feet above normal. This category normally causes more extensive curtain wall failures, with some complete roof structure failure on small residences. Major erosion will occur at beach areas. Major damage to lower floors of structures near the shore can be expected. Terrain continuously lower than 10 feet above sea level may be flooded, requiring massive evacuation of residential areas inland as far as 6 miles. (Notification Manual)

**Category 5 Hurricane:** The severest of five levels of relative hurricane intensity on the Saffir/Simpson hurricane scale. A Category 5 hurricane is defined by winds greater than 155 MPH, or a storm surge greater than 18 feet above normal. This category normally causes complete roof failure on many residential and industrial buildings; some are blown over or away. Major damage to lower floors of all structures located less than 15 feet above sea level and within 500 yards of the shoreline can be expected. Massive evacuation of residential areas on low ground within 5 to 10 miles of the shoreline may be required. (Notification Manual)

**Climate Change:** Any significant change in the measures of climate (e.g., temperature, precipitation, wind patterns, etc.) lasting for an extended period of time

**Comprehensive Emergency Management Plan (CEMP):** Operations plan required under Chapter 252.38(1), Florida Statutes, that defines the organizational structure, chain of command, and operational procedure for the preparation, response and recovery, and mitigation efforts associated with an emergency; includes a basic plan as well as a recovery annex and mitigation annex. It contains policies, authorities, concept of operations, legal constraints, responsibilities, and emergency functions to be performed. Agency and departmental response plans, responder Standard Operating Procedures (SOPs), and specific incident action plans are developed from this strategic document.

**Comprehensive Plan:** An official document in ordinance form adopted by the local government setting forth its goals, objectives, and policies regarding the long-term development of the area within its jurisdiction; the Coastal Management Element of Palm Beach County's plan contains emergency management guidance and references the PDRP.

**Consequence:** The outcome of an event or situation expressed qualitatively or quantitatively, being a loss, injury, disadvantage or gain. (Standards 1995)

**Continuity of Government (COG):** All measures that may be taken to ensure the continuity of essential functions of governments in the event of emergency conditions, including line-of-succession for key decision-makers.

**Continuity of Operations Plan (COOP):** An internal planning effort within individual component entities, agencies, or government organizations to ensure the capability exists to continue essential "mission-critical functions" across a wide range of potential emergencies.

**Crisis:** An event and/or a situation which endangers the established system, the health, life, and property of its members and urgently requires intervention.

**Crisis Management:** The process by which an organization or community deals with a major event that threatens to harm or has harmed the organization, community, its stakeholders, and/or the general public.

**Damage Assessment:** The process used to appraise or determine the number of injuries and deaths, damage to public and private property, and the status of key facilities and services such as hospitals and other health care facilities, fire and police stations, communications networks, water and sanitation systems, utilities, and transportation networks resulting from a human-generated or natural disaster.

**Declaration:** The formal action by the President to make a State eligible for major disaster or emergency assistance under the Robert T. Stafford Relief and Emergency Assistance Act, Public Law 93-288, as amended.

**Disaster:** Any natural, technological, or civil emergency that causes damage of sufficient severity and magnitude to result in a declaration of a state of emergency by a county, the Governor, or the President of the United States. Disasters shall be identified by the severity of resulting damage, as follows:

- ***Catastrophic Disaster*** – A disaster event that results in large numbers of deaths and injuries; causes extreme damage or destruction of facilities that provide and sustain human needs; produces an overwhelming demand on the state and local response resources and mechanisms; causes a severe long-term effect on general economic activity; and severely affects state; local, and private sector capabilities to begin and sustain response activities;
- ***Major Disaster*** – As defined under the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C 5122) a major disaster is any natural catastrophe (earthquakes, explosion, fire, flood, high water, hostile actions, hurricanes, landslide, mudslide, storms, tidal wave, tornado, wind-driven water, snowstorms, or drought), or, regardless of cause, any fire, flood, or explosion, in any part of the United States, which in the determination LMS 2020 28 of the President causes damage of sufficient severity and magnitude to warrant disaster assistance under this Act to supplement the effort and available resources of States, tribes, local governments, and disaster relief organizations in alleviating the damage, loss, hardship, or suffering caused thereby; and
- ***Minor Disaster*** – Any disaster that is likely to be within the response capabilities of local government and results in only minimal need for state or federal assistance. The damage level to life and property is minimal and can be controlled and contained with resources within the municipality, or county in which they occurred.

**Disaster Field Office:** The office established in or near the designated area of a Presidentially declared major disaster to support Federal and State response and recovery operations. The DFO houses the FCO and ERT, and where possible, the SCO and support staff.

**Disaster Management:** The body of policy and administrative decisions and operational activities which pertain to the various stages of a disaster at all levels. (UN 1992)

**Disaster Response:** A sum of decisions and actions taken during and after disaster, including immediate relief, rehabilitation, and reconstruction.

**Economic Redevelopment:** The post-disaster process of organizing local, state and federal agencies and programs to work in concert with the private, public and non-profit sectors to develop strategies, plans and actions for redeveloping/rebuilding the damaged local economy. Community recovery is largely an economic proposition, but there is no organized government assistance program for community economic redevelopment.

**Emergency:** An unexpected situation or event, which places life and/or property in danger and requires an immediate response to protect life and property. Examples of an emergency may include fires; explosions; chemical, biological, environmental, and radiation incidents; bomb threats; civil disturbances; medical emergencies; natural disasters; structural failures; and accidental or human-generated disasters. Any aircraft crash, hurricane, tornado, storm, flood, high water, wind-driven water, tidal wave, tsunami, earthquake, volcanic eruption, landslide, mudslide, snowstorm, drought, fire, explosion, or other catastrophe which requires emergency assistance to save lives and protect public health and safety or to avert or lessen the threat of a major disaster.

**Emergency Management:** Organized analysis, planning, decision-making, and assignment of available resources to mitigate (lessen the effect of or prevent) prepare for, respond to, and recover from the effects of all hazards. The goal of emergency management is to save lives, prevent injuries, and protect property and the environment if an emergency occurs. (FEMA 1995).

**Emergency Response Period:** The Emergency Response period includes activities that address the immediate and short-term effects of an emergency or disaster. Response activities are contained within the ESFs of the CEMP and include immediate actions to save lives, protect property, meet basic human needs, and begin to restore water, sewer, and other essential services. During the Response period, Plan activation is the only PDRP implementation activity. (FDCA/FDEM, 2010)

Milestones that typically mark the end of the Response period include the following:

- Major streets are cleared of debris to allow for restricted travel;
- Re-entry or at least temporary re-entry of the public to assess damage to their personal property is allowed; and
- Curfews are reduced or lifted (if a minor disaster).

**Federal Coordinating Officer (FCO):** Federal Coordinating Officers (FCOs) are appointed to manage Federal resources during a disaster. They have a prominent role in helping FEMA accomplish its core missions of saving lives, preventing suffering, protecting property, and conducting recovery operations. Their primary mission is to coordinate the timely delivery of Federal assistance to State and local governments, individual victims and the private sector.

**Federal Disaster Recovery Coordinator (FDRC):** Works as a deputy to the Federal Coordinating Officer (FCO) for all matters concerning disaster recovery. The Federal Disaster Recovery Coordinator is responsible for facilitating disaster recovery coordination and collaboration between the Federal, Tribal, State and local governments, the private sector and voluntary, faith-based and community organizations. The Federal Disaster Recovery Coordinator partners with and supports the Local Disaster Recovery Manager (LDRM) and the State and/or Tribal Disaster Recovery Coordinator (SDRC/TDRC) to facilitate disaster recovery in the impacted State or Tribal area.

**Federal Response Plan (FRP):** 1) The plan designed to address the consequences of any disaster or emergency situation in which there is a need for Federal assistance under the authorities of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C. 5121 et seq. 2) The FRP is the Federal government's plan of action for assisting affected States and local jurisdictions in the event of a major disaster or emergency. As the implementing document for the Stafford Act, the FRP organizes the Federal response by grouping potential response requirements into 12 functional categories, called Emergency Support Functions.

**FEMA Emergency Support Function #14 (Long Term Community Recovery):** FEMA Emergency Support Function (ESF) #14 Community Recovery coordinates the resources of federal departments and agencies to support the long-term recovery of States and communities, and to reduce or eliminate risk from future incidents. Led by the Federal Emergency Management Agency ESF #14 is supported by four primary agencies including the Departments of Agriculture,

Commerce, Homeland Security, Housing and Urban Development and Treasury, as well as the Small Business Administration. A number of other agencies serve in a support role.

**Flood Insurance Rate Map (FIRM):** The insurance and floodplain management map produced by FEMA that identifies, based on detailed or approximate analyses, the areas subject to flooding during a 1-percent-annual-chance flood event in a community. Flood insurance risk zones, which are used to compute actuarial flood insurance rates, also are shown. In areas studied by detailed analyses, the FIRM shows BFEs to reflect the elevations of the 1-percent-annual-chance flood. For many communities, when detailed analyses are performed, the FIRM also may show areas inundated by 0.2-percent-annual-chance flood and regulatory floodway areas.

**Hazard:** A situation or condition that presents the potential for causing damage to life, property, and/or the environment. An event or physical condition that has the potential to cause fatalities, injuries, property damage, infrastructure damage, agricultural loss, damage to the environment, interruption of business, or other types of harm or loss. May be biological, chemical, or physical agents capable of causing adverse health effects or property damage given a particular environment or location.

**Hazard Analysis:** The identification and evaluation of all hazards that potentially threaten a jurisdiction to determine the degree of threat that is posed by each. (Michigan DEM, 1998)

**Hazard Assessment:** The process of estimating, for defined areas, the probabilities of the occurrence of potentially-damaging phenomenon of given magnitudes within a specified period of time. Hazard assessment involves analysis of formal and informal historical records, and skilled interpretation of existing topographical graphical, geological geomorphological, hydrological, and land-use maps. (Simeon Institute 1998)

**Hazard Identification:** The process of defining and describing a hazard, including its physical characteristics, magnitude and severity, probability and frequency, causative factors, and locations/areas affected. (FEMA 1997)

**Hazard Mitigation:** Any action taken to reduce or eliminate the long-term risk to human life and property from hazards. The term is sometimes used in a stricter sense to mean cost-effective measures to reduce the potential for damage to a facility or facilities from a disaster event.

**Hazard Probability:** The estimated likelihood that a hazard will occur in a particular area.

**Hazard Risk:** The probability of experiencing disaster damage.

**Hazard, Natural:** Naturally caused events such as hurricanes, tornadoes, earthquakes, floods, volcanoes and forest fires.

**Hazard, Technological:** Typically man-related hazards such as nuclear power plant accidents, industrial plant explosions, aircraft crashes, dam breaks, mine cave-ins, pipeline explosions and hazardous material accidents. (Unknown source)

**Hazard, Environmental:** The threat potential posed to man or nature by events originating in, or transmitted by, the natural or built environment. (Kates 1978)

**Hazard Vulnerability:** The susceptibility of life, property, or the environment to damage if a hazard occurs.

**Hazard Vulnerability Analysis (HVA):** A structured approach to assist in evaluating potential adverse events or conditions that could disrupt an organization's operation. Identify, evaluate, and prioritize events that could significantly affect the need for the facility's services or its ability to provide those services. Each potential event is evaluated in each of three categories: probability (of occurrence), risk (severity/impact), and preparedness and assigned a numerical score that rank orders events needing organization focus and resources for emergency planning.

**Hazardous Material (HAZMAT):** Any material which is explosive, flammable, poisonous, corrosive, reactive, or radioactive (or any combination), and requires special care in handling because of the hazards posed to public health, safety, and/or the environment. (Firescope 1994)

**Human-Made Disasters:** Disasters or emergency situations where the principal, direct cause(s) are identifiable human actions, deliberate or otherwise. Apart from "technological" and "ecological" disasters, this mainly involves situations in which civilian populations suffer casualties, losses of property, basic services and means of livelihood as a result of war or civil strife, for example: Human-made disasters/emergencies can be of the rapid or slow onset types, and in the case of internal conflict, can lead to "complex emergencies" as well. Human-made disaster acknowledges that all disasters are caused by humans because they have chosen, for whatever reason, to be where natural phenomena occurs that result in adverse impacts of people. This mainly involves situations in which civilian populations suffer casualties, losses of property, basic services and means of livelihood as a result of war, civil strife, or other conflict. (Simeon Institute)

**Incident:** Under the ICS concept, an incident is an occurrence, either human-caused or by natural phenomena, that requires action by emergency service personnel to prevent or minimize loss of life or damage to property and/or natural resources. (FEMA Disaster Dictionary 2001, 62-63, citing National Wildfire Coordinating Group, Incident Command System, National Training Curriculum, ICS Glossary (PMS 202, NFES #2432), October 1994)

**Incident Command System (ICS):** A standardized on-scene emergency management concept specifically designed to allow its users to adopt an integrated organizational structure equal to the complexity and demands of single or multiple incidents, without being hindered by jurisdictional boundaries. (NWCG 1994)

**Individual Assistance:** Supplementary Federal assistance provided pursuant to a Presidential Declaration of emergency or major disaster under the Stafford Act to individuals and families adversely affected. Such assistance may be provided directly by the Federal Government or through State or local governments or disaster relief organizations.

**Inland Flooding:** Occurs when moderate precipitation accumulates over several days, intense precipitation falls over a short period, or a water body overflows.

**Intensity:** The damage-generating attributes of a hazard. For example, water depth and velocity are commonly used measures of the intensity of a flood. For hurricanes, intensity typically is characterized with the Saffir/Simpson scale, which is based on wind velocity and storm surge depths. (Deyle, French, Olshansky, and Paterson 1998)

**Inundation:** Water covering normally dry land.

**Long-Term Redevelopment:** The protracted phase of recovery that follows intermediate and short-term recovery focusing on redevelopment and revitalization of the overall community. It involves the total holistic process of rebuilding damaged and destroyed social, economic, natural, and built environments in the community to levels acceptable to stakeholders and moving the community toward a state of self-sufficiency, sustainability, economic viability and disaster resiliency. Long-term recovery activities may continue for years or decades depending on the severity and extent of the disaster damages and the availability of resources.

There are three major components to the long-term redevelopment period:

1. *Reconstruction* – The long-term process of rebuilding a community’s destroyed or damaged housing stock, commercial and industrial buildings, public facilities, and infrastructure to the same pre-disaster levels and standards.
2. *Holistic Recovery* – The recovery of the economy and quality of life factors within the community, including employment opportunities, social networks, cultural events, environmental quality, and educational and recreational opportunities.
3. *Community Enhancement* – The process of going beyond restoring all aspects of the community to normal functions by creating conditions improved over those that existed before the disaster. Community enhancement is characterized by activities such as implementing hazard mitigation projects during rebuilding, strengthening building codes, changing land use and zoning designations, improving transportation corridors, building more affordable housing, and developing new economic opportunities.

Milestones that may signal a successful completion of the long-term redevelopment period include the following:

- Replacement of housing stock adequate for the post-disaster population such that Interim housing can be removed;
- Economic indicators show unemployment has stabilized at a rate near pre-disaster levels or comparative to other similar locations;
- 70% or more of businesses have reopened and remained in business for at least 3 months or have been replaced; and
- The percent of population dependent upon disaster assistance and social assistance programs has decreased to near pre-disaster levels.

**Local Disaster Recovery Managers (LDRMs):** In accordance with the National Disaster Recovery Framework, locally designated LDRMs are charged with leading disaster recovery activities for their respective jurisdictions, represent and speak on behalf of their chief executives, and serve as the primary point of contact with the State Disaster Recovery Manager and Federal Disaster Recovery Coordinator.

**Local Mitigation Strategy (LMS):** Multi-jurisdictional hazard mitigation plan required by the Robert T. Stafford Disaster Relief and Emergency Assistance Act as a condition of federal grant assistance. The LMS is administered by a multi-jurisdictional, multi-disciplinary Steering Committee and a number of standing and ad hoc subcommittees.

**Long Term Community Recovery (LTCR):** LTCR is the process of establishing a community-based, post-disaster vision and identifying projects and project funding strategies best suited to achieve that vision, and employing a mechanism to implement those projects. Each community's LTCR program is shaped by the community itself, the damage sustained, the issues identified, and the community's post-disaster vision for the future.

**Long-Term Redevelopment:** The process of going beyond restoring all aspects of the community to normal functions by creating conditions improved over those that existed before the disaster. Long-term redevelopment is characterized by activities such as implementing hazard mitigation projects during rebuilding, strengthening building codes, changing land use and zoning designations, improving transportation corridors, building more affordable housing, and developing new economic opportunities. (Hillsborough PDRP)

**Major Disaster:** Any natural catastrophe (including any hurricane, tornado, storm, high water, wind-driven water, tidal wave, tsunami, earthquake, volcanic eruption, landslide, mudslide, snowstorm, or drought) or, regardless of cause, any fire, flood, or explosion, in any part of the United States, which, in the determination of the President, causes damage of sufficient severity and magnitude to warrant major disaster assistance under the Stafford Act to supplement the efforts and available resources of States, local governments, and disaster relief organizations in alleviating the damage, loss, hardship, or suffering caused thereby. (Robert T. Stafford Act 102; 44 CFR 206.2 and 206.36)

**Mitigation:** A sustained action taken to reduce or eliminate long-term risk to people and property from hazards and their effects. Mitigation distinguishes actions that have a long-term impact from those that are more closely associated with preparedness for, immediate response to, and short-term recovery from a specific event. (FEMA 1997, Multi Hazard . . . , xxii).

**National Disaster Recovery Framework (NDRF):** A federal guide released in September 2011 intended to enable inclusive, collaborative, comprehensive effective recovery support to disaster-impacted States, Tribes, Territorial and local jurisdictions. It provides a flexible structure that enables disaster recovery managers to operate in a unified and collaborative manner. It also focuses on how best to restore, redevelop and revitalize the health, social, economic, natural and environmental fabric of the community and build a more resilient Nation. The NDRF is based on the principle that the “Whole Community,” including the private sector, non-profit organizations, faith-based organizations, individual citizens, as well as local, state, tribal and federal government



agencies have a role to play and have resources that potentially can be leveraged in the recovery process.

**Post-Disaster Redevelopment Plan (PDRP):** A plan which identifies policies, operational strategies, and roles and responsibilities for implementation that will guide decisions and actions 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. (Florida Department of Community Affairs/Florida Division of Emergency Management, 2010)

**PDRP Executive Committee:** A select group of community leaders representing public and private sector organizations and disciplines critical to the development and implementation of the PDRP. The committee serves as a steering committee, providing direction, policy guidance in support of long-term post-disaster recovery, reconstruction and economic redevelopment.

**PDRP Stakeholder Group:** The sum total of PDRP working group members who may meet periodically to share information, discuss recovery and redevelopment progress and issues, and strategize resolutions of critical issues.

**Preparedness:** Those activities, programs, and systems that exist prior to an emergency and are used to support and enhance response to and recovery from an emergency or disaster. Preparedness takes the form of plans, procedures and actions designed to save lives and to minimize damage when an emergency occurs. Planning, training, and disaster drills are the essential elements of preparedness. These activities ensure that when a disaster strikes, emergency managers will be able to provide the best response possible.

**Prevention:** Encompasses activities designed to provide permanent protection from disasters. It includes engineering and other physical protective measures, and also legislative measures controlling land use and urban planning. See also "preparedness". (U.N., 1992)

**Probability Analysis:** The derivation of both the likelihood of incidents occurring and the likelihood of particular outcomes (or effects) should those events occur. (NSW, 1989)

**Protection:** Sea level adaptation policies that support coastal protection through physical means rather than retreat or accommodation. Such strategies may include a range of actions from the construction of barriers to stabilizing vegetation on berms in shallow waters offshore. Other alternatives may include creating breaks and adjusting the height of berms to allow tidal flow, and in spaces between mainland and offshore plantings, establish salt marsh grasses or other appropriate species. The depositing of sediment at a rate required to allow plantings to adapt to the rate of sea level rise can also provide elements of shoreline protection.

**Public Assistance (PA):** Supplementary federal assistance provided pursuant to a Presidential Declaration of emergency or major disaster under the Stafford Act to State and local governments or certain private, not-for-profit organizations other than assistance for the direct benefit of individuals and families. (FEMA/EMI, 1996))

**Recovery:** Those long-term activities and programs beyond the initial crisis period of an emergency or disaster and designed to return all systems to normal status or to reconstitute these systems to a new condition that is less vulnerable. (FEMA 1992)

**Recovery Support Functions:** The Recovery Support Functions (RSFs) comprise the *National Disaster Recovery Framework's (NDRF's)* coordinating structure for key functional areas of assistance. Their purpose is to support local governments by facilitating problem solving, improving access to resources and by fostering coordination among State and Federal agencies, nongovernmental partners and stakeholders.

**Reconstruction, Long-Term:** The long-term process of rebuilding a community's destroyed or damaged housing stock, commercial and industrial buildings, public facilities, and infrastructure to similar levels and standards as existed before the disaster.

**Redevelopment Task Force:** An ad hoc group of working group chairs and members who convene, as necessary, to ensure inter-working group cooperation, coordination and information sharing on long-term recovery matters.

**Relative Sea Level Rise:** The increase in ocean water levels at a specific location, taking into account both global sea level rise and local factors such as subsidence and uplift.

**Resilience:** The capacity of a system, community or society to resist or to change in order that it may obtain an acceptable level in functioning and structure. This is determined by the degree to which the social system is capable of organizing itself, and the ability to increase its capacity for learning and adaptation, including the capacity to recover from a disaster. (U.N. ISDR. 2002)

**Resilience, Community:** The capability of a community to anticipate risk, limit impact, and bounce back rapidly through survival, adaptability, evolution, and growth in the face of turbulent change. (CARRI)

**Response:** Activities to address the immediate and short-term effects of an emergency or disaster. Response includes immediate actions to save lives, protect property, meet basic human needs, stabilize the situation, and prevent further losses. Based on the requirements of the situation, response assistance will be provided to an affected State under the Federal Response Plan using a partial activation of selected Emergency Support Functions (ESF's) or the full activation of all 15 ESF's to meet the needs of the situation. (FEMA FRP, Appendix B)

**Retreat:** In highly vulnerable areas, which are very likely to be inundated, the jurisdiction may consider planned retreat strategies and employ the use of "rolling easements." This strategy requires human activities to yield the right of way to naturally migrating shores. This strategy is a narrowly tailored method to ensure that natural shorelines survive rising sea levels. The simplest

way to implement rolling easements throughout a state would be to prohibit the construction of bulkheads or any other structures that interfere with naturally migrating shores. Another approach would be for the government to purchase the right to develop property or to take possession of privately owned land whenever the sea rises above a threshold level.

**Risk:** A measure of the probability of damage to life, property, and/or the environment, which could occur if a hazard manifests itself, including the anticipated severity of consequences to people.

**Risk Analysis:** Risk analysis is the most sophisticated level of hazard assessment. It involves making quantitative estimates of the damage, injuries, and costs likely to be experienced within a specified geographic area over a specific period of time. Risk, therefore, has two measurable components: (1) the magnitude of the harm that may result (defined through vulnerability assessment); and (2) the likelihood or probability of the harm occurring in any particular location within any specified period of time (risk = magnitude x probability). A comprehensive risk analysis includes a full probability assessment of various levels of the hazard as well as probability assessments of impacts on structures and populations. (Deyle, French, Olshansky, and Paterson, 1998)

**Risk Assessment:** The process of identifying the likelihood and consequences of an event to provide the basis for informed decisions on a course of action. (FEMA, 1992)

**Risk Assessment:** Process or method for evaluating risk associated with a specific hazard and defined in terms of probability and frequency of occurrence, magnitude and severity, exposure, and consequences" (FEMA 1997, Multi Hazard. . . , xxi).

**Risk Management:** The systematic management of administrative decisions, organizations, operational skills and responsibilities to apply policies, strategies and practices for disaster risk reduction. (U.N. ISDR, 2002)

**Salt Water Intrusion:** Displacement of fresh water by the advance of salt water due to its greater density, usually in coastal or estuarine areas.

**Short-Term Recovery:** The short-term recovery period encompasses activities such as damage assessments, public information, the transition from shelters to interim housing, utility restoration, and debris clearance. Short-term recovery does not include the redevelopment of the built environment, economic sector, or normal social networks. Emergency repairs and minor reconstruction, however, will occur during this phase as well as decisions that may affect long-term redevelopment. (FDCA, FDEM, PDRP Guide, 2010)

Milestones that may mark the end of the short-term recovery period include the following:

- Building moratoria are lifted, at least for most areas of the county;
- Power and water are restored to all but the destroyed structures;
- Schools are reopened or temporarily relocated; and
- Most of the road network and traffic signalization is operational.

**Stafford Act:** 1) The Robert T. Stafford Disaster Relief and Emergency Assistance Act, Public Law 93-288, as amended. 2) The Stafford Act provides an orderly and continuing means of assistance by the Federal Government to State and local governments in carrying out their responsibilities to alleviate the suffering and damage which result from disaster. The President, in response to a State Governor's request, may declare an "emergency" or "major disaster" in order to provide Federal assistance under the Act. The President, in Executive Order 12148, delegated all functions, except those in Sections 301, 401, and 409, to the Director, of FEMA. The Act provides for the appointment of a Federal Coordinating Officer who will operate in the designated area with a State Coordinating Officer for the purpose of coordinating state and local disaster assistance efforts with those of the Federal Government. (44 CFR 206.2)

**State Disaster Recovery Manager (SDRM):** In accordance with the National Disaster Recovery Framework serves as the conduit to local governments for key Federal recovery assistance programs, establishes and/or leads a statewide structure for managing recovery, provides support for local recovery-dedicated initiatives, ensures local governments understand their responsibilities and options, and facilitates the development of a unified and accessible communication strategy.

**Sustainable Communities:** Where people and property are kept out of the way of natural hazards, where the inherently mitigating qualities of natural environmental systems are maintained, and where development is designed to be resilient in the face of natural forces. (Godschalk, Kaiser, and Berke 1998, 86)

**Sustainable Development:** Development that meets the needs of the present without compromising the ability of future generations to meet their own needs. In the context of emergency management, this meaning remains and it is linked to creating places that are less vulnerable to natural and technological hazards and that are resilient to those events. Sustainable hazard management has five components: environmental quality; quality of life; disaster resilience; economic vitality; and inter- and intra-generational equity. Reducing the risk from hazards, reducing losses from disasters and working toward sustainable communities go hand-in-hand. (Britton, 1998)

**Vulnerability:** The susceptibility to injury or damage from hazards. (Godschalk, 1991)

**Vulnerability Analysis:** A determination of possible hazards that may cause harm. Should be a systematic approach used to analyze the effectiveness of the overall (current or proposed) emergency management, security, and safety systems at a particular facility

**Vulnerability Assessment:** The process of characterizing exposed populations and property and the extent of injury and damage that may result from a hazard event of a given intensity in a given area. (Deyle, French, Olshansky and Paterson, 1998).

**Working Groups:** Multi-disciplinary teams of public and private sector subject experts charged with implementing and supporting decisions and actions in key topic areas, including: public and private infrastructure and facilities, housing, land use, health and social services, economic redevelopment, environmental restoration, public outreach, and jurisdictional

governance/financial administration. Successful implementation of PDRP actions in the post-disaster environment depends heavily on these work groups.

## ACRONYMS

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|       |  |
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| ACOE  | Army Corps of Engineers                                |
| ADA   | Americans with Disabilities Act                        |
| AIA   | American Institute of Architects                       |
| AMI   | Area Median Income                                     |
| ARES  | Amateur Radio Emergency Service                        |
| BCRM  | Business Continuity and Risk Management Program        |
| BAIHP | Building America Industrialized Housing Partnership    |
| BOCC  | Board of County Commissioners                          |
| CARE  | Conservation and Aquifer Recharge Element              |
| CBA   | Certified Business Analyst                             |
| CCMP  | Comprehensive Conservation and Management              |
| CDBG  | Community Development Block Grant                      |
| CDC   | Centers for Disease Control and Prevention             |
| CERT  | Community Emergency Response Team                      |
| CHHA  | Coastal High Hazard Area                               |
| CIP   | Capital Improvement Program                            |
| CIT   | Community Investment Tax                               |
| CME   | Coastal Management and Port Element                    |
| COAD  | Community Organizations Active in Disasters            |
| COG   | Continuity of Government                               |
| COOP  | Continuity of Operation Plan                           |
| CPIC  | Citizen's Property Insurance Corporation               |
| CRS   | Community Rating System                                |
| DRC   | Disaster Recovery Center                               |
| DEM   | Palm Beach County Division of Emergency Management     |
| EAR   | Evaluation and Appraisal Report                        |
| EAS   | Emergency Alert System                                 |
| ECC   | Emergency Communication Center                         |
| EHEAP | Emergency Home Energy Assistance for the Elderly       |
| EIDL  | Economic Injury Disaster Loans                         |
| ELAPP | Environmental Lands Acquisition and Protection Program |
| EOC   | Emergency Operations Center                            |
| EPA   | Environmental Protection Agency                        |
| EPC   | Environmental Protection Commission                    |
| EPG   | Executive Policy Group                                 |
| ERM   | Environmental Resources Management                     |
| ESF   | Emergency Support Function                             |
| FAU   | Florida Atlantic University                            |
| FCO   | Federal Coordinating Officer                           |
| FDCA  | Florida Department of Community Affairs                |
| FDEO  | Florida Department of Economic Opportunity             |
| FDEM  | Florida Division of Emergency Management               |
| FDEP  | Florida Department of Environmental Protection         |
| FDOT  | Florida Department of Transportation                   |
| FDRC  | Federal Disaster Recovery Coordinator                  |

|        |  |
|--------|--|
| FEMA   | Federal Emergency Management Agency                |
| FHFC   | Florida Housing Finance Corporation                |
| FHRP   | Farmworker Housing Recovery Program                |
| FIND   | Florida Interfaith Network for Disasters           |
| FIU    | Florida International University                   |
| FMA    | Flood Mitigation Assistance                        |
| FMAP   | Florida Market Assistance Program                  |
| FMSAS  | Florida Marine Spill Analysis System               |
| FPL    | Florida Power & Light                              |
| FSBDCN | Florida Small Business Development Center Network  |
| FWC    | Florida Fish and Wildlife Conservation Commission  |
| GAO    | Government Accountability Office                   |
| GDP    | Gross Domestic Product                             |
| GIS    | Geographic Information System                      |
| HMGP   | Hazard Mitigation Grant Program                    |
| HUD    | Housing and Urban Development                      |
| IHP    | Individuals and Households Program                 |
| JIC    | Joint Information Center                           |
| LDC    | Land Development Code                              |
| LDRM   | Local Disaster Recovery Manager                    |
| LEPC   | Local Emergency Planning Committee                 |
| LIHEAP | Low Income Home Energy Assistance Program          |
| LMS    | Local Mitigation Strategy                          |
| L RTP  | Long-range Transportation Plan                     |
| LTCR   | Long Term Community Recovery                       |
| LTRC   | Long Term Recovery Coalition                       |
| MOU    | Memorandum of Understanding                        |
| MPO    | Metropolitan Planning Organization                 |
| MSA    | Metropolitan Statistical Area                      |
| NDRF   | National Disaster Recovery Framework               |
| NMF    | National Mitigation Framework                      |
| NFIP   | National Flood Insurance Program                   |
| NGO    | Nongovernmental Organization                       |
| NOAA   | National Oceanic and Atmospheric Administration    |
| NRCS   | Natural Resources Conservation Service             |
| NRF    | National Response Framework                        |
| OTTED  | Office of Tourism, Trade, and Economic Development |
| PA     | Public Assistance                                  |
| PBIA   | Palm Beach International Airport                   |
| PBS    | Public Broadcasting Service                        |
| PCP    | Primary Care Physician                             |
| PDM    | Pre-Disaster Mitigation Grant Program              |
| PDRP   | Post-Disaster Redevelopment Plan                   |
| PIO    | Public Information Officer                         |
| POC    | Point of Contact                                   |
| POD    | Point of Distribution                              |

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| PPD-8 | Presidential Policy Directive 8 (National Security)         |
| PRA   | Priority Redevelopment Area                                 |
| RDSTF | Regional Domestic Security Task Force                       |
| REACT | Reemployment and Emergency Assistance Coordination Team     |
| RFC   | Repetitive Flood Claims                                     |
| ROC   | Recovery Operations Center                                  |
| RFL   | Repetitive Flood Loss                                       |
| RRLP  | Rental Recovery Loan Program                                |
| RSF   | Recovery Support Function                                   |
| SBA   | Small Business Administration                               |
| OSBA  | Office of Small Business Assistance                         |
| SBDC  | Small Business Development Center                           |
| SDRM  | State Disaster Recovery Manager                             |
| SEOC  | State Emergency Operations Center                           |
| SERC  | State Emergency Response Commission for Hazardous Materials |
| SFWMD | South Florida Water Management District                     |
| SHADP | Special Assistance Development Program                      |
| SHIP  | State Housing Initiatives Program                           |
| SLR   | Sea Level Rise  |
| SRL   | Severe Repetitive Loss                                      |
| SWA   | Solid Waste Authority                                       |
| TAC   | Technical Advisory Committee                                |
| TBRPC | Tampa Bay Regional Planning Council                         |
| TCRPC | Treasure Coast regional Planning Council                    |
| TDR   | Transfer of Development Rights                              |
| TIP   | Transportation Improvement Program                          |
| UASI  | Urban Area Security Initiative                              |
| USACE | United States Army Corps of Engineers                       |
| USCG  | United States Coast Guard                                   |
| USDA  | United States Department of Agriculture                     |
| USFWS | United States Fish and Wildlife Service                     |
| USGS  | United States Geological Survey                             |
| VDC   | Volunteers and Donations Center                             |
| VRC   | Volunteer Reception Center                                  |