



2011 Brevard County Post-Disaster Redevelopment Plan

Prepared by:



Brevard County, like all communities, is vulnerable to disaster. The Brevard County Post-Disaster Redevelopment Plan (PDRP) is action-oriented and outlines a county wide implementation approach. Through a comprehensive stakeholder group that represented 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 Stakeholders and Workgroups 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. The format of the plan allows new actions to be easily included and new participants to become involved immediately through the Workgroups. 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, Brevard County can take advantage of those opportunities and more quickly recover from a disaster should it experience one.

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 covered by the Local Mitigation Strategy and the Comprehensive Emergency Management Plan, respectively.

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Introduction



Disasters and catastrophes have occurred since the beginning of time. History reveals that while some communities can survive and even thrive after a disaster, others never return to their original state, or in the most extreme situations, cease to exist altogether. What determines the success or failure of a community's ability to restore vitality and quality of life? This is a complicated question as community structures become more complex and the number of possible hazards to a community continues to increase. Many variables factor into the ability of a community to recover after a disaster, however a major factor to successful recovery is how well the community has planned to prepare for, respond to and re-build from disasters. .

The State of Florida has initiated a process to increase post-disaster redevelopment planning efforts. Several communities were selected as part of a pilot initiative by the state to not only develop a post-disaster redevelopment plan (PDRP), but to document the process. Through these pilot studies, a PDRP guide was developed.

PURPOSE

The State of Florida has made great strides in disaster preparedness, response, mitigation and community-wide planning. State and federal laws, rules and regulations mandate certain plans such as the Comprehensive Emergency Management Plans, Local Mitigation Strategy, and Comprehensive Plans. Many other plans are not required but are highly recommended including debris management, disaster housing, long range transportation, and environmental management plans. These plans contain valuable information that can guide communities as they recover following a disaster. The PDRP complements these other planning efforts.

One of the challenges of developing a PDRP is unifying the existing information into a single, comprehensive, reference document and determining where gaps still exist. However, the goal of post-disaster redevelopment is not just to restore a community to its previous state, but to make smarter decisions that will increase its resiliency to future hazards and disasters.

The post-disaster environment is typically fast-paced and chaotic. There are competing interests vying for limited funds and resources. Recent incidents of national significance such as Hurricane Katrina, Hurricane Ike, and September 11, 2001, have illustrated this competition. The virtual back-to-back hurricanes that Florida experienced in 2004 and 2005 also emphasize the importance of pre planning for an efficient and effective recovery.

The purpose of this plan is to set forth the goals and objectives as established by the stakeholders in Brevard County, identify actions that can be taken to achieve them, and determine who is responsible for implementation. It is also intended to provide guidance on maximizing funds and resources that are available to the county following a disaster, identify the current capacity of the county to manage long-term recovery and provide strategic guidance throughout the post-disaster redevelopment process.

SCOPE

The scope of this effort is to produce a single, county wide reference document that guides decision-makers as they redevelop towards a sustainable community and rebuild post disaster. Brevard County stakeholders as well as municipal stakeholders were included in this planning process so that the overall vision for the county could be established to guide all affected communities within the county in a coordinated recovery effort.

It is the intent that the PDRP be used in any disaster, regardless of the hazard as long as the resulting damage requires long-term redevelopment efforts. The flexibility of the PDRP's implementation framework and range of topics addressed enables it to be used for multiple hazards. The PDRP's scope is maximized when used for a major disaster affecting the whole community; however, components can also be used in minor or localized disaster events.

THE DISASTER RISK MANAGEMENT CYCLE

Emergency management consists of 4 primary phases that include: mitigation, preparedness, response and recovery. The PDRP's main emphasis pertains to the recovery component. Recovery is generally described as

the process of returning a community to its pre-event condition. There are two general phases of recovery: short-term and long-term. Short-term recovery actions are commonly post-disaster activities that meet the initial and essential needs of the people and their community. Short-term recovery activities include: conducting impact assessments; re-establishing the critical infrastructure necessary for community reconstruction; re-establishing critical services that meet the physical and safety needs of the community (e.g., water, food, ice, medicine and medical care, emergency access, and continuity of government operations), and coordinating re-entry procedures.

Long-term recovery typically involves those activities that are taken in an attempt to return the community to its normal pre-disaster condition. This type of recovery also permits mitigation opportunities to help reduce the impacts of future disasters. Long-term recovery activities can last for many years following a disaster and they include activities such as: redevelopment; environmental preservation and restoration; rebuilding; construction; repairs; and restoration. Economic recovery and business assistance are some of the most important long-term recovery activities that must take place in order for a community to fully recover from a disaster.

Most efforts and attention are focused on the actual emergency period of the Disaster Risk Management Cycle. It is essential to plan for this phase as decisions made during this time can have an impact on future recovery efforts. However, as illustrated in Figure 1, there is a complexity of issues during the recovery period. Unfortunately, the recovery period does not receive as much attention until communities are forced to face these decisions in an ad hoc manner. Pre-planning during the normal state is critical to wise decision making during the recovery period that implements the overall vision for the community.

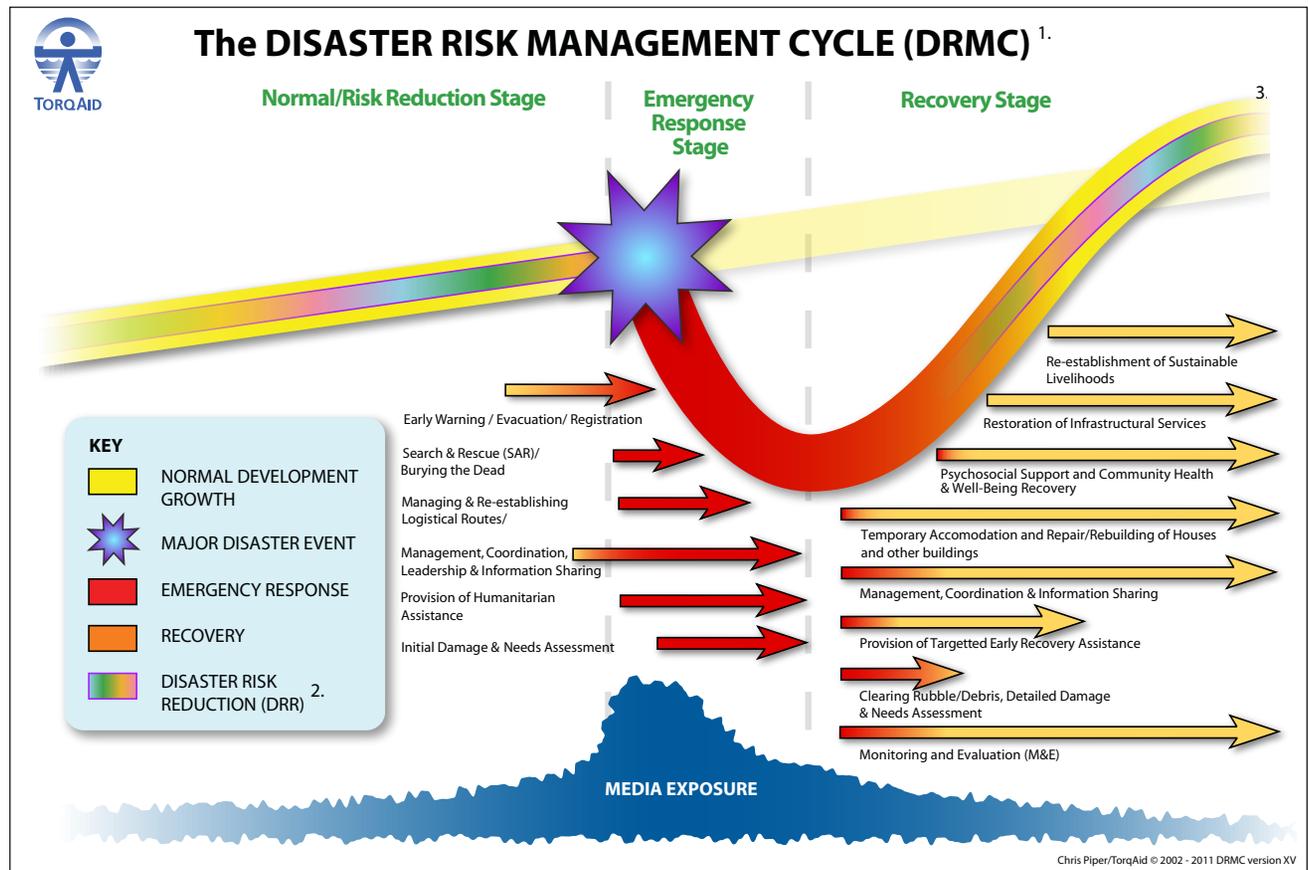


FIGURE 1: The Disaster Risk Management Cycle

AUTHORITY AND STATE RECOMMENDATIONS

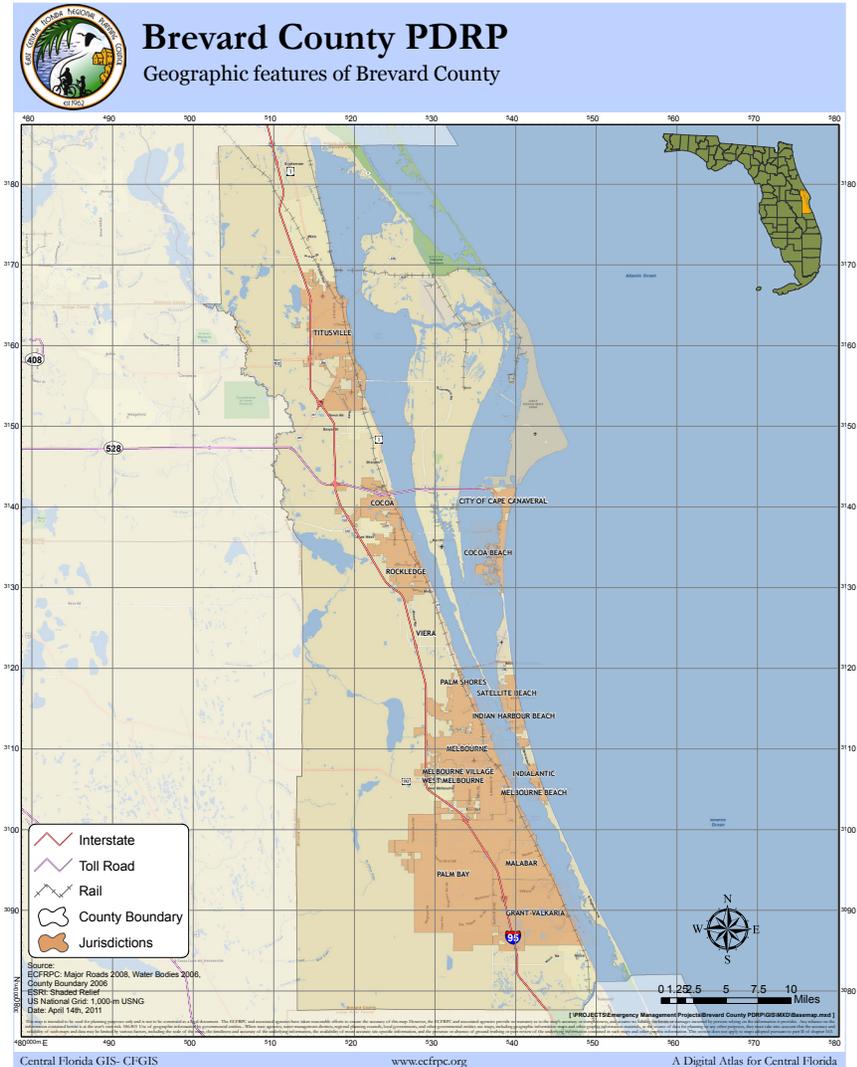
Currently, only coastal communities are required by law to maintain a PDRP. However, in light of recent incidents of national significance, a PDRP is recommended for all communities. Chapter 163.3177(7)(l), F.S. encourages all local governments to develop post-disaster plans and elements even if they are not required by law to do so. Governments that are not required to prepare coastal management elements by law are encouraged to adopt hazard mitigation and post-disaster redevelopment plans. These plans should establish long-term policies regarding redevelopment, infrastructure, densities, nonconforming uses, and future land use patterns.

PLANNING ASSUMPTIONS

- Brevard County has the ultimate responsibility for managing response and short-term recovery efforts, yet redevelopment is a shared responsibility amongst the county and its municipalities.
- The PDRP will be implemented for a disaster that requires the redevelopment of an area, specific or county-wide, in Brevard County.
- The PDRP is applicable to predominantly major and catastrophic disasters for which redevelopment would be required. It is flexible and expandable, depending on the situation and need. In addition, any part or section of this plan may be utilized separately if required by the situation.
- PDRP implementation criteria based on disaster impacts is provided in the Implementation Section of this plan.
- Implementation of the PDRP will begin during the Emergency Operations Center activation for an Activation Level 1. Implementation at this stage of the disaster will involve intergovernmental and intercommunity coordination to ensure that decisions made during response and short-term recovery are in support of the PDRP strategy.

PLANNING PROCESS

The Brevard County PDRP was developed from 2010 to 2011 through a collaborative process. Over 30 local stakeholders met throughout the process to prioritize long-term redevelopment issues relevant to Brevard County, share information about existing local capacity, and draft action plans. The planning process also involved a public outreach component consisting of two public meetings as well as electronic and social media outreach, including the ECFRPC website.



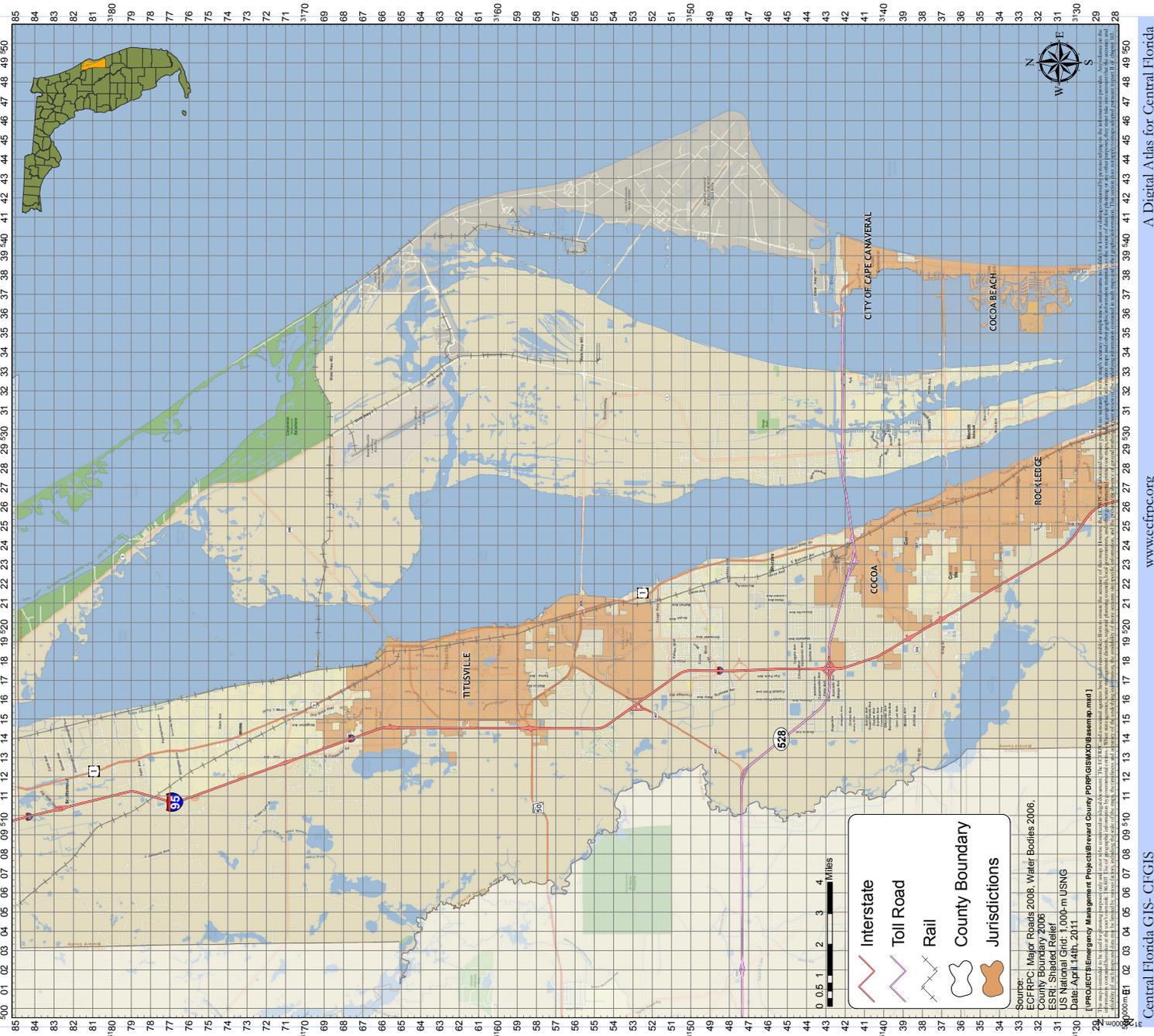
Central Florida GIS- CFGIS www.ecfrpc.org A Digital Atlas for Central Florida

FIGURE 2: Geographic Features of Brevard County



Brevard County PDRP

Geographic features of Northern Brevard County



Source:
 CORPC, Major Roads 2008, Water Bodies 2006,
 Florida Department of Transportation 2006
 ESRI, Shaded Relief
 US National Grid, 1,000-m USNG
 Date: April 14th, 2011
 [PROJECT/Emergency Management Projects/Brevard County PDRP/GIS/Map/Geoserver.mxd]

Central Florida GIS - CFGIS

www.cfrpc.org

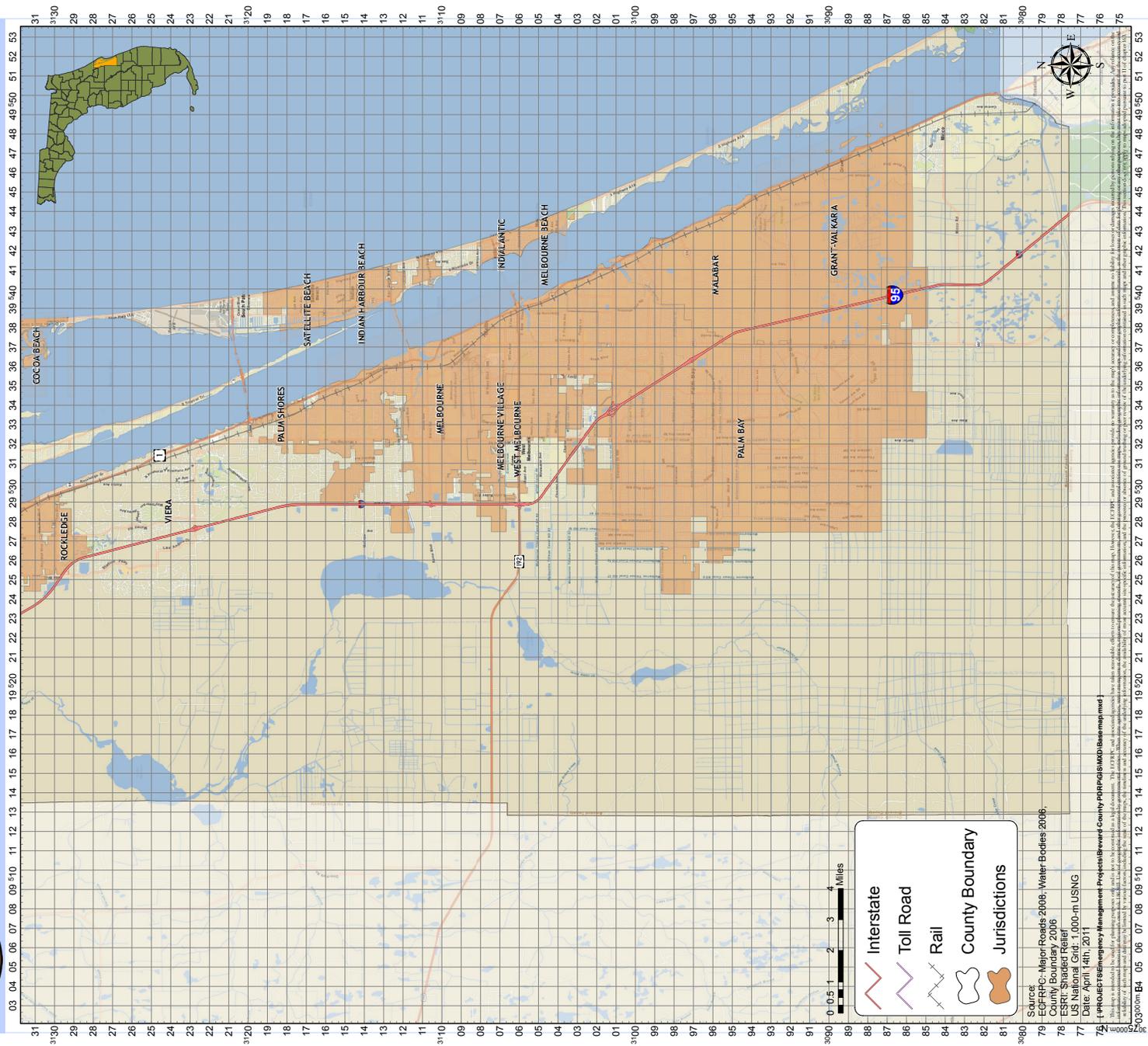
A Digital Atlas for Central Florida

FIGURE 2A: Geographic Features of Brevard County North



Brevard County PDRP

Geographic features of Southern Brevard County



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FIGURE 2B: Geographic Features of Brevard County South

Capacity Assessment



DESCRIPTION OF A CAPACITY ASSESSMENT

The purpose of conducting a capacity assessment is to determine the ability of a local jurisdiction to implement a post-disaster redevelopment strategy, and to identify potential opportunities for establishing or enhancing specific recovery/redevelopment policies, programs or projects. A capacity assessment helps to determine which recovery/redevelopment actions are practical and likely to be implemented over time given a local government's planning and regulatory framework, level of administrative and technical support, amount of fiscal resources and current political climate.

The capacity assessment also highlights the positive steps that have already been taken by the local government to prepare for post-disaster redevelopment, which should continue to be supported and enhanced through future mitigation efforts.

CONDUCTING THE CAPACITY ASSESSMENT SURVEY

In order to facilitate the inventory and analysis of the existing and future guiding documents and policies, a detailed Capacity Assessment Survey was administered by the East Central Florida Regional Planning Council and distributed to members of Brevard County's Emergency Management office, Planning and Development department, Natural Resources and Public Works departments. The survey questionnaire sought information on a variety of "capacity indicators" such as existing local plans, policies, programs and ordinances that contribute to and/or hinder the county's ability to implement recovery and redevelopment activities. Other indicators included information related to the County's fiscal capabilities as well as a county-wide self-assessment.

The survey, administered via Survey Monkey, provided county staff members an opportunity to conduct an assessment of the county's specific capacity. For the planning and regulatory capacity, contributors were asked to indicate whether the planning or regulatory tools are currently in place or under development. They were also asked to rank the plans effect on disaster recovery. The information provided in response to the survey was quantified and scored so that each capacity indicator was

assigned a point value based on its perceived relevance to post -disaster recovery and redevelopment. A total score and capacity rating ranging from 5 - "Strongly Supports" to 1 - "Does Not Support" could be determined according to the total number of points received. The results can be found in Table 1 in the Planning and Regulatory Capacity Section. A checkmark (✓) indicates that the given item is currently in place and being implemented, or that it is currently being developed for future implementation. The next part of the survey addressed fiscal capacity and asked contributors to indicate whether Brevard County has access to or is eligible to use specific local financial resources following a disaster. This assessment was conducted on a yes/no rating scale to determine Brevard County's post-disaster financial capacity. The results can be found in Table 4 (page 28) in the Fiscal Capacity section. The last segment of the survey was a self-assessment of Brevard County's capacity to effectively implement a recovery and redevelopment strategy following a major disaster. This section was assessed on a limited/moderate/high rating system that was based on the most appropriate degree of capacity. Results of this section can be found in Table 5 (page 29) in this section's conclusion.

These classifications were designed to provide a general assessment of local government capacity. The results of this capacity assessment lend critical information for developing an effective and meaningful post-disaster recovery and redevelopment strategy.

PLANNING AND REGULATORY CAPACITY

Planning and regulatory capacity is based on the implementation of plans, ordinances, and programs that demonstrate a local jurisdiction's commitment to guiding and managing growth, development and redevelopment in a responsible manner, while maintaining the general welfare of the community. It includes emergency response and mitigation planning, comprehensive land use planning and transportation planning, in addition to the enforcement of zoning or subdivision ordinances and building codes that regulate how land is developed and structures are built, as well as protecting environmental, historic and cultural resources in the community.

Although some conflicts can arise, these planning initiatives generally present significant opportunities to integrate recovery and redevelopment principles and practices into the local decision making process.

This assessment is designed to provide a general overview of the key planning and regulatory tools or programs in place, or under development for Brevard County, along with their potential effect on recovery and redevelopment. This information will help identify opportunities to address existing gaps, weaknesses or conflicts with other initiatives in

addition to integrating the implementation of the PDRP with existing planning mechanisms where appropriate.

Table 1 provides a summary of the relevant local plans, ordinances and programs already in place or under development for Brevard County and how strongly they support post-disaster recovery. Each of these other local plans, ordinances and programs should be considered available mechanisms for incorporating certain elements of the Post-Disaster Redevelopment Plan.

Table 1: Planning and Regulatory Capacity

Plan/Ordinance/Procedure	In-Place	Under Development	Supports Post-Disaster Recovery (5-Strongly Supports, 1-Does not Support)
Post-Disaster Redevelopment Plan (PDRP)		✓	5
Post-Disaster Redevelopment/Reconstruction Ordinance		✓	4
Brevard County Local Mitigation Strategy (LMS)	✓		4.5
Brevard County Comprehensive Emergency Management Plan (CEMP)	✓		5
Recovery Annex to CEMP	✓		5
Continuity of Operations Plan (Coop)	✓		4.3
Comprehensive Land Use Plan	✓		4
Capital Improvement Plan	✓		2.75
Historic Preservation Plan	✓		3.5
Subdivision Ordinances	✓		4
Building Codes, Permitting and Inspections	✓		4.25
Floodplain Management Plan	✓		4
Open Space Management Plan	✓		3.6
Storm Water Management Plan/Ordinance	✓		4
Natural Resource Protection Plan	✓		4.5
Flood Response Plan	✓		5

Table 1: continued

Plan/Ordinance/Procedure	In-Place	Under Development	Supports Post-Disaster Recovery (5-Strongly Supports, 1-Does not Support)
Evacuation Plan	✓		4.3
Economic Development Plan	✓		3.3
Floodplain Ordinance	✓		5
Zoning Ordinance	✓		3.75
Unified Development Ordinance		✓	4.5
Fire Code	✓		4.25
Debris Management Plan		✓	5
Temporary Housing Plan		✓	4.3
National Flood Insurance Program (NFIP)	✓		4.75

LOCAL PLAN INTEGRATION

Brevard County maintains several planning documents that closely impact post-disaster redevelopment planning. An in-depth understanding of the community's existing plans, policies, procedures and programs is an important part of determining a community's capability to implement a post-disaster redevelopment strategy. The plans include the Local Mitigation Strategy (LMS), the Comprehensive Emergency Management Plan (CEMP), the Continuity of Operations Plan (COOP), and the Brevard County Comprehensive Plan (Comp Plan). Some of these plans are governed by various legislation which set forth required components. The PDRP seeks to integrate post-disaster planning aspects such as temporary and long term housing, critical infrastructure and facility repair, sustaining essential governmental and health services, and business and economic redevelopment. Table 2 illustrates the interaction between these plans as they relate to hazard planning and response. Other plans identified through the PDRP process will also have significant impact on post-disaster planning. Some of these plans are specific to Brevard County, while several others are regional in nature.

Table 2: Local Plan Integration

Purpose and Use	CEMP	LMS	Comp Plan	COOP
Provide hazard assessment information	✓	✓	✓	
Define procedures for providing evacuation and sheltering services	✓			
Define policies for maintaining and enhancing evacuation clearance times		✓	✓	
Define capital expenditure priorities for enhancing evacuation and sheltering capacities		✓	✓	
Define policies and capital expenditure priorities for making the environment less hazardous		✓	✓	
Define policies for making structures more resistant natural hazard forces		✓	✓	
Define capital expenditure priorities for making public facilities more resistant to natural hazard forces		✓	✓	
Define policies for managing the pre-disaster development and redevelopment of land exposed to natural hazards		✓	✓	
Define operational procedures for post-disaster recovery and redevelopment	✓			✓
Define policies for governing post-disaster recovery and redevelopment actions		✓	✓	

BREVARD COUNTY LOCAL MITIGATION STRATEGY (LMS)

The main goal of the Local Mitigation Strategy (LMS) is to reduce or eliminate the impact of hazards that threaten life and property within a community. The LMS provides guidance in developing pre and post-disaster plans and is essential for identifying priority projects and programs for State and Federal funding. The LMS also provides important information regarding the potential impact of common hazards associated with the community. Overall the LMS primarily focuses on mitigation activities and includes goals and guiding principles, mitigation initiatives, projects and potential funding sources, hazard identification, vulnerability assessment, vulnerable properties, and estimated losses. The LMS is managed and updated by a group of local stakeholders termed “Brevard Prepares”.

The LMS establishes the following goals:

- Provide a methodical, substantive approach to mitigation planning
- Enhance public awareness
- Create a decision tool for management
- Promote compliance with state and federal program requirements
- Enhance local policies for hazard mitigation capability
- Assure inter-jurisdictional coordination of mitigation-related programming
- Create jurisdiction-specific hazard mitigation plans for implementation
- Provide a flexible approach to the planning process

BREVARD COUNTY COMPREHENSIVE EMERGENCY MANAGEMENT PLAN (CEMP)

The Comprehensive Emergency Management Plan (CEMP) establishes a framework through which Brevard County prepares for, responds to, recovers from, and mitigates the impacts of a wide variety of disaster and emergency events that could adversely affect the health, safety and/or general welfare of the citizens and communities.

The CEMP is an operations based plan that describes the basic strategies, assumptions and mechanisms through which the county will mobilize resources and conduct activities to guide and support emergency management efforts through response and recovery. It also defines deployment of resources, communications and warning systems, and annual exercises to determine the ability of county, state and federal government to respond to emergency events. The CEMP adopts a functional approach to facilitate effective intergovernmental operations in that it groups the type of assistance provided into eighteen Emergency Support Functions (ESFs) to address functional needs at the county level. Each ESF is headed by a lead agency that has so designated based on its authorities, resources and/or capabilities in the functional area.

The ESFs have been organized within the Brevard County Emergency response organization using the National Incident Management System (NIMS) based organizational structure, with each ESF designated as a branch within the Operations, Planning, Logistics or Finance/Administration Sections.

CONTINUITY OF OPERATION PLAN (COOP)

The Continuity of Operations Plan (COOP) is designed to ensure the continued performance of minimum essential functions during a wide range of potential emergencies. This is accomplished through the implementing procedures, and provisions for mobilization of alternate facilities, personnel, resources, interoperable communications and protection of vital records / databases.

COMPREHENSIVE PLAN

The Comprehensive Plan establishes the goals and objectives that guide the community's growth and development and policies for daily land-use and development decision making. The Comprehensive Plan serves as the foundation for land development regulations, zoning, major capital expenditures and other initiatives to accomplish the community's overall vision. All land development regulations and development permits must be consistent with the Comprehensive Plan. Brevard County's Comprehensive Plan has several elements that include: Conservation; surface water

- The 1988 the Brevard County Comprehensive Plan was prepared in accordance with Chapter 163, Part II, Florida Statutes, "The Local Government Comprehensive Planning and Land Development Regulation Act of 1985", and Florida Administrative Code Rule 9J-5, "Minimum Criteria for Review of Local Government Comprehensive Plans and Determination of Compliance". The 1988 Brevard County Comprehensive Plan replaced the County Comprehensive Plan which was adopted in July of 1981 as mandated by the Local Government Comprehensive Planning Act of 1975.
- The most recent update was November 7, 2008.

management; recreation and open space; historic preservation; housing; potable water; sanitary sewer; solid waste and hazardous materials; transportation; coastal management; future land use; intergovernmental coordination; capital improvements and programs; and public school facilities. Given the broad nature of the plan and its regulatory standing in many communities, the integration of hazard mitigation measures into the Comprehensive Plan can enhance the likelihood of achieving post-disaster recovery actions following a disaster.

EXISTING LOCAL CAPACITIES

EXISTING LAND USE CAPACITY

Capital Improvements Plan

In addition to the comprehensive plan, a capital improvement plan guides the schedule of spending on public improvements. A capital improvements plan can serve as an important mechanism for guiding future development away from identified hazard areas. Limiting public spending in hazardous areas is one of the most effective long-term mitigation actions available to local governments and helps to reduce post disaster damage.

- Brevard County has a Capital Improvements Element (CIE) that is part of the Comprehensive Plan (chapter 13)
- The Capital Improvement Plan should be considered a local funding source for mitigation projects recommended as part of the Local Mitigation Strategy and the implementation of those actions will help to reduce post disaster damages.
- Information in the chapter took effect July 28, 2010

Existing Housing Capacity

Building Codes, Permitting and Inspections

Building Codes regulate construction standards. In 1991, Brevard County implemented a One-Stop review center to streamline the permit system by providing citizens a central reviewing agency located in one office. At this One-Stop Center, a single permit for construction can be issued for building, landscaping, zoning, environmental resources, drainage, public safety (fire) and driveways.

The organizations involved include:

- Land Development
- Building Code
- Planning and Zoning
- Natural Resources Management
- State Department of Environmental Health Services
- Lot Drainage
- Utility Services

Decisions regarding the adoption of building codes (that account for hazard risk), the type of permitting process required both before and after a disaster, and the enforcement of inspection protocols all affect the level of hazard risk faced by a community. Brevard County has adopted and enforced the Florida Building Code, including a website with helpful information about current updates.

Subdivision Ordinances

A subdivision ordinance is intended to regulate the development of housing, commercial, industrial or other uses, including associated public infrastructure, as land is subdivided into buildable lots for sale or future development. Brevard County subdivision regulations are part of the Code of Ordinances. Subdivision design that accounts for natural hazards can dramatically reduce the exposure of future development. Specific information regarding natural hazards is not specified in the code.

Historic Preservation Plan

Brevard County has a Historic Preservation Element that is part of the Comprehensive Plan (Chapter 4). A historic preservation plan is intended to preserve historic structures or districts within a community. An often overlooked aspect of the historic preservation plan is the assessment of buildings and sites located in areas subject to natural hazards, and the identification of ways to reduce future damages. This may involve retrofitting or relocation techniques to protect buildings that do not meet current building standards, or are within a historic district that cannot easily be relocated out of harm's way. These properties provide unique challenges in the post-disaster environment.

EXISTING GOVERNMENT OPERATIONS CAPACITY

Mutual Aid Agreements

Statewide Mutual Aid Agreement - This agreement enables the county to obtain personnel, equipment, services, and supplies needed on a temporary basis. Requests must specify the type of assistance needed with an estimate of the time each will be needed. Requests for assistance under this agreement are transmitted by the Emergency Management Division. Mutual aid agreements are typically designed to meet response and short-term recovery needs.

Law enforcement and Fire Mutual Aid Agreements - These are agreements among emergency response and public safety entities to lend assistance across jurisdictional boundaries. In the event that an emergency response exceeds local resources, organizations have the ability to request all available support.

Continuity of Operations Plans - A Continuity of Operations Plan (COOP) ensures the continued performance of minimum essential functions of a department or division during a wide range of potential emergencies. COOPs detail plans, comprehensive procedures, and provisions for alternate facilities, personnel, resources, interoperable communications, and protection of vital records/ databases. COOPs may be activated for short term periods of time or for extended operations should the primarily location be rendered inoperable.

EXISTING ECONOMIC REDEVELOPMENT CAPACITY

There are several local and regional agencies and organizations that provide economic development capability, support, resources, training and information to local businesses and promote attracting new business, industry and trade to Brevard County.

These agencies and organizations include:

- Brevard County Tourist Development Council
- Brevard Workforce

- Cocoa Beach Area Chamber of Commerce
- Economic Development Commission of Florida's Space Coast
- Enterprise Florida
- Florida Small Business Development Council (SBDC) at Brevard Community College
- Greater Palm Bay Chamber of Commerce
- Melbourne Regional Chamber of East Central Florida
- Office of Tourism, Trade and Economic Development (OTTED)
- Space Florida
- Technological Research and Development Authority
- Titusville Area Chamber of Commerce
- Visit Florida
- East Central Florida Regional Planning Council (ECFRPC)

Examples of several plans, strategies and Comprehensive Plan elements that support economic development, which in turn facilitates or supports post-disaster economic resumption, are listed as follows:

Comprehensive Economic Development Strategy (CEDS)

The Comprehensive Economic Development Strategy (CEDS) promotes a regional economic development through public and private sector collaboration in order to be globally competitive in the 21st century. The East Central Florida Region is an Economic Development District (EDD) approved by the Economic Development Administration (EDA). The East Central Florida Regional Planning Council (ECFRPC) developed the region's CEDS in 2007. The 2007 CEDS is currently being updated by the ECFRPC and will be completed in September 2011.

Economic Development Commission of Florida’s Space Coast

The Economic Development Commission (EDC) of Florida’s Space Coast is a community coalition building a better Brevard through economic development. The EDC reports quarterly to Brevard County and the Office of Trade, Tourism and Economic Development and provides yearly update to the State. The EDC completes a 3-year economic development strategic plan that is delivered to the public and their Board. Their Board is updated each quarter regarding the progress of the strategic plan. These progress reports are also available on the EDC’s website.

Economic Development Element of the Comprehensive Plan (EDE)

The Economic Development Element promotes economic development within the county, which may include seeking funding for grants to build infrastructure or low interest loans to encourage new and expanded business opportunities, or support expanding the amount of land designated and infrastructure required for industrial and commercial development in various municipal planning districts. Currently, Brevard County’s Comprehensive Plan does not include an economic development element. The ECFRPC recommends that Brevard County implement an economic development element into their Comprehensive Plan.

Brevard County’s Comprehensive Plan includes a Capital Improvements element contains policies regarding economic development.

Policy 4.3

Brevard County should continue to seek funding State and Federal sources and pursue interlocal agreements with private and public agencies to ensure sufficient money is available to provide necessary public facilities and services.

Policy 4.4

Brevard County should periodically readdress its budget and fiscal policies to ensure debt management practices such as limitations on the use of revenue bonds as a percentage of total debt, maximum ratio of total debt service to total revenue, and maximum ratio of outstanding capital indebtedness to property tax base are adequate and effective.

Business Recovery Plan (BRP)

A Business Recovery Plan is developed to provide recovery strategies for expediting recovery from business interruption. The plan includes the identification of business processes, an impact analysis, and how the plan will be implemented according to responsibilities, communication, training and plan maintenance. Currently, Brevard County does not have a template of this plan in place. It is recommended that the county work with local business organizations pre-disaster to offer a BRP template and facilitation guidelines to encourage businesses develop their own BRP plans.

EXISTING INFRASTRUCTURE CAPACITY

The restoration of Brevard County’s infrastructure depends on four primary Emergency Support Functions (ESF): ESF 1 (Transportation); ESF 2 (Communications); ESF 3 (Public Works); ESF 12 (Utilities Support). It is vital to restore infrastructure following a disaster to return the community to normalcy. This process covers a wide variety of topics and takes the coordination of multiple agencies.

Emergency Support Functions

ESF 1 Transportation

Space Coast Area Transit (SCAT) is the lead agency for ESF 1 (Transportation). The ESF’s primary function is to provide vehicles and personnel to fulfill transportation-related mission assignments during disaster events. Their role in long-term recovery consists of continuously providing transportation support for the movement of personnel and materials needed to sustain disaster recovery operations. ESF 1 also contains several support agencies that include: School Board of Brevard County; Brevard County Fire/Rescue, Operations Division; Brevard County Parks and Recreation; Coastal Health Systems of Brevard Inc.; Florida East Coast Railroad; Canaveral Port Authority; and the Melbourne Airport Authority.

ESF 2 Communications

The lead agency for ESF 2 (Communications) is the Brevard County

Information Technology Department. Their role in disaster recovery consists of providing facilities, equipment, trained personnel, services and supplies necessary to sustain communications by county and other designated organizations. It is essential for agencies within this ESF to repair and replace permanent communications systems and facilities as well as temporary communications systems. Some other vital communication support agencies include: Brevard County Sheriff's Office Communications; Municipal Communications Agencies; AT&T Wireless; Sprint/Nextel; and other Florida Communications.

ESF 3 Public Works

Brevard County Road and Bridge Department is the lead agency for ESF 3 Public Works. Their role in disaster recovery is to provide assistance and engineering services for technical evaluation and inspection of impacted areas, debris removal, restoration of roadways, flood control systems, and other key public infrastructure components. In the long-term recovery aspect, ESF 3 shall assist the impacted municipal activities, and request public works and engineering assistance from outside organizations, including state and federal agencies. There are several support agencies that include: Water Resources Department; Storm Water Utility Department; Utility Service Department; Solid Waste Management Department; Natural Resources Management Department; and Municipal Public Works Agencies.

ESF 12 Utilities Support

The lead agency for ESF 12 is the Brevard County Utility Services Department. This ESF's main purpose is to coordinate recovery efforts by Brevard County to address emergency power, water and wastewater and energy needs following a disaster. Operations coordinated through ESF 12 include: allocating emergency power generating equipment in support of response and recovery efforts; consolidating damage reports and system requirements generated by local energy companies; providing assistance to energy suppliers in restoring their service; and providing energy information, education and conservation guidance to the public. It is essential to coordinate these activities to ensure smooth recovery procedures. Several departments support ESF 12 that include: Brevard

County Road and Bridge Department; Brevard Water/Wastewater Division; Brevard County Facilities Department; Brevard County Parks and Recreation Department; Brevard Transit Services Department; Florida Power and Light Company; and City Gas Company

EXISTING ENVIRONMENTAL CAPACITY

Brevard County also has in place several documents that specifically address Environment and Floodplain Management. The ability to identify areas of the county that are environmentally sensitive or prone to flooding allow for faster recovery timeframes and the capability to redirect recovery efforts away from these areas. An explanation of the current Brevard County documents is provided below.

Floodplain Management

A Floodplain Management Plan (or a Flood Mitigation Plan) provides a framework for action regarding the corrective and preventative measures in place to reduce flood related impacts. Brevard County has not developed a standalone Floodplain Management Plan, although the County Comprehensive Plan extensively describes the strategies and policies concerning floodplains. The Land Development Codes and Ordinances work in conjunction with the Comprehensive Plan to protect life and property in the floodplain, as well as its functionality. Chapter 62 Article X, Division 5, Section 62-372 states: The purpose and intent of this ordinance: to protect and restore, where feasible, the natural functions of floodplains within the county and to apply the standards set out in this ordinance for development in floodplains and flood-prone areas.

Any development in the floodplain requires a building permit according to Chapter 22 of the Brevard County Code of Ordinances. In accordance with National Flood Insurance Program (NFIP) standards, the Brevard County Code of Ordinances requires that if the cost of any reconstruction, rehabilitation, addition or other improvements to a building equals or exceeds 50% of the building's market value, the existing building is required to meet the same standards as a new building. These requirements typically mean raising the living area of a residential building a minimum of one foot above the base flood elevation.

Environmental Management

The Brevard County Natural Resources Management Office manages County environmental resources by developing and implementing management plans, regulations, and outreach programs. To accomplish all involved with protecting and managing the County's natural resources, the Office is composed of three sections:

- Environmental Resources Management – responsible for county environmental ordinances and management of government owned lands.
- Environmental Remediation and Compliance – responsible for protection of groundwater and drinking water sources through management and disposal of hazardous materials, waste and petroleum products.
- Watershed Management – consists of Storm water Utility Program and Beach Management Program.

Open Space Management Plan

An open space management plan is designed to preserve, protect and restore largely undeveloped lands in their natural state, and to expand or connect areas in the public domain such as parks, greenways and other outdoor recreation areas. In many instances open space management practices are consistent with the goals of reducing hazard losses, such as the preservation of wetlands or other flood-prone areas in their natural state in perpetuity.

Remnant hurricane debris that has not been cleared out of natural areas and vacant properties increases the county's vulnerability to wildfire, as vegetation that dries out becomes dangerous wildfire fuel. Man-made debris, which also can accumulate in the open space areas, can contain toxic materials and increase fire intensity. "Ladder fuels", tangled debris, enables 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 throughout the area. Hurricane debris can also hinder suppression activities. The size of the downed trees and the way they are piled make it difficult to plow a fire line and not only slows down the process, but also creates a safety hazard for fire fighters retreating

from a blaze. Vulnerability of nearby homes is also a concern when dealing with dry hurricane debris and wildfire management.

While the county has not prepared one single open space management plan, the existence of these plans for particular pieces of property are contingent upon the requirements of the acquisition funding source. If the funding source of public open space does not require a management plan, the county codes do not require one to be created. Lands under management of The Brevard County Environmentally Endangered Lands Program (EEL) are, however, required to have a management plan, although some specific hazard related management practices are not required. Fire management is contained in the EEL Sanctuary Management Manual, while debris management as it relates to hazard response is an area which should be considered to be included. Brevard County Comprehensive Plan and land development codes requires that Planned Unit Developments (PUDs) and Developments of Regional Impact (DRIs) create an open space management plan for large open space areas as part of their development. Debris and Fire management may not be included in all plans, especially as it relates to disaster recovery.

Habitat and Ecosystem Protection and Restoration

The Brevard County Natural Resource Department works to protect surface water quality and healthy ecosystems. Surface Water Protection Code Chapter 62, Article X, Division 3, Section 62-3661 states: It is the purpose of this ordinance to protect the quality and natural functions of surface waters within the county. The ordinance establishes standards for development in and adjacent to Class I, II and III waters, Outstanding Florida Waters, and Aquatic Preserves.

Stormwater Management

Stormwater runoff is the number one threat to Brevard County waterways. The Brevard County Stormwater Management plan is designed to address flooding associated with stormwater runoff and focuses on design and construction measures that are intended to reduce the impact of more frequently occurring minor urban flooding.

The Brevard County Watershed Management Program, under the Natural Resource Management Department, was established in 1990 as the program to implement the storm water utility. In 1999 and 2000, the City of West Melbourne and the Town of Malabar joined the program. The program's dedicated funding source is used for capital improvement retrofit projects including: retention ponds, baffle boxes and swales. Approximately \$18 million dollars in projects have been designed and constructed through the program.

The county also provides drainage services and manages stormwater projects for the City of West Melbourne, the Town of Grant-Valkaria, and the Town of Malabar. Most cities within Brevard County's geographical boundary including Melbourne, Palm Bay, and Titusville, have their own Stormwater Utilities and manage their own stormwater flood control and water quality improvement projects.

While local regulations and the Comprehensive Plan require all subdivisions and commercial sites to treat stormwater runoff, much of the county was developed prior to 1978 when these regulations were established.

Most of the urbanized sections of the county are located along the coast and barrier islands with over two thousand stormwater outfalls which drain untreated stormwater into the Banana River, Indian River Lagoon or Mosquito Lagoon. Numerous projects are planned over the next several years to help alleviate flooding issues and provide treatment to stormwater before it flows into natural water bodies.

Brevard County Stormwater Utilites also has drainage basin improvement plans for several areas with known flooding issues. The County utilizes flood data from field reconnaissance as well as residential feedback survey data to determine where flooding has occurred and how drainage can be improved. The flood elevation data is used to calibrate the drainage models and prepare a stormwater management design that more accurately represents the actual site conditions.

The Brevard County Emergency Management CEMP is responsible for the identification and mapping of the stormwater facilities. Monitoring of

these facilities during and after a disaster, however, is the responsibility of the Watershed Management Program.

Beach and Dune Restoration Plan

The Brevard County Beach Management Program is responsible for beach restoration and dune vegetation projects to protect upland property and maintain healthy beaches. Consequently native plants are an essential component of dune restoration as they anchor sand, reduce erosion, and provide a natural "growth" of dunes by catching wind-blown sand. Therefore the replenishment of the native vegetation is critical in the restoration of the beach ecosystem. The Tourist Development Council, recognizing the impact the beaches have on Brevard's tourism based economy, has dedicated a portion of the bed tax to fund the local share of most county beach management projects. Restoration projects in the county have been ongoing since 1972 and continue to the present. The current and latest projects include: Canaveral Bypass Project, North reach, Patrick Air Force Base, Mid Reach, South Reach and the South Beaches. The county continues to research innovative technologies to improve the function and cost effectiveness of future restoration projects.

It is also important to note the Coastal Setback and Control Line as stated in Chapter 62, Article XII, Section 62-4201: The intent of this ordinance to regulate construction along our coastline. The ordinance contains standards for construction and establishes a setback line 25 feet landward of the State's line.

Environmental Contamination

The Brevard County Health Department, Natural Resource Management Department, Emergency Management, the Florida Department of Health, and the Florida Protection Agency are responsible for the protection of the county residents and environment from environmental hazards and contamination.

The Environmental Remediation and Compliance Section (ERC) of the National Management Resource Office (NRMO) is contracted with the Florida Department of Environmental Protection (FDEP) to inspect petroleum storage facilities and oversee petroleum contamination and

also inspects small quantity generators of hazardous waste. FDEP is responsible for large quantity generators. The following are links to documents about environmental remediation:

- **Petroleum Remediation**
[Guide to Florida's Petroleum Cleanup Program*](http://www.dep.state.fl.us/waste/categories/pcp/pages/guide_to_florida_pcp.htm)
http://www.dep.state.fl.us/waste/categories/pcp/pages/guide_to_florida_pcp.htm
- **Storage System Compliance**
[Your Petroleum Storage Tank Facility Inspection Guide*](http://www.dep.state.fl.us/waste/quick_topics/publications/pss/pcp/inspectionguide/YourPetroleumTankFacilityInspectionGuide2005.pdf)
http://www.dep.state.fl.us/waste/quick_topics/publications/pss/pcp/inspectionguide/YourPetroleumTankFacilityInspectionGuide2005.pdf
- **Hazardous Waste Compliance**
[Florida's Handbook for Small Quantity Generators of Hazardous Waste*](http://www.dep.state.fl.us/waste/quick_topics/publications/shw/hazardous/fact/SQGBBook2011Final_express.pdf)
http://www.dep.state.fl.us/waste/quick_topics/publications/shw/hazardous/fact/SQGBBook2011Final_express.pdf

The ERC section is also responsible for the education and assistance of facility owners and operators to reduce new releases of hazardous materials, waste and petroleum products. The Brevard County Emergency Management Local Mitigation Strategy is responsible for identifying and mapping locations of hazardous materials as well as training and updating communication plans for hazardous material incidents through their Comprehensive Management Plan.

In Brevard County, the FDEP is responsible for the implementation of the Safe Drinking Water Act by regulating potable water resources. The FDEP and the Brevard County Department of Health are responsible for the regulation of waste water systems and facilities. The Brevard County Health Department assists the state agencies with the protection of potable water wells, as well as the onsite sewage program and many other areas of environmental health.

Urban Forests

Urban Forests can be valuable assets to the community by:

- Improving the quality of life for residents and tourists;
- Improving air quality;
- Reducing energy consumption;
- Offsetting urban heat effects;
- Removing pollutants from the air and water;
- Establishing habitat for the conservation of regional biodiversity;
- Containing stormwater runoff.

Brevard County Chapter 62, Article XIII, Division 2, Section 62-4331 states: The Brevard County Board of County Commissioners finds that the health, safety and welfare of its citizens can best be protected by land use regulations that support and enforce the following community goals:

- Promote the establishment, management and conservation of native vegetative communities;
- Promote visual and aesthetic buffers between land uses;
- Encourage the protection of Heritage or Specimen Trees;
- Promote water conservation and aquifer recharge;
- Encourage creative landscape designs; 6) Protect life and property by appropriately planting trees and vegetation;
- Preserve and enhance property values;
- Control soil erosion and mitigate heat, air and water pollution;
- Provide regulations that are user-friendly, flexible and minimize conflicts with other land development regulations while protecting property rights.

Existing Health and Social Services Capacity

Brevard County also has many health and social service networks and agencies in place. In the event of a disaster in Brevard County the Health and Social Services structure relies primarily on four Emergency Support Functions (ESF): ESF 6 (Mass Care); ESF 6 (Special Needs); ESF 8 (Health and Medical Services); ESF 15 (Volunteer and Donated Goods). Following a disaster Health and Social Services are in higher demand and will be provided through these Emergency Support Functions, Non-Profit Organizations, Faith Based Organizations and other Community Services.

EMERGENCY SUPPORT FUNCTIONS

ESF 6 (Mass Care)

American Red Cross (ARC)

The American Red Cross is a humanitarian organization that provides relief to victims of disaster and help people prevent, prepare for, and respond to emergencies. They are also Brevard County's lead agency for ESF 6 (Mass Care). In the event of a disaster the Red Cross coordinates efforts to provide sheltering, feeding, and emergency first aid to victims, as well as coordinate bulk distribution of emergency relief supplies to the affected population. They also address the management and coordination of emergency services necessary for the care and support of individuals displaced. The Red Cross encompasses sheltering of individuals evacuating threatened areas, as well as providing care for disaster victims remaining in damaged areas experiencing prolonged disruption to utilities and other fundamental community services. This organization also coordinates mass care efforts with numerous support agencies that include: Schools, Non-Profit Agencies, and Faith Based Organizations.

- When ESF 6 transfers into the Long-Term Recovery phase the ARC moves primarily to ESF 15 for recovery planning and assistance.

ESF 6 (Special Needs)

In Brevard County there are three primary agencies for this ESF that include the Brevard County Health Department, Brevard County Housing & Human Services, and Brevard County Emergency Management.

These agencies work to establish policies and guidelines for the identification and registration of individuals with special physical, medical or mental health needs. They also look to coordinate response and recovery operations at the time of disasters to ensure their evacuation, sheltering, and support. This ESF relies on having advance information of special needs individuals in the general population that would need evacuation or sheltering assistance at the time of a disaster. It is recognized that not all individuals requiring services from special needs shelters will have pre-registered with the county so during an emergency they will work with ESF 6 to get the appropriate care.

ESF 8 (Health and Medical Services)

Health Department

The Brevard County Health Department is a representative of the State's Department of Health and is the lead agency for ESF 8 (Health and Medical Services). The Public Health Department's mission is the promotion of health and safety to members of the community. Their three main roles include: Health Protection, Health Promotion and Disease Prevention, and Health Treatment. During a significant natural disaster or man-made event they are the lead agency responsible for providing the coordination of local resources in response to public health needs, as well as emergency workers engaged in response and recovery. The health department also coordinates health and medical responses by working closely with several support agencies that include the appropriate County Entities, Medical Facilities, Non-Profit Organizations, and other Health related Services.

ESF 15 (Volunteers and Donations)

ESF 15 (Volunteers and Donations) is a support function that coordinates the use of volunteer support from organizations and individuals at the time of a disaster, and to provide for the receipt, storage and distribution of donated goods to meet the needs of disaster victims within the impacted areas of the county. The scope of this ESF incorporates soliciting selected goods or services to be donated, and distributing them to support service agencies and directly to disaster victims. In Brevard County the lead agency for ESF 15 is the Brevard County Office of Human Resources. This agency works closely with several support agencies that include 211 Brevard, VOAD, ARC, and United Way.

Critical Social Service Organizations

Brevard County has a large amount of Non-Profit and Faith Based Organizations that provide numerous types of outreach and assistance to the local population. Some of the Key organizations involved in a disaster are provided below:

VOAD

The Brevard Voluntary Organizations Active in Disasters is a non-dues affiliation of more than 60 agencies, churches, and other non-profit organizations. This agency seeks to prevent the duplication of effort by coordinating the availability of needed services in disasters. The affiliation is active during disaster pre-planning through post disaster support by acting as a clearing house for disaster assistance.

Faith Based Organizations

Faith Based Organizations play a major role in disaster recovery. In Brevard County there are numerous Faith Based groups that participate in the VOAD and Long-Term Recovery Organizations. These faith-based groups can assist the various volunteer groups by offering support with donated goods, home repairs, debris removal or even provide spiritual care. A few examples of extremely active Faith Based Organizations are provided below:

- UMCOR- The United Methodist Committee on Relief responds to natural or civil disasters that are interruptions of such magnitude that they overwhelm a community’s ability to recover on its own. UMCOR also recognizes that disasters cause disruptions that can last for years and often create permanent changes in people’s lives; therefore they work within a community to address the long-term effects of a disaster and assist people in rebuilding and adjusting to change.
- Southern Baptists- They contribute manpower, ministry, and financial help during floods, hurricanes, tornadoes, fires, earthquakes, and urban disasters. Southern Baptists have built 335 mobile mass feeding, recovery, child care, command, and other units to date. Disaster relief teams have responded to many natural disasters in their states.

Southern Baptist efforts are correlated primarily with the American Red Cross, and with other private agencies through VOAD.

- Church of Latter-day Saints- Works through organized Church programs or other relief agencies. One of the great strengths of the Church is the ability to organize and provide leadership quickly in emergencies. After assessing the needs, local Church leaders indicate the help they need, such as volunteer labor, commodities, indicate the help they need, such as volunteer labor, commodities, or fast offering funds. As they work with other relief agencies, the contributions of members can be coordinated with local needs.
- Lutherans - The Lutheran Disaster Response Team in Florida responds to natural disasters as well as those caused by human beings. The Team will serve as a liaison between the local community and the greater Lutheran Church body. It will cooperate with all other organizations, bringing resources to those in need and helping to organize the responders, so that all available re- sources are used in an efficient, responsible, spiritual and loving manner.
- Catholic Charities- Relief and recovery services are provided at the local level by Catholic Charities agencies. Catholic Charities agencies provide critical services including emergency food, shelter, direct financial assistance, counseling, and support. These services are provided regardless of race, creed, or socio-economic status.

United Way

The United Way works to make measurable changes in the communities through partnerships with schools, government agencies, businesses, organized labor, financial institutions, community development corporations, voluntary and neighborhood associations, the faith community, and others. In a disaster the United Way sets up a Volunteer Reception Center that will not only deploy the current Volunteer Corps, but provide an efficient mechanism for volunteers to be connected with local responders and emergency relief organizations after a disaster strikes. They also include a Volunteer Corps Initiative where trained volunteers work to provide water and ice distribution, phone assistance and emergency shelter service.

211 Brevard

211 Brevard is free helpline that is available 24 hours a day, 7 days a week. This agency provides the community with more than 1,200 Social Service programs. The database includes programs that assist with basic needs, emergency financial assistance, parenting classes, mental health and substance abuse services, domestic violence shelters, mentoring programs, community activities and more. In past emergencies the agency also worked to maintain up-to-the-minute information on services needed by those impacted.

Salvation Army

The Salvation Army provides several basic disaster relief services. These services include shelter and feeding support, emergency assistance, donation management, emotional and spiritual care, communications, case management, clean-up and construction, and partnerships.

Brevard Long Term Recovery Coalition

The Brevard Long Term Recovery Coalition's purpose is to strengthen area-wide disaster coordination through the sharing of information, simplifying residents access to services, jointly resolving cases with disaster related recovery needs and providing mitigation activities to low income residents. Some of their goals consist of:

- Promote collaboration among community partners to address the long term recovery needs resulting from a disaster.
- Advocate for ongoing hurricane preparedness within the community through cooperation with governmental, faith-based, non-profits and voluntary agencies.
- To help resolve recovery needs that have not been met by local, state, federal or voluntary agency assistance.
- The following Board Members comprise the Brevard Long Term Recovery Coalition:
 - o County Manager
 - o Director, Brevard County Emergency Management
 - o Executive Director, American Red Cross or designee
 - o President, United Way of Brevard or designee
 - o Lead Salvation Army Officer North/Central

- o Lead Salvation Army Officer South
- o Chair, Brevard County VOAD
- o 5 At-Large Members (At least 1 shall represent a Faith Based Organization)
- o Brevard County Sheriff's Office designee
- o Executive Director, Catholic Charities
- o Brevard Workforce Development Board designee
- o Brevard County Health Department designee

Advocacy Groups and Elder Services

Advocacy Groups and Elder Services are well represented throughout Brevard County and can be accessed through the 2-1-1 database. Advocacy groups are essential in providing outreach to diverse populations that have the possibility to be overlooked because of disability, language barriers, transportation, communications, and poverty. Elder Services are vital because of the large population of individuals over 60 years old that reside in Brevard County. These groups have the ability to provide important social services that include health and mental evaluation, personal care services, and transportation.

The Brevard Continuum of Care Coalition

The Brevard Continuum of Care Coalition provides a platform for planning, coordination among social service providers, advocacy, inter-agency communication and education focused on homelessness. They conduct a Point in Time Count which surveys homeless individuals on their reasons for homelessness, and the services required to assist them out of homelessness.

EXISTING FISCAL CAPACITY

The ability of a local government to implement a successful post-disaster redevelopment strategy is often closely associated with the amount of money available to implement policies and projects. This may include external grant funding awards or locally-based revenue and financing. Costs associated with recovery/redevelopment policy and project implementation vary widely. In some cases, policies are tied primarily to staff time or administrative costs associated with the creation and monitoring of a given program.

In other cases, direct expenses are linked to actual projects which can require a substantial commitment from local, state and federal funding sources.

An institutional capacity assessment was undertaken for each workgroup area of the PDRP by meeting with the workgroup participants. The purpose of conducting these discussions and assessments was to document what is already in place to contribute to disaster recovery, determine the ability of Brevard County to implement this plan, and to identify potential opportunities for establishing or enhancing specific redevelopment policies, programs, or projects. The following capacity discussion is specific to financial administration in Brevard County.

Due to the broad and comprehensive nature of post-disaster redevelopment, there are often many disparate resources that may provide a portion of the capacity needed for pre, or post-disaster implementation of the PDRP.

The organizations listed in Table 3 are those that would be important to have represented after a disaster as they either provide critical rapid post-disaster decision-making or may play a role in implementation. This list, however, is neither exhaustive nor is the participation of these organizations in the planning/implementation process mandatory. Additional stakeholders not listed in the table below attended meetings during the PDRP planning process and, at the discretion of the group; these and other organizations can be invited to participate in the future.

Table 3: Rapid Post-Disaster Organization List

Organization	Role or Expertise
Economic Development Commission of Florida's Space Coast (EDC)	Responsible for coordinating and directing countywide redevelopment initiatives, sustain and encourage economic growth of local economy, community planning, and marketing redevelopment opportunities to the private sector
Brevard County (Finance, Budget, Purchasing)	Manage funding for Brevard County
Brevard County Planning	Coordination and implementation of land development, coordination and implementation of land development projects
Space Coast Area Transit (SCAT)	Manage finances and transportation services
Brevard County Clerk of the Circuit	Court/Comptroller Disbursement of County funds
Brevard County Department of Procurement Services	Manage and coordinate procurement process and construction contracting
Brevard County Hazard Mitigation Section	Coordinate assistance and grants given to the cities and County
Brevard County School District	Allocate school budgets

Table 4: Currently Accessible Financial Resources

Financial Resources	Yes	No
Capital Improvement Programming	✓	
Community Development Block Grants (CDBG)	✓	
Special Purpose Taxes (or taxing districts)	✓	
Gas / Electric Utility Fees	✓	
Water / Sewer Fees	✓	
Stormwater Utility Fees	✓	
Development Impact Fees	✓	
General Obligation, Revenue and/or Special Tax Bonds	✓	
Partnering arrangements or intergovernmental agreements	✓	

Table 4 provides a summary of the whether Brevard County has access to or is eligible to use specific local financial resources. A checkmark (✓) under the Yes category indicates that the given item is currently accessible or eligible resources and a checkmark (✓) under the No category indicates the opposite.

Additional Fiscal Support

Brevard County has several organizations that can help provide fiscal support to a variety of entities within the county. These organizations include but are not limited to:

ESF 7: Resources

The role of the ESF 7 is to bring needed resources and logistical support to aid disaster response and recovery operations. Necessary support includes locating, procuring through purchase or contracting, and issuing and transporting resources such as equipment, materials, personnel, and fuel. The primary responsibility for coordinating resource support for disaster operations rests with the Department of Procurement Services. Other agencies directly supporting this function include the Management & Budget Department, Facilities Management Division, Human Resources.

ESF 15: Volunteers and Donations

ESF 15 coordinates the effective utilization of unaffiliated disaster volunteers and donated goods during response and recovery operations and manages the county's relief supplies reception and distribution system.

Brevard County VOAD

Brevard (VOAD) Voluntary Organizations Active in Disasters is a non-dues affiliation of more than 60 agencies, churches, and other not for profit organizations. The affiliation is active during disaster pre-planning through post disaster support by acting as a clearing house for disaster assistance. Brevard VOAD is a Brevard County, Florida, USA, non-profit organization and a member in various national and state organizations.

Florida Disaster Recovery Fund

The Florida Disaster Recovery Fund, formerly known as the Hurricane Relief Fund, is a state program that serves as a funding and management source for recovery needs that have not been met by relief organizations, government agencies, or insurance. The Fund is fueled by donations from private corporations, foundations, and individuals and is managed by the Volunteer Florida Foundation, a nonprofit that works with local long-term recovery organizations within impacted communities.

Volunteer Florida

Volunteer Florida reaches out to individuals from immediate recovery organizations, businesses, nonprofits, and other representatives living and working in recovery who best know the constantly changing needs of their communities. The Fund also provides direct grants to local nonprofits and faith-based groups who need to rebuild their own infrastructure to serve their communities (Volunteer Florida Foundation, 2009).

CAPACITY ASSESSMENT CONCLUSION

Brevard County has a wide variety of plans, programs and policies that support the Post-Disaster Redevelopment Plan. By completing a review of the county’s existing documents it produced results that determined what post-disaster redevelopment plans and policies are already in place and allowed for the identification of possible shortfalls. Recommendations of ways to further integrate post-disaster redevelopment into the relevant plans, procedures and policies are provided in Chapter 7 Recommendations and Action Matrix. The Action Matrix indicates whether the capability exists or is needed to implement the action. For a detailed list of existing policies and procedures that pertain to post-disaster recovery and redevelopment, please refer to Appendix.

Table 5 provides a summary of Brevard County’s capacity to effectively implement a recovery and redevelopment strategy. A checkmark (✓) under any of the Limited/Moderate/High categories indicates the degree of capacity.

Table 5: Existing County Capacity

Capacity	Degree of Capacity		
	Limited	Moderate	High
Planning and Regulatory Capacity		✓	
Administrative and Technical Capacity		✓	
Fiscal Capacity			✓
Political Capacity		✓	
OVERALL CAPACITY		✓	

Vulnerability Analysis



Through previous studies such as the Statewide Regional Evacuation Study (2010), Brevard County has previously identified potential hazards which could significantly impact Brevard County and the municipal jurisdictions within the county and require post-disaster redevelopment activity. These included tropical storms or hurricanes, flooding, hazardous materials incidents and wildfires. Once identified, a vulnerability analysis can be conducted to provide information on the location and extent of risk and vulnerability. The vulnerability analysis is the susceptibility of people, property, environment and social and economic activity to injury or damage and the degree to which they are at risk (SRES 2010). Therefore, the next step is the vulnerability analysis and risk mapping of these specific hazards.

The following vulnerabilities were assessed for the purpose of the PDRP:

- Coastal High Hazard Area
- Freshwater Flooding
- Wildland Fire
- Wind
- Infrastructure and Facilities
- Social
- Natural Resources of Regional Significance (NRORS)
- Regional Economic Model (REMI) analysis, impact and termination of the Space Shuttle program

To assess Brevard County's vulnerabilities, it is essential to review land use patterns, demographic information, transportation facilities and various plans for the county, including Comprehensive Plans, the Comprehensive Emergency Management Plan (CEMP), and the Local Mitigation Strategy (LMS). These plans provide relevant background information about the county and its hazards and risks.

DEMOGRAPHICS & TOPOGRAPHY

Brevard County's coastal location and topography is one reason for its vulnerability to natural hazards as well as man-made threats. Located along Central Florida's Atlantic Coastline, Brevard County is approximately 72 miles in length and 20 miles wide. Neighboring counties include Volusia, Orange, Osceola, and Indian River, forming

Brevard County's borders to the north, west and south respectively. The Atlantic Ocean forms the eastern boundary and provides an attraction for residents and tourists. Brevard County's land area encompasses 656,714 acres or 1018 square miles while water bodies account for an additional 184,773 acres of total area.

Brevard County's environment is unique due to the presence of the Atlantic Ocean, the Indian River lagoon system, the Banana River, and the St. Johns River. These bodies of water divide the county into three distinct land areas, each with their own ecosystem and character; the Barrier Island, Merritt Island, and the mainland, which includes the St. Johns River Valley flood plain. These areas possess their own opportunities and limitations to development.

- 1. The Barrier Island, bounded on the east by the Atlantic Ocean and on the west by the Indian and Banana River lagoons, is a sensitive environmental resource that experiences great growth pressures due to the lure of the beaches for both residents and tourists alike. The Barrier Island performs an important function protecting the inland areas from the powerful forces of the Atlantic Ocean. Therefore, the beaches and dunes are a vital resource that requires protection and careful growth management measures. Much of the Barrier Island is incorporated by the cities of Cape Canaveral, Cocoa Beach, Satellite Beach, Indian Harbour Beach, the Town of Indialantic, and the Town of Melbourne Beach. The majority of the unincorporated area of the Barrier Island includes Canaveral Air Force Station, Patrick AFB, and areas south of Melbourne Beach to the Sebastian Inlet.*
- 2. Merritt Island, bounded by the Banana and Indian River lagoon systems is an area of the county diverse in activities. Merritt Island is bisected by N. Courtney Parkway and Tropical Trail, which run north to south. The central hub of activity is located along the S.R. 520 corridor where a variety of commercial establishments are found. Commercial activity is also prominent along the section of N. Courtney Parkway from S.R. 520 north to S.R. 528. The northern portion of Merritt Island, between S.R. 528 and the Kennedy Space Center, is comprised primarily of agricultural and residential estate*

uses with some commercial uses found along N. Courtney Parkway. The southern portion of Merritt Island is residential in nature.

3. The mainland area offers a wide range of opportunities, from urban and rural settings, to the Indian River Lagoon and the St. Johns River. The cities of Titusville, Cocoa, Rockledge, Melbourne, West Melbourne, Palm Bay, the Town of Palm Shores, Town of Malabar and the Town of Grant-Valkaria line the eastern portion of the mainland from north to south. A significant portion of the land west of Interstate 95 is encompassed by the St. Johns River flood plain, an important environmental area that poses limitations to development.

(Source: Brevard County Comprehensive Emergency Management Plan)

The U.S. Census 2010 population is 601,766. Approximately 40% of the county wide population lives in the unincorporated portion of the County. There are 16 jurisdictions within the county, the newest being the Town of Grant-Valkaria which became incorporated in July 25, 2006. The average population density is 527 people per square mile as of 2010.

Between 2000 and 2010, Brevard County experienced growth rate of 14.1% which was less than the statewide growth rate of 17.6% during those 10 years. According to the University of Florida, Bureau of Economic and Business Research (2009), Brevard County’s population is projected to grow slightly faster in the next 35 years, reaching 724,800 people by the year 2035, however with the current economic downturn, it may be somewhat less. The tables to the right represent data from the 2010 Census, 2009 1 Year estimates from American Community Survey and 2009 BEBR.

Table 6: American Community Survey Population Estimates

American Community Survey 2009 1-year Estimates Population	
Population	Percent %
Persons under 5 years old	5.2%
Persons under 18 years old	19.5%
Persons 65 years old and over	20.8%
Persons Below Poverty Level	11.2%
Language spoken other than English	8.7%

Table 7: Housing Units in Brevard County

Housing Units in Brevard County 2005-2007	
Single-unit structures	67.9%
Multi-unit structures	24.1%
Mobile Homes	8%

Table 8: Civilian Non-institutionalized Population with a Disability

Civilian Non-institutionalized Population with a Disability	
Population	Percent %
Population under 18	5%
18 to 64 Years	10.8%
65 Years and Over	35.6%

Of particular concern within Brevard County’s population are those persons with special needs and/or limited resources such as the elderly, disabled, low-income, or language-isolated residents. At risk populations also include correction facilities, in addition to residential areas, which may be vulnerable to flooding, storm surge or wildfire.

HAZARDS

On average the top rated hazards for Brevard County and its jurisdictions, as identified in the county’s 2009-2010 (LMS) and the 2010 (CEMP) were: high winds, lightning, and loss of electrical, water and sewer. The table below depicts the top three hazards rated by each jurisdiction.

Table 9: Jurisdictional Top 3 Hazards

Jurisdiction	Number One	Number Two	Number Three
Cape Canaveral	High Winds	Lightning	Erosion
Cocoa	High Winds	Hazardous Materials	Loss of Electrical
Cocoa Beach	Lightning	High Winds	Flooding
Grant-Valkaria	High Winds	Flooding	Major Fire-Wildland
Indialantic	Loss of Water	Lightning	Loss of Electrical
Indian Harbour Beach	High Winds	Storm Surge	Loss of Sewer
Malabar	Major Fire-Wildland	Radiological	Loss of Electrical
Melbourne	Lightning	High Winds	Loss of Electrical
Melbourne Beach	Lightning	High Winds	Storm Surge
Palm Bay	Major Fire-Wildland	Crime**	Key Employer Crisis
Palm Shores	High Winds	Lightning	Loss of Electrical
Rockledge	Lightning	Hazardous Materials	High Winds (4 others tied)
Satellite Beach	High Winds	Storm Surge	Lightning
Titusville	High Winds	Key Employer Crisis	Major Fire-Wildland
West Melbourne	Lightning	Loss of Water, Electrical	Telecommunications
Brevard County-Unincorporated	High Winds	Lightning	Loss of Electrical, Water, Sewer

*Note: LMS Pg. 137-138

**The LMS represents Crime as Palm Bay’s 2nd highest hazard. The city reports, however, that other hazards pose a greater threat such as lightning, high winds, and loss of electrical, water, and sewer utilities.

The following represent the county’s highest risk hazards, in order of highest to lowest, based on the relative risk ratings: High Winds, Lightning, Flooding/Storm Surge and Major Fire-Wildland. These specific hazards and Brevard County’s vulnerability to each are described in the following sections.

STORM SURGE

Storm surge is a rise above the normal water level along a shore caused by strong onshore winds and/or reduced atmospheric pressure. The surge height is the difference of the observed water level minus the predicted tide. Storm surge can be 50 or more miles wide and stretch across the coastline where the hurricane makes landfall. The maximum rises in sea-level move from under the storm to the right of the storm's track, reaching maximum amplitude of 10 to 30 feet at the coast. The storm surge may even double or more in height when the hurricane's track causes it to funnel water into a bay. Typically, the stronger the hurricane is the higher and more powerful the storm surge will be.

The greatest threats to Brevard County posed by hurricanes or tropical storms are the effects of storm surge, especially along the barrier islands north of Cape Canaveral to south of Sebastian Inlet. The combination of high tides and wind action can create coastal flooding and saltwater inundation and are considered significant risk factors. Risk of storm surge is ranked highly as a concern by beach communities.

An overview of the locations vulnerable to storm surge is indicated on Figures 3a and 3b (pages 38 & 39).

Understanding the types of land uses and population within the Coastal High Hazard Area is important for disaster planning and redevelopment. As a coastal county, Brevard County and its coastal municipalities are required to include a Coastal Element in their comprehensive plan (See Chapter 7: Policies and Procedures for relevant existing policies). Also required is the recognition and planning of areas in the Coastal High Hazard Area. The definition of the Coastal High Hazard Area (CHHA) according to State Statute 163.3178(2)(h) is the area below the elevation of the Category 1 storm surge line as established by the Sea, Lake, and Overland Surges from Hurricanes (SLOSH) computerized storm surge model.

The 2010 Statewide Regional Evacuation Study provided an updated analysis of the storm surge areas for Category A-E storms (Categories 1-5) based upon new LiDAR (Light Detection And Ranging) data. The storm tide limits were determined using the maximum surge from hurricanes (Categories 1,2,3,4 and 5).

The barrier islands and the Cape are widely affected with storms ranging from only a Category 1 and are completely affected in a Category 3 Storm Surge. Inland areas, due to the high topography along the lagoon are not as vastly affected, however the Titusville and Malabar areas are anticipated to experience storm surge associated with a Category 5 storm. Judgments must be made about the potential for isolation in areas which may not receive storm surge yet are surrounded by areas which will. Potential freshwater flooding is also a consideration in some cases.

Based upon these data, approximately a population of 133,464 (SRES 2010) of the county's 536,357 residents live within the Coastal High Hazard Area (Category 1 Storm Surge). The table below illustrates the population at risk from hurricanes by Evacuation Zone in Brevard County.

Table 10: Number of Residents within Evacuation Zones A - E

Level	Brevard County
A	136,637
B	3,341
C	16,743
D	23,779
E	64,421
Total	244,921

Note: Vulnerable population determined using SRESP behavioral data and county provided evacuation zones. Vulnerable population numbers are not inclusive, meaning population numbers listed for a higher zone are not included in the lower zone. For example, vulnerable population listed for Evacuation Zone B does not include vulnerable population listed for Evacuation Zone A. (Source: SRES 2010)

Land uses in the Coastal High Hazard Area are shown on the maps below and range from open space/conservation to high density residential, commercial and institutional. Assessing all types of land uses is critical when developing a Post-Disaster Redevelopment Plan in order to create a sustainable and economically viable community. A breakdown of the Department of Revenue (DOR) Code classifications is in the table below. "Governmental" land uses comprise 46.9% of the land located in the Coastal High Hazard Area, (Figures 4a & 4b, pages 40 & 41) followed by "Residential" at 29%.

Table 11: Percentage of County DOR Categories within Coastal High Hazard Area

DOR Category	Land in CHH (Sq. Miles)	Percentage of Total CHH lands
Agriculture	0.9284	4.39%
Centrally Assessed	0.2336	1.11%
Commercial	0.5178	2.45%
Governmental	9.9194	46.94%
Industrial	0.3221	1.52%
Institutional	0.236	1.12%
Miscellaneous	0.2297	1.09%
Non-Agricultural Acreage	2.59	12.26%
Residential	6.1386	29.05%
Unclassified	0.0165	0.08%
Total	21.1321	100%

Through Local Mitigation Strategies and public information campaigns, state and local governments are working to encourage residents and businesses to mitigate potential wind and flood losses at the local level.

The worst case for storm surge would be associated with a major hurricane, such as a Category 5, arriving at high tide and accompanied by violent wave and wind activity. Figures 3a and 3b (pages 38 & 39) the 5 foot Surge Zone Maps, indicate that this situation could impact all of the barrier island communities, as well as the mainland side of the Indian River Lagoon. Structures within these areas are vulnerable to surge and the accompanying impacts of wave action. These impacts include structure damage caused by erosion, physical pressure, and inundation. Storm surge would inundate thousands of structures and wave energy could completely destroy or seriously damage thousands of structures. Roadways and bridges, utilities, and communications systems would be significantly damaged and require extensive and time consuming repairs. Numerous injuries and fatalities could be expected for any residents refusing to follow evacuation orders. Significant beach erosion would result in the damage or loss of hundreds of beach front structures causing direct and profound the economic impact. All impacts associated with storm surge from erosion to debris and inundation will result in both short- and long-term environmental impacts. *Note: LMS Pg. 146-147

SEA LEVEL RISE

The maps in Figures 5a and 5b (pages 42 & 43) depict areas to be inundated with up to a 5 foot in sea level. These maps were derived from data from a 2003 report to the Environmental Protection Agency: Land Use Impacts and Solutions to Sea Level Rise in East Central Florida (Brevard and Volusia County) (ECFRPC 2004). As shown on the maps, inundation from the Banana River and Indian River Lagoon affects the barrier island considerably as well as the mainland. Considering this in the post-disaster redevelopment planning is important to keep residents and infrastructure safe from rising sea levels and associated increased storm surge. Adaptation, mitigation or managed withdrawal may be considered.

FRESHWATER FLOODING

Floods are the inundation of a normally dry area caused by an increased water level in an established watercourse, such as a river, stream, or drainage ditch, or ponding of water at or near the point where rain fell. For Florida, flooding is a continuous concern and is generally the cause for more deaths than high winds. In Brevard County and its municipalities, flooding can result from either storm surge associated with hurricanes, riverbank overflow, or ponding from heavy rains within a drainage area.

Due to its topography, the county has experienced inland flooding from at least 12 hurricane strength storms and numerous tropical systems since 1922. In addition, severe winter weather systems have caused significant coastal and inland flooding. Flooding can occur from the ocean or rising waters of the Indian River, Banana River, St. Johns River, Mosquito Lagoon, Sykes Creek and Newfound Harbor. The majority of the land west of Interstate 95 makes up part of the St. Johns River Valley flood plain.

The county is susceptible to short duration flooding, typical from a frontal system with short periods of intense rain. Freshwater flooding can occur when an excessive amount of rainfall accompanies a tropical storm or hurricane. As a result of the topography and high water table of Brevard County, drainage problems can make a small amount of rainfall very significant. Man-made alterations to the land have also disrupted natural flow patterns and can lead to shallow flooding over a large area.

Lastly, coastal tidal flooding is generated from high tides and wind action and is a chronic problem within the coastal shoreline of Brevard County.

Five jurisdictions included flooding (and storm surge) in their top three highest risk hazards (Table 9, page 34). According to FEMA FIRM data, over 55% (464,616 acres) of the county lies in an AE flood zone as depicted in Figures 6a and 6b (pages 44 & 45). In AE flood zone, there is a 1% chance per year that the area will flood. The table below depicts the population at risk from flooding for years 2010 and 2015.

Table 12: Estimated Population in a Floodplain

	Total County Population 2010	Estimated Population in 100 Year Floodplain 2010	Total County Population 2015	Estimated Population in 100 Year Floodplain 2015
Brevard County	601,766	95,493	664,321	105,815

(Source: SRES 2010)

WILDFIRE/URBAN INTERFACE

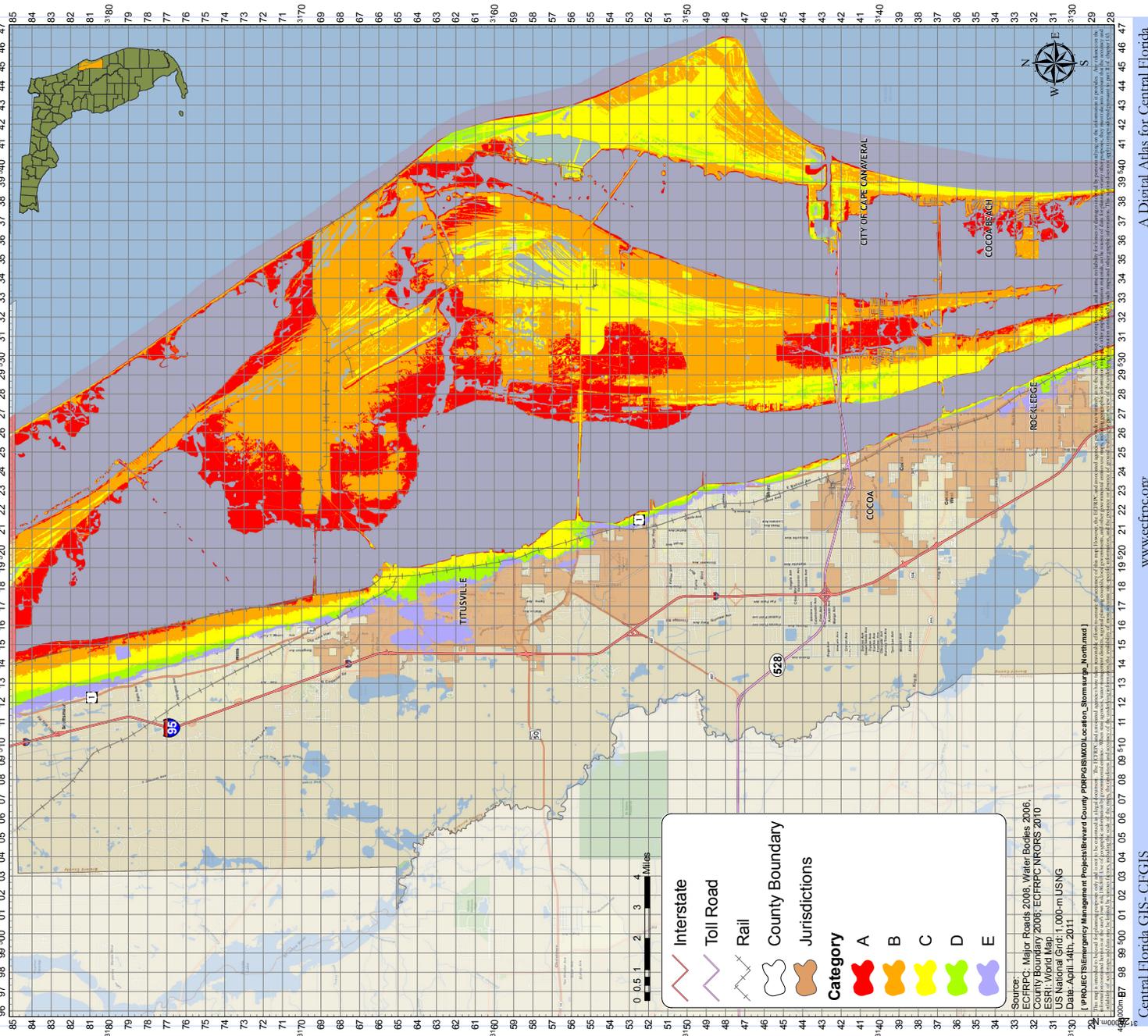
Each year, thousands of acres of wildland and many homes are destroyed by fires that can erupt at any from a variety of causes, including arson, lightning and debris burning. A wildland fire, or wildfire, is any free burning, uncontrollable and un-prescribed fire which consumes natural fuels and spreads in response to its environment. The major cause of brush and forest fires is due to lightning strikes, mainly occurring during months of higher thunderstorm activities.

There are four types of forest fires:

- Surface fires are the most common type of wildfire and burn along the floor of the forest, moving slowly killing or damaging trees.
- Ground fires (muck fires), usually started by carelessness, burn on or below the forest floor. These fires are hard to detect and even harder to extinguish.
- Crown fires are spread rapidly by the wind and move the fastest of all types of fires by jumping along tree tops.
- Wildland-Urban Interface fires are in a geographical area where structures and other human development meet or intermingle with wildlands or vegetative fuels.



Brevard County PDRP 5 foot Storm Surge in Brevard County



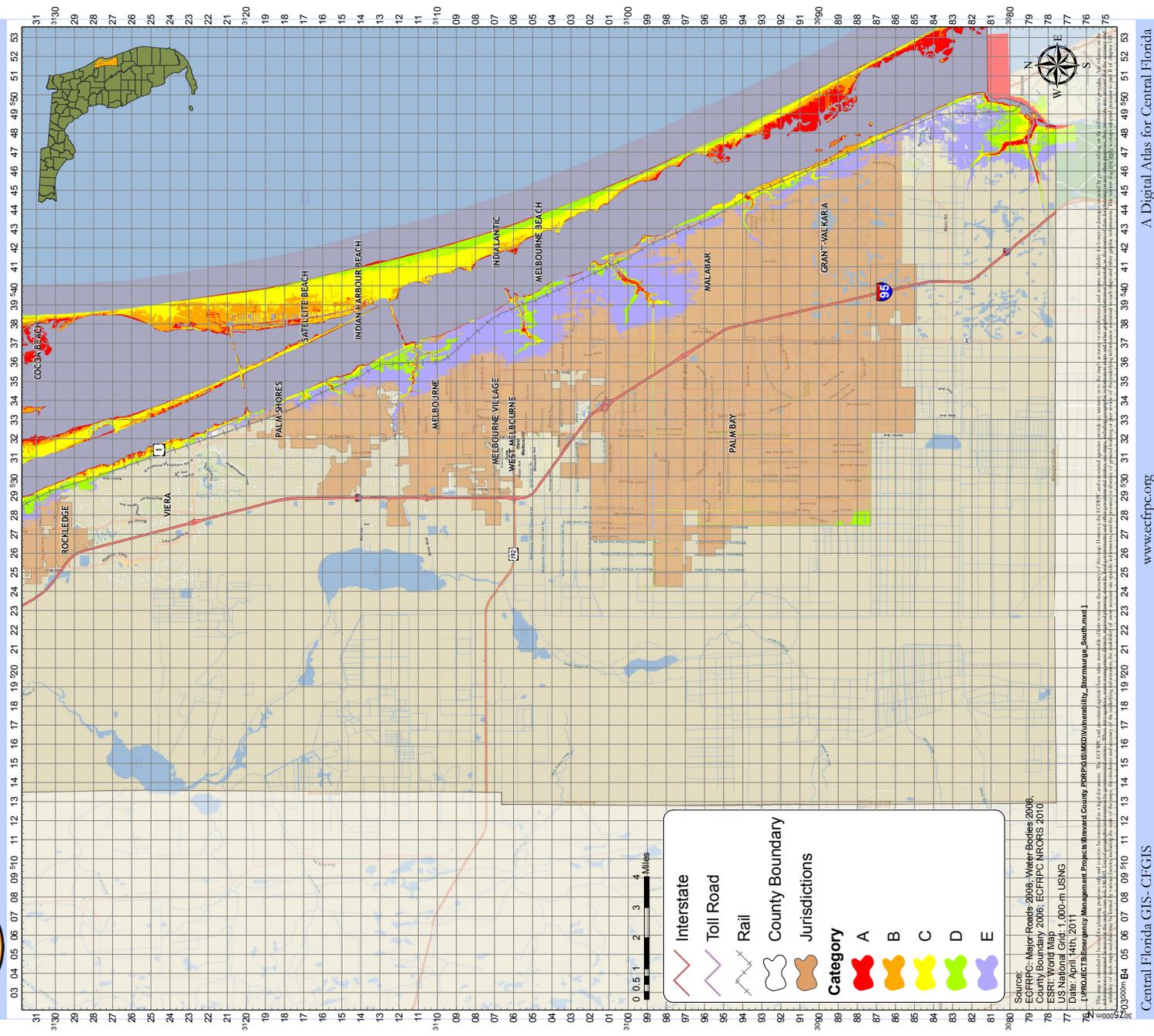
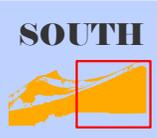
Source:
 ECFRPC, Major Roads 2008; Water Bodies 2006;
 County Boundary 2009; ECFRPC NRORS 2010
 ESRI, World Map; 1,000-m USNG
 Data April 14th, 2011

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FIGURE 3A: 5 foot Storm Surge North



Brevard County PDRP 5 foot Storm Surge in Brevard County



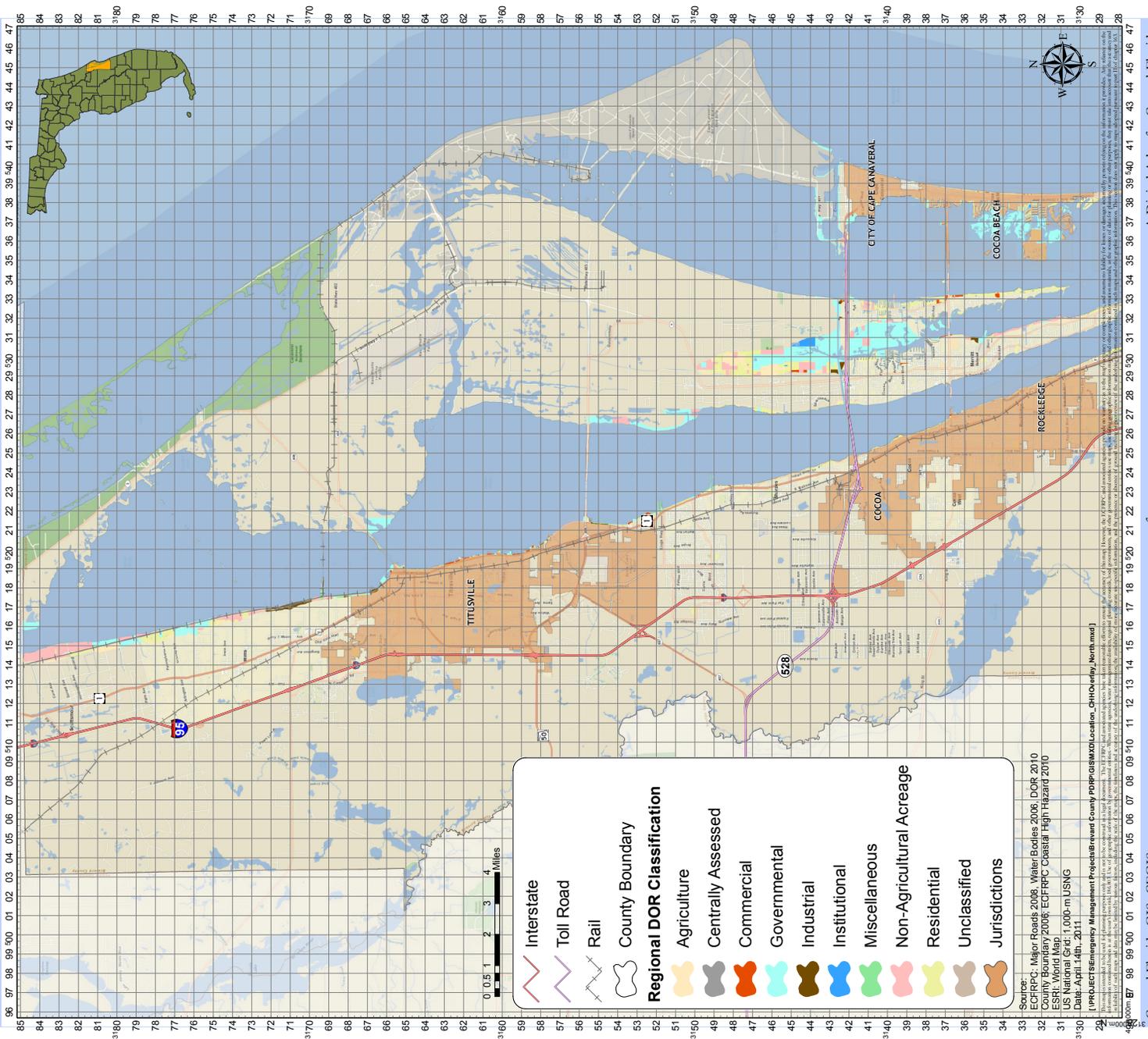
Source:
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 County Boundary 2006; ECFRPC NRGRS 2010;
 ESRI; World Map
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FIGURE 3B: 5 foot Storm Surge South



Brevard County PDRP

Regional DOR classification within Coastal High Hazard



Source:
 ECFRPC: Major Roads 2008; Water Bodies 2008; DOR 2010
 County Boundary 2006; ECFRPC Coastal High Hazard 2010
 ESRI: World Map
 US National Grid: 1,000-m USNG
 Date: April 14th, 2011

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FIGURE 4A: Regional DOR classification within Coastal High Hazard North



SOUTH



Brevard County PDRP

Regional DOR classification within Coastal High Hazard

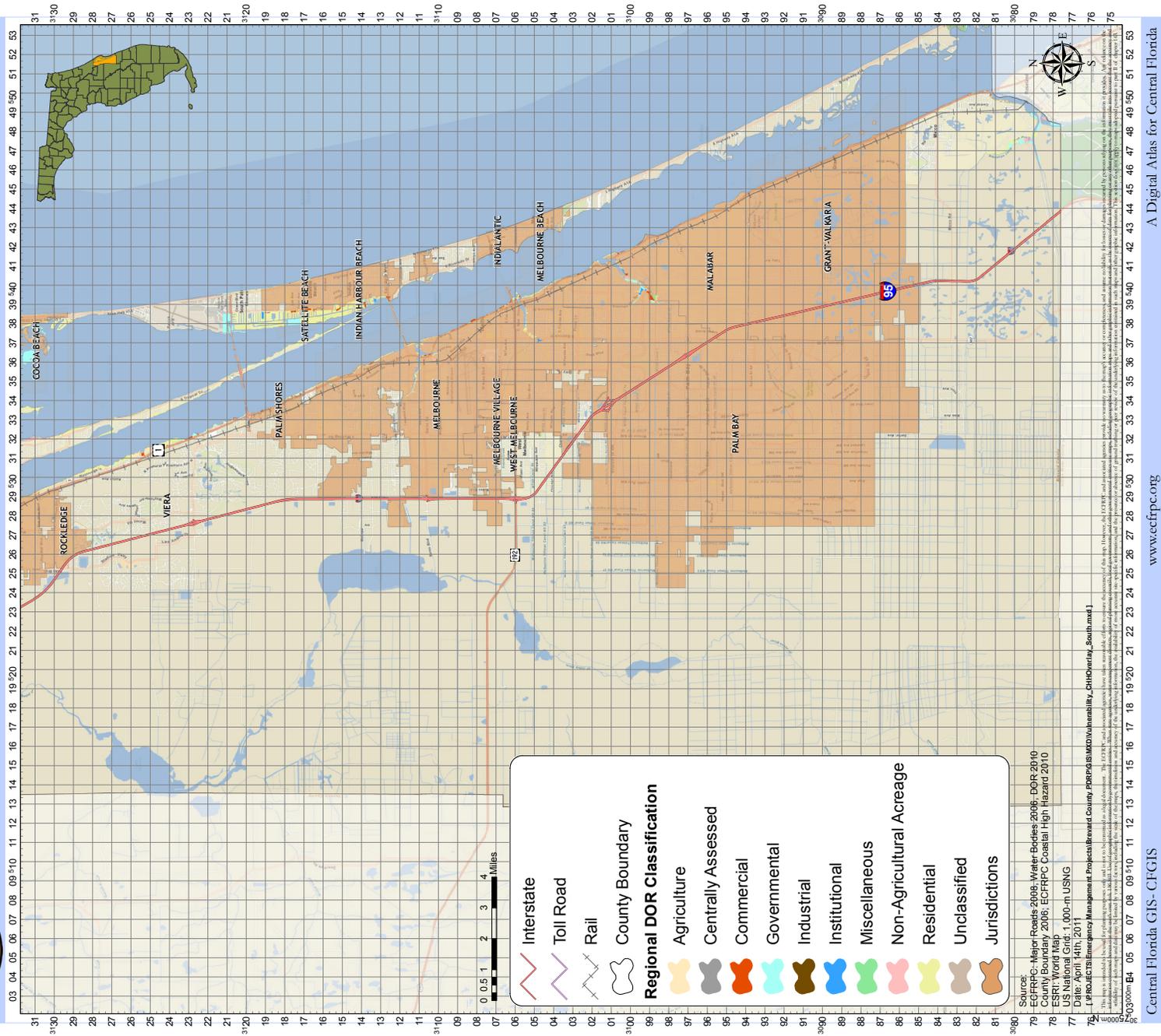
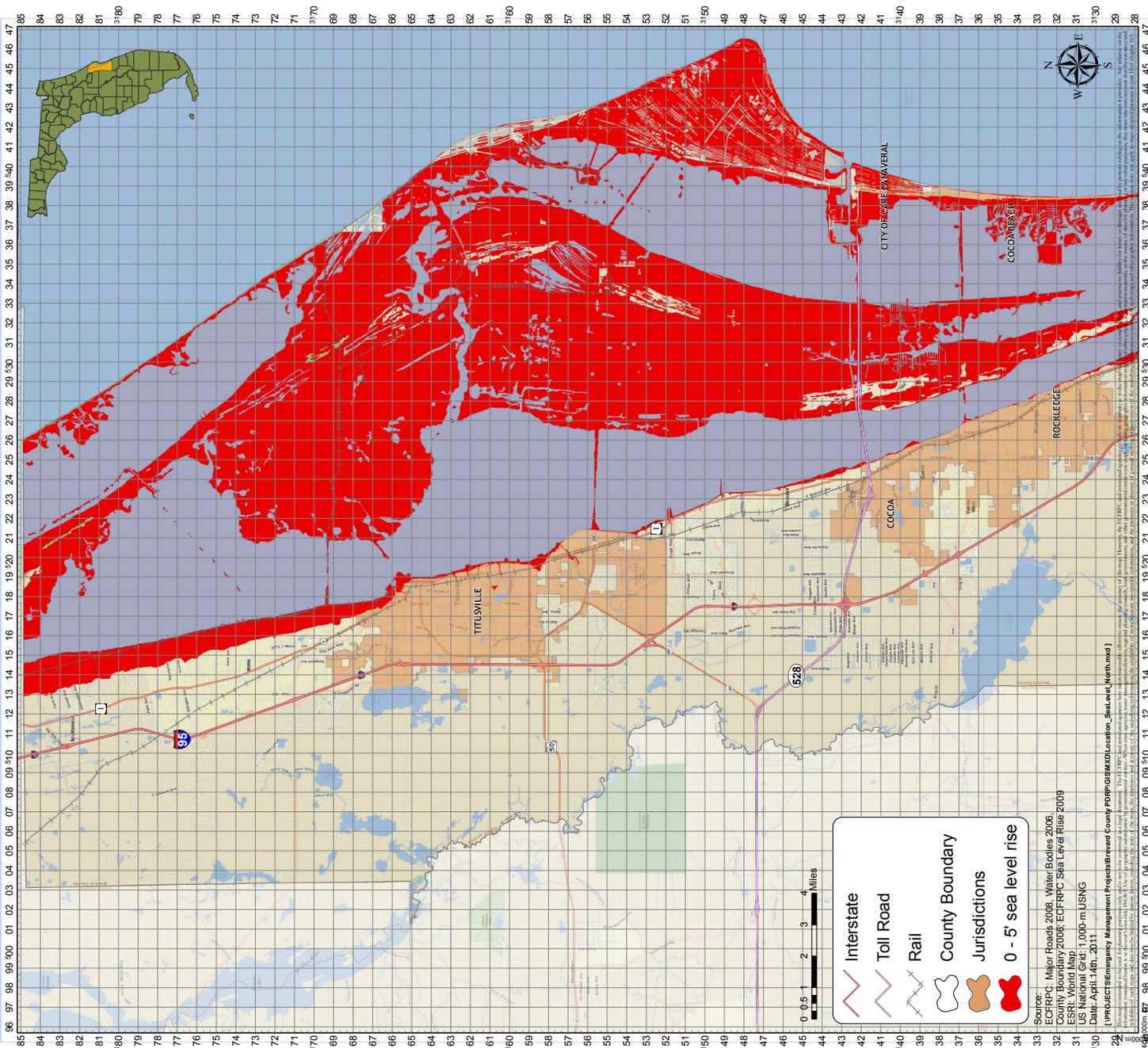


FIGURE 4B: Regional DOR classification within Coastal High Hazard South



Brevard County PDRP

Sea Level Rise in Brevard County



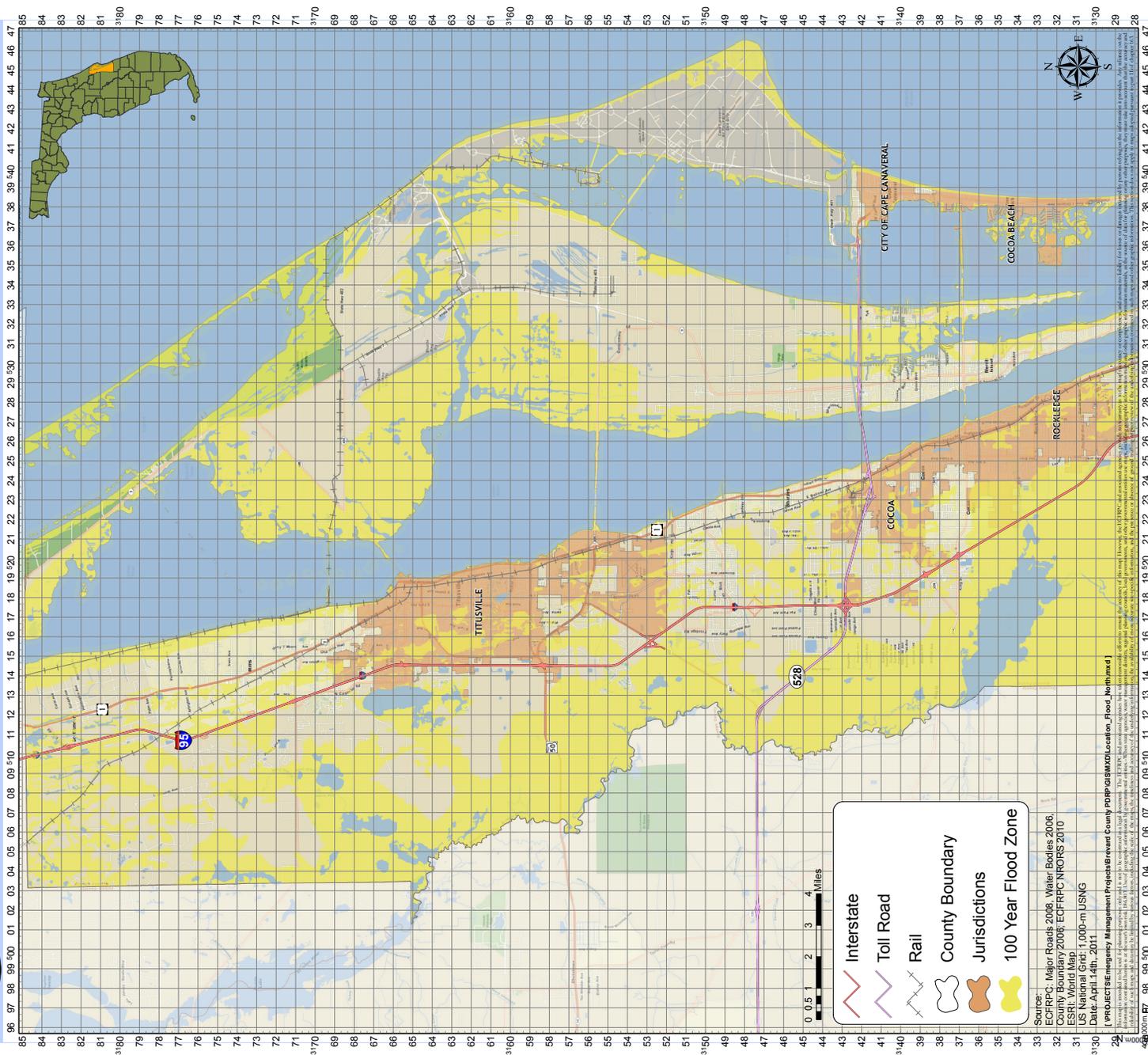
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FIGURE 5A: Sea Level Rise North



Brevard County PDRP 100 Year Floodplain in Brevard County



Source:
 ECFRPC: Major Roads 2008; Water Bodies 2006;
 County Boundary 2006; ECFRPC NPOIRS 2010
 ESRI: World Map
 US National Grid: 1,000-m USNG
 Date: April 14th, 2011

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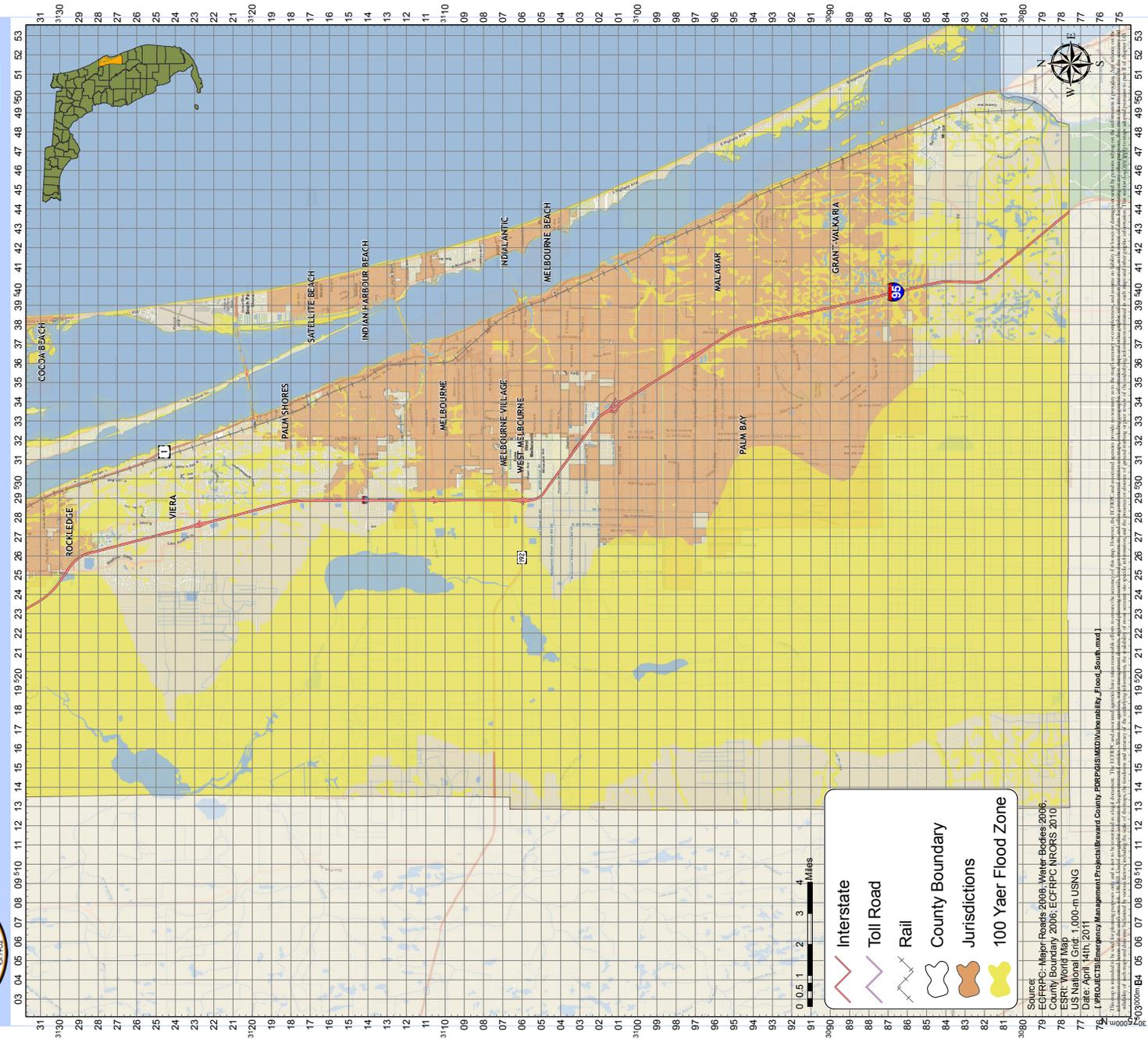
FIGURE 6A: 100 Year Floodplain North



SOUTH



Brevard County PDRP 100 Year Floodplain in Brevard County



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FIGURE 6B: 100 Year Floodplain South

The following maps depict the Wildland Urban Interface Risk Analysis and the Wildfire Level of Concern Analysis for Brevard County.

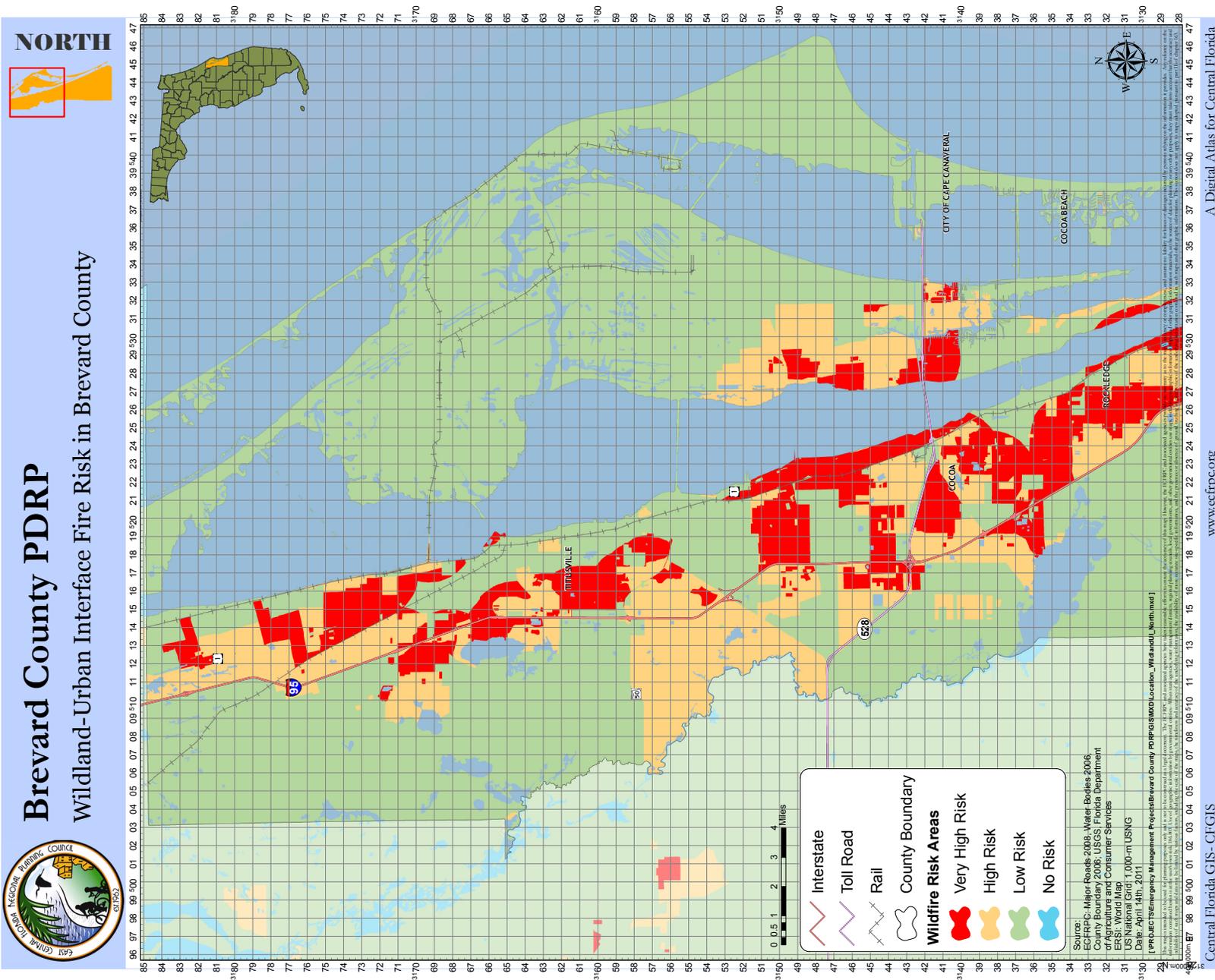
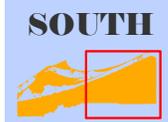
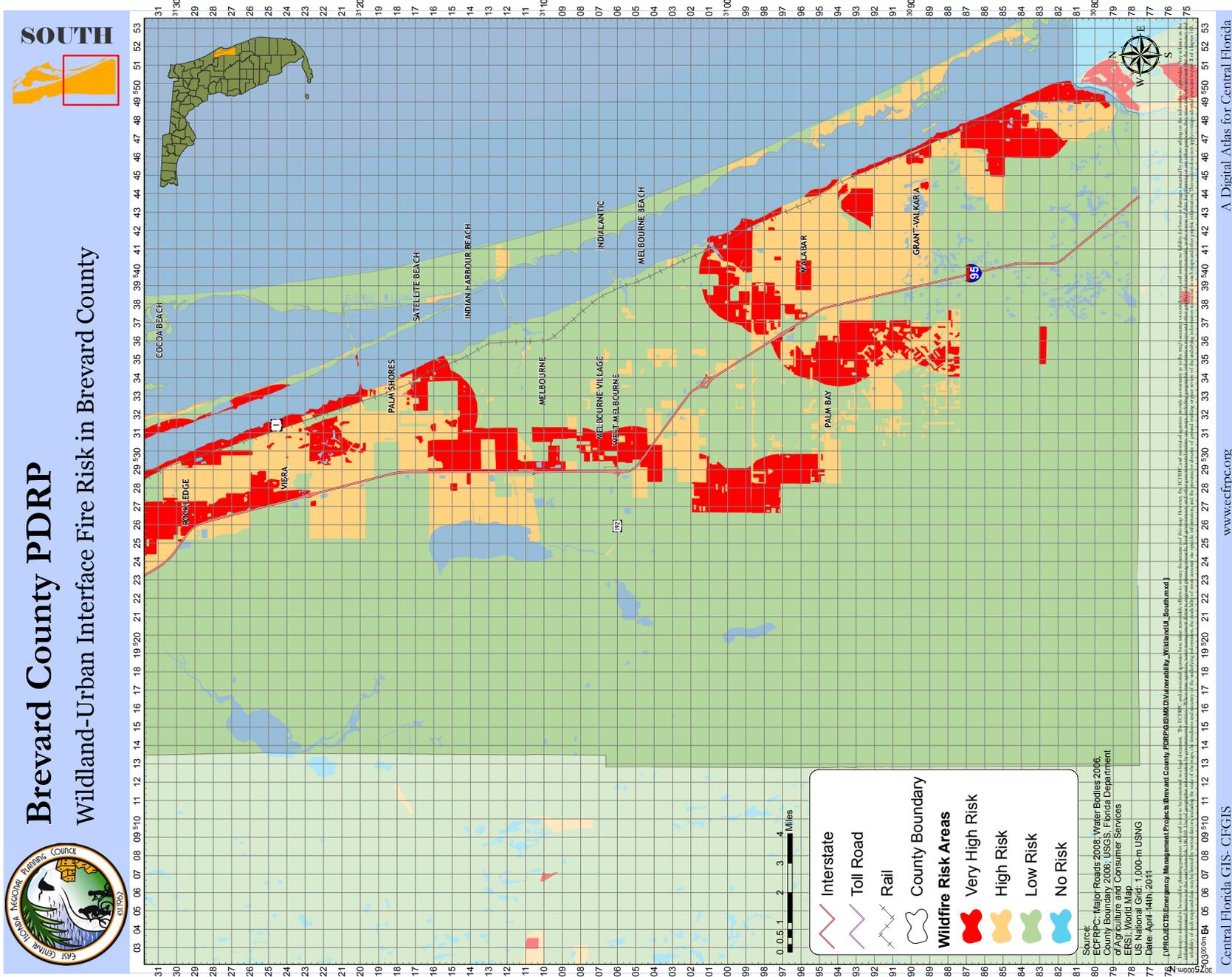


FIGURE 7A: Wildland-Urban Interface Fire Risk North



Brevard County PDRP

Wildland-Urban Interface Fire Risk in Brevard County



	Interstate
	Toll Road
	Rail
	County Boundary
Wildfire Risk Areas	
	Very High Risk
	High Risk
	Low Risk
	No Risk

Source:
 CFRPC: Major Roads 2008; Water Bodies 2006;
 County Boundary 2008; USGS: Florida Department
 of Agriculture and Consumer Services
 ERSI: World Map
 US National Grid: 1,000-m USNG
 Date: April 14th, 2011

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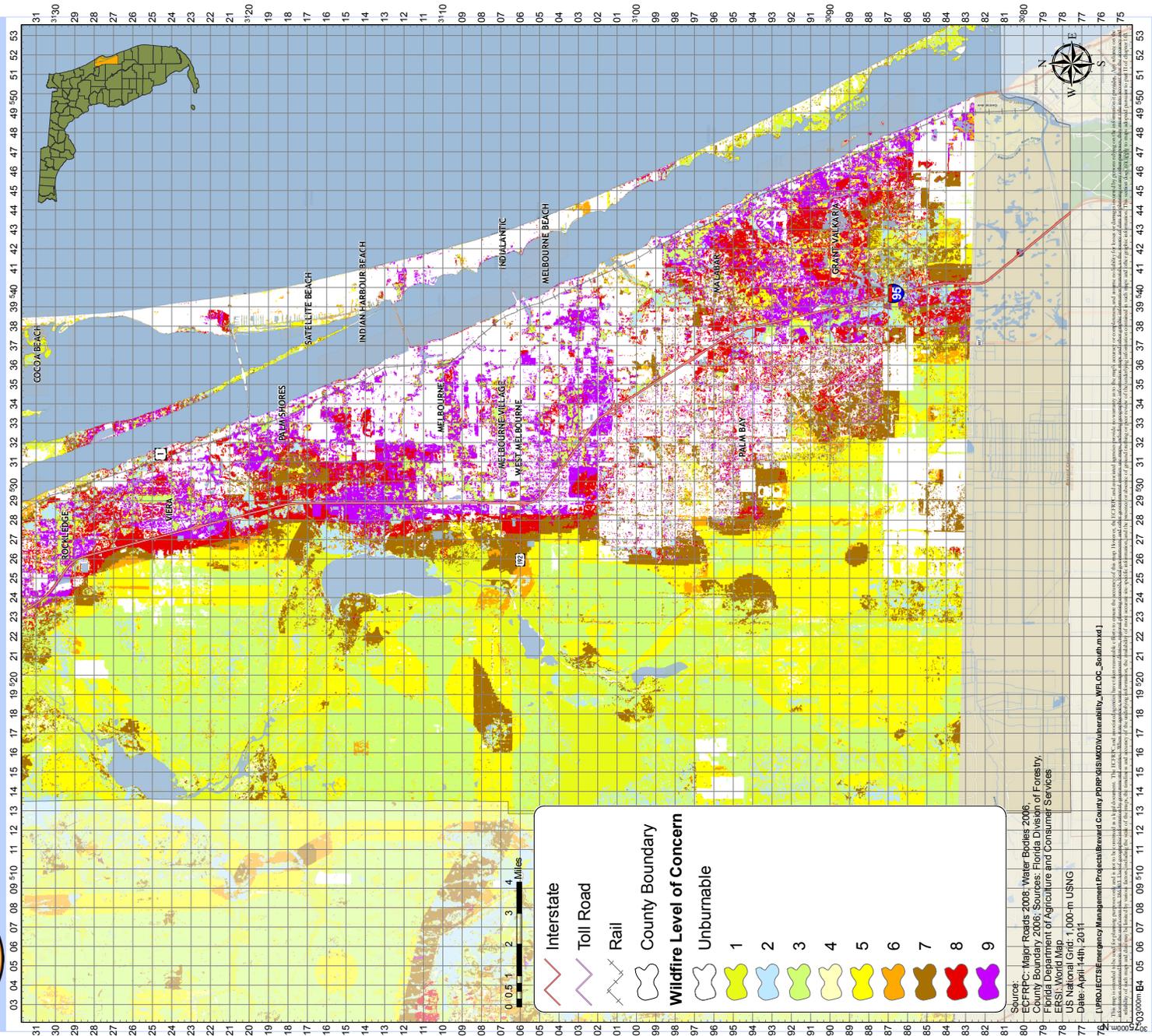
This map is intended to provide information and is not intended to be used as a basis for any legal or financial decision. The CFRPC and its members do not warrant the accuracy, completeness, or timeliness of the information provided on this map. The CFRPC and its members are not responsible for any errors or omissions in this map. The CFRPC and its members are not responsible for any damages, including consequential damages, arising from the use of this map. The CFRPC and its members are not responsible for any damages, including consequential damages, arising from the use of this map. The CFRPC and its members are not responsible for any damages, including consequential damages, arising from the use of this map.

FIGURE 7B: Wildland-Urban Interface Fire Risk South



Brevard County PDRP

Wildfire Level of Concern in Brevard County



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FIGURE 8b: Wildfire Level of Concern South

Florida's typical fire season is from January to May. During relatively dry months, the potential for wildfires increases dramatically. The driest months (January, February and March), with the combination of low humidity and high wind, have the highest number of reported fires. During these months, fine fuels (grass, leaves, pine needles) are in optimal burning condition. The largest number of lightning-caused fires occurs in July, coinciding with the peak of the thunderstorm season. However, lightning accounts for only 11.7% of the fires started during 1974 - 1990. Other sources are man-made, including arson, carelessness, debris/trash burning, and operating equipment which may emit sparks.

Adding to the fire hazard is the growing number of people living in new communities built in areas that were once wildland. Each wildfire, especially near development, has the potential to threaten human life, structures and natural resources. Urban development has moved into wildland areas where the hazard is more severe and fire control is more difficult. With the county's considerable amount of undeveloped land prime with fuel sources for fires, Brevard County is especially susceptible to wildfires particularly during months with minimal rainfall levels.

Development occurring at the edge of undeveloped, vegetated areas, such as forests, grasslands, wetlands, is most at risk. This characteristic is prevalent within the corridors largely defined by I-95 on the west and US 1 on the east, with some other smaller pockets of development located throughout the county (see Figures 8a and 8b: Locations of Wildfire Levels of Concern, pages 48 & 49). Levels of concern are a method to reflect different degrees of vulnerability of development to wildfire. Four jurisdictions with larger amounts of wildland-urban interface ranked wildfire among their three highest hazards (see Table 9, page 34).

The worst case for a wildfire event would involve multiple blazes throughout the most vulnerable areas depicted on the Locations of Wildfire Levels of Concern map (I-95/US 1 N/S corridor)(Figures 8a and 8b). Most structures within and adjacent to these high risk areas would be vulnerable to wildfire, unless specific structural and landscaping actions had been taken to mitigate that risk. Numerous residential, commercial and industrial structures, both singly and in developments

such as mobile home parks in these areas are adjacent to or within vegetated areas. Failure to successfully evacuate the I-95/US 1 corridor could result in numerous injuries and fatalities and wide area public health impacts from smoke would be a concern. Property damage would be extensive, numerous families would be displaced, and businesses would suffer enormous economic impacts with many failing to reopen. Damages to overhead utilities would be significant with power loss throughout the area. Impacts to the north-south transportation corridor in the county could last beyond the duration of the event and domino throughout central Florida due to highway and rail closures. *Note: LMS Pg. 147

The Florida Division of Forestry (DOF) provides risk maps for wildfire. The web-based risk system produces maps for Level of Concern (LOC) (Figures 11a and 11b, pages 60 & 61), Fuels, Wildland Fire Susceptibility Index (WFSI), and the likelihood of the number of fires per 1000 acres per year (FOA). The Wildland Fire Risk Assessment System (FRAS) combines indices of Wildland Fire Susceptibility and Fire Effects to generate a "Level of Concern" map. Data layers used to develop the Wildland Fire Susceptibility Index include: fuel and crown closure classifications and non-burnable areas from Landsat TM (Thematic Mapper) data, and topographic and fire weather data from existing data sets. The Fire Effects Index uses data layers derived from a variety of existing data sets. These data included location of critical facilities, forest plantations, utility corridors, urban interface areas, roads, and fire fighting resource locations; as well as, suppression cost--based on soil and fuel types. The Levels of Concern (LOC) were computed by multiplying the Wildland Fire Susceptibility Indices by the Fire Effects Indices. The LOC values were then assigned to nine categories, ranging from lowest level of concern (1) to highest level of concern (9) and mapped for each Florida Division of Forestry District.

Another component of FRAS is the Fire Response Accessibility Index (FRAI). The FRAI is a relative measure of travel time from the nearest fire station to reach a particular mapped cell. Values are assigned into one of six categories of time ranging from Class 1 (greater than 120 minutes) to Class 6 (0-14 minutes). Accessibility is based on the location of roads and wildland fire fighting resource dispatch stations. The Fire Response Accessibility Index is coupled with the Levels of Concern data on district maps.

In order to determine the vulnerability of the county to potential wildfire, the assessment from the Florida Division of Forestry (DOF) risk maps for wildfire was used to identify areas susceptible to fires. Areas in Brevard County posing greatest risk to wildland fire threats are prevalent within the corridors largely defined by I-95 on the west and US 1 on the east, with some other smaller pockets of development located throughout the county.

The table below shows that in 2015, Brevard County can expect to have over 300,000 residents vulnerable to wildfire risks, slightly less than half of the County's estimated population of 664,321.

Table13: Population At Risk of Wildfire

	Total Estimated County Population	Estimated Population in Wildfire/Urban Interface	Total Estimated County Population	Projected Population in Wildfire/Urban Interface
	2010	2010	2015	2015
Brevard County	601,766	279,718	664,321	307,174



Brevard County PDRP

Wind Risk Assessment Using HAZUS Overlayed with Housing Vulnerability

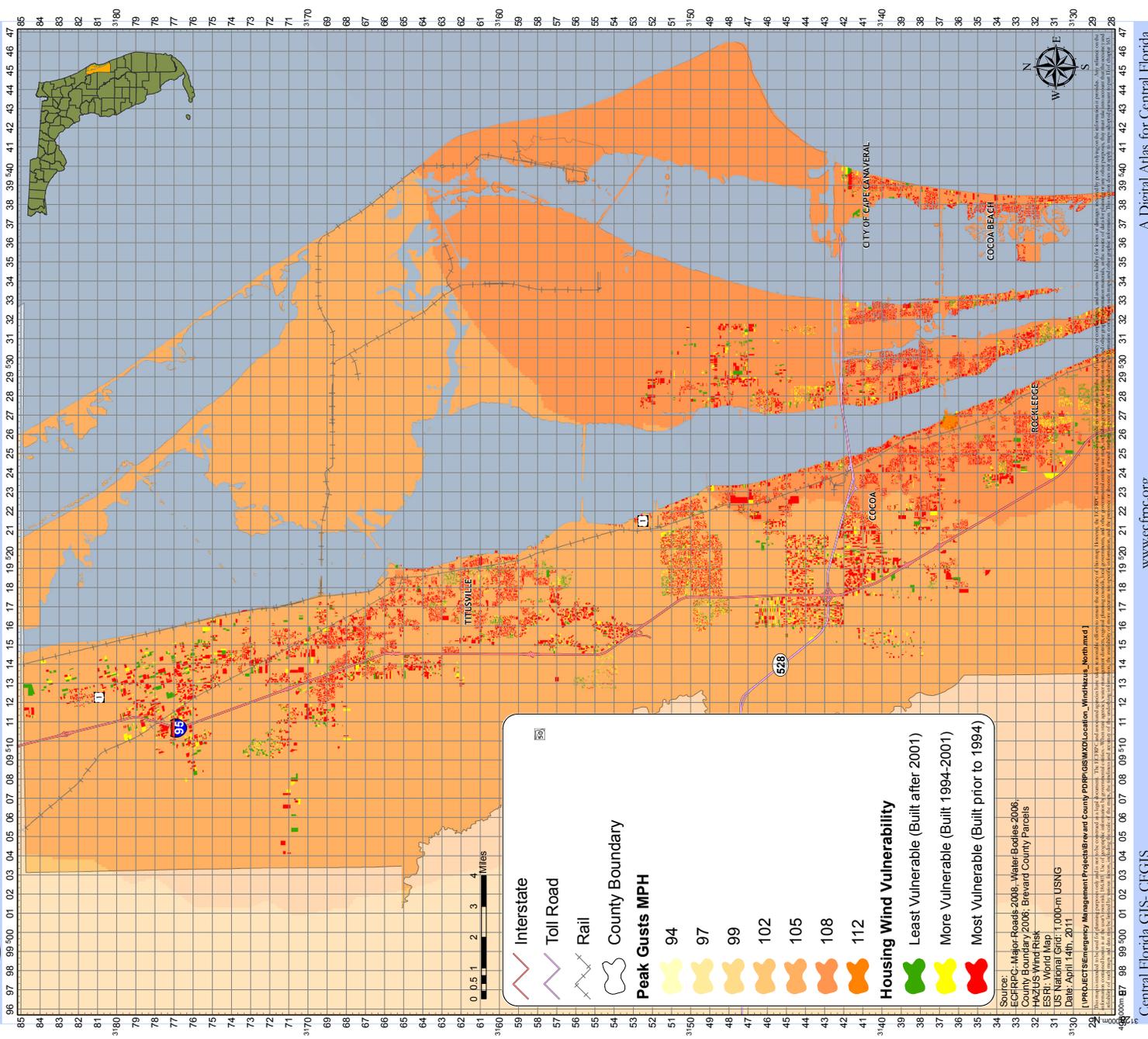


FIGURE 9A: Wind Risk Assessment North

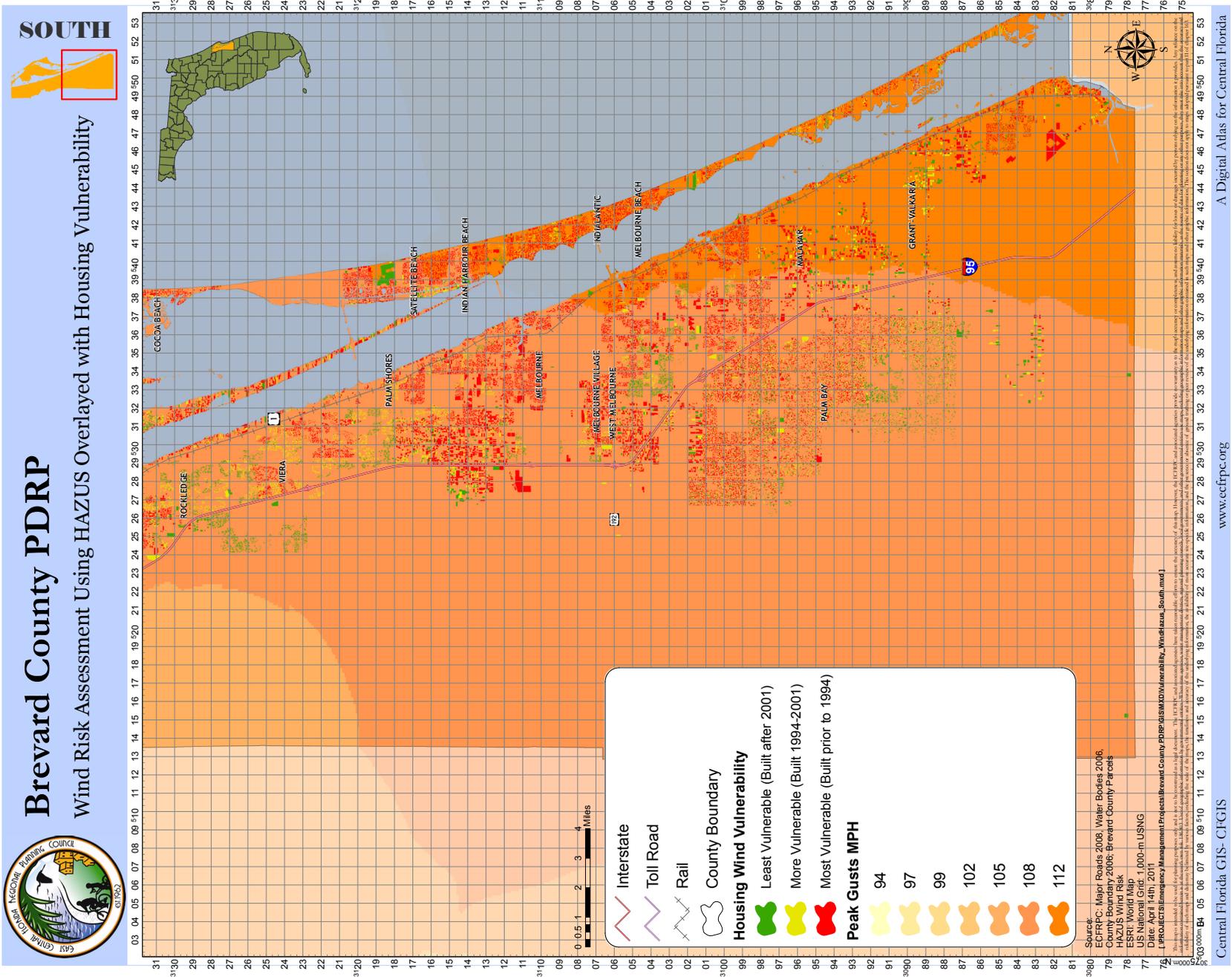
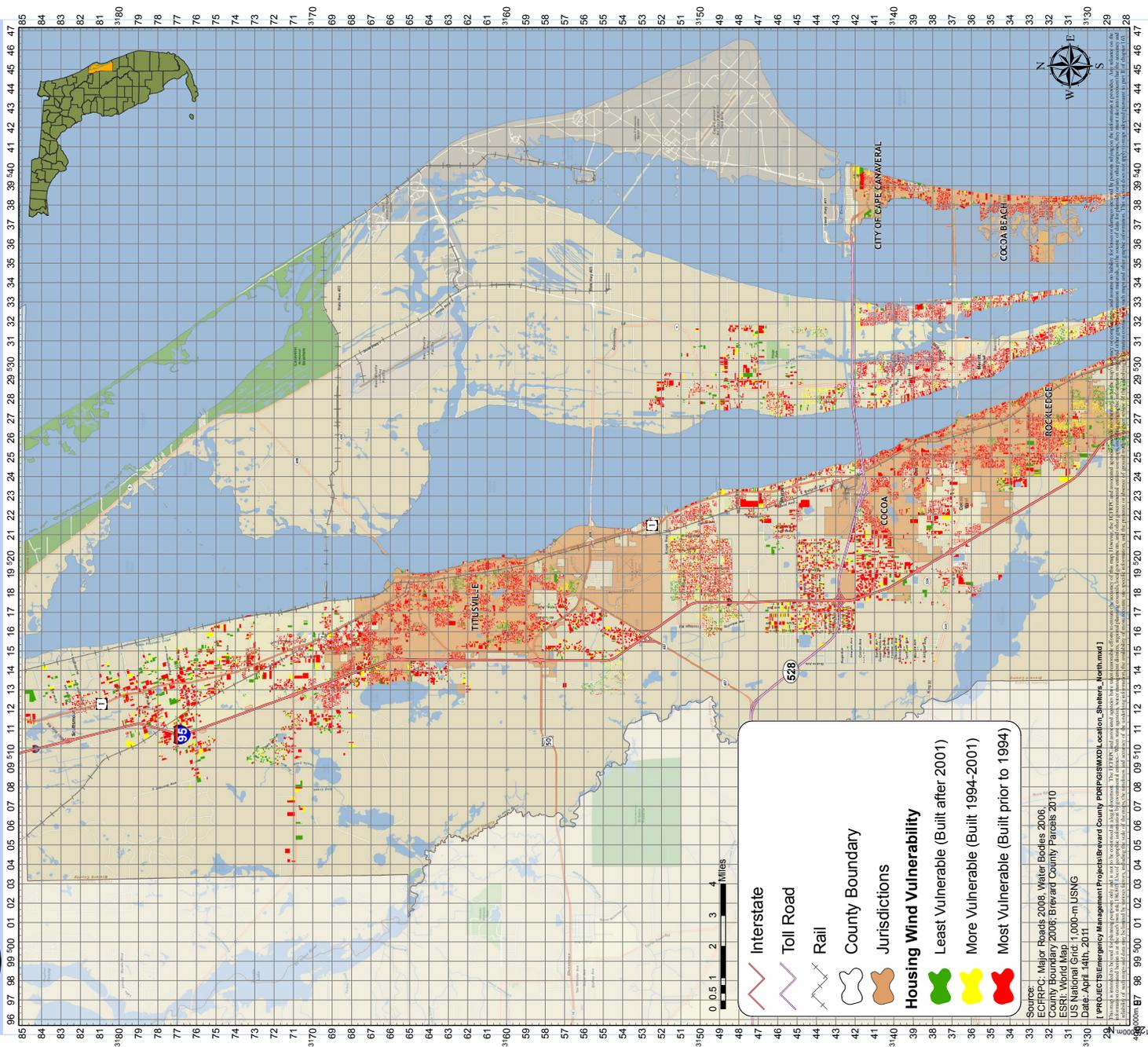


FIGURE 9B: Wind Risk Assessment South



Brevard County PDRP

Housing Wind Vulnerability by Structure Year Built



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FIGURE 10A: Housing Wind Vulnerability by Structure Year Built North

WIND RISK ASSESSMENT

High winds are winds that approach or exceed 40 mph and are sustained for an hour or more. High winds accompany severe storms, hurricanes, tornadoes spawned by hurricanes and wind shears or bursts and their side effects, hail and lightning, are widely anticipated events in Brevard County. Because of its subtropical, coastal location with flat topography and 72 miles of coastline, Brevard County and each municipality is particularly susceptible to hurricanes and tropical storms and are considered to be at high risk from associated high winds (See Figures 9a and 9b).

In the past century, Brevard County has experienced at least 10 hurricanes, six in the past 25 years (three occurring in 2004), and numerous tropical storms such as Tropical Storm Fay in 2008. The greatest threats posed by either event are storm surge, wind damage, and inland flooding. There are approximately 24,000 mobile homes throughout the county and numerous structures constructed prior to building code modifications that resulted from the devastation caused by Hurricane Andrew in south Florida. These structures are relatively more vulnerable to high wind damage. Wind damage from the storm itself is related to wind speed and the accompanying "pressure" that is exerted on structures.

In March of 2002, a Statewide Building Code was fully adopted and implemented in Florida. A critical element of that new building code was the adoption of stricter building standards based upon wind hazard associated with hurricanes. To establish variable building standards for locales throughout Florida, the American Society of Civil Engineer's Standard 7 for the 1998 (ASCE 7-98) was adopted. The ASCE 7-98 provides wind risk assessments for areas throughout Florida along with associated building standards.

According to wind vulnerability and year built for housing units, 69% of all housing units in Brevard County are considered most vulnerable to wind damage as they were built prior to 1994 (See Figures 10a and 10b, page 54 &56). Only 17% of the housing stock was built after 2001 thus representing the least vulnerable housing structures.

Table14: Housing Wind Risk Vulnerability

Vulnerability	Year Built	Total Housing Units	% of Total HU
Least Vulnerable	Built after 2001	34,119	17%
More Vulnerable	Built 1994-2001	27,743	14%
Most Vulnerable	Built prior to 1994	134,970	69%
	Total	196,832	

Source: County Boundary 2006 HAZUS Wind Risk Assessment

The worst case hurricane wind scenario for Brevard County would be an Atlantic approaching, large diameter, Category 4 or 5 hurricane, making landfall at Barefoot Bay in the southeast corner of the County, then moving on a north/northwest path along US 1 and the Indian River. This path would directly impact the densely developed areas of the county and every incorporated jurisdiction requiring large evacuations on the east side of the county. For non-evacuated areas, wind-caused structural damage could cause many injuries and fatalities. It would also result in extensive and wide spread damage to structures, utilities and vegetation. Mobile and manufactured homes throughout the county could be completely destroyed. Extensive roof, doorway and window damage would occur to single family residences and smaller multi-family residences. Larger engineered structures would suffer extensive damage to windows and roofs. Roofs on broad span structures and Butler type buildings would collapse. Above-ground electric transmission and distribution systems would be destroyed. Telecommunication networks would be extensively damaged and many radio and microwave towers destroyed. There would be very large amounts of vegetative debris created, blocking roadways and restricting travel. Debris removal for vegetative debris, as well as construction and demolition debris, would be an enormous problem. Thousands of residences would be considered total losses, possibly rendering the majority of the county's population

homeless. Restoration of all power and telecommunications could take months to complete throughout the area. The economic impacts would be extensive, with most business, including those serving tourists, closed due to damage to their facilities or homes of the employees.

Wind damage may also occur from hurricane-spawned tornadoes or tornadoes generated during severe weather. Although the Midwest has the reputation for the worst tornadoes, Florida experiences the largest number per square mile, averaging 52 tornadoes reported per year since 1961, with an average of two fatalities per year. Tornadoes often form on the leading edge of a hurricane and have the potential to cause more destruction than the hurricane itself. They can be a threat in events ranging from tropical storms to the most powerful hurricanes. Therefore, all of Brevard County is susceptible to high winds of tornadoes, tropical storms, and hurricanes.

A tornado is a violently rotating column of air, descending from a cumuliform cloud or underneath a cumuliform cloud, and often (but not always) is visible as a funnel cloud.

The strength of tornados is measured using the Enhanced Fujita Scale which is defined as follows:

- **EF0 Gale Tornado** 65-85mph
Some damage to chimneys. Tree branches broken off. Shallow rooted trees uprooted.
- **EF1 Moderate Tornado** 86-110mph
Peels surface off roofs. Mobile homes overturned. Moving autos pushed off roads.
- **EF2 Significant Tornado** 111-135mph
Considerable damage. Roofs torn off frame houses. Large trees snapped or uprooted. Light-object missiles generated.
- **EF3 Severe Tornado** 136-165mph
Severe damage. Roofs and some walls torn off well constructed homes. Trains overturned. Most trees in forests uprooted. Heavy cars lifted off ground.
- **EF4 Devastating Tornado** 166-200mph
Well-constructed houses leveled. Structures with weak foundations blown off some distance. Cars thrown and large missiles generated.
- **EF5 Incredible Tornado** >200mph
Strong frame houses lifted off foundations and disintegrated. Automobile-sized missiles fly through the air in excess of 100 mph. Trees debarked.

Brevard County historical area-adjusted tornado activity is 3.3 times above the overall U.S. average. Tornadoes recorded between 1950 and 2004 have caused 12 fatalities and 638 injuries in Brevard County. On April 4th, 1966, an F4 tornado (previous to the update to the Fujita Scale, now termed the EF Scale) killed 11 people, injured 530 people and caused between upward of \$50,000,000 in damages. Also, two people and 52 homes were damaged when a Tropical Storm Fay-related tornado touched down in 2008.

The Brevard County area is at risk to tornado-related high wind damage because of the unpredictable patterns of tornadoes and Florida's relatively high reoccurrence frequency. The characteristics of individual structures also influence the risk from tornado-caused high winds.

A worst case tornado scenario would be a front with multiple tornadoes moving across areas of the county with concentrations of mobile and manufactured homes located within several incorporated and unincorporated areas including Melbourne, Cocoa, Titusville, Cape Canaveral, Indialantic, and Rockledge, as well as Barefoot Bay and Micco in Southern Brevard County. However, very few structures could withstand a direct strike of a strong EF tornado, including large engineered structures which would have window, door and roof damage. A series of tornado strikes could significantly damage numerous structures, result in tens or hundreds injuries and fatalities and displace hundreds of families. Overhead power and telecommunication lines would be damaged, resulting in widespread power outages across the county that could take several days or weeks to repair. There would be large volumes of vegetative and construction/demolition debris requiring removal and localized economic disruption would occur due to damaged businesses and/or impacts on employees. *Note: LMS Pg. 138-141

HAZUS-MH, an emergency management model for assessing damage from hazards, includes a vulnerability analysis incorporating factors such as housing stock, vegetation and friction coefficients based on land cover. Using these factors, a wind risk assessment is performed. The county has the highest 50 year return peak gusts in the East Central Florida Region.

The maps in Figures 8a and 8b (pages 48 & 49) illustrate the HAZUS-MH 50 year return peak gust analysis for Brevard County combined with the vulnerable housing stock indicated by year built.

LIGHTNING

Lightning is a visible electrical discharge produced by a thunderstorm. The discharge may occur within or between clouds, between the cloud and air, between a cloud and the ground or between the ground and a cloud. On average, Brevard County is hit with more than 22,166 lightning strikes a year, the most dangerous months being June, July and August when thunderstorm activity is greatest. Brevard County experiences about 70-80 thunderstorm days a year. The majority of these strikes causing deaths have occurred in open areas or recreational settings such as golf courses and the beach. The Melbourne Weather Forecast Office reported that in Brevard County between 1959 and 2007, 80 people were injured by lightning and 25 were killed. Not only is the danger to individuals, but the frequency with which it can cause wildland fires. In addition, there is a one-in-50 chance that a thunderstorm or lightning will cause economic damage or loss over \$50 anywhere in the entire county. The entire county and all of its municipalities are considered to be at risk from lightning.

The actual vulnerability to lightning strikes is a factor of the characteristics of the community and the vulnerability of its designated critical facilities and neighborhoods. Ten jurisdictions ranked lightning in their top three hazards (Table 9, page 34).

The worst case scenario for lightning would be a large storm front resulting in numerous lightning strikes as the front moves across the county. Strikes in outdoor areas could result in direct injuries or fatalities to several, not large numbers, of people. Any structure without a lightning protection system is vulnerable, with taller structures, e.g., communications towers, and exposed structures in open areas, being at a higher risk. Tens of structures experiencing direct strikes would suffer differing degrees of damage, from slight to total losses if fires ensued.

Strikes to vegetated areas could also cause wildfires which could damage structures and require evacuations. Direct strikes could also damage critical infrastructure, including electric power systems, as well as telecommunication and radio systems, resulting in failure of these systems. Damaged systems could probably be repaired or replaced within a few days or weeks, depending on the system and the extent of the damages. Widespread economic losses would not be anticipated. **Note: LMS Pg. 141-142*

VULNERABLE INFRASTRUCTURE AND FACILITIES

The identification of critical and sensitive facilities is an important factor for emergency management planning as some facilities and systems in the community are very important to the health, safety and welfare of the community. A key element when assessing vulnerabilities is the need of critical to maintain their operation or functions, especially after a disaster when the community may be most dependent on them.

The Critical Facility Inventory (Data base) includes a comprehensive list of critical facilities identified by the State and County Emergency Management Agencies and updated to ensure that preparedness and protective actions can be focused to provide efficient evacuation, sheltering and recovery operations. Participating jurisdictions have included more than 500 designated critical facilities in their databases. This inventory is not published as part of the plan.

Typically critical facilities include transportation facilities (roadways, bus depots, ports, airports); communications facilities; utilities (power plants, water treatment plants and water distribution systems); wastewater treatment plants and lift stations; health care facilities (hospitals, nursing homes, hospice and dialysis facilities); assisted living and residential treatment facilities; schools and day cares; correctional facilities and sheriff/police stations; fire stations; and county and municipal buildings. Volunteer and relief agencies, potential staging areas, recovery centers and points of distribution (PODs) are also included in the critical facilities inventories.

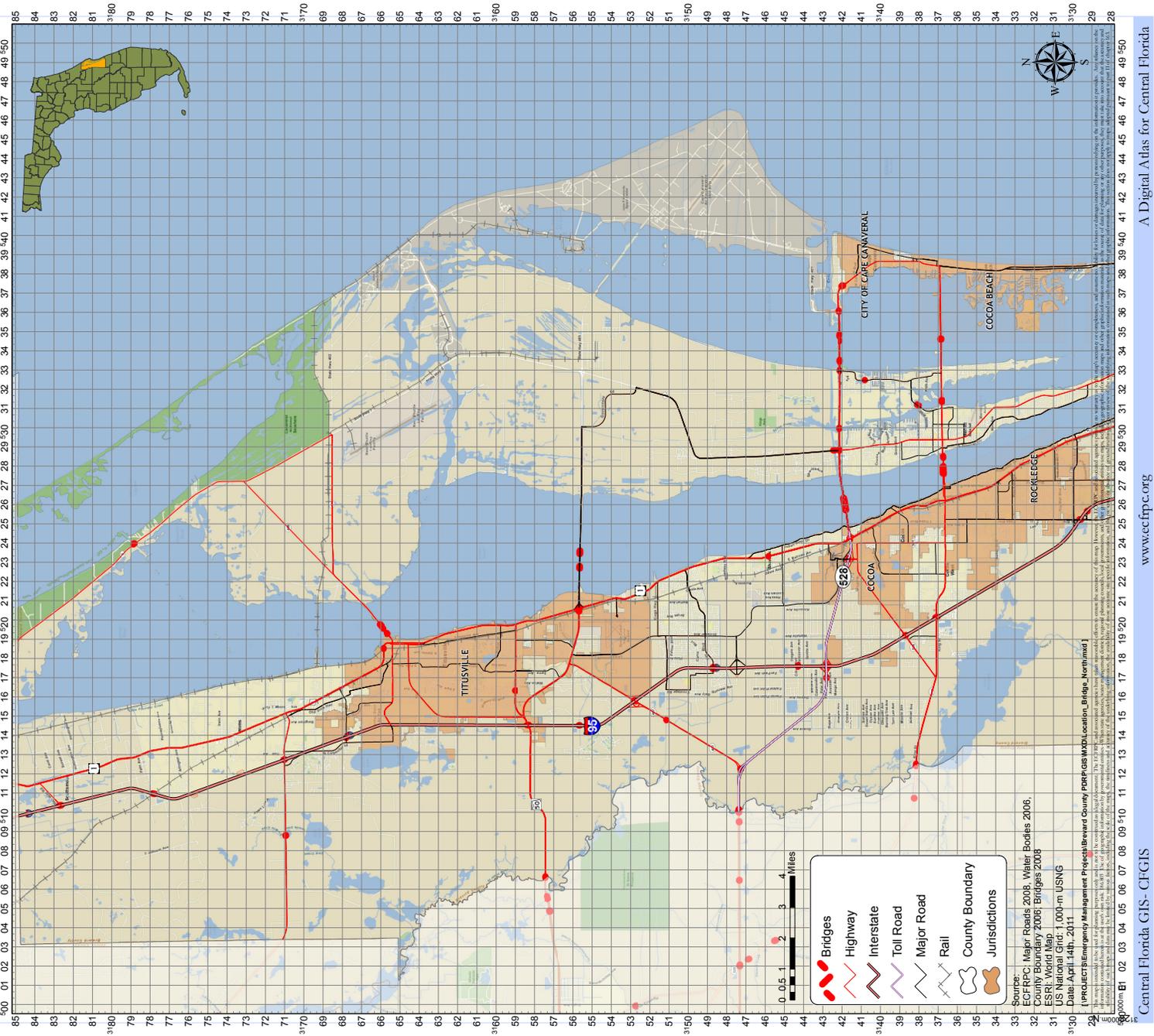
CAUSEWAYS/BRIDGES

In Brevard county causeways and bridges are extremely vital in connecting barrier islands with the mainland as a large portion of the general public resides on the barrier islands including a large population of elderly citizens and nursing homes. Typically, in the event of a hurricane or tropical storm, emergency managers order residents to evacuate to the mainland. If all causeways were damage and impassable, it would prevent a majority of the population would be unable to return home and individuals who stayed would be stranded. There are six main causeways in the County: the Melbourne Causeway, Eau Gallie Causeway, Pineda Causeway, Emory L. Bennett Causeway, Merritt Island Causeway, and NASA Parkway. There is also a smaller drawbridge that connects the southern tip of Merritt Island with Indian Harbour Beach. Causeway locations and descriptions follow. The following maps (Figures 11a and 11b, pages 60 & 61) depict the location of bridges in the county which may be vulnerable to certain hazards. As bridges are built to certain standards above the waterway or floodplain, extensive flooding may affect various bridges, especially where flooding is known to be an issue.



Brevard County PDRP

Bridges and Major Roads



Source: ECFRPC, Major Roads 2008, Water Bodies 2006, County Boundary 2006, Bridges 2008
 ESRI, World Map
 US National Grid: 1,000-m USNG
 Date: April 14th, 2011

[PROJECT'S Emergency Management Project/Brevard County PDRP/Map Location, Bridge, Northind]

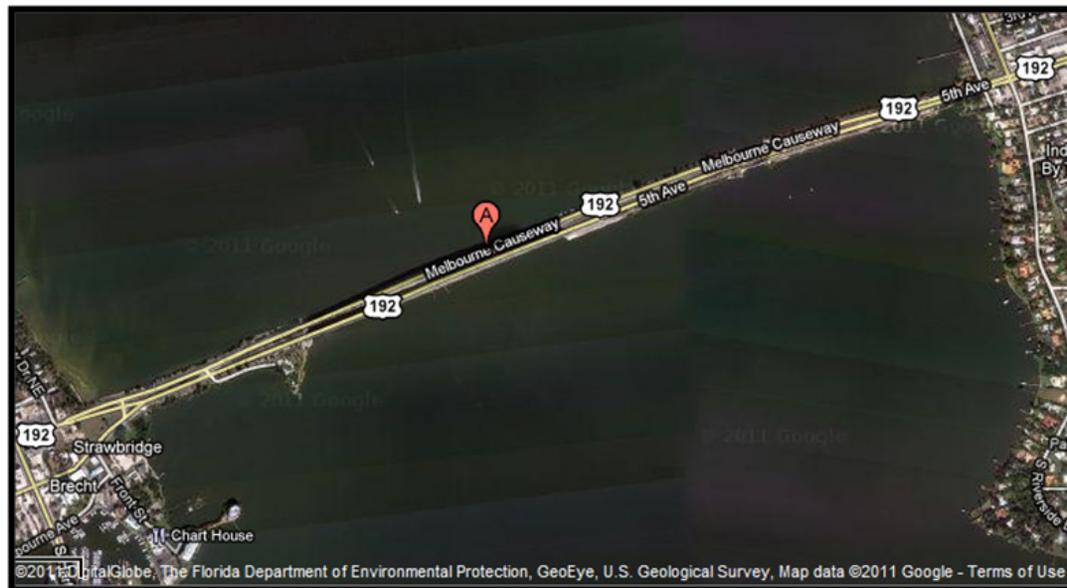
FIGURE 17A: Bridges and Major Roads North

Vulnerability Analysis

- **Melbourne Causeway** - The Melbourne Causeway is composed of three bridges and connects the municipalities of Melbourne and Indialantic across the Indian River Lagoon in Brevard County. The causeway is part of U.S. 192, whose eastern terminus is located approximately 2 miles east of the bridge at SR A1A. East of the bridge, the road is known locally as Fifth Avenue. On the western side, the road continues through downtown Melbourne as Strawbridge Avenue.



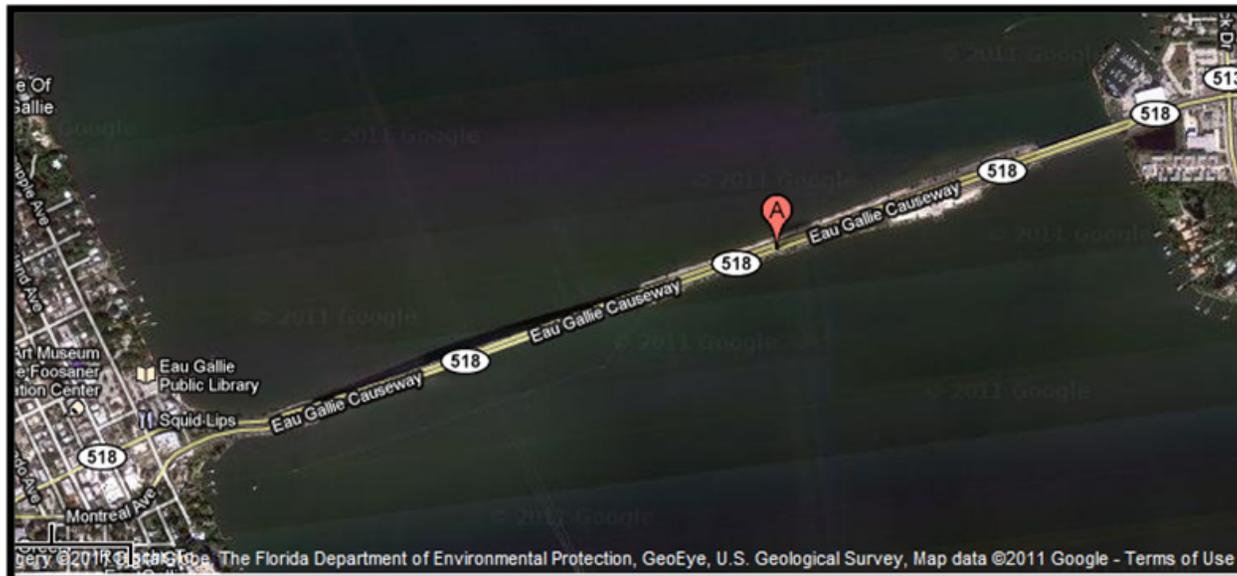
Source: www.vacationhomerentals.com



- **Eau Gallie Causeway** - The Eau Gallie causeway connects Eau Gallie with SR A1A near Indian Harbour Beach across the Indian River Lagoon. Located entirely within the Melbourne city limits, the causeway consists of a main bridge over the Intracoastal Waterway and a relief bridge. The bridge is a key link in SR 518.



Source: Wikipedia

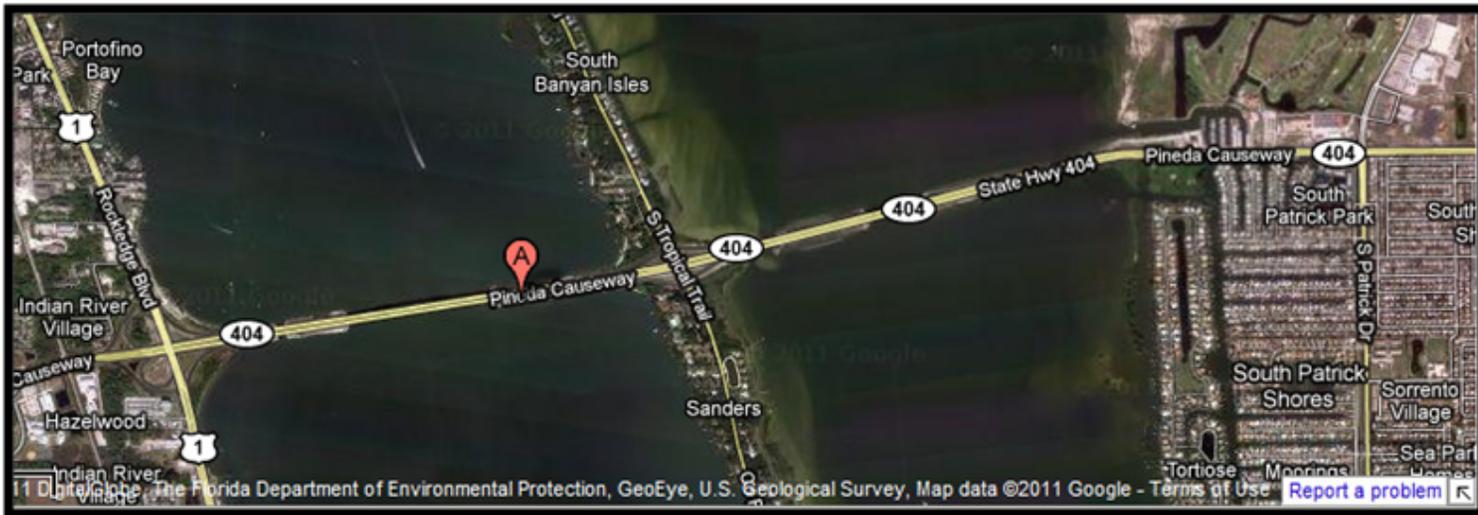


Vulnerability Analysis

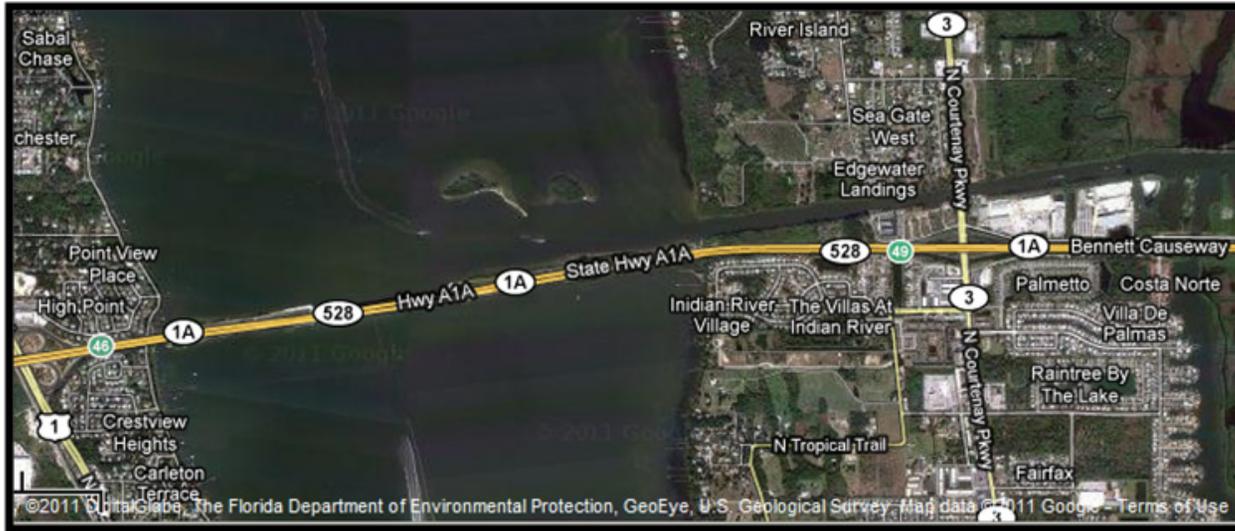
- **Pineda Causeway (State Road 404)** - The Pineda Causeway is the primary access for Patrick Air Force Base and the southern end of Merritt Island. It has interchanges at U.S. 1, South Tropical Trail, and South Patrick Drive.



Source: Wikipedia



- **Emory L. Bennett Causeway** - The Emory L. Bennett Causeway carries the easternmost portion of State Road 528 and State Road A1A, from US 1 to the eastern terminus of SR 528, across the Indian and Banana Rivers, Sykes Creek, and Merritt Island.



- **NASA Parkway** - The NASA Parkway is an east-west roadway in Brevard County designated as part of Florida State Road 405. The Parkway connects the mainland to Merritt Island and Cape Canaveral, connecting points of interest in Titusville Kennedy Space Center (on Merritt Island) and Cape Canaveral Air Force Station.



Vulnerability Analysis

- **Merritt Island Causeway** - The Merritt Island Causeway connects Cocoa, Merritt Island, and Cocoa Beach. It is the second route over the Indian River Lagoon and Banana River. The causeway divides Merritt Island into eastern and western sections. The Hubert H. Humphrey Bridge which crosses the Intracoastal Waterway is found in the western section. The Willard Peebles Bridge, also known as the Cocoa Beach Causeway crosses the Banana River Lagoon.



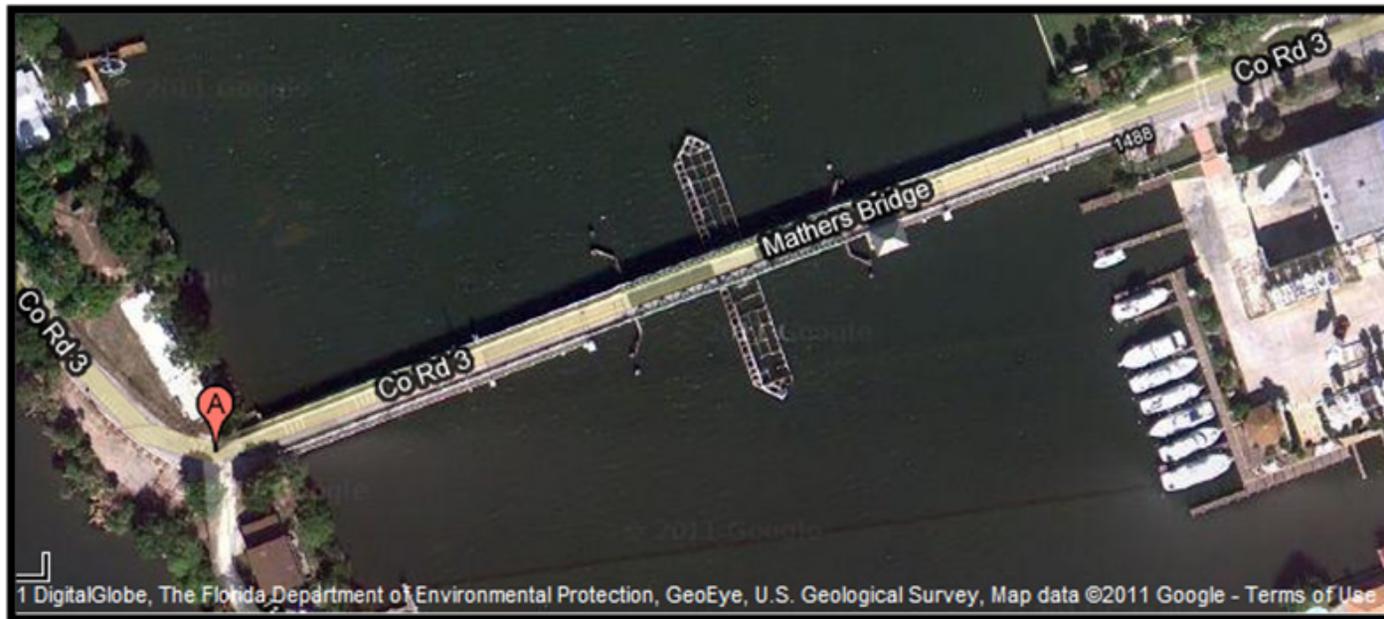
Source: Wikipedia



- **Mathers Bridge** - Mathers Bridge, a 700 foot long low level swing span drawbridge, is located on the southern tip of Merritt Island at the end of State Road 3/County Route 3. It connects Merritt Island to Indian Harbour Beach.



Source: Brevard County Public Works





ROADWAYS

In pre- and post-disaster situations, roads are an essential infrastructure. During an evacuation, the roads listed below are the primary routes used to move the general population away from more vulnerable areas. If any of the roads were damaged in a disaster it would make it difficult to gain entrance in and out of the county, therefore making it problematic for the community to return to normalcy. Provided below are descriptions of essential roadways in Brevard County:

- **Interstate 95-** Interstate 95 is the main Interstate Highway on the east coast of the United States, and serves the Atlantic coast of Florida. This highway is the foremost North/South evacuation route and is a primary commuting pathway in and out of the county.
- **US 1-** US-1 is a North/South highway that runs through many of the mainland municipalities and fields typical daily traffic.
- **US 192-** US 192 is an East/West highway that connects Kissimmee to Melbourne. US 192 cuts northeast to Strawbridge Avenue, which runs one block north of New Haven Avenue, providing a bypass of the Historic Downtown Melbourne. After crossing U.S. Route 1, Strawbridge Avenue and New Haven Avenue merge at the west end of the Melbourne Causeway across the Indian River. East of the Indian River, US 192 enters Indialantic on Fifth Avenue, where it spends four blocks before ending at State Road A1A, one short block from the Atlantic Ocean.
- **State Road 520 (SR 520)-** S.R. 520 is an East/West state highway that connects the Orlando area with Cocoa and Cocoa Beach. It runs from State Road 50 in Orange County, east of Bithlo, southeast across the Beachline Expressway (State Road 528).
- **State Road 528-** SR 528 is an East/West State highway that connects Orlando with Titusville and Cape Canaveral. Near its east end, it passes over the Intracoastal Waterway on the Emory L. Bennett Causeway, and ends at State Road A1A and State Road 401 near Port Canaveral.

MOBILE HOMES

Mobile homes and recreational vehicles (RVs) are extremely vulnerable to hurricane force winds and severe weather. Statistics document that mobile homes and RVs receive a disproportionate share of the damage from severe weather and residents are far more likely to be injured or killed in these structures compared to site built homes. As required by the Department of Housing and Urban Development (HUD), all manufactured homes sold in Florida's coastal counties since 1994 are engineered to withstand sustained winds of 110 mph and 3-second gusts of 130 to 150 mph. (<http://www.builtstronger.com/history.html>) Since 1999, manufactured homes have been built and installed to tougher standards but not equivalent to the most recent codes for site-built structures. In the 2004 hurricane season, new manufactured homes held up relatively well, even when compared to site-built homes.

Because of this vulnerability, hurricane evacuation plans in Florida have called for the evacuation of all areas subject to potential storm surge (coastal flooding) and the complete evacuation of all mobile home/RV residents regardless of their location within the county due hurricane force winds extending miles inland. In Brevard County, this includes residents of substandard housing, mobile homes and visitors in recreational vehicles and travel trailers. In 2009, this accounted for approximately 135 mobile home/RV parks, over 10,000 mobile home spaces and 4,415 RV unit spaces. Seventy-two of these mobile home parks are located in Category 2-5 Storm Surge Areas, 19 are located in the 100 year flood plain, 2 in the 500 year flood plain, and 56 parks are considered at risk to fire.

The following maps (Figures 12a and 12b, pages 70 & 71) illustrate mobile home and RV parks vulnerable to storm surge, wildfire or are located within the 100 year flood plain. Note that in addition, dependent upon Brevard County codes, additional mobile homes may be found throughout the County, outside of mobile home parks.



Brevard County PDRP

Mobile Home and RV Parks within a Hazard Zone

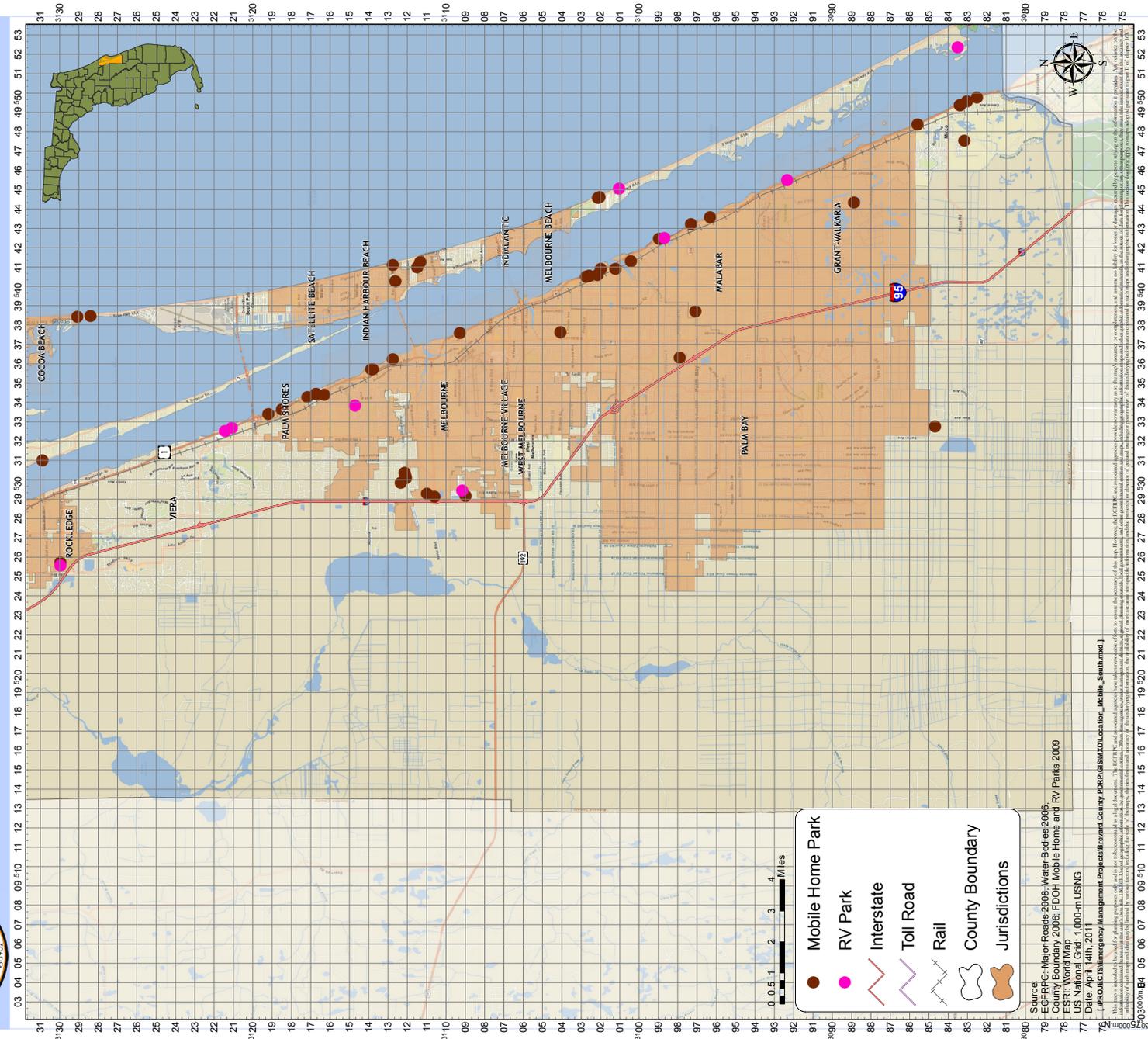


FIGURE 12B: Mobile Home and RV Parks within a Hazard Zone South

SCHOOLS

Schools play a major role in support during and after a disaster by providing space for general and special needs shelter as well as sheltering emergency service staff. Ensuring that schools are strategically spaced outside storm surge areas and built to function as shelters and offer other services is important when assessing site conditions. To function as a shelter, they must be built to specific standards and located outside storm surge areas. Although schools may be built in the 100 year flood plain, the area must be raised to ensure the facility is above the base flood elevation. However, if used as a shelter, analysis of the area around the school is critical to determine if access to the shelter would be hindered by inland flooding. Figures 13a and 13b depict schools in Brevard County which are located in storm surge areas, the 100 year flood plain or vulnerable to wildfire.

Forty (40) schools, 37 public, according to the 2010 Storm Surge Data, are located in the Category 2-5 Storm Surge Areas. This is critical when analyzing possible damage to public infrastructure and restoring functionality within communities. In addition, these schools are unable to be used for shelters. Eight (8) public schools are located in the 100 year floodplain while 6 are located in the 500 year floodplain. According to fire vulnerability, 53 schools, 50 public, are considered vulnerable to fire. Three (3) colleges/universities are located in Category 4 and 5 Storm Surge Areas and vulnerable to fire threats.

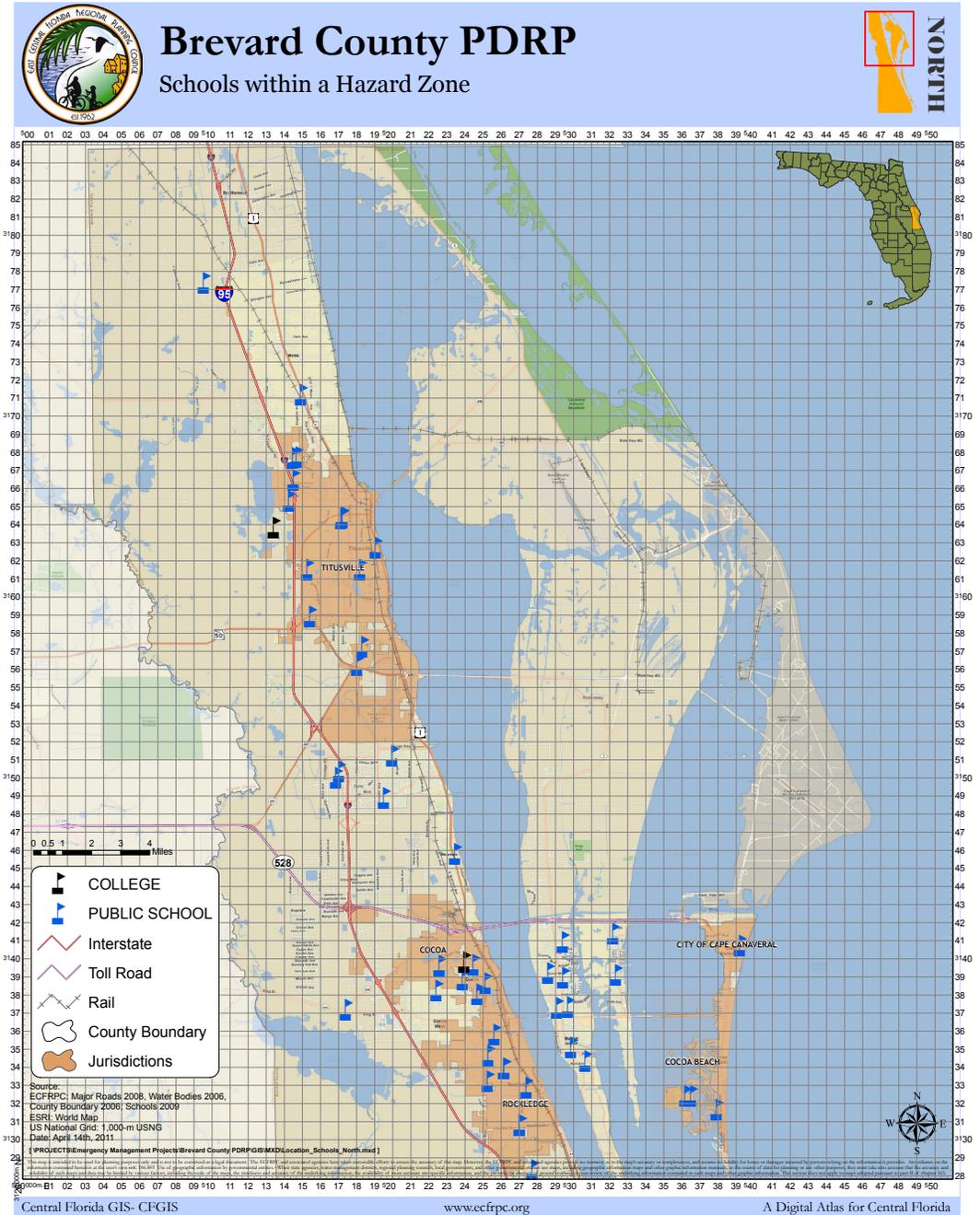


FIGURE 13A: Schools within a Hazard Zone North

SHELTERS

An essential element of any evacuation plan is the ability to shelter residents throughout the duration of the event. Evacuees will seek several alternative forms of shelter at various distances from their origin. These alternatives may include a local public shelter, a hotel or motel, a friend or relative's home, and destinations in an adjacent county or outside of the region. While other types of hazards (flooding, wildfire, hazardous materials and terrorism/civil disturbances) may result in the need for mass care and shelter operations, the event which is both the most probable and potentially most challenging is an approaching hurricane.

Shelters are selected by county emergency management using the Florida Division of Emergency Management criteria. This criterion encompasses American Red Cross 4496 standards which were developed through interagency group under American Red Cross leadership and printed as ARC 4496, July 1992. Shelter selection involves a number of factors - structural and non-structural. Technical information contained in evacuation studies, storm surge and flood mapping, and other data can now be used to make informed decisions about the suitability of shelters. The Statewide Hurricane Shelter Plan is provided to the Legislature every other year and encompasses shelter information across the state.

In Brevard County, schools serve as the primary risk shelter facilities. One criterion for shelters is that they may not be located within storm surge areas. Therefore, any school located within any of these areas, may not be used as a "Risk-Shelter". While locating facilities outside of the 100-year floodplain is a priority, this is very difficult in Brevard County. Although analysis may indicate a shelter is in the 100 year flood plain, the elevation of the first floor is most likely above the base flood elevation (BFE). Therefore, measures such as documenting this elevation of the first floor, meeting National Flood Insurance Program (NFIP) regulations and the provision of adequate emergency supplies sufficient to meet the immediate response needs until flood waters recede, etc. are essential. Also, access to these facilities, especially during a flood or hurricane event, is critical in assessment.

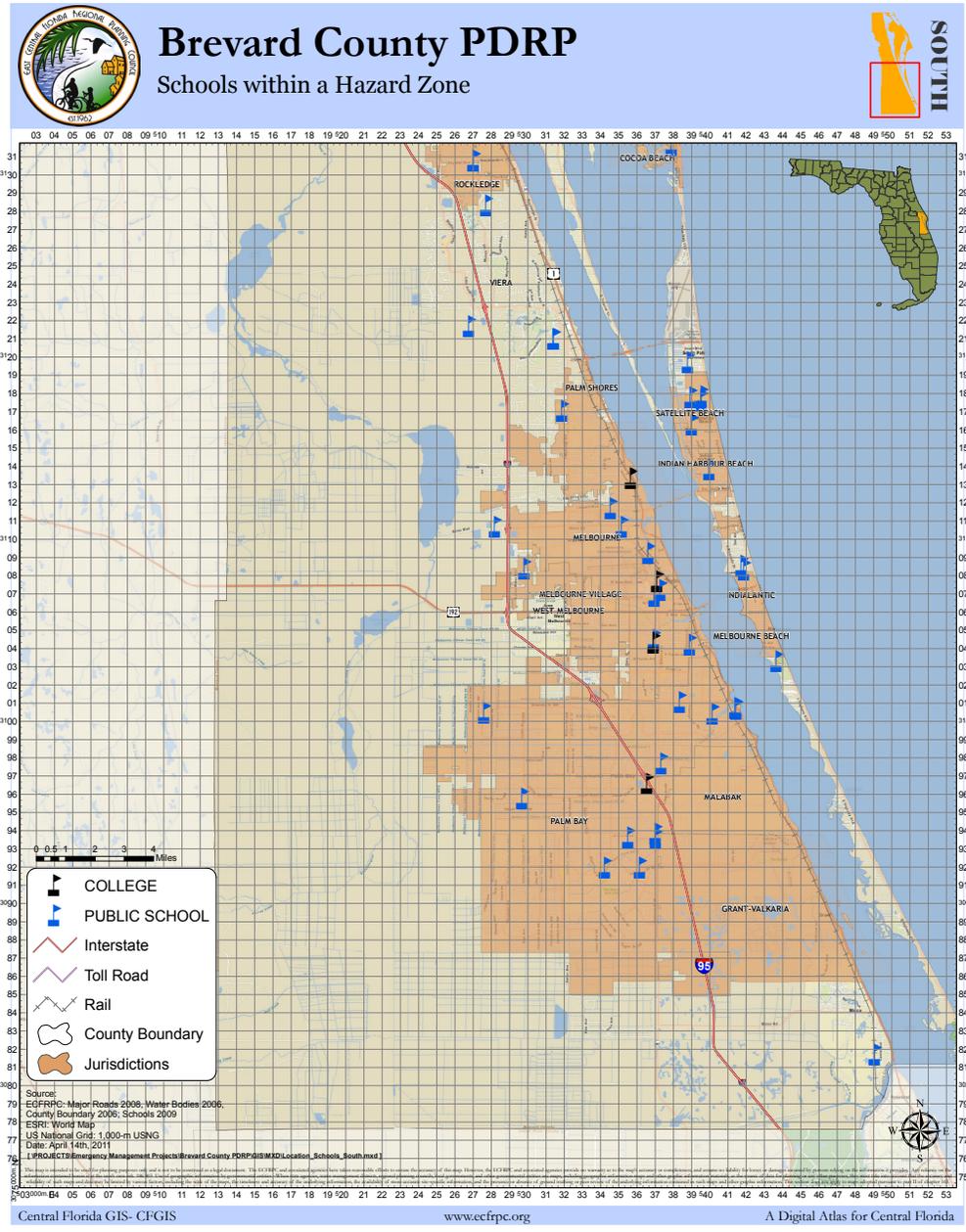


FIGURE 13B: Schools within a Hazard Zone South

Vulnerability Analysis

Pre-storm evacuation shelter demand has significantly decreased in East Central Florida as well as other areas. Public education in Florida has stressed to evacuees that a public shelter should not be the first choice in sheltering destinations. Other options – especially the homes of friends and relatives and hotel/motels in non-evacuation zones – provide a more comfortable alternative for most residents. According to the behavioral surveys conducted in 2008 for the Statewide Regional Evacuation Study Program, part of that message is getting across to residents. The majority of evacuees go to the homes of friends or relatives (36% - 40%). Similar percentages will seek a hotel or motel for refuge depending on age, income and other demographic characteristics. Hotel availability will also be a key factor. Although there are other options for most evacuees, there will always be a demand for public shelter. The demand for public shelter has the potential to be significant in the East Central Florida region for larger category storms.

The shelters in the following maps (Figures 14a and 14b) illustrate those which may be vulnerable to wildfire or are located within the 100 year floodplain, although the facility may be elevated above flood levels. Two (2) shelters are located in the 100 year flood plain, while 1 is located in the 500 year flood plain. According to the new Storm Surge Data from the 2010 Statewide Regional Evacuation Study, one 2010 shelter is located in the Category 3 Storm Surge Area and two are located in the Category 5. This indicates that these shelters may need to be analyzed further as to their ability for use during certain disasters. Seventeen (17) shelters are considered at risk from fire threats.

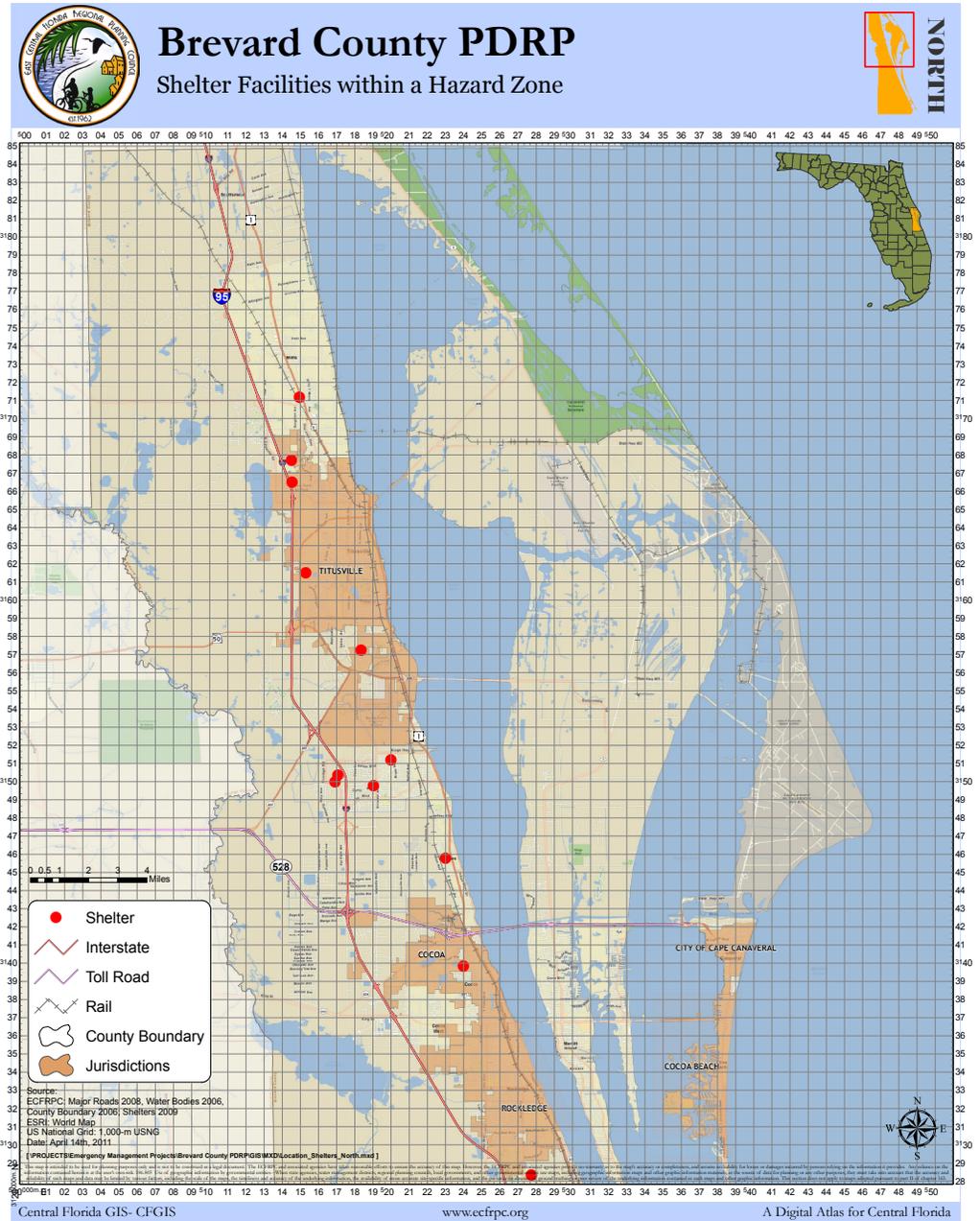
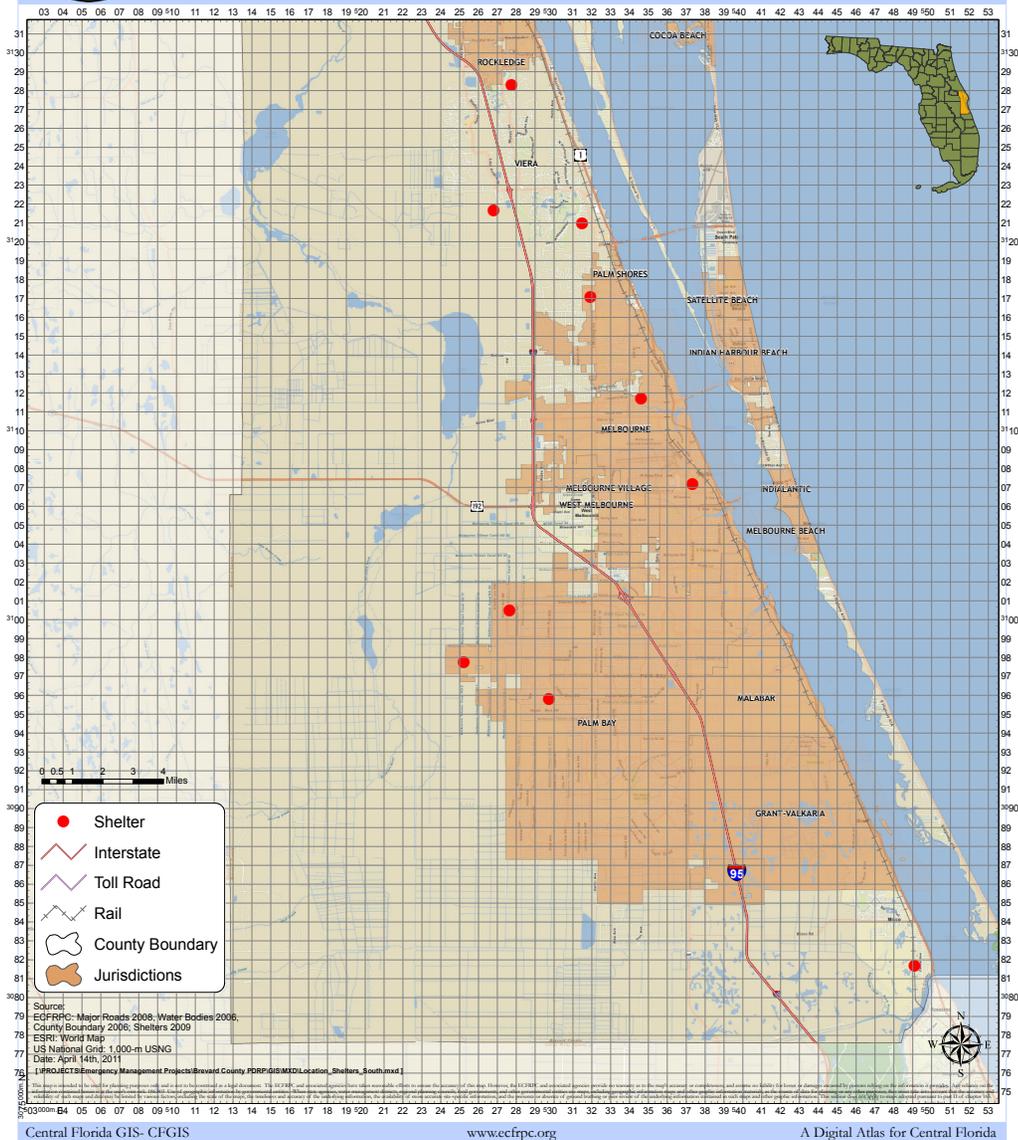


FIGURE 14A: Shelter Facilities within a Hazard Zone North



Brevard County PDRP

Shelter Facilities within a Hazard Zone



302 FACILITIES

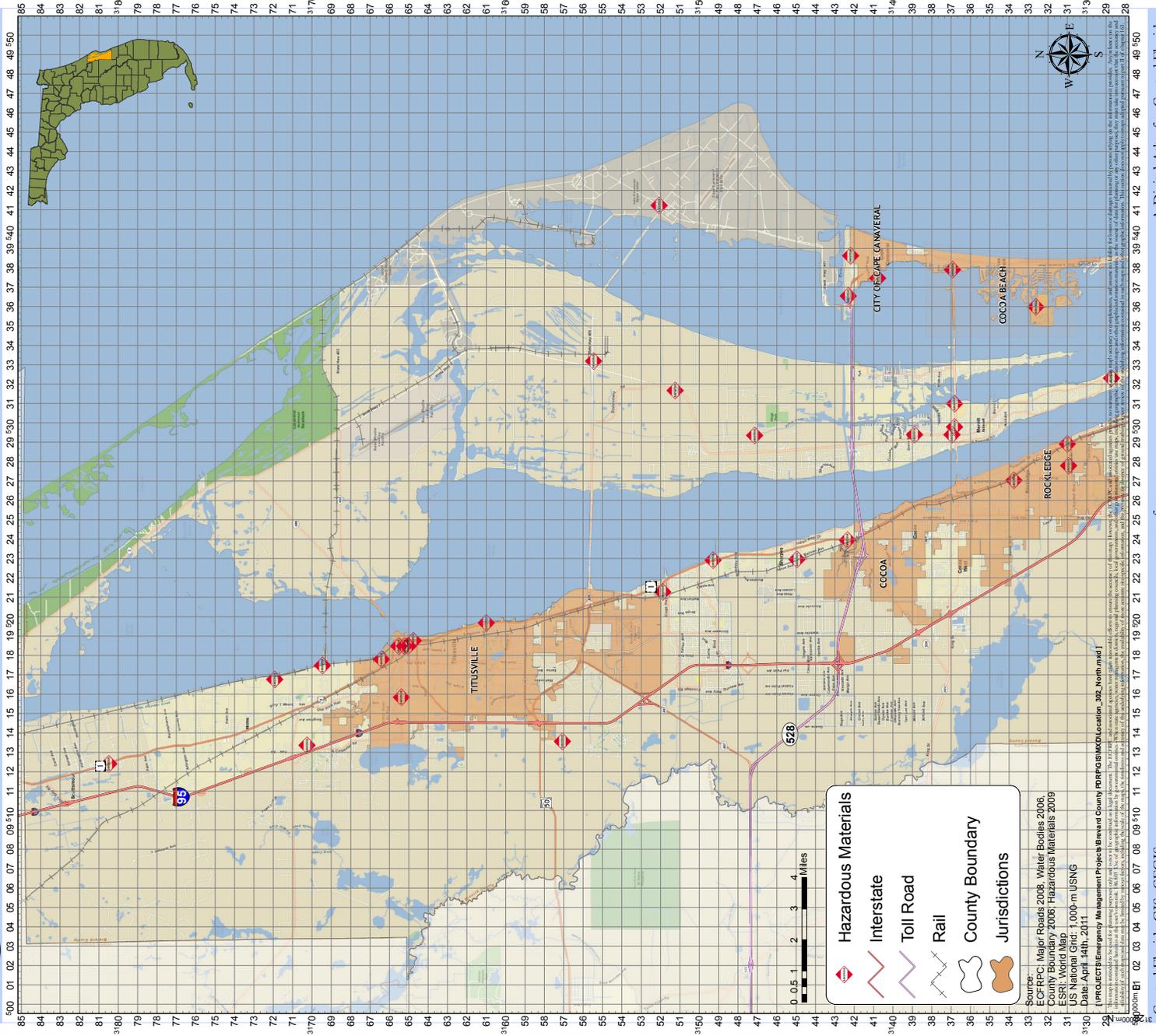
In order to determine the vulnerability of the county to potential hazardous material incidents, it is necessary to determine the Hazardous Material Vulnerability Zones (HMVZ) of each Section 302 Facility (Facilities which use/store Extremely Hazardous Materials). Through the Local Emergency Planning Committee (LEPC) and the County Hazardous Material Section of the Emergency Management Office, detailed vulnerability areas can be determined in real time using the specific chemical, amount of release, wind direction and wind speed. Due to the specificity of each hazardous material release, it was not possible to determine the HMVZ or population exposure for the county. The 302 Facilities depicted in Figures 15a and 15b (pages 76 & 77) represent those facilities (75 facilities) vulnerable to either Storm Surge, Wildfire, or located within the 100 year flood plain. According to the analysis, no 302 facilities are located in the Coastal High Hazard Area while 73% are located in surge zones 1 through 5. Nine facilities are located in the 100 year floodplain and only 5 facilities are located in the 500 year floodplain. Thirty-one facilities are also considered in the Fire Zone risk area.

FIGURE 14B: Shelter Facilities within a Hazard Zone South



Brevard County PDRP

302 "Hazardous Materials" Facilities within a Hazard Zone



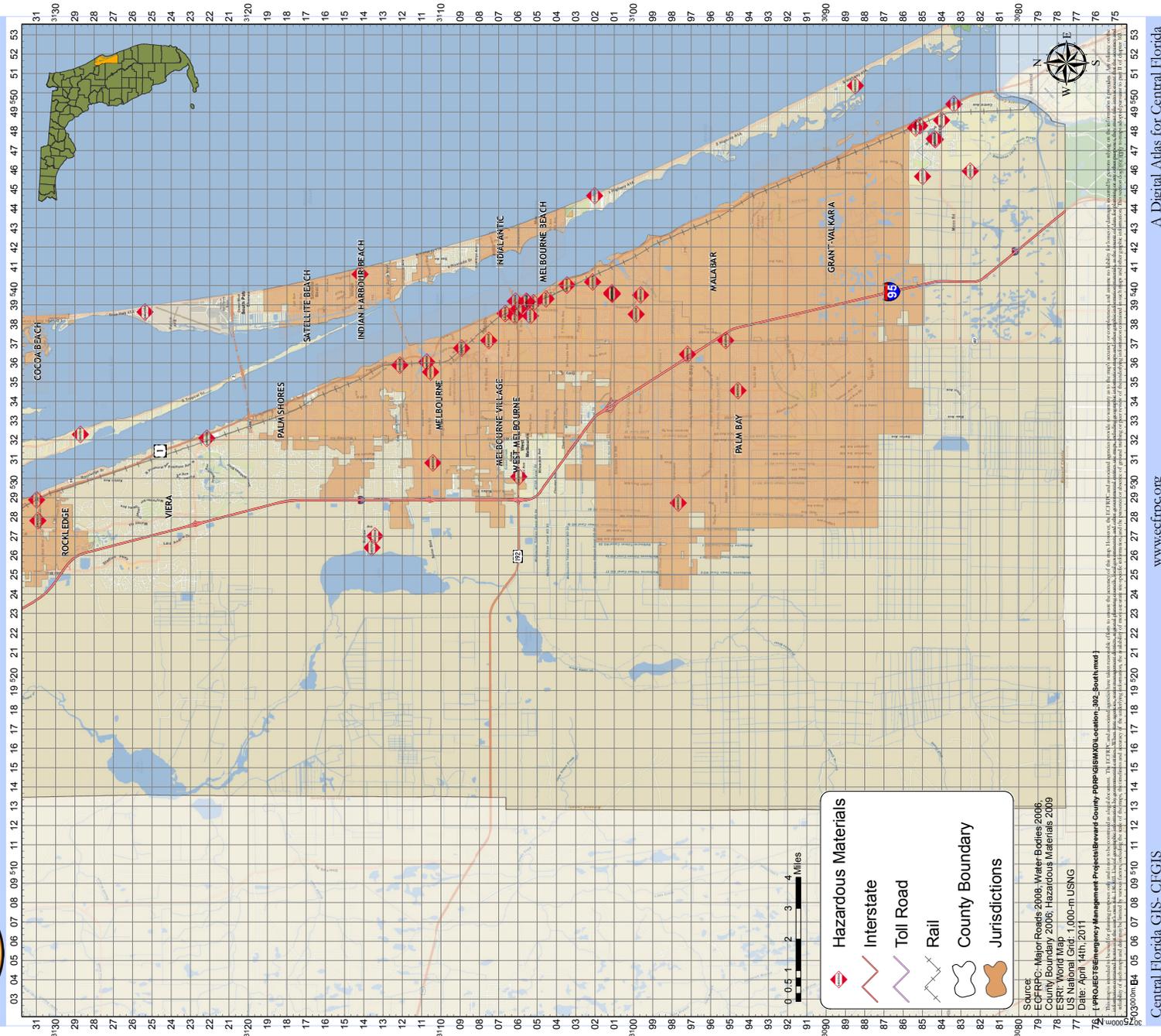
- Hazardous Materials
- Interstate
- Toll Road
- Rail
- County Boundary
- Jurisdictions

Source:
 33 ECFRPC, Major Roads 2008; Water Bodies 2006,
 32 County Boundary 2006; Hazardous Materials 2009
 31 ESRI, World Map
 30 US National Grid, 1,000-m USNG
 Date: April 14th, 2011
 29 E:\PROJECTS\Emergency Management Projects\Brevard County PDRP\GIS\MAPS\Location_302_North.mxd J

FIGURE 15A: 302 Hazardous Materials Facilities within a Hazard Zone North



Brevard County PDRP 302 "Hazardous Materials" Facilities within a Hazard Zone



www.cfrpc.org

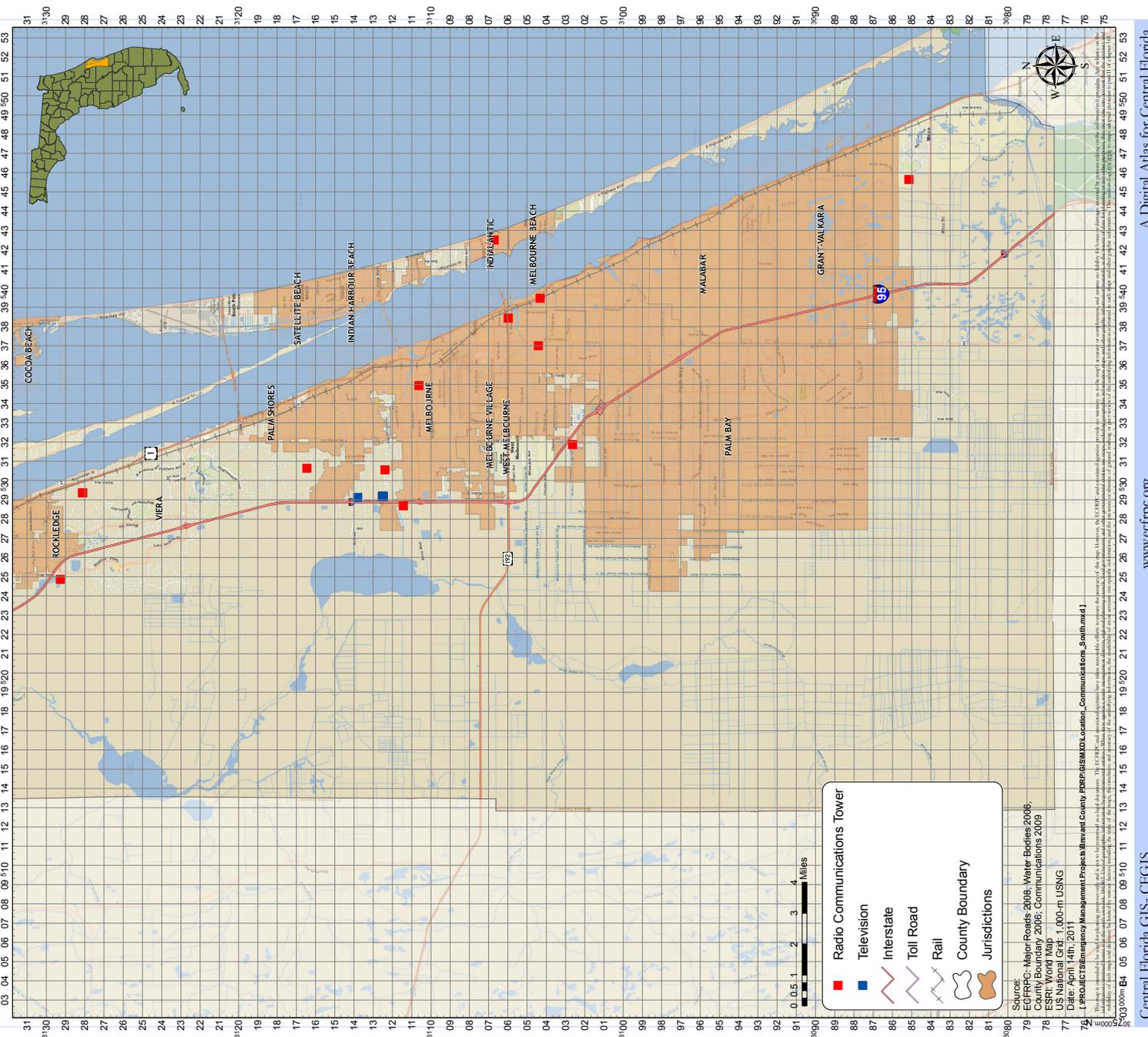
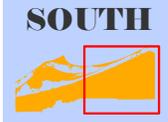
Central Florida GIS - CFGIS

FIGURE 15B: 302 Hazardous Materials Facilities within a Hazard Zone South



Brevard County PDRP

Communication Infrastructure within a Hazard Zone



Central Florida GIS - CFGIS www.ccfrc.org A Digital Atlas for Central Florida

FIGURE 16B: Communication Infrastructure within a Hazard Zone South

EMERGENCY SERVICES

The location of response facilities such as fire, medical services, and law enforcement is important when considering vulnerability to hazards. It is essential that responders not only can access equipment, but routes to surrounding areas be accessible as well. The maps that follow (Figures 17a and 17b) show these facilities which may be vulnerable to storm surge, wildfire or are located within the 100 year flood plain. According to the vulnerability analysis, 71 emergency service facilities are located in storm surge zones 2-5, while 6 facilities are located in the 100 year flood plain, 4 are located in the 500 year flood plain, and 31 are considered at risk to fire. On the following page, Table 15 indicates the break down of the various types of emergency service facilities located in storm surge areas.

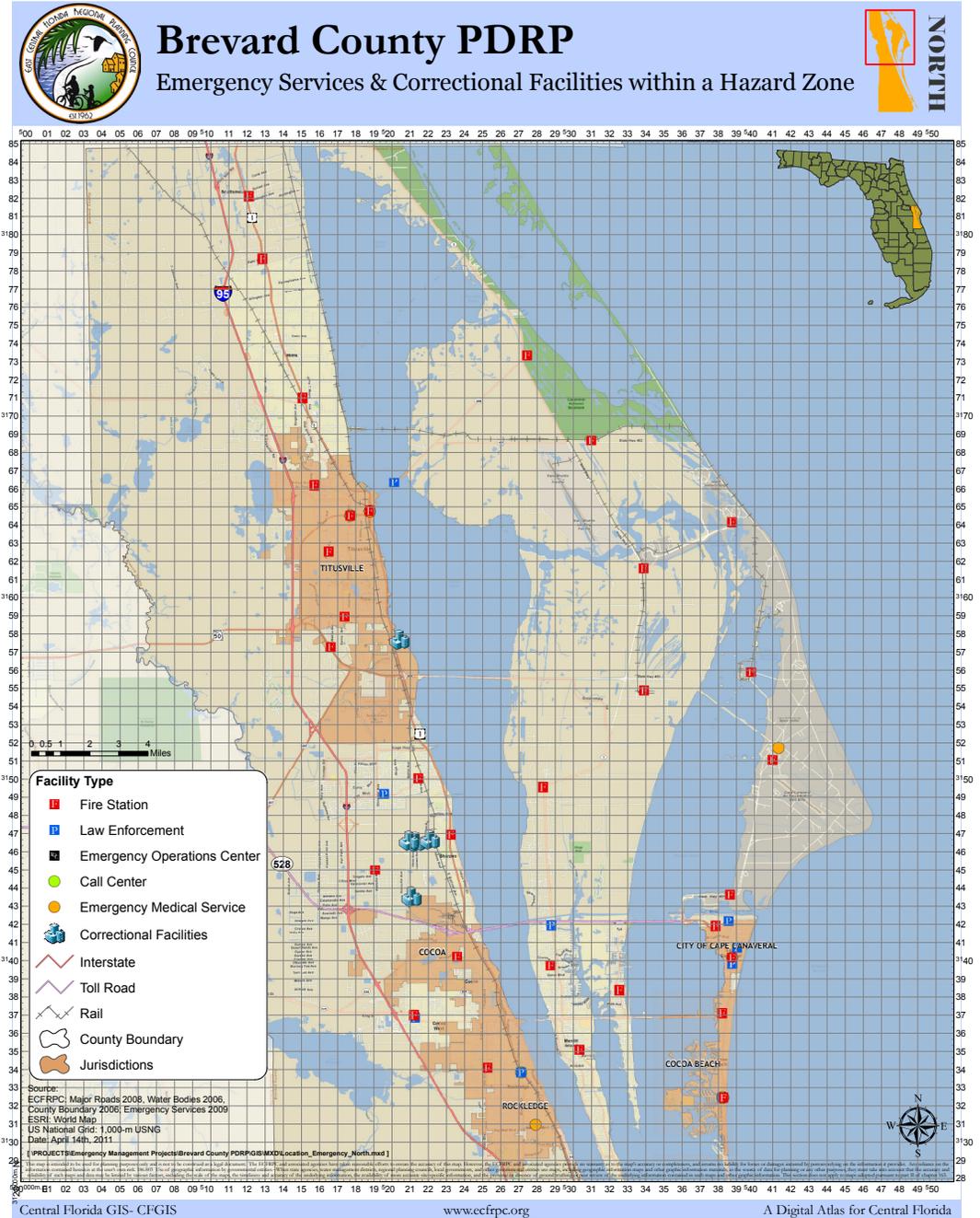


FIGURE 17A: Emergency Services and Correctional Facilities within a Hazard Zone North



Brevard County PDRP

Emergency Services & Correctional Facilities within a Hazard Zone

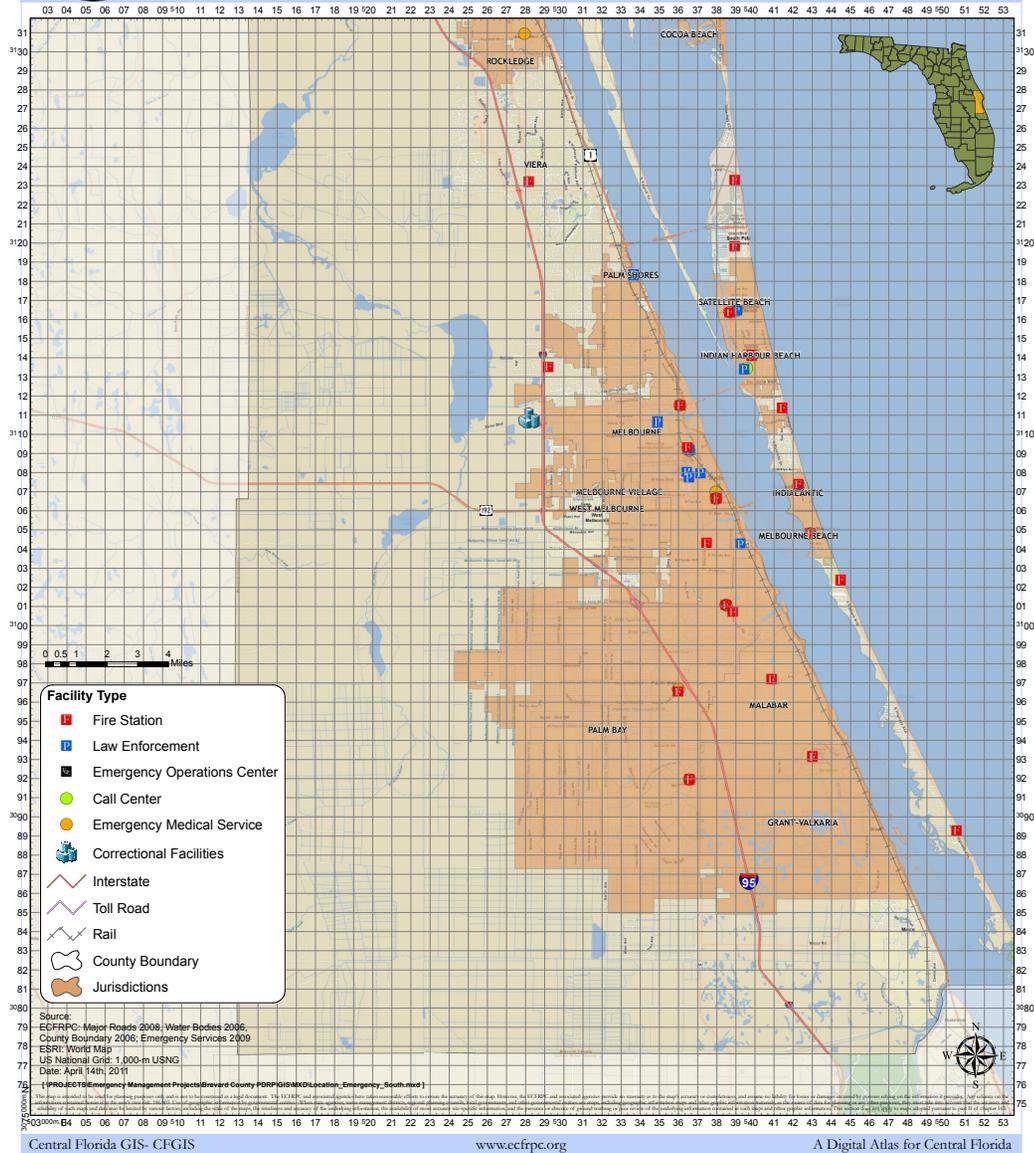


Table 15: Emergency Facilities per Surge Zone

	Surge Zone 1	Surge Zone 2	Surge Zone 3	Surge Zone 4	Surge Zone 5	Not in Surge Zone
All Emergency Services	0	19	24	11	17	28
Call Centers	0	2	2	2	0	1
Emergency Medical Services	0	2	2	2	3	4
Fire Stations	0	13	12	4	6	19
Law Enforcement	0	2	8	3	8	4

FIGURE 17B: Emergency Services and Correctional Facilities within a Hazard Zone South

HEALTH CARE FACILITIES

A key component to the population at risk in Brevard County is the residents within Assisted Living Facilities, Hospices, Hospitals, and various nursing facilities. Assessing the vulnerability of these facilities to storm surge, flooding and wildfire is critical for their operations as well as that of the county. The effects of a hurricane's hazards on these residents would be greatly compounded by their lack of mobility and need for continuity of care. It is also necessary to review and practice their disaster plans for evacuation and re-entry. The special needs of the residents in these facilities makes these plans, especially long-term post-disaster, critical.

Low-lying vulnerable medical facilities are encouraged to make individual hurricane contingency plans to evacuate to a similar facility located outside of areas vulnerable to storm surge instead of to a designated public shelter. The surge vulnerability results are essential for this facility-to-facility concept of planning not only to help determine the need for evacuation, but also for the selection of non-vulnerable host shelter facilities for the reception of the evacuated facility's patients. If a facility is destroyed and occupants must be housed elsewhere, special considerations are needed for temporary housing. Those facilities deemed vulnerable to wildfire, storm surge or are located in the 100 year flood plain are depicted on the following maps (Figures 18a and 18b).

In Brevard County, six hospitals are located in Hurricane Evacuation Zones with one in Category 2 Storm Surge, one in Category 4 Storm Surge, and three in Category 5 Storm Surge Areas. While no hospitals are located in the floodplain, one hospital is considered vulnerable to fire threats.

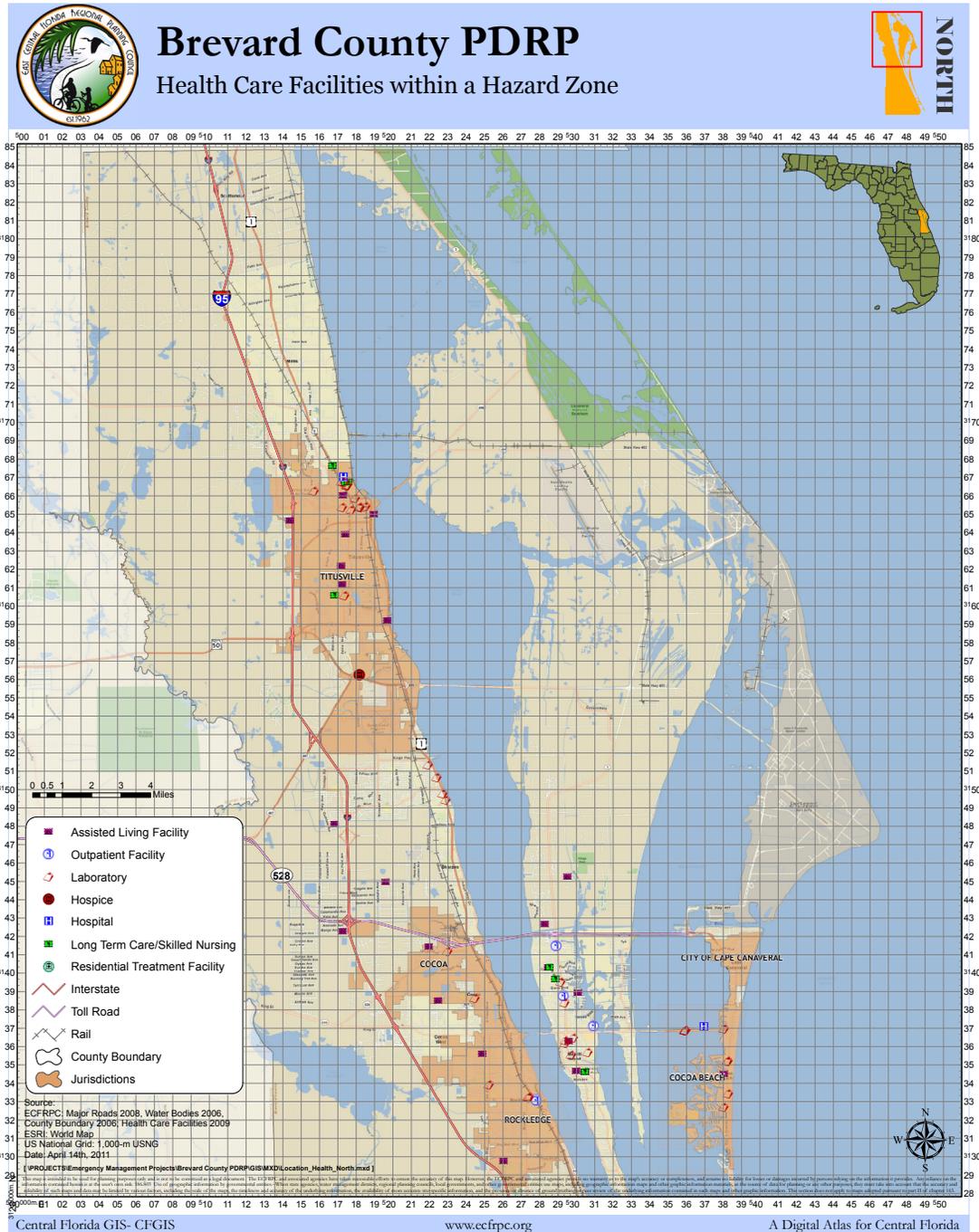
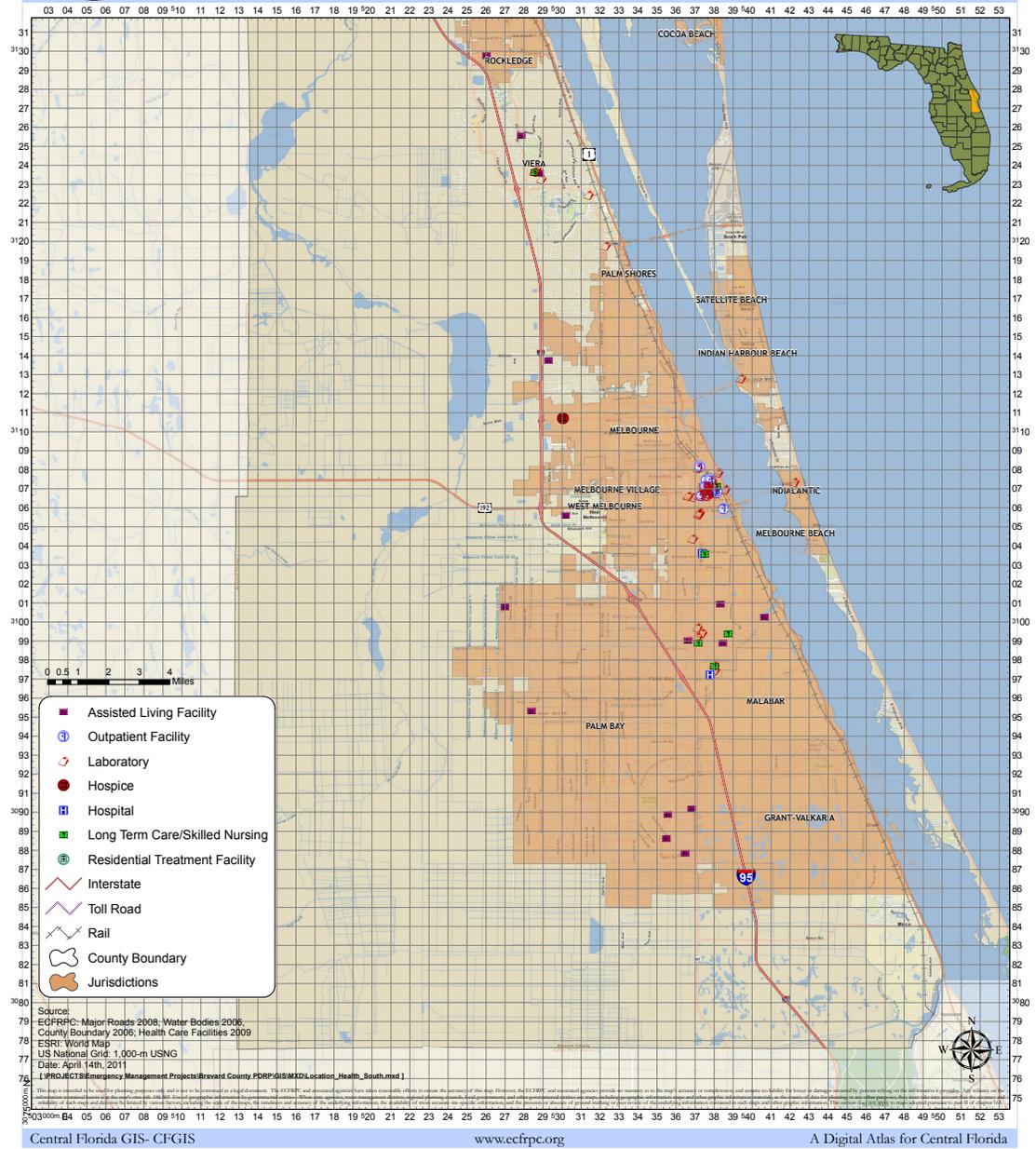


FIGURE 18A: Health Care Facilities within a Hazard Zone North



Brevard County PDRP

Health Care Facilities within a Hazard Zone



Public Facilities

Various essential infrastructure may be vulnerable to certain hazards such as those depicted on the maps (wildfire, storm surge, 100 year flood) due to their current locations. Maintaining and restoring functionality of these facilities is critical to aid in disaster relief and establishing conditions needed by the community. The post-disaster environment allows for this infrastructure to be mitigated or moved to less vulnerable locations or access areas if possible. The table below shows that a number of public infrastructure facilities are located in hurricane surge zones. In addition, 52 facilities are located in the 100 year flood plain and 217 are vulnerable to fire hazards.

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FIGURE 18B: Health Care Facilities within a Hazard Zone South



SOCIAL VULNERABILITY

A Statewide Regional Evacuation Study was conducted from 2007 – 2010. One component of this study was a behavioral analysis related to hurricanes and other hazards. The results of this analysis indicated that due to perception and lack of knowledge concerning evacuation zones and hazards, Brevard County residents may be more vulnerable to various risks than perceived.

Two in five residents (42%) of the coastal counties in the East Central Florida Region believe they live in an evacuation zone. Only half (50%) of coastal county residents that live in a category 1 evacuation zone knew they live in an evacuation zone. Similar results were found for other evacuation zones; however the category 5 zone shows a much lower number. (Source: SRES 2010)

Table 16: Infrastructure Facilities per Surge Zone

	Surge Zone 1	Surge Zone 2	Surge Zone 3	Surge Zone 4	Surge Zone 5
All Infrastructure	5	29	28	20	58
Public Water Supply	2	12	2	10	39
Solid Waste	0	5	6	0	2
Wastewater	3	12	20	10	17

Tables 17 and 18 list the evacuation rates for residents living in site built homes (Table 17) and mobile home/manufactured homes (Table 18) for Brevard County. As expected the evacuation rate increases in each evacuation zone as the category of storm increases. Understanding evacuation behaviors is important in post-disaster planning and preparing for re-entry, supplies, and transportation needs. For example, the main routes identified by respondents as their evacuation route are SR 528 and I-95.

Table 17: Evacuation Rates for Residents Living in Site Built Homes

Brevard Evacuation Rates (%)	Storm Threat Scenario				
Site-built Homes	Cat 1	Cat 2	Cat 3	Cat 4	Cat 5
Cat 1 Surge Evacuation Zone	60	70	80	90	95
Cat 2 Surge Evacuation Zone	55	65	75	90	95
Cat 3 Surge Evacuation Zone	35	35	70	80	90
Cat 4 Surge Evacuation Zone	25	30	30	75	85
Cat 5 Surge Evacuation Zone	15	20	25	50	80
Inland of Surge Evacuation Zones	10	15	20	30	60

Evacuation rate indicates the percent of residents who will leave their homes to go someplace safer from each zone in each storm threat scenario. Figures are based on the assumption that officials order evacuation for surge evacuation zones corresponding to storm category, plus all mobile homes and manufactured homes. Figures also assume that the actual storm track passes very close to the area being evacuated. (Source: SRES 2010)

Table 18: Evacuation Rates for Residents Living in Mobile and Manufactured Homes

Brevard Evacuation Rates (%)	Storm Threat Scenario				
Mobile and Manufactured Homes	Cat 1	Cat 2	Cat 3	Cat 4	Cat 5
Cat 1 Surge Evacuation Zone	75	80	85	95	100
Cat 2 Surge Evacuation Zone	75	80	85	95	95
Cat 3 Surge Evacuation Zone	70	80	80	90	95
Cat 4 Surge Evacuation Zone	70	75	80	90	90
Cat 5 Surge Evacuation Zone	70	70	80	85	90
Inland of Surge Evacuation Zones	65	70	80	85	90

Evacuation rate indicates the percent of residents who will leave their homes to go someplace safer from each zone in each storm threat scenario. Figures are based on the assumption that officials order evacuation for surge evacuation zones corresponding to storm category, plus all mobile homes and manufactured homes. Figures also assume that the actual storm track passes very close to the area being evacuated. (Source: SRES 2010 Table III-8A)

It is also critical for emergency managers to understand how people are accessing information about evacuations and post-disaster details and how well they comprehend it. Previous surveys have repeatedly shown that most people look to their television for evacuation notices. Four out of five East Central Florida residents (82%) have access to the Internet. Even though most residents have not utilized their county’s website for hurricane information, almost three out of four residents (74%) of the East Central Florida Region responded with a “yes” when asked, “Have you ever seen a map of your county showing areas that would need to evacuate in case of a hurricane?” Brevard County issues these maps in phone books in order to reach the most residents. This information may be helpful when disseminating information in the post-disaster environment. In addition, Figure 19 depicts the main sources Brevard County residents use to obtain information for evacuations.

What is your main source of information for evacuations?

	n	Local media	Florida Today	Brevard County Emergency Management	Orlando TV stations	Red Cross	Other
Brevard	400	52%	1%	12%	30%	0%	5%
Category 1		52%	1%	9%	32%	0%	6%
Category 2		52%	1%	9%	32%	0%	6%
Category 3	250	52%	1%	9%	32%	0%	6%
Category 4		52%	1%	9%	32%	0%	6%
Category 5	50	58%	1%	11%	25%	0%	5%
Non-Surge	100	49%	1%	19%	28%	0%	3%

FIGURE 19: Source of Information for Evacuations

Lessons can be learned about human behavior based up on previous experiences. Table 19 illustrates the percentage of households in the East Central Florida region that evacuated for Charley, Frances and Jeanne and their destination.

Table 19: Percentages of All Households That Evacuated and the Most Popular Types of Destinations

Storm	Evacuated	Neighborhood	County	Elsewhere in Florida	Outside Florida
Charley	20%	3%	6%	8%	3%
Frances	28%	2%	8%	13%	5%
Jeanne	19%	2%	5%	8%	2%

(Source: SRES 2010)

The 2007-2008 behavioral survey results from the Statewide Regional Evacuation Study for the East Central Region consistently show a marked difference in responses associated with hypothetical severe storms (Category 4 and Category 5). These results should not be surprising; higher evacuation participation rates make sense. In fact, responses to questions regarding severe storms indicate that approximately 88% of the population intends to evacuate during a category 5 storm event, if ordered.

Public perception of disaster relief plays a major role in how well post-disaster response and redevelopment occurs. Approximately 27% of respondents in Brevard County expect disaster relief to be supplied to residents within 24 hours of a hurricane, 21% expect relief within 48 hours and 20% within 72 hours. Approximately 12% noted that they believe relief should be available within 8 hours after a hurricane.

According to the survey, over 63% would be able to manage for more than days after a hurricane without supplies from relief workers, 15% for 72 hours, 6% for 48 hours and 7% for only 24 hours. The “other” category was chosen by 9%. (Source: SRES 2010)

OTHER HAZARD RESPONSES

The SRES address other hazards including wildfires, fresh water flooding and hazardous materials. Only one in four residents of the East Central Region (24%) believes that their area may be threatened by wildfire at some point in the future. This feeling is more prevalent in non-surge zones (34%), while only 9% of residents in evacuation zones 1 and 2 believe

their homes may be threatened by wildfire. The vast majority (84%) of Brevard County residents claim they intend to evacuate if ordered to do so by public safety officials.

Nearly one in four residents (23%) of the East Central Florida region say their home might be threatened by freshwater flooding at some point. Forty-one percent (41%) of residents in the category 5 evacuation zone are more likely to make this claim, while only 10% of residents living in non-surge zones think their homes may be threatened by freshwater flooding at some point.

Almost three in four residents in the East Central Region (73%) maintain that they will evacuate their homes if ordered to do so by public safety officials because of freshwater flooding. This percentage is lower than the 89% of residents who claim they will evacuate because of wildfires. Residents living in category 5 evacuation zone are more likely (87%) to say they intend to evacuate for freshwater flooding if ordered to do so by public officials as compared to the other zones.

Relatively few East Central Florida residents (16%) believe they will be threatened by a hazardous material accident. Concern for this type of accident peaks in non-surge areas at 43% while, in contrary, no respondents residing in the category 5 evacuation zone believe their homes would ever be threatened by a hazardous materials accident. Belief of future threats from a hazardous material accident varies widely across counties in the East Central Florida Region and is highest in Brevard County (28%). (Source: SRES 2010)

REMI, INC. ECONOMIC IMPACT ANALYSIS

REMI Policy Insight is a customized econometric model that is calibrated specifically to the East Central Florida Region. This model was used to analyze economic impacts to potential industry set-backs. The ECFRPC conducted an analysis of the following scenario: In 2012, a quarter of Brevard County “shuts down” for one month.

REMI, Inc. Model Inputs:

2% of industry employment was removed from 19 industry sectors in Brevard County. Industry employment affects the industries that provide goods or service demands.

List of industry sectors analyzed:

- Forestry, Fishing, Related Activities, and Other
- Mining
- Utilities
- Construction
- Manufacturing
- Wholesale Trade
- Retail Trade
- Transportation and Warehousing
- Information
- Finance and Insurance
- Real Estate and Rental and Leasing
- Professional and Technical Services
- Management of Companies and Enterprises
- Administrative and Waste Services
- Educational Services
- Health Care and Social Assistance
- Arts, Entertainment, and Recreation
- Accommodation and Food Services
- Other Services, except Public Administration

As displayed in the REMI, Inc., output model screen shot on the next page, the local Brevard County economy takes a major dive in 2012. The county’s economy does begin to recover in 2013 and remains stable into 2014.

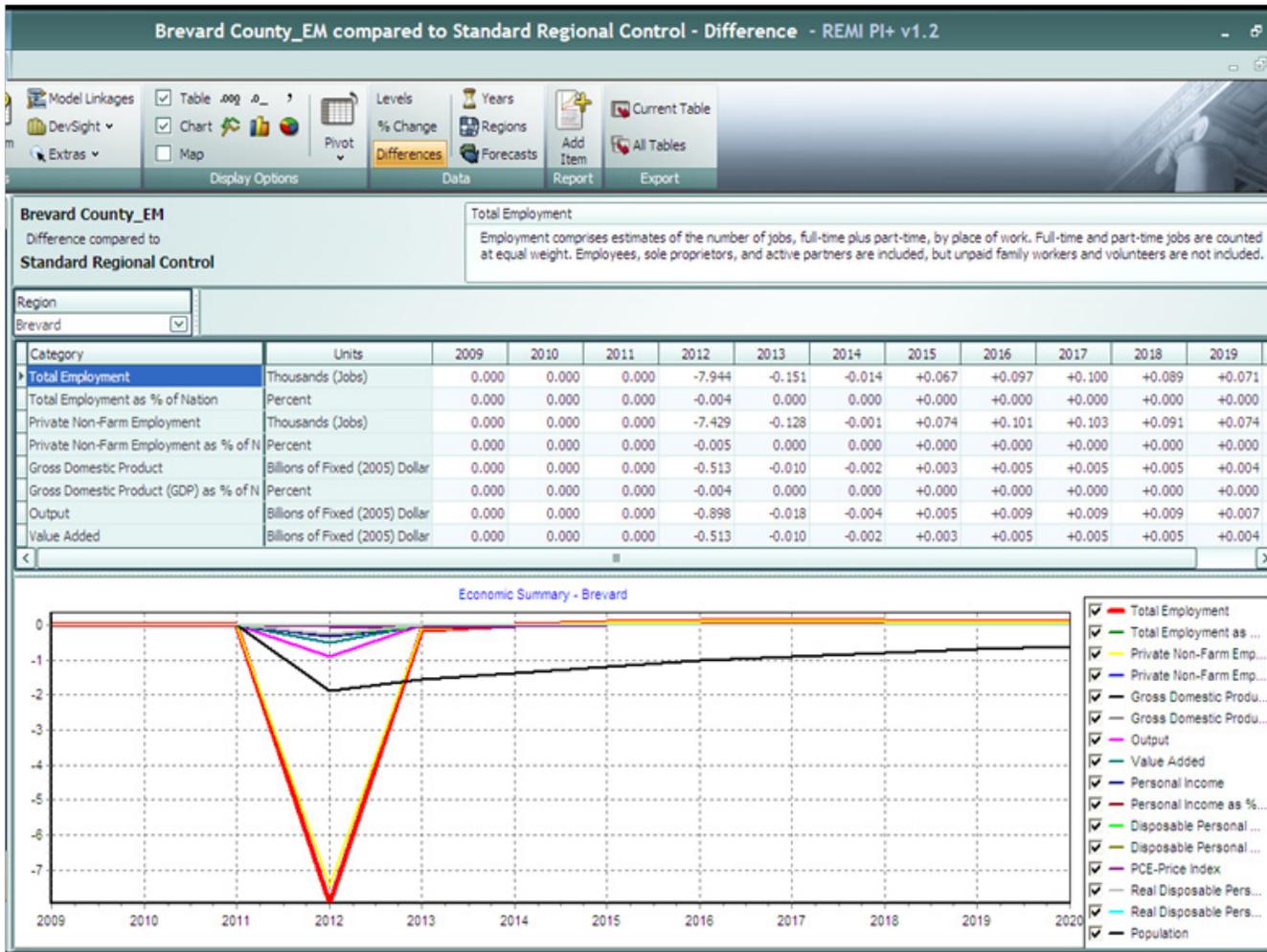


FIGURE 20: REMI, INC. OUTPUT

Table 20: REMI, Inc. Model Outputs

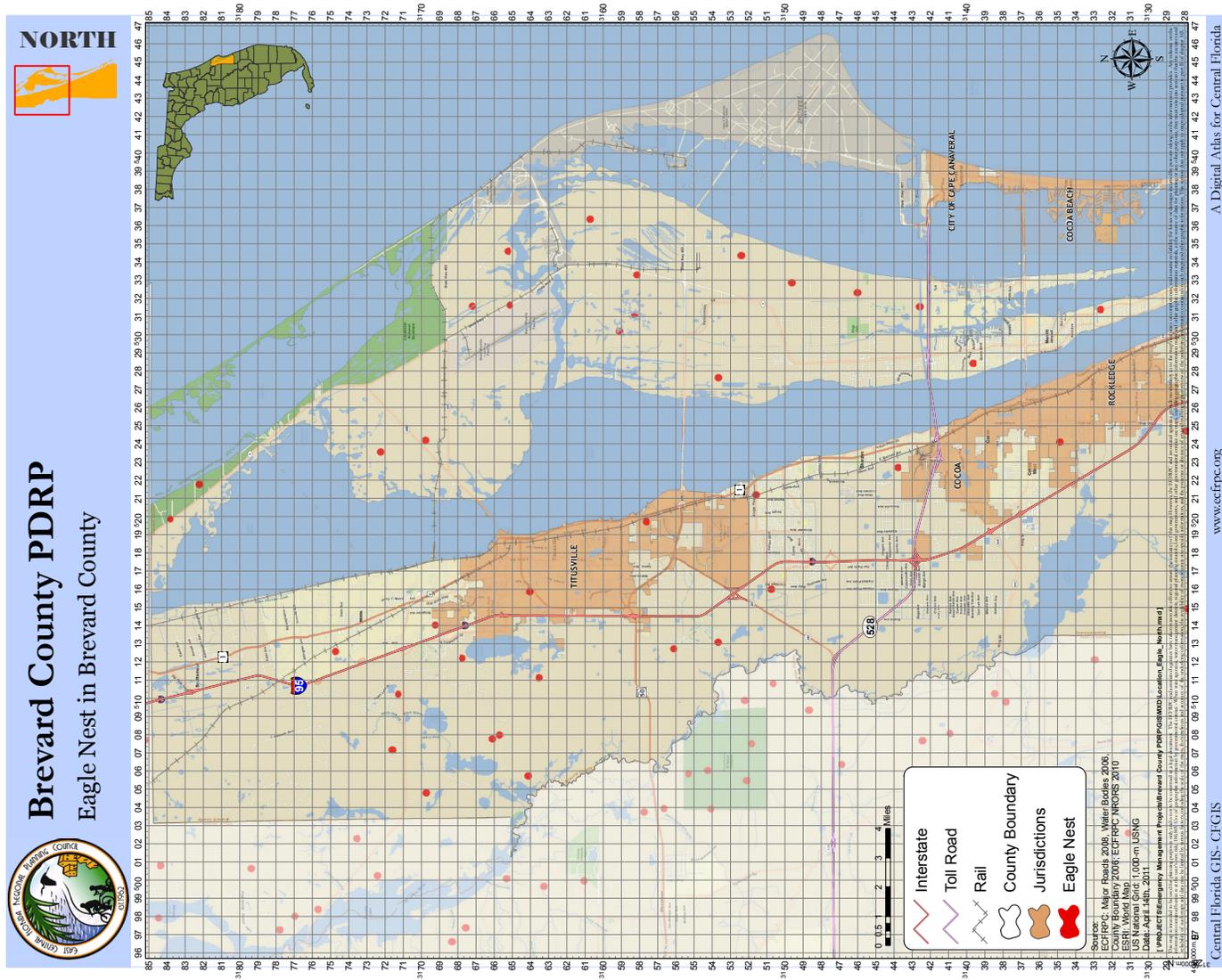
Category	Output in 2012
Employment	-7,944
GDP	-\$513 million
Personal Income	-\$313 million
Population	-1,875

When looking at the impact of the county’s quarter one month “shut down”, it is important to note the change in employment, population, personal income and gross domestic product. In this scenario, the county would be able to begin recovery in the following year; however one cannot overlook the impacts to economic vitality and population. A massive hurricane could leave the county in distress for more than one month, creating even more devastating impacts. Thus, it is imperative for the county to create a strategy for post-disaster redevelopment that begins with implementation pre-disaster.

NRORS HABITAT IMPACT ANALYSIS

The analysis and consideration of Natural Resources of Regional Significance (NRORS) are essential in developing a post-disaster redevelopment plan. It is important to review these data and resources to minimize negative environmental impacts and determine appropriateness of sites for debris staging areas, temporary housing or redevelopment areas. The following maps (Figures 20a and 20b) illustrate the Natural Resources of Regional Significance as determined by the East Central Florida 2060 Plan. Impacts to these areas should be avoided to the extent practicable.

Known bald eagle and other protected eagle nesting locations with a 600 foot buffer protection area from each active nest; the dataset was provided by the Florida Fish and Wildlife Conservation (FWC). Areas known to be home to bald eagle nests should be avoided, at a minimum of 600 foot distance for post-disaster activity in order to reduce nest disturbance.

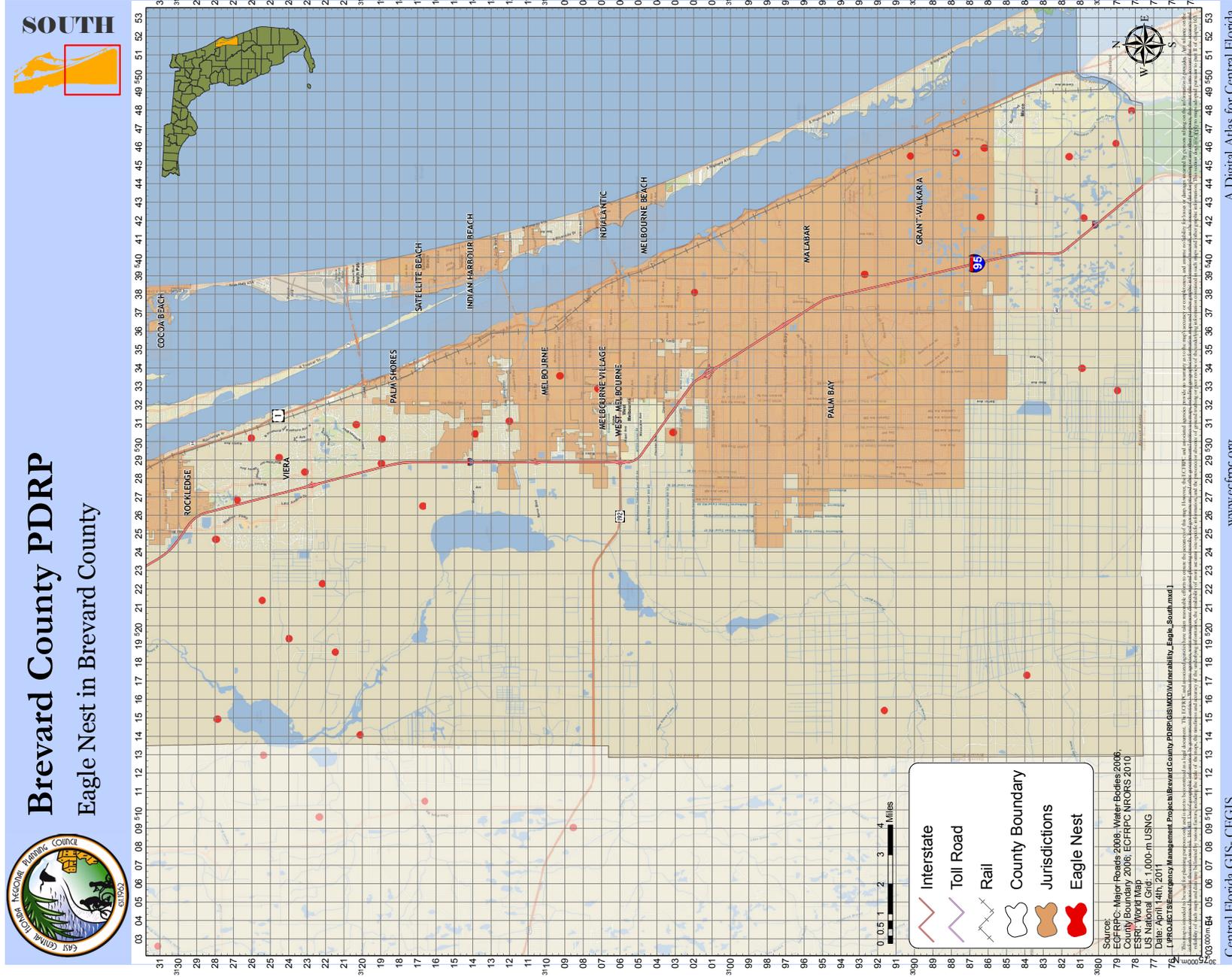


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FIGURE 20A: Eagles Nests North



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FIGURE 20B: Eagles Nests South

The biodiversity hotspots layer identifies areas of overlapping vertebrate species habitat with a species count of 8-13 (13 being highest count). This layer was created by the Florida Fish and Wildlife Conservation Center at the University of Florida. Areas with higher species counts may be indicative a prime habitat for a variety of species. Therefore, precautions should be taken to avoid using such areas for post-disaster staging locations.

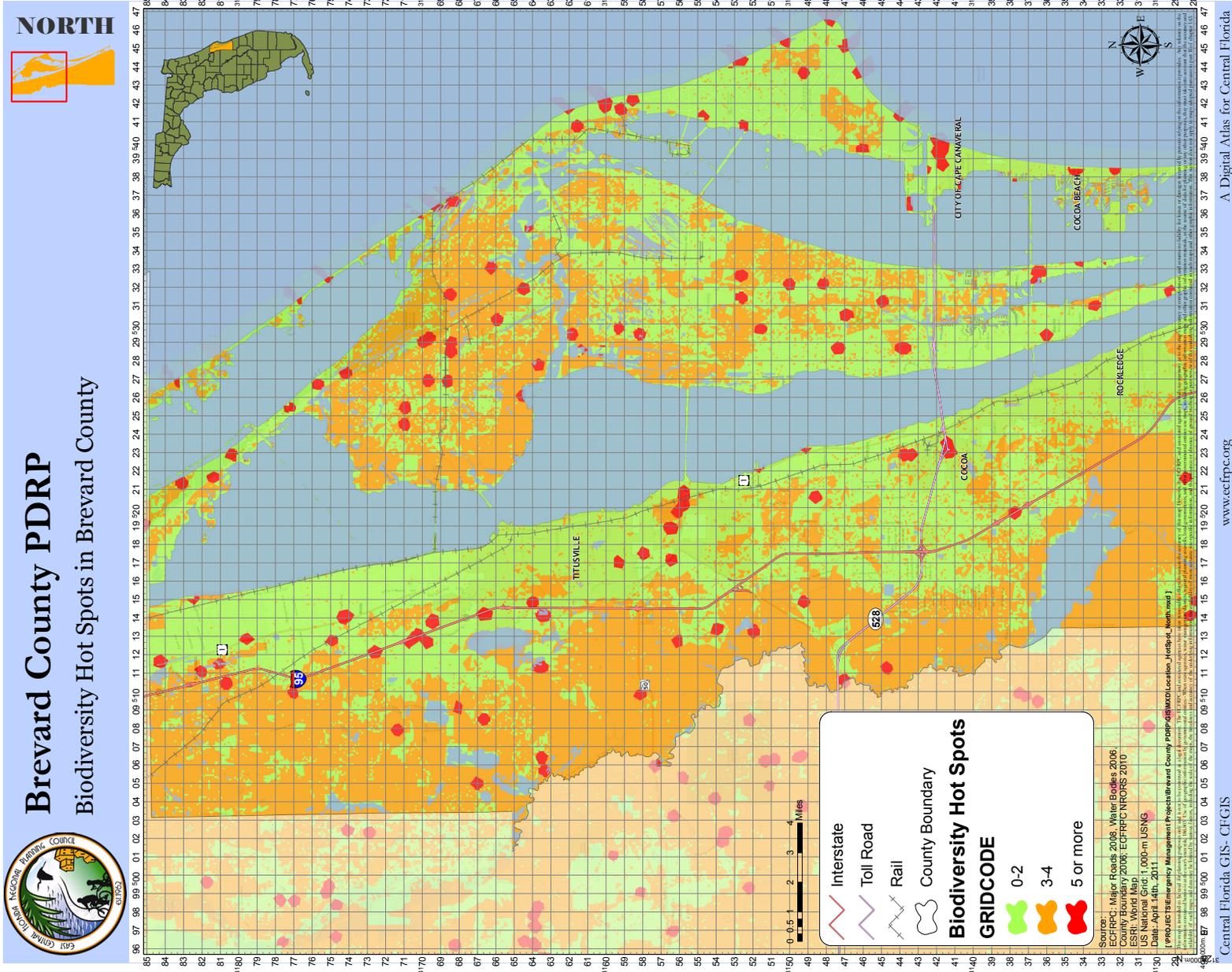


FIGURE 21A: Biodiversity Hotspots North

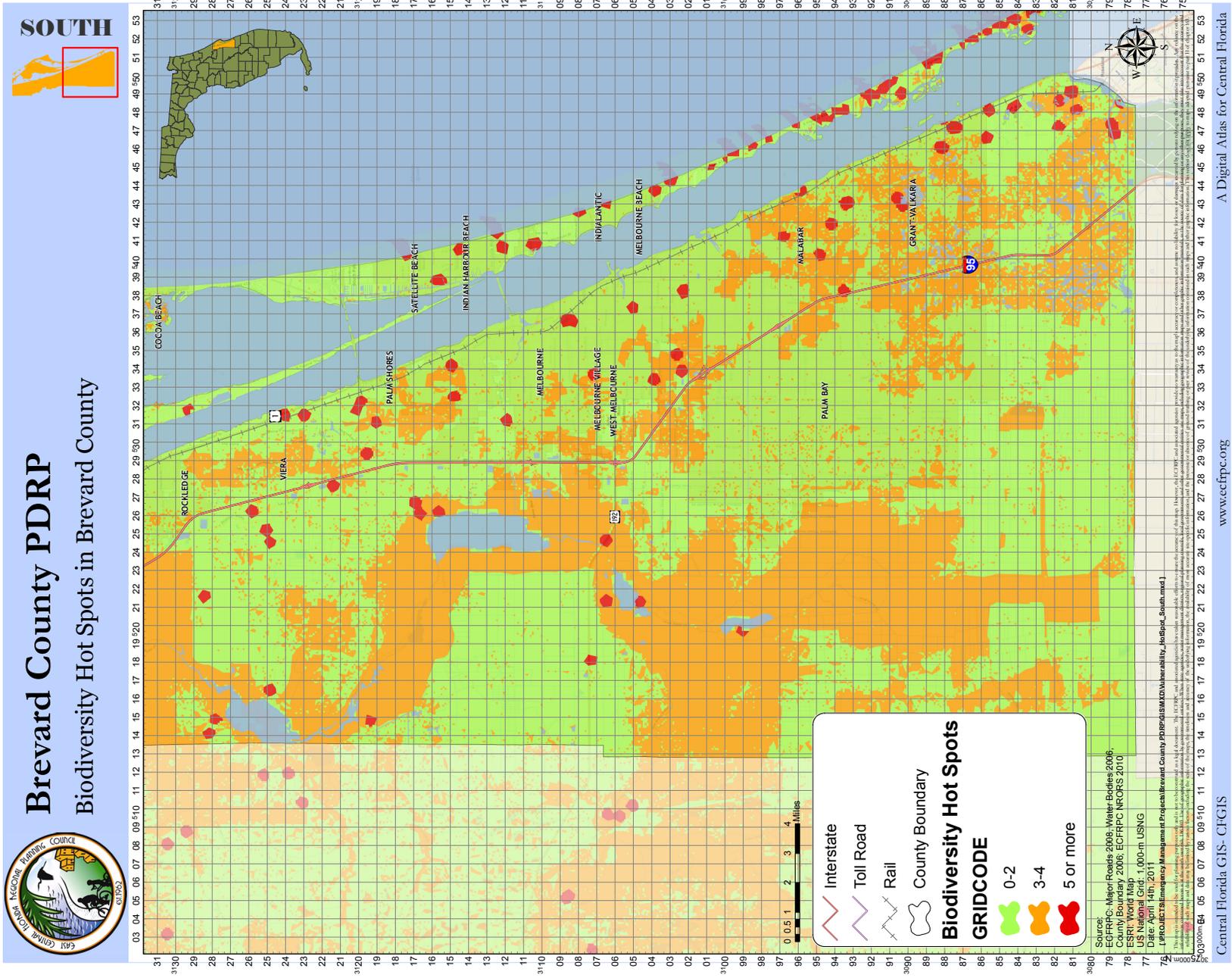


FIGURE 21B: Biodiversity Hotspots South

Extensive conservation areas and two mitigation banks exist in Brevard County as shown in Figures 22a and 22b. These areas are important as natural resources and species migrate due to climate change and sea level rise. These areas are also essential when determining post-disaster redevelopment areas and staging areas to prevent any negative impacts. These areas should also be considered in post-disaster planning for debris management and potential wildfire risk as these areas may not be considered as prime locations for debris removal following a storm. Conservation areas may also be assessed in terms of sea level rise and post-disaster planning in order to maintain their functionality and sustainability.

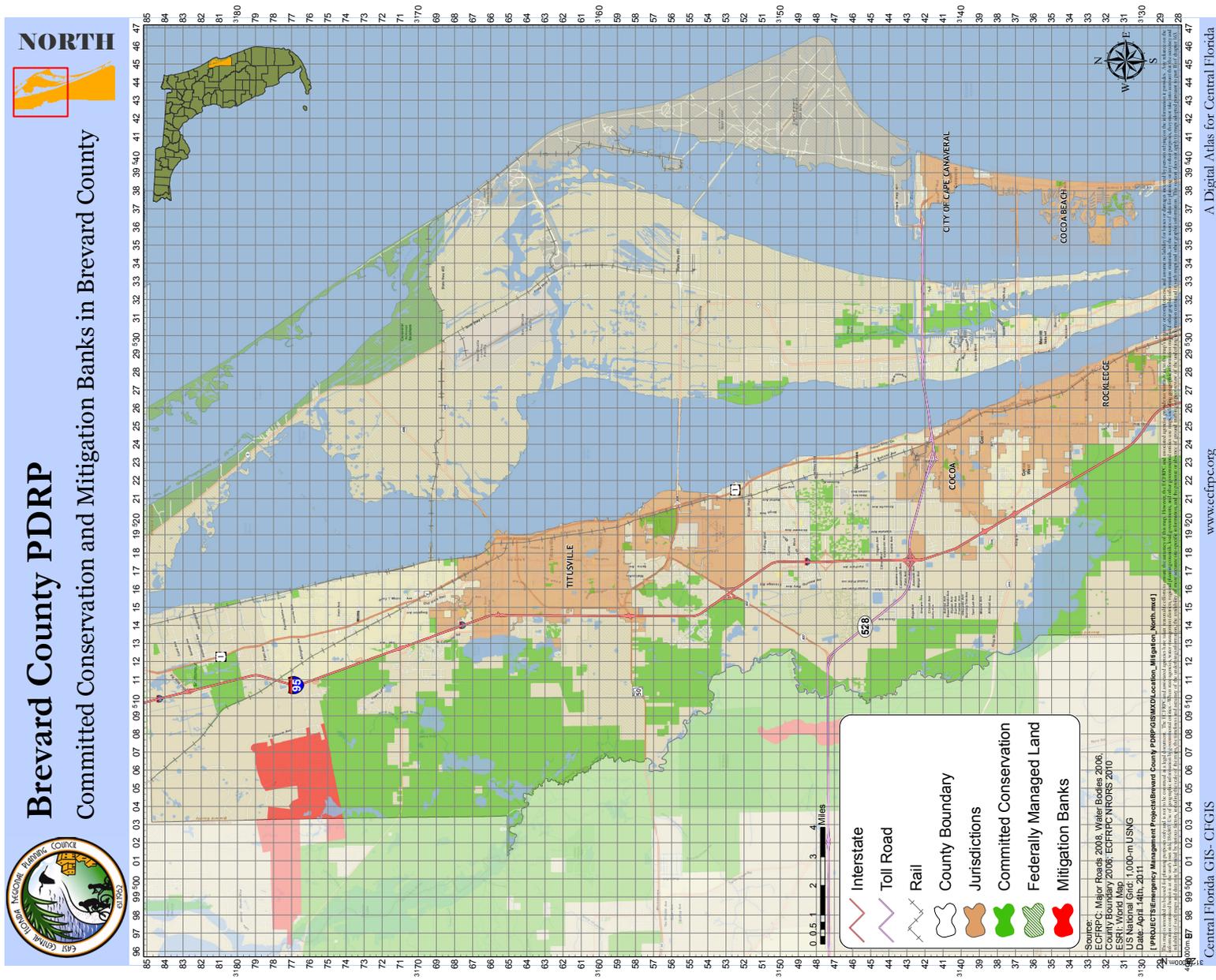
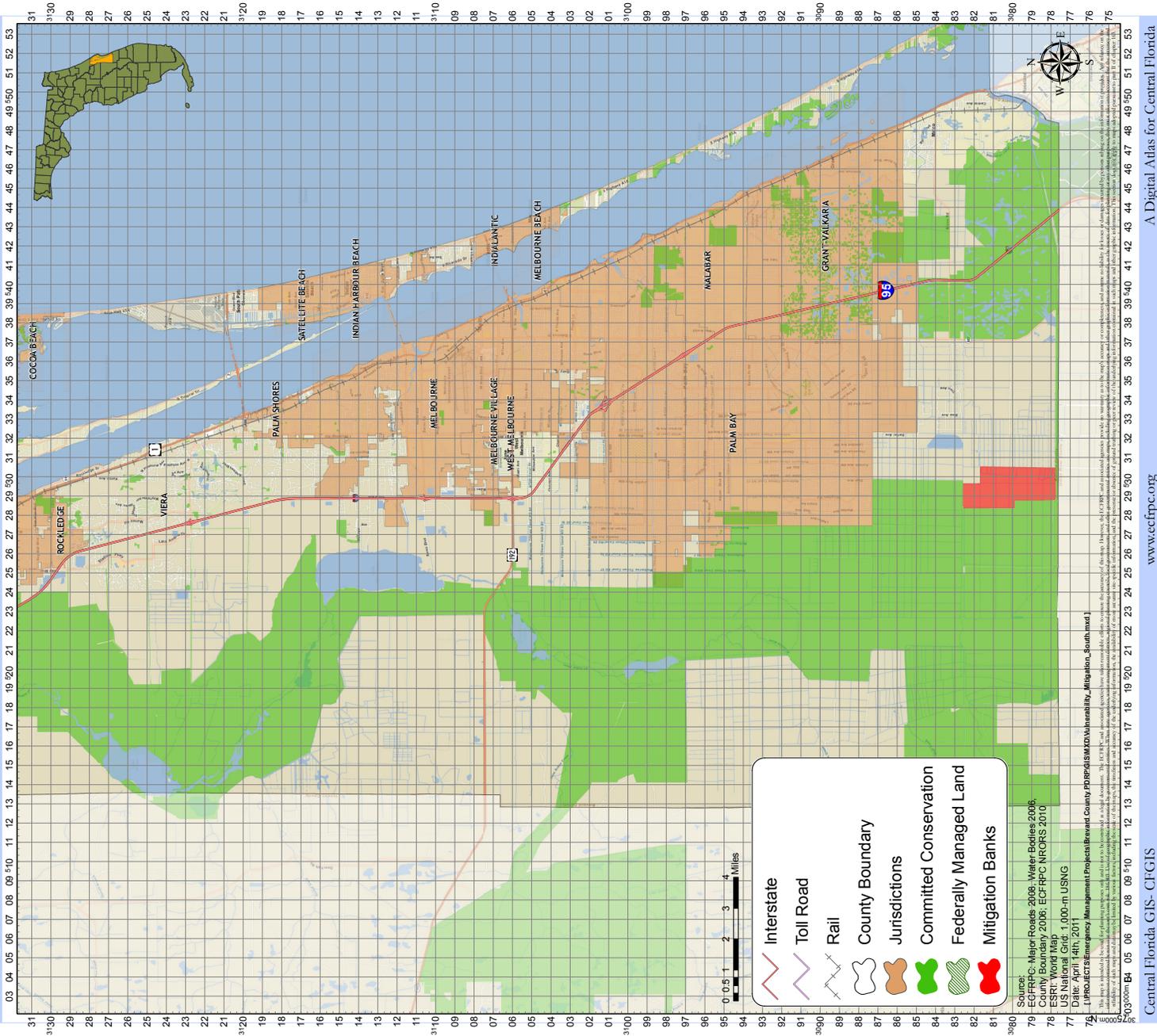


FIGURE 22A: Committed Conservation North



Brevard County PDRP

Committed Conservation and Mitigation Banks in Brevard County



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FIGURE 22B: Committed Conservation South

The rare species habitat conservation priorities dataset was created by Florida Natural Areas Inventory (FNAI) specifically for the Florida Forever program. Priorities 1 through 3 have been included below in the NRORS analysis. Analysis of these areas to storm surge, sea level rise, and wildfire are important especially in terms of post-disaster redevelopment planning as well as preventative efforts (debris management). Precautions should be taken to avoid using such areas for post-disaster staging locations and possible redevelopment or relocation areas.

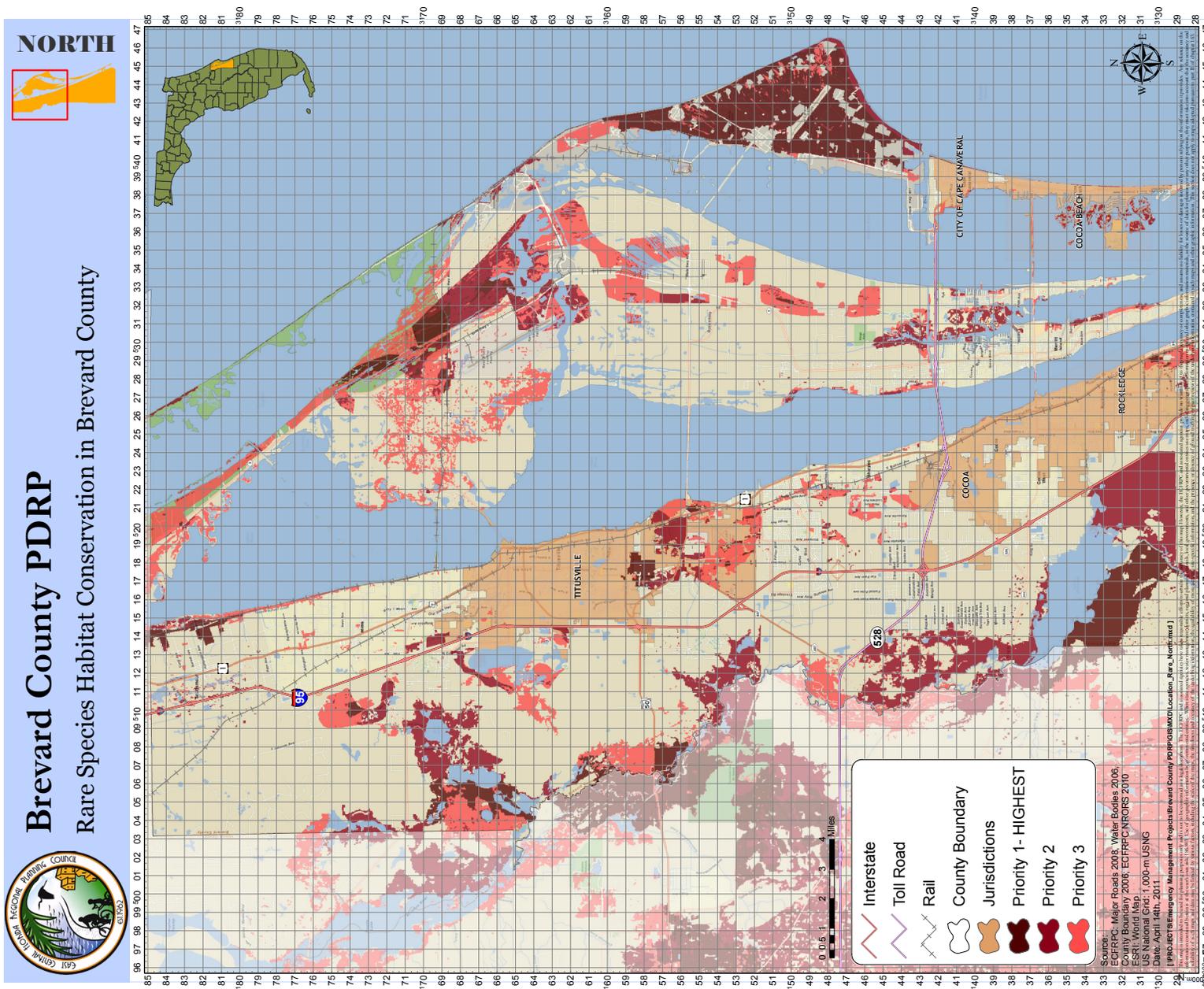
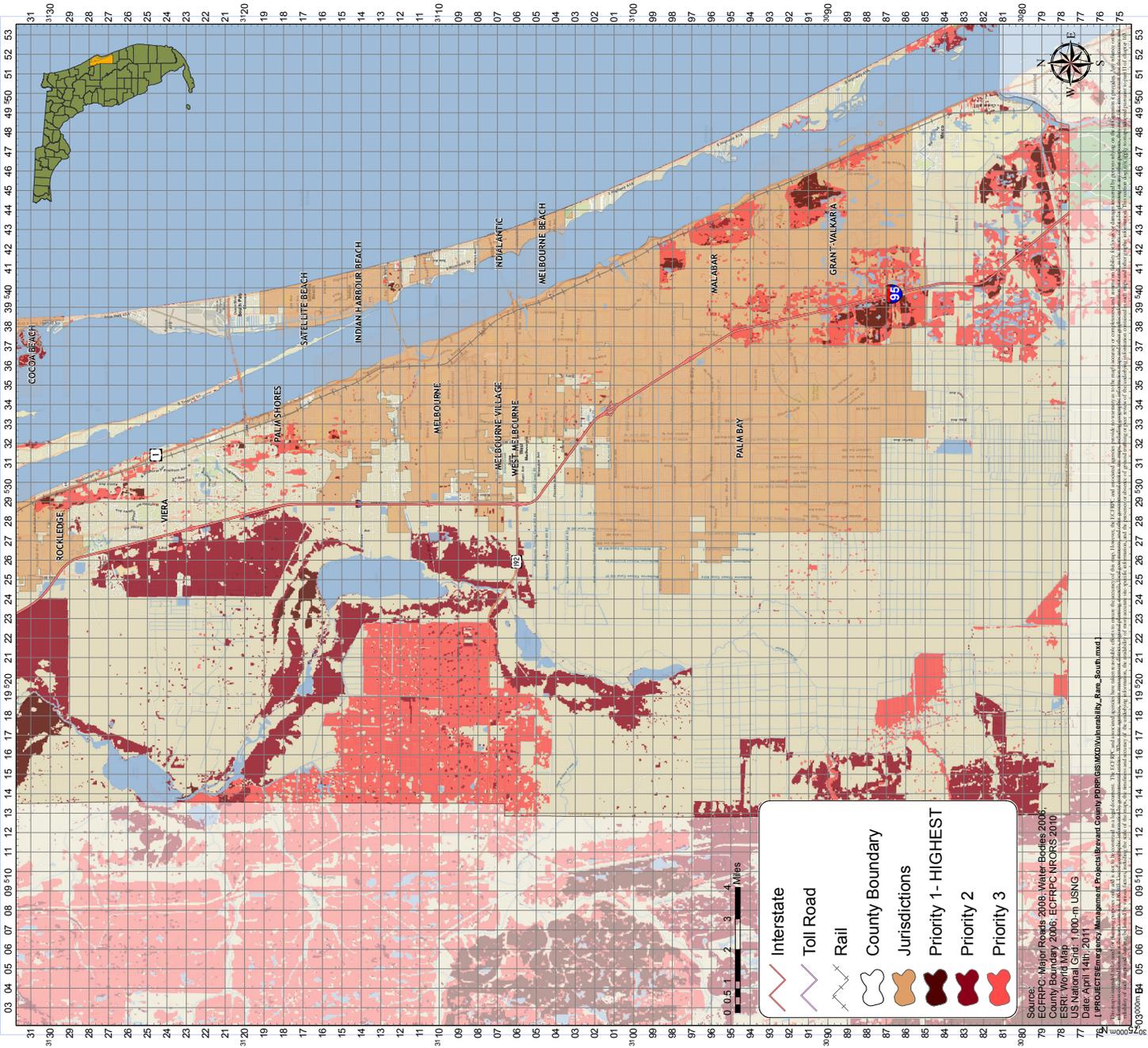


FIGURE 23A: Rare Species Habitat Conservation North



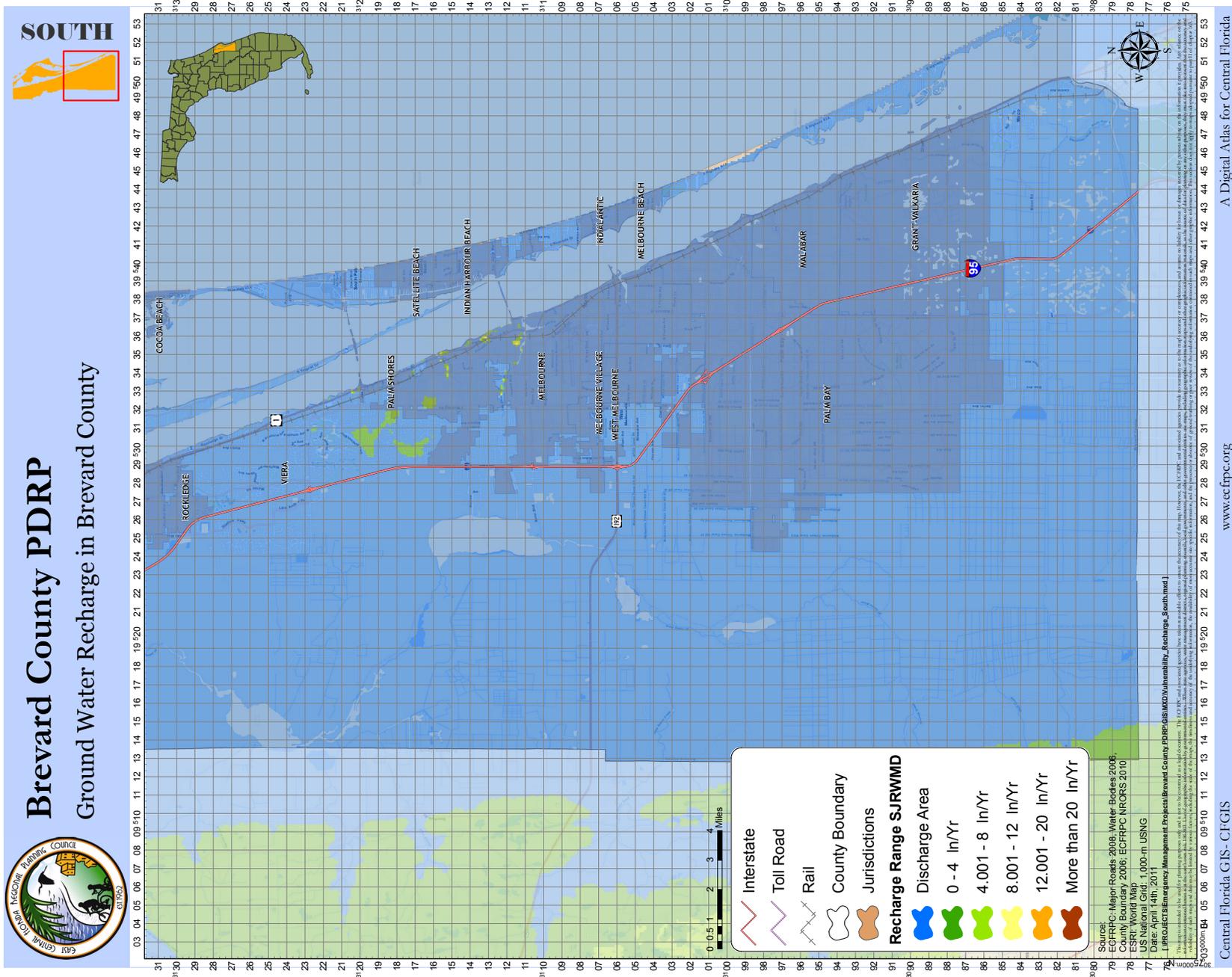
Brevard County PDRP

Rare Species Habitat Conservation in Brevard County



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FIGURE 23B: Rare Species Habitat Conservation South



Brevard County PDRP

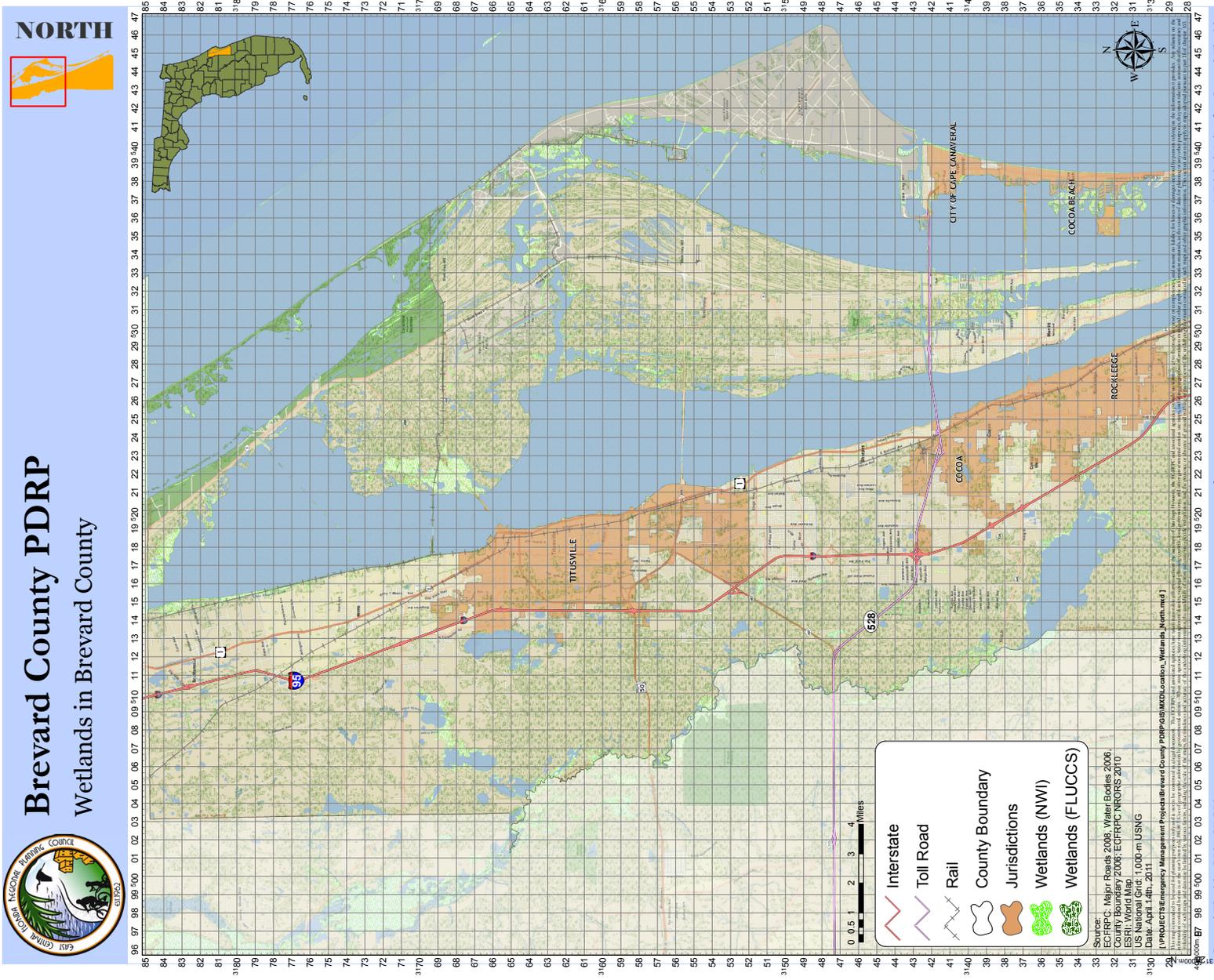
Ground Water Recharge in Brevard County



FIGURE 24B: Ground Water Recharge South

Source: ECFRPC Major Roads 2008; Water Bodies 2006; County Boundary 2006; ECFRPC NRORS 2010; ESRI; World Map; US National Grid; 1,000-m USNG; Date: April 14th, 2011
 This map is intended for planning purposes only and is not to be used for legal purposes. The data used in this map was derived from various sources and is provided as a general reference only. The user assumes all responsibility for the accuracy and reliability of the information presented in this map. The user also assumes all responsibility for the use of the information presented in this map. The user also assumes all responsibility for the use of the information presented in this map. The user also assumes all responsibility for the use of the information presented in this map.

Wetlands in the Natural Resource of Regional Significance (NRORS) are represented by two different wetland datasets. One dataset is comprised of the National Wetlands Inventory (NWI) and the second is based on the identification of wetlands from the Florida Land Use Classification Code System (FLUCCS) from the Water Management Districts (WMD). The ecosystem created by wetlands and the resources provided by them is important when considering natural resource protection and mitigating for sea level rise and storm surge. Impacts to these areas should also be avoided during post-disaster activities.

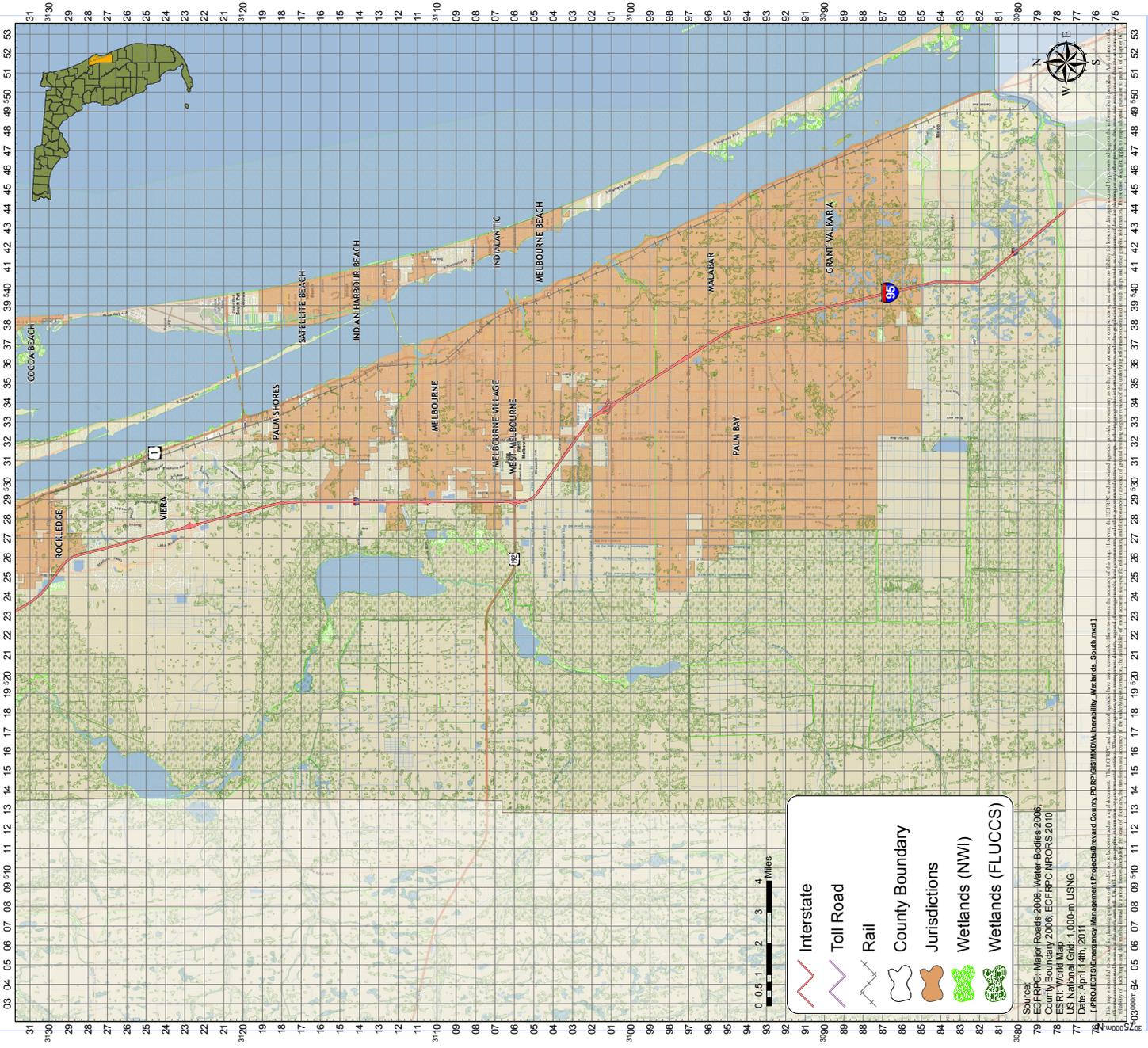


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FIGURE 25A: Wetlands North



Brevard County PDRP Wetlands in Brevard County



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FIGURE 25B: Wetlands South

Methodology and Communications



Developing a Post-Disaster Redevelopment Plan provides a valuable communication and educational process for local elected officials, staff and community stakeholders to understand the complexity of decisions that will need to be made in order for the community to redevelop after a major disaster. This will facilitate the decision making process and help speed recovery after catastrophic events.

PUBLIC INVOLVEMENT

The PDRP planning process is locally driven and relies on stakeholder input. For a community to be prepared to effectively tackle long-term post-disaster redevelopment, it needs a plan that is customized to its local needs. Top-level and grassroots support is important to ensure that the plan will be the guiding document for long-term redevelopment after a disaster.

Participation from the stakeholders and general public is crucial during the PDRP development as well as during implementation phases and plan updates.

The East Central Florida Regional Planning Council worked with Brevard County’s Office of Emergency Management, Planning Department, and Natural Resources Department to ensure that the appropriate and optimal public involvement was achieved.

PUBLIC HEARINGS AND WORKGROUPS

In order to collect public input, ECFRPC staff conducted a number of public meetings and workgroups in Brevard County. Brevard County’s PDRP process officially began with a kick-off meeting on December 12, 2010, facilitated and organized by the ECFRPC.

The chart below lists all of the meetings held and organized by the ECFRPC regarding the PDRP. The date, description, location and outreach are detailed below.

Table 21: Planning Meetings

Date	Description	Location	Outreach
December 12, 2010	Kick-off Meeting	Brevard County Government Center	Email, Brevard County Website, ECFRPC Website
January 25, 2011	Workgroup Meeting 1	POW/MIA Park Building in Melbourne	Email, ECFRPC Website
February 10, 2011	Public Meeting 1	Brevard County Government Center	Email, Facebook, Twitter, Press Release, Newspaper, Brevard County Website, ECFRPC Website
February 22, 2011	Titusville City Council Meeting	Titusville City Hall	
March 2, 2011	Workgroup Meeting 2	POW/MIA Park Building in Melbourne	Email, ECFRPC Website
March 29, 2011	Public Meeting 2	Brevard County Government Center	Email, Brevard County Website, ECFRPC Website
April 11, 2011	Workgroup Meeting 3	POW/MIA Park Building in Melbourne	Email, ECFRPC Website

PUBLIC OUTREACH

ECFRPC staff worked with Brevard County to communicate information about all of the PDRP meetings. ECFRPC staff sent emails to all workgroup members and agency contacts to inform them about the PDRP process as well as update them along the way. The ECFRPC staff created a press release for the first public meeting, which was distributed by the ECFRPC to all media and news contacts. The ECFRPC website was also utilized to communication information about the PDRP. Meeting agendas, flyers, minutes and other PDRP materials were available for public access on the website.

Workgroups were established to help create the Plan and also designate responsibility for overseeing the implementation. Workgroup members represent a wide spectrum of the community with local expertise on all aspects of disaster impacts. Workgroups were broken down into the Plan’s subject matter areas. Workgroup members chose their workgroup based upon area of expertise. The table below illustrates the participating agencies and organizations within Brevard County.

Table 22: PDRP Workgroups

Topic	Stakeholder Group
General/Administrative	Chief Administrative Officer
	Municipalities
	Public Information Officer
	County Emergency Management Office
	Finance Department
	Patrick Air Force Base
	Legal Department
	Kennedy Space Center
	Administrative or Personnel Department
	GIS Department
Land Use/Comprehensive Planning	Clerk of Courts
	Planning and Development Department
	Community Redevelopment Associations
	Regional Planning Council
	Municipalities
	Kennedy Space Center
	Patrick Air Force Base
HBCA of Brevard	

Table 22: continued

Topic	Stakeholder Group
Housing	Building and/or Zoning Department
	Code Enforcement Department
	Neighborhood or Homeowner’s Association
	Homebuilder’s Association
	Municipalities
	Housing and Human Services
	Brevard Long Term Recovery Coalition
	HBCA of Brevard
	Planning and Development Department
	Municipalities
	Habitat for Humanity
Economy	Economic Development Organization
	Chambers of Commerce
	Tourism or Visitor’s Bureau
	Major Employers
Infrastructure	Public Works Department
	Solid Waste Department
	Public and/or Private Utilities
	Transportation Planning Organization
	Transit Organization/ Company
	Aviation and Port Authority
	County Road and Bridge
	Municipal Police Departments
	Municipalities
	Florida Department of Transportation
	County Sheriff Department

Table 22: continued

Topic	Stakeholder Group
Health and Social Services	School District and Higher Education Facilities
	Health Department
	United Way
	American Red Cross
Health and Social Services	Non-governmental Organization Service Providers
	Emergency Management Department
	Brevard Long Term Recovery Coalition
	Municipalities
	Housing and Human Services
Environment	Natural Resource Management
	St. Johns Water Management District
	Parks and Recreation Department
	Space Coast Climate Change Initiative
	Florida Department of Environmental Protection
	Florida Fish and Wildlife Conservation Commission
	Kennedy Space Center
	Patrick Air Force Base
Municipalities	

GIS MAP CREATION METHODOLOGY

A detailed table of data sources for each map can be found in the Appendix. Data was retrieved from the ECFRPC database due to recent data collection efforts and analysis (2010 SRES). If newer data was readily available, the data was downloaded from the original source (see map source table). The Data was overlaid with ESRI’s online world map and symbolized for geographical representation.

Plan Implementation



The Implementation Chapter provides an overview of how the Post-Disaster Redevelopment Plan will be implemented throughout the county and the organizational structure of the agencies that are accountable for overseeing various roles. These agencies are responsible for ensuring the goals and objectives stated in this plan are met through the execution of actions to be taken prior to and in the aftermath of an incident.

Implementation of the Post-Disaster Redevelopment Plan not only establishes authority and organizational structure, but also provides the framework for monitoring and reporting progress of plan implementation. The plan also institutes a schedule for plan review and revision. Training and exercising the plan are included in the plan's implementation strategy.

AUTHORITY

Brevard County's statutory authority for developing and implementing a PDRP is found in §163.3178(2)(f) F.S. which requires that all coastal jurisdictions include, in their comprehensive plan's Coastal Management Element, a "redevelopment component which outlines the principles which shall be used to eliminate inappropriate and unsafe development in the coastal areas when opportunities arise".

The following criteria warrant the activation of the county's Post-Disaster Redevelopment Plan:

- Declaration of a Local State of Emergency
- Emergency Operation Center (EOC) activated
- Major or catastrophic damages that warrant redevelopment

The request for the PDRP's activation will be made by the Emergency Management Director based upon the decision of both the Planning Department and Emergency Management. The PDRP will be implemented for short term recovery (1-90 days after the disaster occurs) and long term redevelopment (90 days or more after the disaster occurs) actions.

PDRP WORKGROUPS

The post-disaster goals and objectives identified by the workgroups during the planning process can be found in the Goals and Objectives Chapter of this plan. Each workgroup will analyze and direct the implementation of specific actions within its functional area of focus. Some issues, due to their broad nature, have overlapping disciplinary and jurisdictional implications. These issues will require coordination between workgroups.

During "Blue Skies" planning, workgroups are ultimately responsible for identifying and detailing what actions must be undertaken to accomplish the redevelopment goals and objectives. These responsibilities include, but are not limited to, identifying and prioritizing specific actions, needed resources, and funding required to implement actions. Following a disaster, the workgroups are responsible for executing the action plan.

REDEVELOPMENT TASK FORCE

The Brevard County Redevelopment Task Force should be established in order to provide a coordination mechanism to oversee the implementation of PDRP actions as well as the recovery and redevelopment process and to serve as an advisory committee to the Brevard County Board of County Commissioners. The Redevelopment Task Force is to provide subject matter expertise in overseeing recovery issues and support the respective agencies with specific roles and responsibilities during the recovery process.

Some of the major duties of the Redevelopment Task Force will be to:

- Establish uniform policies for effective coordination to accomplish Brevard County redevelopment tasks resulting from a natural or manmade disaster
- Recommend and coordinate efforts to restore normalcy to areas adversely impacted by a disaster
- Help identify mitigation opportunities and resources

The Redevelopment Task Force should consist of individuals chosen from the PDRP Workgroups. These individuals should include personnel from the following agencies who can accomplish the accompanying tasks:

Table 23: Redevelopment Task Force Responsibilities

Workgroup	Responsibility	Proposed Task Force Members
Government Operations	<ul style="list-style-type: none"> • Identifying strategies to avoid insolvency • Sustaining essential governmental services 	<ul style="list-style-type: none"> • Emergency Management • Administration • Finance • Emergency Response • Municipalities • Public Information Officer • Legal
Housing	<ul style="list-style-type: none"> • Promotion of mitigation techniques for rebuilding and repair • Review Temporary & Long Term Housing Plan & provide technical guidance • Promote affordable house in redevelopment projects 	<ul style="list-style-type: none"> • Building Department • Permitting/Zoning • Housing & Human Services • Growth Management/Planning • Emergency Management • Public Works • Home Builders Association • Code Enforcement
Economic Redevelopment	<ul style="list-style-type: none"> • Promotion of Business Continuity Planning • Facilitate communication within & among the business community • Identify sources of financial assistance • Identify business redevelopment incentives 	<ul style="list-style-type: none"> • Chambers of Commerce • Economic Development Commission • Small Business Development Board • Tourism/Visitors Bureaus • Major Employers
Health and Social Services	<ul style="list-style-type: none"> • Support health care operations including retention of medical staff • Monitor potential public health threats • Support continuation of long term needs to special populations 	<ul style="list-style-type: none"> • Health Departments • Hospitals • Non-Profits (ARC, United Way) • Faith Based Organizations • School District • Human/Social Services • Assisted Living Facilities

Table 23: continued

Redevelopment Task Force Responsibilities		
Workgroup	Responsibility	Proposed Task Force Members
Infrastructure	<ul style="list-style-type: none"> • Maintain current list of infrastructure assets • Prioritize assets based on high, medium or low criticality • Coordinate debris management and disposal with Land Use to ensure consistency 	<ul style="list-style-type: none"> • Engineering • Road & Bridge Dept. • Public Works • Utilities • Transportation • Transit Organization • Aviation/Port Authority
Environment	<ul style="list-style-type: none"> • Ensure environmental restoration is balanced with reconstruction and redevelopment actions • Monitor pollution and other potential sources of environmental contaminants 	<ul style="list-style-type: none"> • Emergency Management • Natural Resources • Parks and Recreation • Planning/Community Development • Water Management District • Environmental Agencies
Land Use	<ul style="list-style-type: none"> • Recommend policy changes to Comprehensive Plans that reduce exposure to hazard consequences • Ensuring temporary uses are consistent with future land use policies 	<ul style="list-style-type: none"> • Growth Management • Regional Planning Council • Historic Preservation • Natural Resources • Community Redevelopment

PLAN REVIEW AND UPDATE

The process for plan review and revision will be a two-stage process comprised of an annual review and a comprehensive review. The annual review is conducted for benchmarking the status of projects and responsibilities assigned to the various working groups. The comprehensive review and update will occur every five years and include review and revision of the plan's overarching goals, objectives, priorities, and major process revisions. The review should be conducted in close coordination with the update of the Comprehensive Plan. A review may also be necessary in the aftermath of a major disaster in Brevard County which impacts priorities and resources.

ANNUAL REVIEW

Once a year, the Redevelopment Task Force shall review actions for which they are responsible and provide a report to the Planning Department and Emergency Management Office. The report should address the current status of actions, obstacles preventing implementation of assigned responsibilities, and recommendations for revisions to actions that may be needed to achieve the plan's stated goals and objectives. The Redevelopment Task Force will provide guidance for continued implementation of the Action Matrix and discuss any legislative changes that may impact goals or action items. Agency memberships in the Task Force should also be reviewed for inclusion of any partners whose involvement may be anticipated. The Redevelopment Task Force will then review and approve any updates or revisions to the plan developed. A summary of these findings will be presented to the Brevard County Board of County Commissioners no later than June 1st each year and distributed to the County's municipalities.

Another component of the annual review is to assess consistency with the Local Mitigation Strategy (LMS). This includes integrating applicable PDRP actions as projects on the LMS Project List and ensuring that priorities for redevelopment are also priorities for pre-disaster mitigation initiatives.

COMPREHENSIVE REVIEW

The Comprehensive review will encompass major plan revisions including goals, objective and priorities. These revisions should be based on any

new disaster experiences as well as any changes in the county's vision for growth management. Any jurisdictional changes (such as new or dissolved municipalities, jurisdictional boundaries, etc.) that may impact overall plan implementation should be addressed during this process. Moreover, political changes, availability of resources, grants and other factors will likely impact the post-disaster redevelopment goals and actions. Provided that annual reviews have been timely and substantive, the comprehensive plan review process should be manageable enough to complete in less than one year.

TRAINING

Decision makers and Task Force members taking part in Post-Disaster Redevelopment will benefit from the following courses designed to provide a baseline of knowledge for long-term recovery. These courses are recommended but not required.

- **Online Training**

- IS-800 National Response Framework, An Introduction- This course provides an overview of the concepts and principles of the National Response Framework (NRF). The Framework establishes a comprehensive, national, all-hazards approach to domestic incident response.
- IS-700 National Incident Management System (NIMS), An Introduction- NIMS provides a consistent nationwide template to enable all government, private sector, and nongovernmental organizations to work together during domestic incidents.
- IS-184 Long Term Community Recovery- As part of the NRF, Emergency Support Functions (ESF's) are primary mechanisms at the operational level used to organize and provide assistance.

- **State Training**

- G-402 Incident Command System Overview for Executive/Senior Officials- This course is for elected officials, senior executive, senior managers and agency administrators with a policy responsibility that do not have a specific ICS or Multiagency Coordination System function/role or responsibility

- o E210 Recovery from Disaster: The Local Government Role- The course is designed for local disaster recovery teams consisting of emergency managers, city/county administrators, public works directors, building inspectors, and community planners. The course focuses on the roles and responsibilities of each team member, and provides guidance on developing a local disaster recovery plan.

EXERCISES

The Brevard County Post-Disaster Redevelopment Plan is extremely complex and involves the participation and coordination of many different organizations and agencies, county and municipal departments and other stakeholders. Therefore it is imperative that the plan be exercised on a regular basis to guarantee a well-coordinated recovery. One recommendation for exercising the plan is to hold table top exercises during the annual review process. These exercises, coupled with specific job training, will ensure that all those tasked with implementing the plan are familiar with their duties and responsibilities. The exercise should also focus on determining whether the post-disaster actions included in the PDRP are adequate to cover all of the predicted needs. At the conclusion of the exercise, an after-action report should be developed to identify any additional gaps not discovered during the annual review.

COMMUNICATIONS

Clear communication of recovery and redevelopment information is imperative to the successful recovery of Brevard County residents and business owners. This includes information about public involvement during the redevelopment process through community redevelopment and revitalization meetings and the role of regional and state coordination agencies during disaster recovery.

Brevard County has a dedicated Public Information Officer (PIO) who is responsible for providing public information regarding the recovery effort and will participate in the Joint Information System (JIS). The JIS provides an organized, integrated and coordinated means for providing information to the public following a disaster. The PIO will represent

every aspect of county and municipal government to ensure the dissemination of consistent and complete information.

It is recommended that the PDRP Redevelopment Task Force, in coordination with the Board of County Commissioners, designate an official spokesperson/PIO for the Redevelopment Task Force during long-term recovery. This will aid in transitioning recovery operations in the Emergency Operations Center to long-term recovery and redevelopment operations. The structure of long-term recovery can be established by the Redevelopment Task Force; communications between members of the long-term recovery operation may have to take place via remote methods or email.

Emergency Support Functions

Brevard County has an Emergency Support Function (ESF) structure to align county response and recovery activities with those of the State. The following ESFs, outlined in greater detail in the CEMP, are relevant to communication during short-term recovery:

ESF #2, "Communications" is responsible for providing facilities, equipment, trained personnel, services and supplies necessary to sustain communications by county and other designated organizations during emergency response and disaster recovery operations within or for the benefit of Brevard County at the time of a disaster event. The communications facilities, systems and equipment that are to be provided, maintained, repaired or replaced under the coordination and oversight of ESF #2 at the time of a disaster include both permanent communications systems and facilities, as well as temporary communications systems installed specifically to support local emergency response and disaster recovery operations.

ESF# 14, "Public Information," recovery phase operations will remain the same as that utilized during the response phase, and, as indicated by the complexity and scope of the recovery process, the county staffing for ESF #14, the Citizen Information Center and the Media Information Center may require modification. Overall, however, the county's

organizational structure for ESF #14 will continue to be coordinated by the primary agency’s lead PIO.

**For additional information regarding the purpose and scope of these ESFs, please see the Brevard County CEMP.*

EXTERNAL COMMUNICATION

It is recommended that redevelopment information be disseminated to citizens at the Disaster Recovery Centers immediately following the disaster. The primary source for information dissemination during the long term recovery and redevelopment period should be through the county’s website in addition to, traditional media outlets and businesses, churches, and neighborhood organizations.

The public may also be able to continue to obtain recovery information through traditional media outlets as listed in Table 24.

Table 24: Media Outlets

Media Type	Name of Media Provider
Television	Space Coast Government Television Brevard County Schools NASA Select
Radio	WA1A-107.1 F WCIF – 106.3 FM WLRQ-99.3 FM WBVD-95.1 FM WMEL -920 WHKR – 102.7 WMMB-1240 WEJF-90.3
Newspaper	Florida Today

The county currently contracts with Brevard 2-1-1 to serve as a central point of contact for citizens to request service, seek information and referral, and direct complaints, compliments, and suggestions regarding government service. Brevard 2-1-1 also provides information concerning non-disaster related services and serves as conduit between VOAD/ UW and those needing volunteer assistance or seeking to volunteer. The agency updates website content to reflect the newest information released by the EOC along with updates on disaster & social service availability.

Public Participation in Redevelopment Decisions

Following a disaster, Brevard County staff should initiate a series of meetings in areas impacted by the disaster. Meetings should be conducted to provide information and gather input so that the county can identify common recovery and redevelopment themes and issues.

county staff and (when possible) County Commissioners should be present at meetings.

Once these input meetings have taken place, Brevard County should use the information gathered to refine the county’s Recovery and Redevelopment Strategies. The county should continue to keep the public updated on the status of recovery and redevelopment efforts with “Community Recovery Update Meetings.” The County should also develop an electronic newsletter that can be posted to the Brevard County website and be sent to citizens interested in recovery and redevelopment efforts.

Neighborhood Redevelopment and Revitalization Plans should then be created in the impacted areas. However, having a Neighborhood Redevelopment and Revitalization Plan prior to a disaster will facilitate quicker recovery and redevelopment efforts.

Financial Resources



Major disasters reduce the revenue of impacted communities and increase funding needs for government, businesses and citizens. Post-disaster impacts that strain local governments include physical damage to property and infrastructure including critical and historic properties, economic losses, environmental degradation, and erosion of quality of life and the social fabric of the community.

Financing redevelopment following a disaster can be challenging as communities strive to maximize available funding options while working towards the long-term sustainability goals and objectives of the municipality, county and region. However, post-disaster financial assistance is generally focused on immediate response to relieving impacts and damage directly resulting from the disaster. The objective of quickly restoring the county to pre-disaster conditions may limit Brevard County's ability to implement their long-term post disaster redevelopment goals and vision as identified in this plan.

A Post-Disaster Redevelopment Plan that is well integrated with other plans and policies is evidence of strategic planning and consistency which helps to demonstrate effective financial stewardship. This is important when trying to attract additional outside resources as communities that are well-prepared to obtain funding and gain support from various organizations may experience a smoother recovery and post-disaster redevelopment period.

GOVERNMENT FINANCIAL RESERVES, REVENUE SOURCES, AND CREDIT

The governmental budgeting process is subject to regulatory restrictions on expenditures of revenues. Financial resources within the General Fund may be allocated to legitimate governmental purposes with limited restrictions imposed by State or Federal laws, County ordinances, or other external regulations. The 2010/2011 Brevard County Fiscal Year budget was approximately \$1 billion, but only 4.13% is generated from the general fund and may, therefore, be allocated for any jurisdiction-wide purpose. The remaining is reserved for other uses.

Many other revenue sources are restricted in their expenditures as dictated by Federal and State Statute. For example, fuel revenues from the Highway Trust Fund (Federal) and State Transportation Trust Fund (State) may only be allocated to roadway and transit needs. Therefore, in the post-disaster environment, local governments do not have the authority to reallocate these funds to high priority infrastructure restoration needs. Other similar restrictions may also apply as outlined in Florida Statutes Title XIV, Taxation and Finance, Chapters 192-221.

If spending restrictions were eased during a post-disaster environment, governments would be allowed greater flexibility in the allocation of funds for post-disaster redevelopment efforts. This would require federal and state government action within the agencies with regulatory authority for the expenditure of these restricted funds and/or from the political leadership in these legislative bodies. For this flexibility to work effectively, stakeholders will need to build consensus for defining the catastrophic threshold of disaster-related damage. Quantifying and defining a catastrophic disaster event which may trigger regulatory waivers remains a challenge.

Governmental revenues will suffer significantly in the post-disaster environment as some revenue triggers may be interrupted due to a disaster, creating a significant impact on financial resources available for future expenditures. An example is the potential significant reduction in the collection of user fees for services such as utilities. Dependent up on the magnitude of disaster, a loss of revenue from taxes can cause major financial impact on the county and cities, especially when combined with the potential of decreased property values as Brevard County Government relies heavily on the revenues it receives from property and other taxes. As demonstrated in Figure 26 on page 119, 22% of the county's almost \$1 billion budget is derived from these taxes. This impact was evident in Louisiana and Mississippi, in 2005 after Hurricane Katrina, as many areas were left uninhabitable for an extensive period of time resulting in unpaid taxes, bond defaults, mortgage foreclosures and bankruptcies.

In a county such as Brevard where tourism is a major economic driver, any disruption of tax and revenue generating economic activity can cause devastating effects on the financial situation of the county government as well as the residents and business owners. These impacts can create even further instability in the community post-disaster.

The county and its municipalities are not permitted to liquidate assets to pay off debts and usually adjust debts by refinancing, extending debt maturities, or reducing the amount of their principal or interest. Debt financing can be obtained through: 1) General Obligation Debt backed by the taxing power of the county, and; 2) Revenue Bond Financing involving certain revenues to the county's debt service. Therefore the strength of the government's credit rating will be critical in obtaining funds to bridging the financial gap before FEMA reimbursement is available to meet federal match requirements and sustain government services. Catastrophic disasters can negatively impact a government's bond rating and bonding capacity therefore impacting the ability to borrow money. The higher the bond rating, the lower the interest cost to borrow funds. Since investors seek higher bond ratings, it is difficult for jurisdictions to sell voter approved bonds intended for infrastructure restoration projects if the jurisdiction's bond rating is excessively low. A strong post-disaster redevelopment plan may increase the comfort level of lenders during what would normally be perceived as very risky. Brevard County currently has an AA-rating from Fitch (2010).

Bankruptcy Protection under Chapter 9 of Title 11 U.S.C. § 101(40) (1994) provides court protection that allows financially distressed municipalities to continue to provide essential public services to residents while they develop and negotiate plans for adjusting debts. However, Florida sets even stricter conditions on financially distressed municipalities. A municipalities failure to pay obligations (wages, retirement benefits, debt service, etc.) or have sufficient reserves to cover a deficit can bring a determination

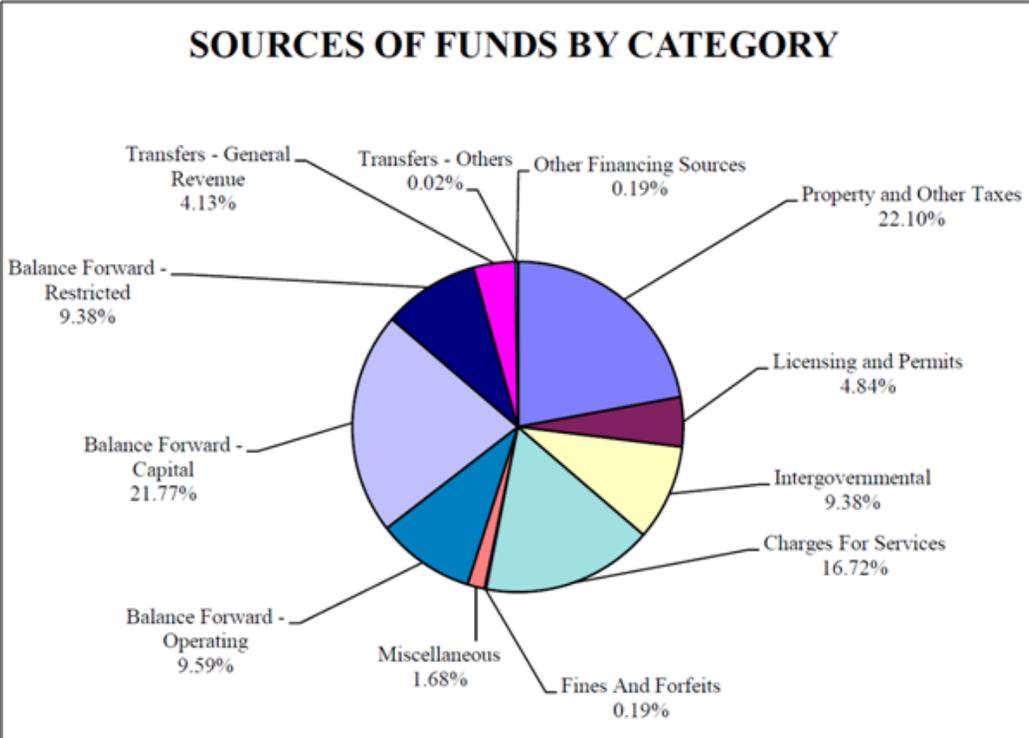


FIGURE 26: Sources of Funds by Category

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.

RESERVE FUNDS

While some disasters may cause pockets of damage and sporadic, yet recoverable disruptions in local economies, effects of other disasters may be of catastrophic in terms of the area affected, damages, loss of life and the duration of recovery. Brevard County reserve funds may be able to assist with the financial turmoil during this time. Reserve funds are described by the county as accounts used to designate certain portions of a fund or types of net assets as being unappropriated for expenditures or as legally required to be set aside for specific purposes.

Examples include but are not limited to:

- matching dollars for grants
- capital projects
- outside agency requests
- departmental requests to fund increases to current or new program initiatives
- fund expenditures relative to a major storm or other unforeseen disaster that fundamentally alters the current tax base.

The amount recommended is a minimum of 2% of operating costs for major funds. The county reserves expenditures for FY 2010-2011 are as follows: Restricted 9.65%, Capital 12.31%, Operating 3.31%. In the event of an emergency or disaster, the county can evaluate all reserve funds for which to extract money. The county also is allowed to take loans from their Enterprise funds.

The county no longer has a “Contingency Fund” which, according to F.S. 129.01, cannot be greater than 10% of the fund in which it is budgeted and should be established only in those funds where emergencies may occur. Although the county currently does not incorporate contingency funds, the Brevard County policies for such funds still exist and call for the general government contingency account to be budgeted at one-quarter of one percent (0.25%) or more of projected general operating revenues for the ensuing fiscal year. All contingency accounts in the other funds should be budgeted at one and a half (1.5%) or more of anticipated fund revenues.

Table 25 shows of the reserve funds in the FY 2010 -2011 budget that may be tapped in the event of an emergency.

Table 25: FY 2010 - 2011 Budget

Description	Operating	Capital	Restricted
800 MHZ	\$100,000	\$454,499	
E911 Administration		\$70,625	
Fire operations		\$5,125,246	\$3,814,321
Government Operations	\$19,315,256		\$2,160,000
Employee Benefits			\$17,437,763
Risk Management			\$22,516,090
Information Systems		\$308,515	
Library Public Services	\$485,418		\$529,352
Library Support Services	\$52,319		
Countywide Mosquito and Aquatic weed Control	\$1,515,187	\$671,223	
Environmental Resources Management		\$161,180	
Environmental Remediation and Compliance	\$327,924		
Watershed Management		\$722,382	
Watershed District 1		\$11,695	
Watershed District 2		\$32,253	

Table 25: continued

Description	Operating	Capital	Restricted
Watershed District 4		\$21,262	
North Area Parks Operations	\$2,028,890		\$5,476
Central Area Parks Operations	\$167,529		
South Area Parks Operations	\$3,265,946	\$75,494	\$175,000
Environmentally Endangered Lands	\$1,663,932		\$1,098,595
Referendum Capital Projects		\$28,454,288	
Parks and Recreation Debt Management			\$1,044,036
Impact Fee Administration and Development Support	\$26,167		
Correctional Impact Fees		\$440,078	
Educational Impact Fees		\$1,608,212	
Emergency Medical Services Impact Fees		\$353,352	
Fire Rescue Impact Fees		\$293,902	
Transportation Impact Fees		\$8,079,924	
Licensing Regulation and Enforcement	\$93,009		
Building Code	\$76,572		
Transportation Construction Management		\$40,574,813	\$1,546,513
R&B District 1 MSTU	\$60,000	\$200,000	
R&B District 2 MSTU	\$60,000	\$125,000	
R&B District 3 MSTU	\$50,000	\$26,000	
R&B District 4 MSTU	\$60,000	\$32,000	
R&B District 5MSTU	\$60,000	\$42,000	
R&B District 4 Merritt Island MSTU	\$5,000		
R&B District 4 Beach MSTU	\$20,000		
disposal	\$2,969,260	\$21,953,615	\$28,718,381
Collection and Recycling	\$1,125,686		6,100,00
Tourism Development		\$2,728,375	\$390,712
County Capital		\$1,448,066	\$12,278,654
Barefoot Bay Water and Wastewater		\$1,252,430	\$485,750
Valkaria Airport		\$30,000	

Table 25: continued

Description	Operating	Capital	Restricted
Court Information Technology	\$3,005		
Witness Coordination	\$82,230	\$40,000	
Sexual Assault Victims Services	\$642		
Melbourne Tillman Water Control District	\$42,930		
Tico Airport Authority		\$45,479	
General Long Term Debt		\$728,375	\$3,078,730
Proprietary Long Term Debt	\$251,549		\$12,168,828
Totals	\$33,908,451	\$116,767,455	\$107,448,201
Total	\$258,124,107		

INSURANCE

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 become. The largest recovery support organization to governments, businesses and disaster survivors is the private insurance industry not the federal government. Ensuring that adequate insurance is maintained on public infrastructure, businesses, and homes is key in the recovery and redevelopment process. Jurisdictions should review their insurance policies annually to ensure sufficient coverage is in place as the costs of repairing infrastructure that is underinsured will compete with the other demands being made on financial reserves.

Residents should similarly monitor their insurance coverage carefully. However, as most homeowners in Florida are aware, property insurance premiums are increasing substantially. Many private insurance companies are not able to insure more homeowners in high risk areas or are raising rates because of the increased risk during this era of high hurricane activity, and other 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 (CPIC) created by Florida Statute 627.351(6) in 2002. The CPIC, a state regulated association, provides insurance coverage to Florida homeowners, commercial residential and commercial business property owners and in 2009, insured 1.2 million policy holders.

This is down 14% from 2008. However, the exposure to loss continues to grow, state finances will remain under threat and taxpayers, many of whom live nowhere near the coast, will continue to face the prospect of increased assessments (Insurance Information Institute 2011).

Governmental authorities can assist residents through an ongoing campaign to educate the public on the importance of adequate insurance. Many property owners and renters have misconceptions about federal disaster aid.

In the American Planning Association's publication (1998) Planning for Post-Disaster Recovery and Reconstruction, it states:

Local government should invest some effort and credibility in convincing its residents and property owners that insurance provides a distinct asset to facilitate community recovery and that that high rates of insurance coverage in a floodplain serve to demonstrate the community's seriousness and commitment to effective reconstruction. This fact, in turn, will allow community leaders to better make their own case for outside assistance and to demonstrate to funders that the money and resources they provide will be used effectively. There are many ways to accomplish this, including local efforts to coordinate and distribute information about the insurance options available to residents and municipal assistance to property owners pursuing claims.

The Florida Hurricane Catastrophe Fund (FHCF) is a state-run reinsurance pool for high hurricane damage losses with the purpose to protect and advance the state's interest in maintaining insurance capacity in Florida by providing reimbursements to insurers for a portion of their catastrophic hurricane losses. Member insurance companies pay premiums into the pool and when losses reach a set level companies pay a deductible to get reinsurance funds. Building construction shortages caused claims to be higher than expected during the 2004 and 2005 hurricane seasons, and the legislature passed changes to the fund in 2005 to lower the trigger level for insurers. These issues, along with massive losses from the 2004 and 2005 hurricanes, caused the fund to run out of money. To try to resolve this problem, the Legislature increased the bonding capacity of the fund. However, the cost was passed onto policyholders since the bonds are paid for through insurance assessments (Palm Beach County PDRP).

The law requires that if the cash balance of the FHCF is not sufficient to pay losses that a broad base of insurance lines will be assessed to fund revenue bonds to pay the losses. The emergency assessment is for the purpose of financing the FHCF's shortfall from the 2005 hurricane season. The assessments apply to all property and casualty lines of business, but exclude those specifically exempted in Section 215.555, F.S. The FHCF issued bonds in the amount of \$1.35 billion in 2006 and \$625 million in 2008 which are currently being financed by a 1% assessment on these premiums for all policies renewed after January 1, 2007. Bonds in the amount of \$675.92 million were issued in 2010. The current assessment percentage of 1% increased to 1.3% and will be effective on all policies written or renewed on or after January 1, 2011 (Florida State Board of Administration 2011).

Also underemphasized is the importance of business interruption insurance which can be vital in reviving economic redevelopment. 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 or fail after reopening following major disaster, with small

businesses being higher among the business casualties. Reasons for business failure are diverse. Some include:

- the extent of damage to critical production and service capacity, inventory, and capital assets;
- financial resources a business can quickly obtain for recovery;
- prolonged assistance delays and recovery and business interruptions.

Loans through the Small Business Administration (SBA) may be available to the business community after a disaster, however, application periods may be tied to these loans. Many times, small businesses spend time applying for these loans, only to be turned down. Almost a third of SBA applications are turned down, another 10% are still pending months after applications are submitted and most businesses receive only a portion of what they apply for (median at 50%) (Palm Beach County PDRP).

Therefore, it is essential to stress the importance of this insurance to business owners throughout the county.

GRANTS AND LOANS

A wide variety of financial assistance is available both prior to and after an event such as the Public Assistance Program, Pre-Disaster Mitigation Grant Program (PDM), and Hazard Mitigation Grant Program (HMGP). However, not all require a presidential disaster declaration. For example, assistance from the Small Business Administration (SBA) may be activated either under a presidential declaration or by administrative declaration. The activating mechanism will determine the level of benefits. As some loans are not available until after a disaster, it is important for a county or city to have multiple pots of financial resources and strategies to sustain short to moderate term recovery efforts. In fact, less than two months after Hurricane Katrina, New Orleans had to cut its city staff by half (3,000 people) and reduced its services until the city received assistance from FEMA's Community Disaster Loan Program.

As a condition for FEMA Section 404 Hazard Mitigation Grant Program (HMGP) funding, hazard mitigation project must be listed in the Local Mitigation Strategy.

Therefore, the identification of hazard mitigation projects through the Local Mitigation Strategy (LMS) and Local Comprehensive Plan Capital Improvement Projects improves the county's probability of funding for these projects. An approved LMS is not only important to be eligible for the non-competitive FEMA Section 406 Public Assistance hazard mitigation funding but to receive grant funding for permanent work such as road systems and bridges, water control facilities, public buildings and contents, public utilities, and parks and recreational facilities.

Having a strong post-disaster redevelopment plan is important especially when outside assistance from Federal and State financial assistance is utilized. Also, the requirements and guidelines do not always meet the development and recovery needs of the local government. Maintaining local control of the redevelopment efforts or providing the existing plan is essential in these efforts.

In addition, FEMA's Community Disaster Loan program offers up to \$5 million dollars for operating costs during the fiscal year in which the disaster occurs. Under extraordinary circumstances these loans may exceed \$5 million dollars and in rare cases, the loans may be forgiven.

An additional source of information is the Resource Identification Strategy (RIS) database (www.flris.org), a partnership program between the Department of Community Affairs (now under the Florida Department of Economic Opportunity) and the Florida Public Affairs Center at Florida State University. The database is designed to connect critical needs with funding sources by providing communities with important information on potential assistance from federal, state, and other organizations, including non-traditional source and projects. These resources may be available before a crisis, during the development of a local mitigation strategy, or after a disaster strikes. The RIS can be accessed by visiting: <http://www.flris.org>.

The Florida League of Cities' book entitled *Financial and Technical Assistance for Florida Municipalities 2008-2009* provides information concerning grants, loans, technical assistance and other resources available for community development and redevelopment, economic

development, emergency management, capital facilities, coastal management, environmental, historic preservation, housing and infrastructure. (<http://www.flcities.com/membership/grant/>)

PRIVATE DONATIONS

Recent disasters have demonstrated the generous nature of the human spirit through disaster donations. Donations in 2005 were estimated to be around \$7.37 billion. Good stewardship and organization of donations is important in showing how private donations will be managed. An unorganized process for receiving donations following a disaster can have a negative impact. Therefore, it is important to establish a streamlined process and to strategize in order to best tap these resources through the long-term recovery period.

Private donations can also take the form of land or easement donations as private landowners and land trusts may donate land as a means of encouraging more judicious land use and lowering risk to the community. Strategies to take advantage of this form of donation should be explored as part of more sustainable redevelopment.

Donations may also come in the form of services offered. For example, the American Institute of Architects has long maintained rural/urban design assistance teams (RUDATs), who visit communities to assess urban design needs, conduct local design charrettes, and collaboratively suggest solutions. Similarly, university planning and design schools may provide teams for a variety of community development purposes that could be incorporated into post-disaster redevelopment.

Local businesses and employees may be able to assist in the recovery efforts by providing goods and services having direct or indirect impact. Some businesses may be able to acquire equipment and materials needed in their redevelopment as well as other businesses.

Companies with skilled workers may be able to assist with recovery efforts until they are able to return to work. Economic recovery may be impacted positively by utilizing local labor force as it will keep some residents working locally through the disaster, spending money locally and may also minimize the post-disaster out migration of workers who pursue employment outside the impacted area.

MUTUAL AID

Mutual aid is a critical resource in short-term recovery. However, the inability to utilize mutual aid resources in the long-term recovery environment poses limitations. Mutual aid or intergovernmental agreements may wish to include language that allows for longer use of personnel and assets or explore other types of long-term assistance agreements.

VARIABLES IN ESTIMATING RESERVE FOR CONTINGENCY FUNDS

Several essential variables should be considered when estimating the amount of funds that should be held in reserve for the event of a disaster.

- increased demand on the General Fund due to decrease in revenue from fines and fees;
- payroll requirements in a post-disaster environment;
- disaster only related costs;
- ad valorem revenue replenishment;
- budgeting for outcomes of post-disaster (safety, economic development, basic needs, etc);
- Overtime prior to and immediately following an event

Agency policies regarding payment of personnel will have a large impact on the ability of funds to meet payroll requirements and the speed in which they are depleted. The county may wish to establish policies related to non-essential personnel payroll status during the post-disaster environment when they are unable to work. Departments may wish to also establish an Emergency Staffing Policy, which mandates that non-essential disaster recovery employees are required to assist in an area that will be in need of additional staffing. Employees may select a primary, secondary and tertiary choice of assignments and are also required to complete the basic NIMS-compliant training.

At a time determined by the county manager, employees are required to report to their assigned emergency staffing post. If they are unable to report as required, regardless of the issue, they are required to utilize accrued leave time, which when exhausted, places the employee in an unpaid leave status.

This type of policy is beneficial as it allows more specialized staff to perform more essential recovery duties and it reduces the unfunded payroll since these wages can be eligible for reimbursement due to employees being NIMS compliant.

Post-disaster response and recovery requirements place a large strain on the financial situation because expenditures such as debris management, emergency repairs, emergency supplies and equipment, emergency lease space, and others necessitate a radical reprioritization of available funds. While many disaster related expenditures are reimbursable either under the Stafford Act or insurance payments, initial costs must be covered in the immediate aftermath. To budget for such response and recovery costs, tools such as the HAZUS-MH can provide disaster data which can assist budget analysts with the estimation of potential costs. This data, in combination with Brevard County's own historical information from past hurricanes, wildfire and other events, can assist in these estimations.

Budgeting for outcomes can be instrumental in estimating the amount of funds to be set aside for post-disaster response and redevelopment. Some areas of these outcomes may be in response to the residents' expectations of the county following a disaster. Prioritizing outcomes may assist the government in determining which programs continue to be funded in a financially strapped post-disaster environment.

Residents typically are under the belief that the county, State, or Federal Government is responsible for their needs after a disaster. Recovery efforts and assistance not only place strain on the county finances but also on the county as a whole in terms of equitable relief and assistance. Some areas of the county, whether for health, economic, or other reasons, may require greater amounts of assistance after a disaster.

This was seen after Hurricane Katrina in New Orleans in 2005 as those who remained in the city were residents generally of lower income lacking transportation to evacuate. To alleviate the strain created by the perception of inequality of disaster assistance, public outreach and education concerning the types of assistance as well as its availability or financial reimbursement is necessary.

MYTHS AND MISCONCEPTIONS ABOUT FEDERAL DISASTER ASSISTANCE

Below is a list of the myths and misconceptions about Federal Disaster Assistance taken from FEMA's "A Citizen's Guide to Disaster Assistance".

- **The Federal government has total responsibility for disaster recovery.**

The local government is primarily responsible for preparing for disasters that might affect a community and helping residents recover from such events. The great majority of disasters are handled successfully at the local level. State and Federal resources are intended to assist the community only when the community's own resources are not sufficient.

- **The objective of Federal disaster assistance is to "fix everything."**
As much as we may wish otherwise, once a disaster has seriously impaired our homes and our communities, they may never be exactly the same. Nor will disaster assistance ever be adequate to restore everything that was lost by all those affected. The individual's own provision, especially insurance, must be used to ensure that losses can be recovered. Federal assistance will, in general, be used only for necessary expenses not met through other programs. Some of the Federal programs (such as loans from the Small Business Administration) cover most items that were lost, but not everyone is eligible. Other programs assist with only a portion of the losses or are intended only for serious needs.
- **Everyone in the disaster area is eligible to receive Federal disaster assistance.**
As part of the application process, applicants will have to demonstrate that they meet the eligibility requirements for each

particular type of aid they are requesting.

- **When Federal agency representatives arrive, they will immediately distribute money to disaster victims.**

Individuals and families will need to plan to use their own resources and financial reserves until Federal funds can be released. An application process must be completed before assistance becomes available. Often, it takes several weeks for the Federal government to review requests for financial assistance and to issue funds to those who meet eligibility requirements. Most Federal assistance is in the form of a loan that must be repaid rather than an outright grant.

- **Money received from Federal disaster assistance can be used as the recipient thinks best.**

Monetary assistance is given for a specific purpose. The recipient must use the money to meet the need for which assistance was provided and must comply with specific regulations applicable to each type of assistance. If the assistance is in the form of a loan, recipients must be judged able to pay back the loan.

- **Federal aid replaces the need for insurance.**

Individuals, families, and businesses should all carry adequate insurance to meet their needs in the event of a disaster. It is not the purpose of Federal assistance to duplicate protection available through insurance plans. Federal assistance is provided to address only the most basic disaster-related needs not covered by other means. Besides, most disaster events are not presidentially-declared disasters, so Federal assistance is often not available.

Source: FEMA. *A Citizen's Guide to Disaster Assistance*. IS-7, January 1997, 1-11-1-13.

Recommendations



Various recommendations for policies, actions and analysis have been developed as a result of Brevard County's Post-Disaster Redevelopment Capacity Assessment and workgroup input. These recommendations and actions provide the PDRP workgroups and stakeholders with a platform to begin increasing county and municipal resilience and ability to recover and redevelop stronger and more effectively following a disaster.

EXPAND FISCAL CAPACITY

After a disaster, it is necessary that there be both horizontal and vertical intergovernmental coordination in dealing with financial administration. County and municipal agencies should work in unison and with both state and federal agencies. While these networks of coordination cannot be concretely established until after a disaster, local agencies can begin to draft frameworks pre-disaster of how they will work among themselves and which local agencies will be working with state and federal agencies. This will prevent a duplication of roles and responsibilities in post-disaster periods.

The Comprehensive Plan for Unincorporated Brevard County includes an element on intergovernmental coordination for the purpose of providing measurable direction and instilling accountability. It outlines the ways of addressing an issue with a multijurisdictional approach without being so specific as to preclude other ways of solving problems and leaving room for equity and responsiveness. The policy statements are intended to require minimal added staff time and effort to implement. The county can use the comprehensive plan as a guide to developing a similar set of guidelines to direct intergovernmental coordination concerning financial administration of the PDRP in the future.

EVALUATE ROAD CONNECTIVITY AND RESPONSE TIMES

Response times for emergency vehicles can be improved when several alternative routes are available, especially during a disaster event when roadways may be blocked by debris or evacuating traffic. A gridded and connected street network provides these alternative routes and improves response times.

Research conducted in Charlotte, North Carolina's Department of Transportation¹ studied the effect of connectivity on fire station service areas and capital facilities planning. The findings showed that as street connectivity increased, the number of households served by each fire station (20,800 to 25,900 households) increased as well, compared to less-connected service areas serving only 5,700 to 7,300 households. The fiscal impacts on a per capita annual basis of less-connected network was \$586 to \$740, compared to just \$159 to \$206 in the more connected transportation areas. Furthermore, since an ordinance limiting cul-de-sacs, response times have decreased to less than 5 minutes, reversing the trend caused by the disconnected network of increasing response times. Recently, Virginia became the first state to significantly limit cul-de-sacs from development. Cities like Portland, Oregon, Austin, Texas and Charlotte, North Carolina have taken similar actions. From a services perspective, cul-de-sacs make it harder and more expensive for governments to render services, forcing them to travel further distances. A well connected street network can lower emergency response times and provide a savings to governments.

CONDUCT SEA LEVEL RISE ANALYSIS

While sea level rise is a global concern, impacts, mitigation and adaptation strategies will need to be addressed locally and regionally. As sea level rises, its impact throughout the county will vary based on the extent of inundation and the areas and resources affected. Strategies to address sea level rise may vary throughout the county as the extent of impacts and affected resources range from high density development to critical natural ecosystems. Therefore, assessing the impact of submergence on infrastructure, development, and natural areas is essential for the development of appropriate policies and strategies for the county and region. Education and outreach, along with strategic discussions, are essential components of this process.

¹ Magnasco, Matt; Pleasant, Danny. Charlotte (N.C.) Department of Transportation "Emergency Responder Perspective from Charlotte, North Carolina" 2008 Congress for New Urbanism presentation www.cnu.org/node/2495

The city of Satellite Beach and the Indian River Lagoon National Estuaries Program received funding from the EPA Climate Ready Estuaries Program to conduct a sea level rise analysis. The city, using LiDAR data, analyzed one to six foot sea level rise scenarios based upon the most recent data. Localized current water levels were used to depict a current and localized analysis. Using the results of the analysis, the city was able to determine not only the geographical extent of the city affected by each scenario but also the impact on the city's critical facilities. These data provided the basis for discussion of strategies and policies for the city to undertake in their adaptation, protection, and mitigation to sea level rise.

The city of Satellite Beach, being the first city in the county to take this step, serves as a pilot for the county and other cities to begin focusing on this issue. As another starting point, the *2003 EPA Sea Level Rise Study for Brevard and Volusia County*, analyzed the existing and future land use models to determine, based on a five foot sea level rise, what areas may be protected from rising seas and which areas may be left to be inundated. While this study is almost ten years old and future land use maps have since changed, it provides information to begin discussions concerning adaptation strategies and policies as well as an initial look at key areas that may be affected by sea level rise.

Figure 27 illustrates the extent of Satellite Beach anticipated to be affected by a one to six foot rise in sea level. As expected due to the topography of the barrier island and the Banana River, submergence begins on the western side of the city and moves eastward.

INCREASE ENVIRONMENTAL CAPACITY

Considerable open space areas, including urban forests, exist in the county and municipalities. Therefore, pre- and post-disaster strategies should be developed, as these areas may be critical for wildfire prevention, debris staging areas, and quickly improving quality of life for residents post-disaster.

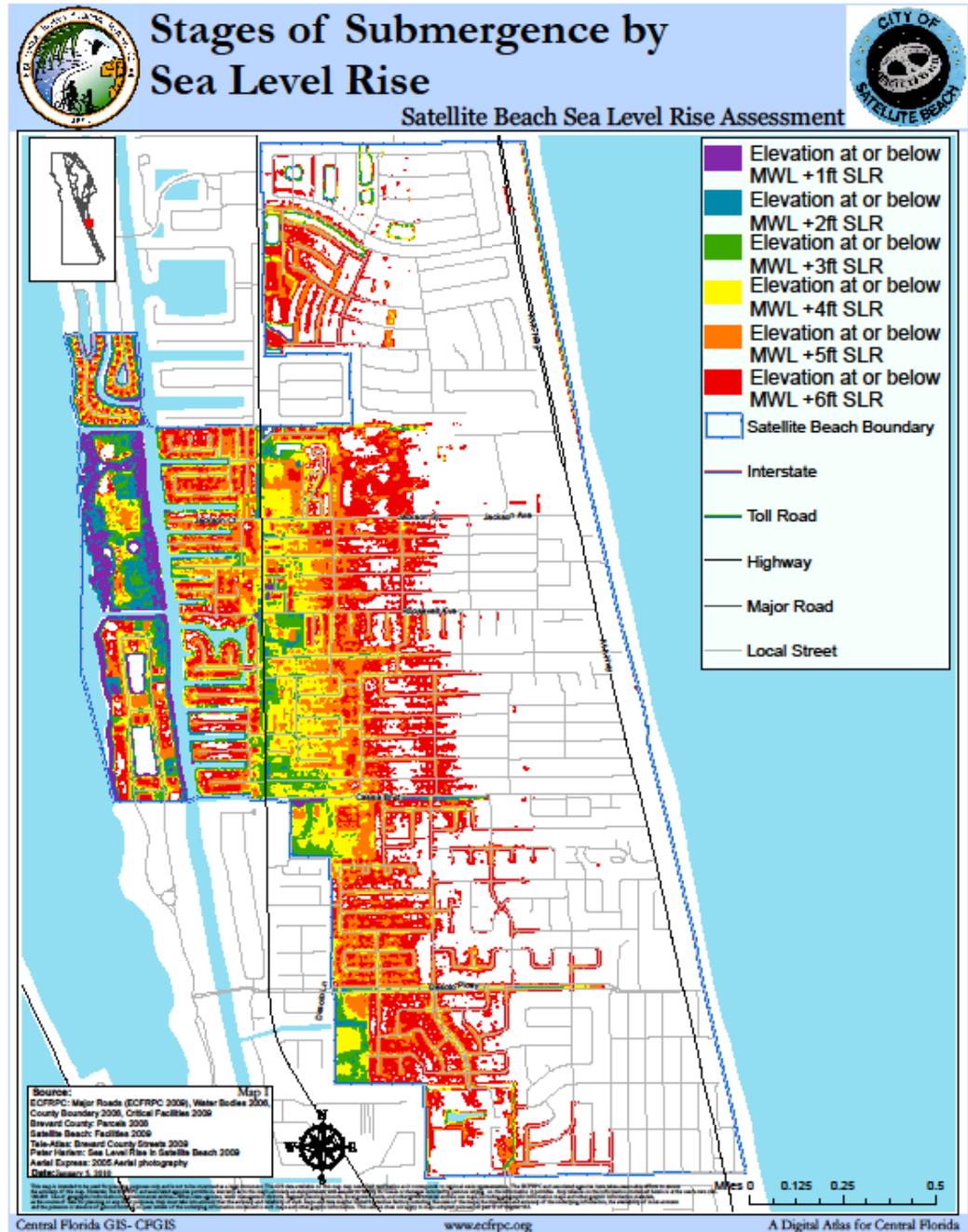


FIGURE 27: Satellite Beach Sea-Level Rise Assessment

A county-wide open space management plan could include the following components to address pre- and post-disaster redevelopment:

- Debris and Fire Management Strategies Pre-Event (Create fire wise management strategies to ensure natural fires are able to be controlled and control burns do not pose a hazard due to excess debris)
- Assess Debris Staging Areas
- Coordinate Staging Areas with Emergency Management
- Assess Parks and other open space areas, especially those with RV hook ups and electricity, for potential public and critical workforce housing staging areas

Urban forests may be more vulnerable to storm damage resulting from wind, lightning strike, or saltwater exposure if not maintained. Trees that may require years to mature can be devastated in minutes by defoliation, uprooting, splitting, or toppling. Tree damage also threatens the safety of people and property

Landscaping codes for businesses and residential development can serve as a basis for appropriate vegetation and maintenance education. For example, native tree species fare better from hurricane wind conditions than non-native species. Educating citizens on species selection, planting methods, and pruning can prevent or mitigate the amount of damage from wind or lightning and minimize the replanting following a storm. Employing a professional arborist to recognize vulnerabilities early can also reduce damages later.

Urban forest and landscaping should be replaced within a year after the disaster, as it is not an immediate need for post-disaster redevelopment but is important in order to maintain a sense of community, to re-establish economic viability and redevelopment.

During the short-term post-disaster recovery period, activities related to the urban forest will include a damage assessment, immediate treatment, cleanup, and debris removal. Long-term redevelopment requires professional care as well as citizen education. Re-planting trees quickly without a broader strategy can result in an even-aged

stand of trees which lacks different heights and size, a replanting plan should be implemented. Many local volunteer groups, often utilizing grants, may be organized prior to and activated after an event to assist in habitat restoration, damage assessment and recovery efforts. These volunteer groups may include:

- colleges/university agricultural/arborist students
- Institute of Food and Agricultural Services (IFAS)
- Urban Forestry Grant
- Local and State parks, forestry and recreation staff
- Storm Damage Assessment Protocol for Florida Hurricanes model
-

The county should review urban forest and outreach models to assess the urban canopy and its functional value. It will be important for those protecting and re-establishing the urban forest to have baseline information for preventative measures and re-planting plans.

POLICY RECOMMENDATIONS

Although numerous plans and policies exist supporting post-disaster redevelopment planning in the county, analysis of these instruments and work group meetings have shown a shortfall of some aspects associated with post-disaster planning.

The following recommended policies are intended to help implement the infrastructure action items. These recommended policies were created based on the action items identified and established through the Post-Disaster Redevelopment Plan (PDRP) workgroup. The policies focus on debris management, staging areas, infrastructure identification, funding identification and mechanisms, and the redirection of development to more appropriate locations. This list should not be considered an exhaustive list of potential policies for post-disaster redevelopment. This plan should be considered a living document and policy recommendations will vary with time and implementation.

Policy 1: Create a countywide coordinated debris management plan to include long-term debris management that expedites recovery, is consistent with future land use, and preserves the environment.

Policy 2: The county will adopt a Post-Disaster Plan, which describes facilities and sites designed to serve as local, state and federally sponsored emergency assistance locations. Examples of such facilities include disaster application centers, citizen assistance centers, and disaster field offices; include temporary housing sites and debris disposal locations.

Policy 3: Review and revise purchasing procedures and staffing for the post-disaster environment to ensure needed items and services are procured efficiently to meet demands.

Policy 4: Continue to assist in the restoration of municipal stability and independence as quickly as possible.

Policy 5: Biannually investigate the cost / benefit of obtaining private insurance for government infrastructure.

Policy 6: The county shall continue to limit the expenditure of public funds that subsidize development in coastal high hazard areas (CHHA). The CHHA is the area below the elevation of the category 1 storm surge line as established by a Sea, Lake and Overland Surges from Hurricanes (SLOSH) computerized storm surge model. Public funds shall be limited unless such funds are necessary to:

- a. Provide services to existing development;
- b. Provide adequate evacuation in the event of an emergency;
- c. Provide for recreational needs and other appropriate water-dependent uses; or
- d. Maintain the urban level of service.

Policy 7: Public expenditures in high hazard coastal areas should be limited to the maintenance of existing infrastructure and those improvements included in the Coastal Management Element.

Policy 8: Only those public expenditures necessary for the health, safety and welfare of the residents in vulnerable areas as well as such improvements as are deemed to be required to facilitate use of the public natural open space and recreation areas may be funded.

Policy 9: Through interlocal agreements, the county shall strive to replace and/or consolidate public facilities and services in order to most efficiently establish and maintain established levels of service.

Policy 10: Public expenditures for sewer facilities in Coastal High Hazard Areas to serve existing may be permitted in order to mitigate the potentially harmful effects of septic tanks on water quality.

Policy 11: Develop a formalized methodology for prioritizing critical public infrastructure to facilitate restoration in the most efficient manner.

Policy 12: Review governmental facilities and infrastructure which, if destroyed, could be relocated to a less vulnerable area.

Policy 13: Protect the function of natural drainage features.

Policy 14: In order to maximize the use/functions of existing facilities, the county should establish a “maintenance and monitoring program” of county controlled drainage ditches.

Policy 15: By 2013, the county should establish a Geographic Information System (GIS) - based inventory of all stormwater management facilities under the county’s jurisdiction.

Policy 16: Continue to develop and update GIS information and infrastructure layers to provide accurate data to inform decision making.

Policy 17: The county shall seek opportunities to improve the connectivity of street networks in an effort to increase evacuation options, vehicular traffic flow, and emergency response time, as well as reduce emergency response costs.

Policy 18: Require redevelopment to connect to the central water and sewer systems consistent with Comprehensive Plan policies.

Policy 19: Coordinate regional agencies to address potential post-disaster infrastructure repair and redevelopment.

Policy 20: Encourage disaster mitigation techniques during rebuilding and repair of infrastructure.

ACTION MATRIX

The following matrix was developed as a result of a review of the existing county plans and policies as well as work group input. The matrix includes actions recommended for the county and municipalities, where applicable, to undertake for post-disaster redevelopment planning. As noted in the matrix, some actions should be performed pre-disaster for more effective post-disaster recovery or to create a more resilient community. Other recommended actions should occur in the short-term recovery period to aid in long-term post-disaster redevelopment efforts.

The following are recommended actions that your community can take during this phase of the post-disaster planning process. Each task is represented by a colored circle representing the task's level of achievement.

One colored circle – minimum task

2 colored circles – recommended additional tasks

3 colored circles – best practice advanced tasks

Table 26: Action Matrix

Achievement Level	Government Operations Actions & Policy	Implementation Timeline										Structure & Implementation							
		Pre-Disaster	Emergency Period		Short-Term Recovery (days)				Long-Term Redevelopment (months)				Action Plan						
			72 hours	1 - 15	15 - 30	30 - 60	60 - 90	4 - 6	6 - 12	12 - 18	18 - 24	24 +	Policy Plan	Responsible Agency	Collaboration Agencies	Resources Needed	Additional Action Needed		
	Implement long term redevelopment pre-planning county-wide. The key to success in a long-term redevelopment phase is adequate pre-planning																		
	Ensure accurate county-wide asset inventory	X	X	X	X	X									COOP by department	Asset Management Department		In-house staff and time	Annually update inventory
	Establish resource management and communication plan	X													CEMP - ESF7, TICP	ESF7		In-house staff and time	Annually update inventory
	Determine mission essential functions for core services across all jurisdictional boundaries.	X													COOP and CEMP	ESF3 - Public Works and ESF 12 Utilities	City Administrations	In-house staff and time	
	Determine mission support functions for core services across all jurisdictional boundaries.	X													COOP and CEMP	ESF3 - Public Works and ESF 12 Utilities	City Administrations	In-house staff and time	
○	Ensure local municipality plans align with county plans	X													CEMP, Comp Plan, LMS	all municipalities with own plans	all levels of government	In-house staff and time	Amend any necessary plans to ensure they work together
●	Coordinate plans and projects with adjacent jurisdictions to maximize impacts and efficiencies.	X							X	X	X	X			CEMP, Comp Plan, JPA	Public Works/Planning	Municipalities	In-house staff and time	
	Seek methods to ensure that essential personnel will have housing in the community following a disaster.	X													COOP, COG, PDRP	Public Safety	Human Resources, Neighborhood Services	In-house staff and time	
	Encourage all the Constitutional Offices and municipalities to develop Continuity of Operations Plans (COOP) and have them reviewed by Emergency Management and integrated with the County COOP as appropriate.	X													PDRP	Constitutional Offices and municipalities	Constitutional Officers	In-house staff and time	
	Consider cooperative agreements or consolidation of services between governmental agencies to maintain efficient delivery of services in a post storm environment.	X													CEMP annexes/mutual aid agreements	County Departments and municipalities		In-house staff and time	
	Work with surrounding counties and State to further mutual aid agreements	X													CEMP, COOP, PDRP	County Departments and municipalities			

Achievement Level	Government Operations Actions & Policy	Implementation Timeline										Structure & Implementation							
		Pre-Disaster	Emergency Period	Short-Term Recovery (days)				Long - Term Redevelopment (months)					Action Plan						
			72 hours	1 - 15	15 - 30	30 - 60	60 - 90	4 - 6	6 - 12	12 - 18	18 - 24	24 +	Policy Plan	Responsible Agency	Collaboration Agencies	Resources Needed	Additional Action Needed		
Effective alternate forms of communication for a long-term event																			
	Contracts with signboard companies to provide information to citizens and residents	X													COOP, PDRP	Public Works, Utilities	FHP, Clear Channel, 511 Traffic	Sign Board Mutual Aid agreements	Establish effective long term agreements
	Proactively communicate with the citizens of Brevard County to ensure understanding of priorities, restoration activities, and status of the redevelopment of the County.	X					X	X	X	X					PDRP	City Clerk Administrations, Office of the County Administrator	Public Safety	In-house staff and time	
<input type="radio"/>	Communicate with AM/FM radio stations integrate into appropriate plan	X													Region 5 TICP, State TICP	Communications Department	AM/FM Radio Stations, ESF14 Public Information, Media Relations		
<input checked="" type="radio"/>	Communicate and involve HAM radio/CB operators	X													PDRP	Communications			
	Look into using Regional communications assets such as the MARC and other communications units	X				X	X								Region 5 and State TICP, Florida Fire Chiefs State Emergency Response Plan	Communications			
	Evaluate capacity and seek to establish areas of free Wi-Fi access for government operations and citizen access to information.	X	X	X	X										PDRP	Information Technology	Public Safety/Emergency Management	In-house staff and time	
	Have volunteers pass out flyers containing relevant information to citizens	X					X	X	X	X					PDRP, CEMP	Volunteers ESF16		Volunteers	Create list of volunteers that can assist or be called upon

Achievement Level	Government Operations Actions & Policy	Implementation Timeline										Structure & Implementation							
		Pre-Disaster	Emergency Period		Short-Term Recovery (days)				Long - Term Redevelopment (months)				Action Plan						
			72 hours	1 - 15	15 - 30	30 - 60	60 - 90	4 - 6	6 - 12	12 - 18	18 - 24	24 +	Policy Plan	Responsible Agency	Collaboration Agencies	Resources Needed	Additional Action Needed		
	Knowledge of long-term redevelopment funding opportunities																		
	Know how to effectively work off of mutual aid agreements for a long-term scenario	X													CEMP - Finance Section	County Departments/City Departments		In-house staff and time	Training on procedures
	For each core and support service, determine to what level of service each must be maintained to conserve financial resources	X													CEMP	Each core area			
	Knowledge of bond capacity to fund recovery in the case of unmet budget needs	X													PDRP	Municipalities		In-house staff and time	Training on procedures
	Understand public assistance, the Hazard Mitigation Grant program, Community Development Block Grants, and Community Disaster Loan program, etc.	X													PDRP			In-house staff and time	Training on procedures
○	Counsel and assist residents with applying for funding					X	X	X	X	X	X				PDRP	Health and Social Services, Homeowners Associations	Chambers of Commerce, County and City Economic Development Departments	In-house staff and time	Training on procedures
	Have smaller municipalities, that might not otherwise be eligible for some funding sources, work with the county collectively for funds						X								PDRP	Municipalities	County	In-house staff and time	
	Using damage assessment and other sources of data, estimate the impact on the County's financial revenue sources			X											Incorporate into CEMP	Property Appraiser		In-house staff and time	
	Work with ECFRPC to run REMI to model economic impacts, from here have county apply for EDA recovery funds with RPC assistance						X	X	X	X	X				PDRP	Economic Development Departments	Municipalities	In-house staff and time	ECFRPC to provide REMI services to Brevard County
	Establish alternate forms of long-term transportation																		
	Secure alternate ways of transportation to and from Barrier Island	X													PDRP	Community Services	Planning Department, TPO, SCAT	In-house staff and time	Update COOPs as necessary
○	When renewing boat licenses ask owners if they would be willing to aid as transportation volunteers to move populations to and from barrier islands	X													PDRP	Tax Collectors Office		Citizen support	Create and implement questionnaire
○	Change transit routes to meet new housing and employment distribution in post disaster environment.	X	X	X			X	X							PDRP	Community Services	Planning Department, TPO, SCAT		

Achievement Level	Housing: Actions & Policy	Implementation Timeline											Structure & Implementation							
		Pre-Disaster	EM Period	Short-Term Recovery (days)					Long-Term Redevelopment (months)					Action Plan						
				72 hours	1 - 15	15 - 30	30 - 60	60 - 90	4 - 6	6 - 12	12 - 18	18 - 24	24 +	Policy Plan	Responsible Agency	Collaboration Agencies	Resources Needed	Additional Action Needed		
		Temporary Housing Sitting Criteria, Provision, and Removal																		
		X														PDRP	Planning and Zoning	Emergency Management, Code Enforcement,	Staff time	
○	Allow temporary housing units on established single-family lots during the housing recovery time period		X	X	X	X	X	X	X	X						PDRP	Housing and Human Services	Brevard Long Term Recovery Coalition (BLTRC), FEMA	Staff time	Amend Comprehensive Plan and LDC
○	Ensure availability of temporary housing for critical workforce by creating a plan	X	X	X	X											PDRP	Housing and Human Services	BLTRC, Planning	Staff time	Amend Comprehensive Plan
●	Place staff in disaster recovery centers that can assist citizen with paperwork for FEMA and other relief organizations		X	X	X	X										PDRP	BLTRC	State and Federal relief organizations	Staff time	
	Have staff available for long-term housing issues that can assist citizen with paperwork for FEMA and other relief organizations						X	X	X	X	X	X				PDRP	BLTRC	State and Federal relief organizations	Staff time	
		Ability to reconstruct homes rapidly																		
	Prioritize building permits which will provide for the greatest restoration of dwelling units in the least amount of time	X		X	X											PDRP	Building Enforcement	Zoning, Code Enforcement, Municipality Administration	Additional Staff	Hiring additional staff
○	Identify permitting expediting procedures from the County/City Building Departments and Florida Department of Health (FDOH).	X		X	X											PDRP	One-Stop Permitting Site	Public Works, Building, Code Enforcement	Staff time	
○	Housing & Human Services and Disaster Recovery Centers should co-locate		X	X	X	X										PDRP	Emergency Management			
●	Create agreement with adjacent Counties to 'borrow' inspectors so disaster and ongoing projects can move forward	X														PDRP	Emergency Management	Florida Associations of Counties	Staff time	
		Transitioning residents back to permanent housing																		
○	Create a Renters Assistance Database for connecting affected renters with suitable rental properties. Database should be updated every 3 months	X														PDRP	Brevard 2 11	Emergency Management, Housing and Human Services, United Way	Staff time	
●	Create dialogue with manufactured home builders to get capacity quotes for rebuild	X					X	X	X	X	X	X				PDRP	Housing and Human Services	Emergency Management and Code Enforcement	Staff time	

Achievement Level	Housing: Actions & Policy	Implementation Timeline											Structure & Implementation								
		Pre-Disaster	EM Period	Short-Term Recovery (days)					Long-Term Redevelopment (months)					Action Plan							
				72 hours	1 - 15	15 - 30	30 - 60	60 - 90	4 - 6	6 - 12	12 - 18	18 - 24	24 +	Policy Plan	Responsible Agency	Collaboration Agencies	Resources Needed	Additional Action Needed			
		Rebuild affordable housing																			
	Identify local strategies and funding sources to assist in rebuilding affordable housing	X															PDRP	Housing and Human Services	Local, State and Federal relief organizations	Staff time	
		Encourage homeowners to incorporate mitigation during rebuilding																			
	Encourage incorporation of 'green building' techniques	X															PDRP	Planning	Building and Code Enforcement	Staff time	Amend Comprehensive Plan, LDC and other relevant code
	Encourage incorporation of fortification techniques for wind	X															PDRP	Planning	Building and Code Enforcement	Staff time	Amend Comprehensive Plan, LDC and other relevant code
	Identify local strategies and funding sources that can be implemented to assist residents in retrofitting/fortifying homes to be more disaster resistant	X															PDRP	Housing and Human Services	Local, State and Federal relief organizations	Staff time	

Achievement Level	Economic Redevelopment Actions & Policy	Implementation Timeline											Structure & Implementation						
		Pre-Disaster	Emergency Period	Short-Term Recovery (days)					Long - Term Redevelopment (months)					Action Plan					
				72 hours	1 - 15	15 - 30	30 - 60	60 - 90	4 - 6	6 - 12	12 - 18	18 - 24	24 +	Policy Plan	Responsible Agency	Collaboration Agencies	Resources Needed	Additional Action Needed	
Public Business Resumption and Retention																			
	Business Resumption and Retention Capacity		X	X	X	X	X	X	X	X	X	X	X	X	Brevard Workforce, East Central Florida's Comprehensive Development Strategy, Chambers of Commerce's Strategies, and Titusville's Continuity of Government Plan	Brevard County, Brevard Workforce, and Florida's Space Coast EDC	East Central Florida Regional Planning Council, EDC of Brevard County, Brevard Workforce, Chambers of Commerce	Funding for business incentives, operational support and educational materials, OJT Funds	Collect key business information prior to disaster and work with Brevard Workforce to apply for additional On the Job Training (OJT) Funds
	Collect key business information and create a local business inventory	X												Florida's Space Coast EDC, Brevard County and Chambers of Commerce and the City of Cocoa	Brevard County and the Cities	Florida's Space Coast EDC, Chambers of Commerce, Cities and Counties	Brevard County's BTR information, a host website and agency to oversee the inventory and update the inventory quarterly	Outreach to let the community know this information is available and work to copy City of Cocoa's outreach strategy to gather information regarding generators and essential services	
	Assist local businesses with continuity of services	X												City of Titusville	Brevard County and Florida's Space Coast EDC	Brevard County, ECFRPC, Chambers of Commerce, United Way, Red Cross and City of Titusville	Volunteer host website to house online documents and outreach materials	Hold yearly training and informational meetings for local businesses on what to do post-disaster	
	Strive to use local businesses and local workforce in recovery and redevelopment activities		X	X	X	X	X	X	X	X	X	X	X	Brevard Workforce, Brevard County's PDRP			Database of local businesses and available workforce	Hire from the already available local workforce or newly unemployed	
	Create a website where all local unemployed residents can upload their resumes and professional profiles	X												Brevard Workforce	Brevard County				

Achievement Level	Economic Redevelopment Actions & Policy	Implementation Timeline										Structure & Implementation					
		Pre-Disaster	Emergency Period	Short-Term Recovery (days)				Long - Term Redevelopment (months)					Action Plan				
				72 hours	1 - 15	15 - 30	30 - 60	60 - 90	4 - 6	6 - 12	12 - 18	18 - 24	24 +	Policy Plan	Responsible Agency	Collaboration Agencies	Resources Needed
Community Redevelopment Agency (CRA) and other economic/multi-use redevelopment projects																	
	Community Redevelopment Agency (CRA) and other economic/multi-use redevelopment projects						X	X	X	X	X	Comprehensive Plan	Brevard County				
	Economic Development "Resources Meeting" for the business community after a disaster						X	X	X	X	X	Comprehensive Plan and the PDRP	Brevard County	East Central Florida Regional Planning Council, Public and Private Sector Businesses/Organizations with interest in the community and business climate		Public outreach, conduct public meeting	

Policies and Procedures

Achievement Level	Heath and Social Services Actions & Policy	Implementation Timeline											Structure & Implementation						
		Pre-Disaster	Emergen- cy Period	Short-Term Recovery				Long - Term Redevelopment				Action Plan							
				72 hours	1 - 15	15 - 30	30 - 60	60 - 90	4 - 6	6 - 12	12 - 18	18 - 24	24 +	Policy Plan	Responsible Agency	Collaboration Agencies	Resources Needed	Additional Action Needed	
Special Needs Assistance																			
○ ○ ●	Provide assistance to special needs populations (transportation, help with applying for disaster assistance programs)	X	X	X	X	X	X								CEMP (ESF 6)	Brevard Long-Term Recovery Coalition; Brevard Housing & Human Services; Brevard County Health Dept; Emergency Mgmt.	Space Coast Area Transit; Coastal Area Transit ; Community Organizations; 211	Staff & Time	Look at additional funding sources
Assisted Living																			
○ ○ ●	Education of patients prior to an emergency regarding evacuation, notification, and plans; assess ability of facility to continue services after disaster.	X	X	X	X	X	X								Health Care Facilities Comprehensive Emergency Management Plan (CEMP)	Individual Health Care Facility	Any MOU with relative agencies	Staff and Time	Agency for Health Care needs to add long-term recovery actions to the CEMP criteria
Non-government Entities																			
○ ○ ●	Coordinate with faith based organizations to provide assistance to disaster survivors.			X	X	X	X	X							Non-Government MOU's	Brevard County Long-Term Recovery Coalition	Red Cross; United Way; 211; VOAD; ESF 15;	Staff and Time	Better Coordination of Large Faith Based Groups; Better coordination of assistance received
○ ● ●	Develop plan to handle and coordinate influx of volunteers			X	X	X	X	X							CEMP (ESF 15)	ESF 15 Lead	VOAD, United Way, Red Cross	Staff and Time	Assess various agencies volunteer handling capabilities
Public Education																			
○ ○ ●	Continue providing public education on disaster readiness and survival, property protection, insurance, permitting, licensed contractors, etc.	X	X	X	X	X	X	X	X	X					CEMP	Emergency Management & Community Organizations	Public and Private Sector Community Agencies and Organizations; Brevard Co. Long Term Recovery Coalition	Outreach Materials	Look at providing public education on continued long-term recovery

Achievement Level	Heath and Social Services Actions & Policy		Implementation Timeline											Structure & Implementation						
			Pre-Disaster	Emergen- cy Period	Short-Term Recovery (days)					Long-Term Redevelopment (months)					Action Plan					
					72 hours	1 - 15	15 - 30	30 - 60	60 - 90	4 - 6	6 - 12	12 - 18	18 - 24	24 +	Policy Plan	Responsible Agency	Collaboration Agencies	Resources Needed	Additional Action Needed	
Health and Medical																				
<input type="radio"/>	Prepare staff to respond effectively to disasters or emergency situations that affect the environment of care and test response mechanisms(response); Plan processes for reestablishing operations after the incident (recovery).		X	X	X	X	X	X	X							Hospital Emergency Management Plans	Individual Hospital/Health Care Facility	N/A	Staff and Time	Strengthen MOU's; Look at additional Long-Term support facilities
<input type="radio"/>	Assess the capabilities (structural, operational, financial) of medical care centers to provide services after a disaster.				X	X	X								COOP Plan	Individual Hospital/Health Care Facility	N/A	Staff and Time	N/A	
<input type="radio"/>	Identify strategies and implement actions to attract and retain medical professionals to affected areas							X	X	X	X	X			Currently Under Development	Brevard Co. Health Dept.	Medical & Assisted Living Facilities; Medical Reserve Core	Staff and time	Consider offering incentives	

Achievement Level	Infrastructure and Public Facilities Actions & Policy	Implementation Timeline										Structure & Implementation							
		Pre-Disaster	Emergency Period		Short-Term Recovery (days)				Long-Term Redevelopment (months)				Action Plan						
			72 hours	1 - 15	15 - 30	30 - 60	60 - 90	4 - 6	6 - 12	12 - 18	18 - 24	24 +	Policy Plan	Responsible Agency	Collaboration Agencies	Resources Needed	Additional Action Needed		
Infrastructure for temporary recovery operations																			
	ID sites for temporary housing (schools, parks, public land). <i>(place in housing section?)</i>	X													Consolidated Action Plan (CAP)	Housing & Human Services	Emergency Management, School Board, Housing Authority	GIS	incorporate identification sites CAP
	Infrastructure analysis - Where is waste/etc. going at temporary sites. (utility over-use/existing + new infrastructure analysis)				X										Consolidated Action Plan (CAP)	Housing & Human Services	Deep, Health Department (County)	n/a	ID sites in CAP
	Coordinate with FEMA to have quicker response for funding and assistance (Create plan? Expectations?)	X		X											LMS	Emergency Management	local government	n/a	Identify expectations in LMS
	Coordinate with electric, utility, and telecommunications providers for restoration of power in areas for redevelopment, critical facilities and business		X												Comprehensive Emergency Management Plan (CEMP)	Emergency Management	Utilities, Local jurisdictions	n/a	none
	Recovery leadership – Establish an agency to head and organize? Identify/established hierarchy to implement recovery steps		X												CEMP	Assistant County Manager, Emergency Management	Local jurisdictions	n/a	Identify head agency in CEMP
Debris Management																			
	Coordinate with debris removal contractors to ensure that damage to historic properties and archaeological sites are avoided	X													Debris Removal Plan (Local)	Public Works	Solid Waste, Coast Board, Local, FEMA	Permitting coordination	none
	Pre-selected contractors – remediation, clean-up, debris removal	X													Area Contingency Plan (ACP)	Public Works	Solid Waste, Coast Guard, Local, FEMA, SJRWMD, FDEP	Permitting coordination	Update ACP to include preselected contractors
	Identify debris staging/reduction sites; avoid siting near environmentally sensitive areas or areas where debris operations could hamper other redevelopment measures such as, but not limited to, temporary housing sites.	X													Area Contingency Plan (ACP)	Public Works	Solid Waste, FEMA, Housing & Human Services	GIS	Update ACP to include staging sites
	Fee for boat debris removal strategic water ways	X													Area Contingency Plan (ACP)	FWC, Brevard County Sheriff	Natural Resources (local)	Permitting coordination	Update ACP to include fee

Achievement Level	Infrastructure and Public Facilities Actions & Policy	Implementation Timeline											Structure & Implementation					
		Pre-Disaster	Emergency Period		Short-Term Recovery (days)				Long-Term Redevelopment (months)					Action Plan				
			72 hours	1 - 15	15 - 30	30 - 60	60 - 90	4 - 6	6 - 12	12 - 18	18 - 24	24 +	Policy Plan	Responsible Agency	Collaboration Agencies	Resources Needed	Additional Action Needed	
○ ● ●	Issue of Debris fields being developed? Analysis of existing/potential debris fields and growth pressures	X												Comprehensive Plan	Planning & Development	GIS, Public Works, Emergency Management	GIS, permitting coordination	Update Comp Plan to identify critical staging areas and create existing inventory. Inventory will need to be updated intermittently as sites are developed.
Financing Infrastructure and public facilities repair																		
○ ○ ●	Coordination between agencies, cities, etc. to develop financial partnerships and related missions	X	X											CEMP	Assistant County Manager, Emergency Management	Local jurisdictions	n/a	none

Achievement Level	Infrastructure and Public Facilities Actions & Policy	Implementation Timeline											Structure & Implementation							
		Pre-Disaster	Emergency Period	Short-Term Recovery (days)				Long-Term Redevelop (months)				Action Plan								
				72 hours	1 - 15	15 - 30	30 - 60	60 - 90	4 - 6	6 - 12	12 - 18	18 - 24	24 +	Policy Plan	Responsible Agency	Collaboration Agencies	Resources Needed	Additional Action Needed		
Infrastructure and public facilities mitigation and historic considerations																				
	ID vulnerable and critical infrastructure and people/entities responsible for public buildings/facilities	X	X													Local Mitigation Strategy (LMS)	Emergency Management	Public Works	Natural Resources, Florida Dept. of Law Enforcement	Update LMS to include critical infrastructure and responsible entities
	ID who is to assess high risk / vulnerable facilities and fix/harden infrastructure with highest risk – pro active	X													X	LMS	Emergency Management	DEP, SJRWMD, Brevard County Health Dept. Utility Dept., Facilities Management	n/a	Update LMS to include responsible entities
○	Prioritize mitigation projects for critical/vulnerable sites (retrofit, relocate) Evaluate above-ground/below ground utility retrofits	X													X	LMS	Emergency Management	Local Mitigation Working Group	n/a	Update LMS with prioritization list
●	Create a standard for tapping into existing infrastructure for temporary/long-term operations	X														local utilities plan	Utilities	Public Works, Engineering	n/a	Update local utilities plan with appropriate standards
●	Control of assets – ID assets county wide in one database (County to include city data)	X													X	CEMP	Assistant County Manager, Emergency Management	Local jurisdictions	n/a	Complete
	Develop resources of where to look for grants and legislation, etc. for all resources available during / after / for emergency redevelopment/economic	X			X											Capital Improvements Plan	Brevard Budget Office	Local jurisdictions	Grant Coordinator	Create a Grant Coordinator Position
	Coordinate with local jurisdictions to create special permits for infrastructure improvements for critical facilities. Create a Critical Infrastructure List (utilities, cell towers, electric, etc.)	X									X					Ordinances (Local)	Local Jurisdictions	FDEP, SJRWMD	permitting coordination	Create ordinance at the local level to expedite permit review.
	Coordinate infrastructure improvement, mitigation/retrofitting with 5-year CIP and Infrastructure Element of jurisdictional comp plan	X													X	Comprehensive Plan	Planning & Development, Emergency Management	Public Works, Engineering	n/a	none

Achievement Level	Infrastructure and Public Facilities Actions & Policy	Implementation Timeline											Structure & Implementation						
		Pre-Disaster	Emergency Period	Short-Term Recovery (days)				Long-Term Redevelopment (months)				Action Plan							
				72 hours	1 - 15	15 - 30	30 - 60	60 - 90	4 - 6	6 - 12	12 - 18	18 - 24	24 +	Policy Plan	Responsible Agency	Collaboration Agencies	Resources Needed	Additional Action Needed	
FEMA integration for infrastructure and public facilities																			
<input type="radio"/>	Public awareness education on responsibilities/plan outreach for recovery and FEMA education.	X												X	Stafford Act	Emergency Management	Brevard County, Public Relations, FEMA	media access, FEMA brochures, Education docs	coordinate with local media
<input checked="" type="radio"/>	Encourage county/towns to meet FEMA regulations as it pertains to public infrastructure.	X												X	Stafford Act	Emergency Management	Brevard County, Public Relations, FEMA	media access, FEMA brochures, Education docs	none
Enhanced infrastructure and public facilities																			
<input checked="" type="radio"/>	Evaluate/rewrite codes and comp plans to address infrastructure relocation/adapt, and land uses/buildings codes in appropriate locations and relocation (critical facilities, emergency response)	X												X	Local Comprehensive Plan & Land Development Code	Planning & Development,	Emergency Management, Engineering, Public Works	n/a	Include action in next comprehensive plan update
Regional infrastructure consideration																			
<input type="radio"/>	Coordination between agencies, cities, etc. to develop response protocol and partnerships for regional infrastructure	X	X												CEMP	Assistant County Manager, Emergency Management	Local jurisdictions	n/a	none
Enhanced infrastructure capacity to priority redevelopment areas																			
<input type="radio"/>	Coordinate infrastructure improvements, retrofitting/mitigation with intergovernmental coordination element of local jurisdiction comp plan	X												X	LMS	Emergency Management	Public Works, Engineering	n/a	none

Achievement Level	Environmental Actions & Policy	Implementation Timeline											Structure & Implementation					
		Pre-Disaster	Emergency Period		Short-Term Recovery (days)				Long-Term Redevelopment (months)					Action Plan				
			72 hours	1-15	15-30	30-60	60-90	4-6	6-12	12-18	18-24	24+	Policy Plan	Responsible Agency	Collaboration Agencies	Resources Needed	Additional Action Needed	
	Environmental Contamination																	
	Identify and map locations of hazardous materials that may be impacted from a disaster and document procedures for long-term cleanup and public safety.	X												Local Mitigation Strategy	Emergency Management	OSHA, EPA, FLDEP, PAFB, KSC, LEPC, Brevard County Facilities Dept, Port Canaveral, Environmental Remediation and Compliance	GIS team and EM team	Amend LMS to identify facilities in storm surge and flooding areas; develop long term procedures
	Continue training and updating of the city/countywide post disaster communication plan for Hazmat resources	X												CEMP	Emergency Management	Environmental Remediation and Compliance, FDEP, FEMA, Stormwater Utility, Solid Waste Management, Planning Department, EPA, OSHA, EPA, FLDEP, PAFB, KSC, LEPC, Brevard County Facilities Dept, Port Canaveral, FDEM	Hazardous Materials Task Force, GIS database; communication system	Amend CEMP after evaluation and inventory of resources county/city wide, BMPs; implementation of Hazardous Materials Management System; training and coordination of communication system and protocol
	Analyze existing contamination response and clean up plans and amend where needed. Create BMPs.	X												PDRP	BC Environmental Remediation and Compliance (SQG); FDEP (LQG/TSD)	Emergency Management, Stormwater Utility, Solid Waste Management, Coast Guard	Hazardous Materials Task Force	Amend CEMP and create long term procedures if needed; implementation of Hazardous Materials Management System
	Identify and contract pre-event licensed hazardous waste and material disposal contractors.	X												Local Mitigation Strategy	BC Environmental Remediation and Compliance/FDEP	Budget Office, Cities, FDEP, EPA; LEPC, Coast Guard		keep contracts up to date
	Create safe long term re-entry criteria for areas affected by a major disaster including hazardous contamination.	X							X	X	X	X	X		PDRP	Emergency Management, Solid Waste Management, EPA, FEMA, FDEP, ACOE, SJRWMD, BC Health Department, Natural Resources, Utilities, Public Works	working group	identification of facility relocation and future redevelopment; inclusion in LMS and/or CEMP and comprehensive plan
	Create safe long term redevelopment criteria for areas affected by a major disaster including hazardous contamination.	X							X	X	X	X	X		PDRP	Emergency Management, Natural Resources, DOH, FEMA, SJRWMD, DEP, County Health Department	working group	identification of facility relocation and future redevelopment; inclusion in LMS and/or CEMP and comprehensive plan
	Identify, map and monitor compromised potable water wells	X	X	X	X	X	X	X						CEMP	Emergency Management/DEP	Utilities, Public Works, Cities,	GIS and assessment team, database	
	Identify, map and monitor compromised storm water facilities	X	X	X	X	X	X	X						CEMP	Emergency Management/Natural Resource Management	Utilities, Public Works, Cities, Emergency Management	GIS and assessment team, database	
	Identify, map and monitor compromised waste water facilities	X	X	X	X	X	X	X						CEMP	Emergency Management/DEP/DOH	Utilities, Public Works, Cities, Emergency Management	GIS and assessment team, database	

Policies and Procedures

Achievement Level	Environmental Actions & Policy	Implementation Timeline											Structure & Implementation						
		Pre-Disaster	Emergency Period	Short-Term Recovery (days)					Long - Term Redevelopment (months)					Action Plan					
				72 hours	1 - 15	15 - 30	30 - 60	60 - 90	4 - 6	6 - 12	12 - 18	18 - 24	24 +	Policy Plan	Responsible Agency	Collaboration Agencies	Resources Needed	Additional Action Needed	
Habitat and Ecosystem Protection and Restoration																			
<input type="radio"/>	Assess damage to beaches and restore habitat and functionality			X	X	X	X	X	X	X	X	X	X	X	Beach and Dune Restoration Plan	Natural Resource Management	SJRWMD, FDEP	response team; grants for re-establishment	
<input type="radio"/>	Assess boats after disaster for pollution, leaks, gas		X	X	X	X	X	X	X	X	X	X	X	Debris Management Plan	Solid Waste Management	FWCC, Sheriff, SJRWMD; Coast Guard,	Assessment Team	include strategy in Debris Management Plan and target FWCC and Sheriff Office as responders	
<input type="radio"/>	Restore health of waterways after disaster.		X	X	X	X	X	X	X	X	X	X	X	PDRP	Planning	Natural Resources, FDEP, Stormwater Utility, Solid Waste Management, FFWCC, National Estuaries Program, SJRWMD, Emergency Management, USACE		Inclusion of waterway debris and contamination removal in Debris management plan, LMS, CEMP, NEP where needed.	
<input type="radio"/>	Review areas for mooring field sites; recommend more dry docking	X												PDRP	Natural Resource Management	SJRWMD, Coast Guard, Planning	Education team for completed report.	Data base, Outreach; incorporate into Comprehensive Plan and Manatee Protection Plan	
<input type="radio"/>	Assess damage to fisheries, sea grass coverage and estimate and establish restoration and mitigation needs to restore habitat and functionality			X	X	X	X	X	X	X	X	X	X	Comprehensive Plan	Natural Resource Management	SJRWMD, FDEP	response team; grants for re-establishment		
<input type="radio"/>	Assess damage to coastal wetland/mangrove habitats.			X	X	X	X	X	X	X	X	X	X	Beach and Dune Restoration Plan	Natural Resource Management	SJRWMD, FDEP	response team; grants for re-establishment		
<input type="radio"/>	Meet with the public to identify interested landowners in hazard-prone areas for potential buyout projects.	X						X	X	X	X	X		Comprehensive Plan	Planning	SJRWMD, EELS, Natural Resources	funding, policies, tools such as TDR, fee simple, conservation easements,	develop grant database, priority list/map; amend comprehensive plan	
<input type="radio"/>	Require management plans for conservation areas in county and city codes for subdivisions/PUD/DRI.	X												Comprehensive Plan	Planning	SJRWMD, FDEP, Natural Resources, Storm Water/Utilities, Cities		Amend comprehensive plans and LDCs	

Achievement Level	Environmental Actions & Policy	Implementation Timeline										Structure & Implementation						
		Pre-Disaster	Emergency Period		Short-Term Recovery (days)				Long - Term Redevelopment (months)				Action Plan					
			72 hours	1 - 15	15 - 30	30 - 60	60 - 90	4 - 6	6 - 12	12 - 18	18 - 24	24 +	Policy Plan	Responsible Agency	Collaboration Agencies	Resources Needed	Additional Action Needed	
Parks and Urban Forests																		
	Incorporate urban parks and forests, and environmental restoration and preservation issues into redevelopment projects and actions	X						X	X	X	X	X		Comprehensive Plan	Planning	Natural Resource Management, SJRWMD, EELS, Cities		Assess comprehensive plan and LDCs, and provide amendment updates, maps, if needed
●	Restore and enhance urban forests during redevelopment efforts to increase the quality of life for residents.				X	X	X	X	X			X		Comprehensive Plan	Planning	Utilities, Cities	Grants/Grant Researcher	Amend comprehensive plans and LDCs
●	Research programs and grants to help fund urban reforestation, especially after a disaster	X												PDRP	Budget	Natural Resource Management, SJRWMD, EELS, Planning	Grant Researcher	Amend comprehensive plans and LDCs; Develop grant database
	Link landscaping codes and plans to replanting efforts after storm or fire	X												PDRP	Planning	Cities		Amend comprehensive plans and LDCs
	Identify buffer requirements for urban conservation and urban forest areas	X						X	X	X	X	X		PDRP	Planning	Natural Resource Management, SJRWMD, EELS		Amend comprehensive plans and LDCs if necessary
Review of Temporary Sites																		
	Coordinate county-wide appropriate short and long term temporary site locations and review procedures.	X												Temporary Housing Plan	Housing and Human Services	Brevard County Planning, SJRWMD, FDEP, Utilities, FEMA, Housing and Human Services, FDOH, BC Health Department, FDEP, EPA, Storm water Management, KSC		Incorporation into CEMP and/or LMS; identification in Comprehensive Plan; GIS database creation
○	Evaluate potential short and long term temporary sites to determine any existing contamination and re-assess after their use.	X	X	X	X	X	X	X	X	X	X	X		Temporary Housing Plan	Housing and Human Services	FDOH, BC Health Department, FDEP, EPA		Incorporation into CEMP and/or LMS;
●	Review Space Center housing sites and VAB for temporary housing sites	X		X	X	X	X	X	X	X	X	X		Temporary Housing Plan	Housing and Human Services	Brevard County Planning, SJRWMD, FDEP, Utilities, FEMA, Housing and Human Services, FDOH, BC Health Department, FDEP, EPA, BC EM, KSC	Review Team, GIS	Creation of Disaster Housing plan

Achievement Level	Land Use Actions & Policy	Implementation Timeline													Structure & Implementation				
		Pre-Disaster	Emergency Period		Short-Term Recovery (days)				Long-Term Redevelopment (months)					Action Plan					
			72 hours	1 - 15	15 - 30	30 - 60	60 - 90	4 - 6	6 - 12	12 - 18	18 - 24	24 +	Policy Plan	Responsible Agency	Collaboration Agencies	Resources Needed	Additional Action Needed		
Phased Reconstruction and streamlined permitting																			
	Waive collection of permit fees for health and safety priorities	X	X		X	X									PDRP	Building and Code Enforcement	Natural Resources	Internal coordination	Organization and action by BCC
<input type="radio"/>	Planning, Building and Code enforcement must coordinate permit review simultaneously post disaster	X													Brevard County One-Stop Permitting	Building and Code Enforcement	Planning	In place	
<input checked="" type="radio"/>	Temporary prioritization on non-emergency repairs to structures to allow for initial stabilization of community - services, access, etc.	X	X		X	X	X	X							PDRP	Building and Code Enforcement	Planning, Zoning, Natural Resources	Staff time	Creation of prioritization order
	Delay landscaping standards to expedite recovery	X	X		X	X	X	X							PDRP	Natural Resources	Planning, Code Enforcement	Staff time	
Build back standards for nonconforming and substantially damaged structures																			
<input type="radio"/>	Prioritize, identify and map areas of repetitive loss properties and implement managed withdrawal	X													PDRP	Emergency Management	Planning, Building and Code Enforcement, Natural Resources	Staff time	Amend Comprehensive Plan
<input checked="" type="radio"/>	Create infill and demolition incentives to encourage the rehabilitation of non-conforming and substantially damaged structures	X													PDRP	Planning		Staff time	Amend Comprehensive Plan
Controlling long-term post-disaster blight																			
<input type="radio"/>	Create and maintain a Foreclosure Data Base	X								X			X	PDRP	Planning	Code Enforcement	Staff time		
<input checked="" type="radio"/>	Create a prioritized demolish schedule for unsafe structures to reduce chance of injury and improve property values	X								X			X	PDRP	Planning	Code Enforcement	Staff time		

Achievement Level	Land Use Actions & Policy	Implementation Timeline											Structure & Implementation							
		Pre-Disaster	Emergency Period		Short-Term Recovery (days)				Long - Term Redevelopment (months)					Action Plan						
			72 hours	1 - 15	15 - 30	30 - 60	60 - 90	4 - 6	6 - 12	12 - 18	18 - 24	24 +	Policy Plan	Responsible Agency	Collaboration Agencies	Resources Needed	Additional Action Needed			
	Reducing disaster vulnerability through land use and development regulations																			
	Develop policies that encourage street connectivity: Interconnected grid street networks increase emergency management performance and lowers per capita cost	X														PDRP	Planning	Fire and Emergency Management	Staff time	Amend Comprehensive Plan
○	Avoid development in environmentally sensitive areas	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Comprehensive Plan	Natural Resources and Planning		Staff time	
●	Identify and map areas of non-conforming land uses	X														PDRP	Planning	CFGIS	GS and staff time	
●	Encourage Fire Wise community standards	X														PDRP	Planning	Fire	Staff time	Amend Comprehensive Plan and LDC
	Planning, The Fire Department, and the FL Division of Forestry (FDOF) need to coordinate burning criteria to create an understanding of each others needs to prevent future burn hazards	X														Comp Plan	Planning	Fire	Staff time	
	Offer GIS assistance to municipalities in Brevard County for disaster planning	X														PDRP	Planning	CFGIS	Staff time	
	Prioritizing areas to focus redevelopment																			
●	Create a triage of priorities for redevelopment of non-conforming land use and repetitive loss properties, based upon the three most likely disaster scenarios identified in the LMS	X															Planning and Emergency Mgmt.	Natural Resources, Building and Code Enforcement	Staff time	Amend Comprehensive Plan
	Historic preservation and restoration																			
●	Determine buildings and areas that should be protected by historical designations to assists in the preservation and restoration of the sites	X														PDRP	Planning	Historical Commission, Housing & Human Services Department	Staff time	

Appendix



EXISTING LOCAL, REGIONAL AND STATE POLICIES AND PROCEDURES

The policies below currently (2011) support post-disaster planning in Brevard County.

Brevard County Comprehensive Plan

Solid Waste Management Element

GOAL 2: BREVARD COUNTY SHALL ENSURE A SAFE, ENVIRONMENTALLY SOUND, AND EFFICIENT COUNTY-WIDE HAZARDOUS MATERIALS MANAGEMENT SYSTEM.

Objective 6: Brevard County shall increase public awareness of the nature, harmful effects, and proper disposal methods associated with hazardous wastes through public information programs. Information on source reduction and recycling of hazardous wastes shall also be made available.

Policy 6.1: All appropriate public agencies and organizations should develop and implement public information programs.

Criterion: County shall maintain a Household Hazardous Waste Hotline to answer questions, to disseminate current information to the public, to provide information programs to schools, and to advise the commercial sector on the proper handling and disposal of hazardous wastes.

Policy 6.2: Brevard County shall disseminate information on hazardous waste source reduction and recycling to homeowners and businesses.

Criterion: Brevard County shall research and compile information from available sources on hazardous waste source reduction and recycling possibilities.

Policy 6.3: Brevard County shall continue to publish solid waste recycling information guides to help facilitate the recycling of waste materials such as batteries, fluorescent lamps, mercury devices, paints, pesticides, oil, etc.

Objective 7: Brevard County shall establish and maintain programs and enforcement mechanisms to ensure that all users of hazardous materials and generators of hazardous waste properly transport, store, and dispose of hazardous waste.

Policy 7.1: Brevard County shall continue and expand the collection center or system to receive hazardous wastes from households, small businesses, and other low-volume generators.

Policy 7.2: Brevard County shall, where appropriate, incorporate into the Brevard County Code by reference all state statutes relating to environmental pollution or hazardous materials.

Policy 7.3: All hazardous waste incineration units and specialized units shall be required to acquire any and all county, state and federal permits.

Criterion: Hazardous waste shall be incinerated only in accordance with applicable standards of the State of Florida and Brevard County.

Policy 7.4: Brevard County shall train and equip all involved enforcement personnel to ensure adequate enforcement of local hazardous materials codes.

Policy 7.5: Brevard County's Natural Resources Division shall establish a hazardous waste assessment, notification and verification program in accordance with Ch. 62-731 F.A.C.

Objective 8: Brevard County shall provide adequate emergency response and cleanup capabilities for the uncontrolled or accidental releases of hazardous materials.

Policy 8.1: The County hazardous materials emergency response team shall be maintained, and provided with adequate training and equipment (including a field communication network) on a permanent basis.

Policy 8.2: Operating costs shall be recovered from parties responsible for the cause of hazardous material incidents.

Policy 8.3: Brevard County shall maintain and expand a hazardous materials computer data base (accessible to other County Departments) which identifies the characteristics, locations, types, and quantities of hazardous materials for emergency response purposes.

Objective 9: Implement a program to assess the present and future facility needs for the collection and consolidation of hazardous wastes generated by Brevard County.

Policy 9.1: Brevard County shall maintain a hazardous waste collection station at the Central Disposal Facility and provide, where feasible, recycling services.

Policy 9.2: Brevard County shall explore the establishment of additional transfer facilities within the County.

Objective 10: By 2002 Brevard County shall establish and implement a program to coordinate the County Departments involved in hazardous material management. Public and private sector entities will be encouraged to become involved in the development of an optimal hazardous materials management system.

Policy 10.1: Establish a Hazardous Materials Task Force to be responsible for preparing recommendations and implementing programs and activities that would provide for an efficient and safe Hazardous Materials Management System.

Policy 10.2: Brevard County shall establish a hazardous materials incident procedure which describes all involved departments' role and assures the proper handling of the event.

Criteria:

- A. The purpose of the Hazardous Materials Task Force shall be to coordinated county-wide effort to develop an optimal hazardous materials management system.
- B. The Hazardous Materials Task Force should be comprised of, but not limited to, representatives from all relevant agencies and organizations.

Transportation Element

Policy 2.4: Major transportation system improvement proposals and associated ancillary facilities shall be thoroughly evaluated for consistency with the Comprehensive Plan, applicable Florida Statutes and federal regulations to minimize adverse environmental impacts and maximize economic and social benefits. A "major improvement" could involve roadway, rail, airport, port and/or other mode.

Criteria:

- A. Adequate project data, including an analysis of benefits, impacts, and proposed mitigation measures should be provided. As appropriate, the following items should be considered:

1. Current and future public need;
 2. Project impacts to natural resources, including floodplains, aquifer recharge areas, soils, wetlands, surface water, groundwater, drainage, natural communities and wildlife, spheres of influence, air quality, and species listed as endangered, threatened or species of special concern as designated by federal, state or local agencies;
 3. Project impacts to significant historical and archaeological resources such as those listed on the National Register of Historic Places or Florida Master Site File;
 4. Noise and visual implications, including the provision of adequate landscaping;
 5. Management of hazardous materials including emergency planning, emergency response, spill control and spill prevention;
 6. Hurricane evacuation strategies and capacities;
 7. Project impacts to the local economy, including wages and job generation;
 8. Project impacts to the intraregional mobility function of the Florida Intrastate Highway System;
 9. Land use compatibility with existing and future development including established neighborhoods;
 10. Proliferation of urban sprawl as defined in Florida Statutes;
 11. Long term maintenance responsibilities;
 12. Capacity of other infrastructure, such as water and sewer, to accommodate the project and/or ancillary elements associated with the project.
- B. The Board of County Commissioners shall determine consistency of a major transportation system improvement with the Comprehensive Plan upon review and consideration of all technical data and analysis, recommendations of the staff, Local Planning Agency and input from the public.

Policy 2.6: Brevard County shall monitor the needs of the coastal population and identify major transportation improvements to maintain performance levels, as set forth in the Coastal Management Element, for ensuring timely evacuation prior to an impending natural disaster.

Policy 5.6: Brevard County shall coordinate with Port Canaveral, as described in the Brevard County Peacetime Emergency Plan, for evacuation from natural disasters.

Future Land Use Element

Policy 11.1: Brevard County shall continue to identify areas that are candidates for redevelopment, such as those addressed in the Merritt Island Redevelopment Plan and adopt redevelopment plans in order to improve traffic circulation and parking, and to provide for aesthetically pleasing and environmentally sound commercial, office and residential opportunities, consistent with this Comprehensive Plan. At a minimum, the following criteria shall apply:

Criteria: A. Redevelopment plans shall be coordinated with the availability of the following public facilities and services at levels of service adopted in this Comprehensive Plan: roadways, potable water, sanitary sewer, drainage, solid waste and emergency services. Community Facilities Needs (Fire and Police Stations, Libraries, Schools, Water Facilities and Prisons)

Policy 1.2.6: Brevard County shall designate, acquire or dedicate adequate and appropriate lands for community facilities, such as public schools, water system facilities, fire and emergency medical services, police protection, and libraries as established in the Capital Improvements Element of this Comprehensive Plan.

Intergovernmental Element

Policy 2.5: Brevard County shall coordinate with the municipalities and appropriate state agencies to develop Evacuation Zone Management Plans as described in the Coastal High Hazard section of the Coastal Management Element as well as the recommendations found within the Brevard County Comprehensive Emergency Management Plan (CEMP).

Capital Improvements Element

Policy 1.3: As a part of the Capital Improvements Plan development process, Brevard County should utilize the following advisory level of service standards for public libraries, law enforcement, correctional facilities, fire protection, emergency medical services, and public education shown below as planning guidelines to evaluate the need for public facility improvements.

Objective 4: Brevard County shall maintain adequate fiscal resources and policies to fund necessary public facility improvements, including transportation, potable water, sanitary sewer, surface water management, solid waste, parks and recreation, public libraries, law enforcement, correctional facilities, fire protection, and emergency medical services.

Policy 4.3: Brevard County should continue to seek funding from State and Federal sources and pursue interlocal agreements with private and public agencies to ensure sufficient money is available to provide necessary public facilities and services.

Public Schools Facility Element

Policy 3.7: Brevard County, in conjunction with the School District and the municipalities within Brevard County shall identify issues relating to public school emergency preparedness, such as:

- A. The determination of evacuation zones, evacuation routes, and shelter locations.
- B. The design and use of public schools as emergency shelters.
- C. The designation of sites other than public schools as long-term shelters, to allow schools to resume normal operations following emergency events.

Coastal Element

Objective 4: Brevard County shall implement and improve as necessary a comprehensive beach and dune management program which protects, enhances and restores a naturally functioning beach system as funding is available.

Policy 4.1: The Land Development Regulations shall maintain regulations governing the location, construction and maintenance of development adjacent to the Atlantic shoreline. Development seaward of the Florida Department of Environmental Protection (FDEP) 1981 Coastal Construction Control Line (CCCL), which coincides with the Brevard County Coastal Construction Line (CCL), shall be governed by the following conditions, at a minimum:

Criteria:

- C. No new shoreline hardening structures shall be permitted in unincorporated Brevard County south of Patrick Air Force Base (PAFB) property or within the Archie Carr National Wildlife Refuge, with exception of emergency provisions as provided for in Florida Statutes Chapter 163.3187(1)(a) "Amendment of Adopted Comprehensive Plan".
- D. North of the PAFB, no new shoreline hardening structures should be permitted.
- E. Pursuant to Criteria C and D of this policy, if a shoreline hardening structure is deemed necessary, the following criteria shall apply:
 - 1. Vertical wood or concrete structures, and rock revetments shall only be approved when less structural alternatives, such as beach renourishment, dune restoration and sandbag systems have been determined not to be feasible.
 - 2. All shoreline protection measures shall be designed to minimize adverse impacts to the naturally functioning beach and dune system and adjacent properties. The County may require dune restoration and revegetation as a component of the shoreline hardening approval both landward and seaward of the proposed structure.
 - 4. All shoreline protection shall be designed and constructed so as to not impede public access to or along the shore.
- F. Setbacks or other non-structural methods of shoreline protection shall be given the highest priority.
- G. Reconstruction of existing hard erosion control structures which are more than fifty (50) percent destroyed should be considered new construction and should be regulated as such, except for the maintenance of existing public navigational projects, such as Port Canaveral and Sebastian Inlet.

Policy 4.3: Brevard County shall continue to adopt and enforce standards for maintenance or re-establishment of dune areas.

Criteria:

- G. Private property owners should be encouraged to re-establish dune vegetation which has been destroyed by non-designated access activities or storm damage.

Policy 4.4: Brevard County's beach and dune restoration program shall include an analysis of environmental, financial and social criteria.

Criteria:

- A. The first priority for beach renourishment shall be given to the protection of life and property.
- B. Priority shall also be given to environmental considerations.
- C. Public areas which are heavily utilized for recreation, including surfing, fishing or swimming, shall be considered for beach or dune renourishment or restoration, as applicable. Long-term management of these areas shall be included with all site improvements.
- D. A feasibility or benefit/costs analysis should be performed for any renourishment project. Such analyses shall include, as appropriate, present and future benefits for property protection, recreation and tourism over the life of the project.

Policy 5.5: Brevard County shall require hurricane plans to be submitted to the Emergency Management Division in conjunction with marina site plans for review.

Policy 5.13: Brevard County shall support environmentally and economically sound development of Port Canaveral and related facilities, which is consistent with this Comprehensive Plan. (See Policy 5.4 of the Transportation Element).

Coastal High Hazard Area

Objective 6: Limit future public expenditures for infrastructure and service facilities which subsidize growth within the coastal high hazard areas of Brevard County. Expenditures for public land acquisition or enhancement of natural resources shall be encouraged.

Policy 6.4: If County utility lines are relocated for any purpose, they should be located outside of the coastal high hazard zone, except where there is no cost-feasible alternative.

Policy 6.5: Public facilities, except for recreational facilities, shall not be located by Brevard County within the coastal high hazard zone, except where there are no other cost feasible alternatives. Corresponding improvements may only be considered when the facilitation of such improvements is needed to support the densities programmed on the Future Land Use Map (FLUM) series of the Comprehensive Plan.

Objective 7: Limit densities within the coastal high hazard zone and direct development outside of this area.

Policy 7.5: Brevard County shall maintain the Brevard County Comprehensive Emergency Management Plan (BrevCemp). This plan shall be consistent with this Comprehensive Plan, and shall be coordinated with the municipalities, the appropriate state and federal agencies, and approved by the appropriate state agency(s).

Policy 7.8: Public facilities, such as hospitals, wastewater treatment plants or fire stations, shall not be located on causeways.

Policy 8.9: Based upon hurricane vulnerability concerns and excessive evacuation times, new mobile home development or recreational vehicle parks shall not be permitted on the barrier island, to the extent permitted by law. Expansions to an existing mobile home development may be permitted if such development results in a decrease in land use intensity and an overall reduction in programmed residential densities and is consistent with the character of the surrounding area.

Hurricane Evacuation

Objective 8: Reduce excessive evacuation times where they currently exist, and maintain all other evacuation times within the acceptable standard. Acceptable standards will be reviewed and updated as necessary.

Policy 8.2: Brevard County shall coordinate with the municipalities and appropriate state agencies to develop Evacuation Zone Management Plans to reduce evacuation times above the current optimum behavioral response time. The following shall be considered, at a minimum:

Criteria:

- A. Roadway and other infrastructure improvements and funding mechanisms.
- B. Programs designed to improve the behavioral response to hurricane evacuation orders.
- C. Land use strategies.

Policy 8.3: Brevard County Emergency Management shall continue to coordinate with NASA to allow evacuation of North Merritt Island through Kennedy Space Center, if necessary.

Policy 8.4: Brevard County shall identify roadway and operational improvements to the hurricane evacuation network based upon the number of people who cannot be evacuated within an optimum evacuation time limit.

Criteria:

- A. Priority shall be given to improvements serving the zone with the highest number of people remaining after the current optimum evacuation time.
- B. The remaining improvements shall be given priority in descending order according to the number of people remaining after the optimum evacuation time.
- C. Brevard County, in cooperation with the Florida Department of Transportation, shall identify key hurricane evacuation routes that are vulnerable to flooding, erosion and critical points of congestion during the established evacuation time

Policy 8.8: Brevard County's Comprehensive Emergency Management Plan (BrevCEMP) shall be consistent with the state comprehensive emergency management plans.

D. Brevard County shall present recommended roadway, operational and maintenance improvements to the appropriate implementing and funding agencies.

Policy 9.1: Brevard County shall continue to cooperate with the Red Cross and State Emergency Management to provide an emergency shelter manager training course and encourage interested citizens of Brevard County to become shelter managers.

Policy 9.2: Brevard County Office of Emergency Management shall continue to cooperate with the Red Cross to develop a public education program on hurricane preparedness, including the locations of hurricane evacuation shelters and the need for emergency shelter managers.

Policy 9.5: Brevard County shall support the School Board in their efforts to utilize enhanced hurricane shelter protection standards for all reconstruction and new development in accordance with FS 235.26.

Policy 9.7: Brevard County shall study the feasibility of increasing residential construction standards to reduce hurricane shelter deficits and ensure the delivery of safe housing for citizens of Brevard County.

Post-Disaster Redevelopment

Objective 10: Expedite post-disaster recovery and reduce or eliminate the future risk to human life, and public and private property from natural hazards via recovery and re-development strategies adopted in the Brevard County CEMP.

Policy 10.1: Brevard County's Code Compliance Department and Public Works Department shall review all non-emergency and long-term redevelopment proposals utilizing the following criteria:

Criteria:

- A. If utility lines, including but not limited to sewer, water, gas, electric and cable TV, must be relocated after a storm event, they should be permanently located landward (west) of the 1986 FDEP Coastal Construction Control Line and underground, except for feed lines servicing individual parcels. Repair of these lines on a temporary basis to protect health and safety shall be permitted in their existing locations.
- B. Underground storage tanks which are located seaward of the Brevard County Coastal Setback Line (CSL) shall be relocated landward (west) of the 1986 FDEP Coastal Construction Control Line.
- C. Water-dependent commercial uses seaward of the 1981 FDEP Coastal Construction Control Line which are damaged by more than 50% of their assessed value or fair market value as determined by an NAI appraisal supplied by the property owner may be reconstructed seaward (east) of the 1981 FDEP CCCL consistent with the coastal zone construction requirements.
- D. Water-related commercial uses seaward (east) of the 1981 FDEP Coastal Construction Control Line which are damaged by more than 50% of their assessed value or fair market value as determined by an NAI appraisal supplied by the property owner should be relocated landward (west) of the 1981 FDEP CCCL unless the project has no feasible alternative and is found to be in the public interest.
- E. Water-enhanced commercial uses seaward (east) of the 1981 FDEP Coastal Construction Control Line which are damaged by more than 50% of their assessed value or fair market value as determined by an NAI appraisal supplied by the property owner should be relocated landward (west) of the 1981 FDEP CCCL.
- F. If non-habitable minor structures which are damaged by more than fifty (50) percent of their assessed value or fair market value as determined by an NAI appraisal supplied by the property owner are reconstructed, they shall be relocated and constructed in compliance with coastal zone construction requirements.
- G. Brevard County should develop a program for the possible relocation of residential housing, if required after a natural disaster.

Policy 10.2: The replacement of infrastructure shall be constructed in conjunction with existing development or as part of an integral network of infrastructure.

Policy 10.3: By 2002, Brevard County should analyze those public structures within the coastal zone which are most likely to be damaged or destroyed during a hurricane. The analysis shall be coordinated by the Planning and Zoning Office and shall consider the following criteria, at a minimum:

Criteria:

- A. The cost effectiveness of relocation versus repair shall be analyzed.
- B. Alternatives shall be considered in the light of mitigative impacts, growth management consistency, impacts to the public, timeliness, legal issues, environmental impacts and cost.
- C. The following alternatives, at a minimum, shall be analyzed:
 - 1. Repair of the structure to the pre-disaster conditions.
 - 2. Repair of the structure to the pre-disaster conditions with physical protective structures, such as seawalls or revetments.
 - 3. Vertical relocation of the structure, e.g. elevating roadways with bridges.
 - 4. Relocation further inland.
- D. Reconstruction or relocation of SR A1A and other roadway segments within the coastal high hazard area shall be included within this study.

- E. Analysis of County service center and other facilities shall be in conjunction with the County's Space/Needs Assessment.
- F. Those structures within the high risk vulnerability zone to be included are the Central Brevard Service Complex, District II Commission Office, District II Road and Bridge, County Sign Shop, public libraries and County fire stations.
- G. The study shall be consistent with the East Central Florida Regional Planning Council studies. The hurricane scenarios and loss estimates shall be consistent with the Hurricane Loss Study and shall be coordinated with other appropriate agencies.
- H. The impact of sea level rise and the projected 30-year erosion line shall also be analyzed.

Policy 10.4: In the event of a disaster all infrastructure and other County owned improvements, which were not included within the above outlined study, shall be analyzed to determine the cost effectiveness of relocation versus repair.

Policy 10.5: The Brevard County Code Compliance Department shall provide copies of building permits which have been issued for storm damage repair to the County Hazard Mitigation Team for their evaluation for identification of areas susceptible to repeated damage by hurricane erosion and flooding.

Policy 10.6: Brevard County shall continue to conduct disaster related exercises at regular intervals, as determined by the Office of Emergency Management, or in conjunction with the East Central Florida Regional Planning Council, Local Emergency Planning Committee and other state or federal agencies.

Policy 10.7: The Property Appraiser should be requested to conduct a post-disaster evaluation exercise to assess property damages necessary for disaster relief and post-disaster redevelopment funds. The Property Appraiser should have available a listing of property values coordinated with land use maps to facilitate such property assessment procedures. County staff, such as the Planning and Zoning Office staff, should be utilized as manpower requirements dictate.

Policy 10.8: The BrevCEMP shall be coordinated with other local, regional and state entities. As additional interagency hazard mitigation reports are received, they shall be reviewed and incorporated into the BrevCEMP.

Policy 10.9: Brevard County should require that when utility lines, including, but not limited to sewer, water, gas, electric and TV cable, are relocated for any purpose, they shall be placed underground.

Policy 12.9: Brevard County shall coordinate with the U.S. Army Corps of Engineers and the Canaveral Port Authority in the implementation of the Port Canaveral inlet management plan.

Port Canaveral

Objective 12: Brevard County will continue to identify provisions of the Port Master Plan which it considers inconsistent with the Coastal Management Element of the County Comprehensive Plan and will continue to offer to coordinate with Port Canaveral in resolving any inconsistencies. Brevard County shall continue to request copies of proposed plan amendments submitted for transmittal to the Department of Community(delete hard return) Affairs and shall continue to review and comment on such amendments to the Port Master Plan consistent with the County's procedure for reviewing plans of other jurisdictions and Chapter 163.3177 (6) (g).

Brevard County Code of Ordinances

According to the Brevard County Code of Ordinances, the term “nonconforming use” is defined as the use of land or structures that was lawful prior to the effective date of an ordinance, but then becomes not permitted. In general, there are no provisions that specifically deal with nonconforming use and structures as it pertains to disaster or post-disaster planning. Although the Workgroups attempted to put procedures in place, it became very apparent that achieving these guidelines were both politically and practically unlikely.

The two sections of the Brevard County Code that are most applicable to disaster planning are Sec. 62-1183 – Abandonment and Sec. 62-1184 – Discontinuation on damage to structure.

Sec. 62-1183. - Abandonment.

If any nonconforming use of land or structures is abandoned or discontinued for a period of 180 consecutive days or for 18 cumulative months during any three-year period, the land or structure shall thereafter only be put to a use specifically in conformity with the provisions of the applicable zoning classification and any other provision of this article or amendment to this article, and the privileges of this subdivision shall be deemed forfeited for the land or structures. This provision shall not apply to any nonconforming residential structure in a residential or GU zoning classification, or to an agricultural use which has been seasonally discontinued as part of an on-going agricultural operation.

(Code 1979, § 14-20.38(D); Ord. No. 95-56, § 2 , 12-12-95)

Sec. 62-1184. - Discontinuation on damage to structure.

If any nonconforming structure is destroyed or damaged by any cause and such damage exceeds 50 percent of the fair market value of such structure, such structure shall thereafter only be put to a use specifically in conformity with the provisions of the applicable zoning classification and any other provision of this article or amendment to this article, and the privileges of this subdivision shall be deemed forfeited for such structure. Fair market value, for the purposes of this section, shall be deemed the valuation of such structure by the county property appraiser in his assessment for levying of ad valorem taxes for the tax year in which such damage was sustained. Exceptions to this section shall be as provided in section 62-1182(b)(3).

(Code 1979, § 14-20.38(E))

Local Mitigation Strategy

The Vision statement:: “Make Florida a disaster resistant and resilient State, one community at a time”.

State Goal 2: Support the development and enhancement of local capability to practice hazard mitigation.

Brevard Prepares Goal 2: Local government in partnership with the community will continue to develop, implement and maintain effective mitigation programs

State Goal 3: Increase public and private sector awareness and support for disaster loss education practices as a means of developing a culture of hazard mitigation in Florida.

Brevard Prepares Goal 4: Public education will be enhanced to increase the level of disaster awareness.

State Goal 5: Protect the state's cultural, economic and natural resources.

Brevard Prepares Goal 1: The disaster-resistant economy will be strengthened.

Brevard County/Brevard Prepares

Goals and Objectives for the Local Mitigation Planning Process:

1. The disaster-resistant economy will be strengthened.
 - a) Local government will establish programs, facilities and resources to support business resumption activities by impacted local businesses and industry.
 - b) Local government emergency response and disaster recovery plans will appropriately consider the needs of key employers in the community.
 - c) Local government will encourage community businesses and industries to make their facilities and operations disaster resistant.
 - d) Components of the infrastructure needed by the community's businesses and industries will be protected from the impacts of disaster.
2. Local government in partnership with the community will continue to develop, implement and maintain effective mitigation programs.
 - a) The capability to effectively utilize data and information related to mitigation planning and program development including "lessons learned".
 - b) The effectiveness of mitigation initiatives implemented in the community will be measured.
 - c) Outreach programs to gain participation in mitigation programs by business, industry, institutions and community groups will be developed and implemented.
 - d) The community's public and private sector organizations will partner to promote hazard mitigation programming throughout the community.
 - e) Local elected governing bodies will promulgate the local mitigation plan and support community mitigation.
3. The health, safety and welfare of our disaster-resistant community will be maintained.
 - f) Local governments will establish and enforce building and land development codes that are effective in addressing the hazards.
 - g) Land use policies, plans and regulations will discourage or prohibit inappropriate location of structures or infrastructure.
 - h) Local government will ensure that hazard mitigation needs and programs are given appropriate emphasis.
 - i) Regulations will be established and enforced to ensure that public and private property maintenance is consistent with minimizing vulnerabilities to disaster.
 - j) Designated evacuation routes will be relocated, retrofitted or modified to remain open before, during and after disaster events, and vehicle access routes to key areas will remain open.
 - k) The potential for infrastructure system failure because of or during a disaster will be minimized through routine maintenance.
 - l) Local government will support key employers in the community in the implementation of mitigation measures for their facilities and systems.
 - m) Facilities in the community posing an extra health or safety risk when damaged or disrupted will be made less vulnerable to the impacts of a disaster.
 - n) Programs for removal, relocation or retrofitting of vulnerable structures and utilities in hazard areas will be established and implemented.
 - o) There will be adequate resources, equipment and supplies to meet victims' health and safety needs after a disaster.
 - p) Adequate systems for notifying the public at risk and providing emergency instruction during a disaster will be available.
 - q) Local governments will protect high hazard natural areas from new or continuing development.

- r) Local jurisdictions will participate fully in the National Flood Insurance Program and the associated Community Rating System.
 - s) Reconstruction and rehabilitation of structures and utilities in the community will incorporate appropriate hazard mitigation techniques.
4. Public education will be enhanced to increase the level of disaster awareness.
- a) The community will be periodically updated regarding local efforts in mitigation planning and programming.
 - b) The owners and operators of businesses and industries in the community will be knowledgeable in appropriate techniques.
 - c) Managers of public facilities will be knowledgeable in hazard mitigation techniques and the components of the community’s mitigation plan.
 - d) All interested individuals will be encouraged to participate in hazard mitigation planning and training.
 - e) The public living or working in defined hazard areas will be aware of that fact, understand their vulnerability and know appropriate techniques.
 - f) Education programs in risk communication and hazard mitigation will continue to be established and implemented.

Brevard County 2025 Long Range Transportation Plan

TRAFFIC FLOW AND CONGESTION MANAGEMENT STRATEGIES

In order to preserve access, some government agencies are employing Intelligent Transportation Systems (ITS), which are created by integrating advanced information, electronic, communications, and other technologies to address surface transportation problems. ITS networks provide a wealth of real-time and archived data that can be used to conduct analyses to identify issues and solutions related to both existing and probable future locations of recurring congestion. In addition, ITS data from roadways and signals can pinpoint non-recurring congestion, helping the Metropolitan Planning Organization (MPO) isolate trouble spots that surface during community events and plan for appropriate responses. ITS data can also be combined with crash and incident data using Geographic Information Systems (GIS) in order to target safety-related improvements at high-crash locations.

ITS User Service Bundle	ITS User Service	Statewide	Region	Corridor
Emergency Management	Emergency Notification and Personnel		X	X
	Emergency Vehicle Management		X	X

Several local government entities and other agencies in Brevard County currently or are planning to use and operate ITS systems. These agencies include the following:

- Brevard County and City of Melbourne Traffic Operations Centers
- Brevard County Emergency Operations Center

The MPO Traffic Operations Committee can use these and other data to plan traffic management strategies such as signal timing improvements and placement of message boards for incidents, special events and emergency evacuation.

Strategic Regional Policy Plan - East Central Florida Regional Planning Council

The East Central Florida Regional Policy Plan is a regional plan focusing on a variety of issues from growth management and transportation to emergency management and natural resources. The policies below support post-disaster redevelopment planning.

Policy 4.17: Support the implementation of the Comprehensive Economic Development Strategy (CEDS) and other state and federal plans that are consistent with the region’s economic policies.

Policy 5.15 - Ensure that the transportation network, especially public transportation, supports the emergency evacuation needs of the region.

GOAL - Prepare communities to effectively respond to disasters by implementing an all-hazards approach to emergency preparedness planning and coordination at the regional level.

Policy 6.3: - Plan for and support domestic security initiatives in the East Central Florida region.

Policy 6.7: Emergency preparedness planning shall consider and address statewide, regional, and local pre-disaster evacuation and post-disaster response and recovery.

Policy 6.9: Assist local jurisdictions and agencies to implement industry disaster preparedness plans and programs.

Policy 6.10: Coordinate public and private partnerships to promote the region's emergency preparedness programs and capabilities, such as the East Central Florida Post-Disaster Economic Redevelopment Plan (PDERP).

Policy 8.5: Promote local government assessments of carbon emissions, local energy resources, and potential impacts and risks associated with climate change.

Policy 8.6: Encourage communities to identify coastal land uses and critical facilities that may be impacted by sea level rise.

Florida State Statutes and Rules

Florida Statutes and Rules provide directives and requirements for emergency management planning as well as post-disaster redevelopment planning. These relevant statutes and rules are below.

Section 163.3177(7)(l), F.S.

Local governments that are not required to prepare coastal management elements under s. 163.3178 are encouraged to adopt hazard mitigation/post-disaster redevelopment plans. These plans should, at a minimum, establish long-term policies regarding redevelopment, infrastructure, densities, nonconforming uses, and future land use patterns. Grants to assist local governments in the preparation of these hazard mitigation/post-disaster redevelopment plans shall be available through the Emergency Management Preparedness and Assistance Account in the Grants and Donations Trust Fund administered by the department, if such account is created by law. The plans must be in compliance with the requirements of this act and chapter 252.

Rule 9J-5.012(2)(e), F.A.C.

(e) The following natural disaster planning concerns shall be inventoried or analyzed:

2. Post-disaster redevelopment including: existing and proposed land use in coastal high-hazard areas; structures with a history of repeated damage in coastal storms; coastal or shore protection structures; infrastructure in coastal high-hazard areas; and beach and dune conditions. Measures which could be used to reduce exposure to hazards shall be analyzed, including relocation, structural modification, and public acquisition.

Rule 9J-5.012(3)(b)8., F.A.C.

Prepare post-disaster redevelopment plans which will reduce or eliminate the exposure of human life and public and private property to natural hazards;

Rule 9J-5.012(3)(c)5., F.A.C.

Post-disaster redevelopment including policies to: distinguish between immediate repair and cleanup actions needed to protect public health and safety and long-term repair and redevelopment activities; address the removal, relocation, or structural modification of damaged infrastructure as determined appropriate by the local government but consistent with federal funding provisions and unsafe structures; limiting redevelopment in areas of repeated damage; and, policies for incorporating the recommendations of interagency hazard mitigation reports, as deemed appropriate by the local government, into the local government's comprehensive plan when the plan is revised during the evaluation and appraisal process;

Rule 9J-5.012(3)(c)6., F.A.C.

Identifying areas needing redevelopment, including eliminating unsafe conditions and inappropriate uses as opportunities arise;

Facilities Vulnerability Analysis

Map	Critical Facility Vulnerability Analysis																
	In Hazard Zone	Evac Zone A	Evac Zone B	Evac Zone C	Evac Zone D	Evac Zone E	Surge Zone 1	Surge Zone 2	Surge Zone 3	Surge Zone 4	Surge Zone 5	Not in Surge	100 Flood	500 Flood	Out of Flood	In Fire Zone	Not in Fire Zone
302 Facilities	75	18	4	7	11	20	0	9	16	8	22	20	9	5	61	31	44
Communications	36	5	0	3	1	6	0	2	3	3	4	24	7	10	19	23	13
Schools (All)	90	22	0	5	3	15	0	10	12	5	13	50	8	6	76	53	34
Public Schools	84	22	0	4	3	13	0	10	12	4	11	47	8	6	70	50	31
Colleges	6	0	0	1	0	2	0	0	0	1	2	3	0	0	6	3	3
Emergency Services (All)	99	47	0	2	6	23	0	19	24	11	17	28	6	4	89	31	68
Call Center	7	5	0	0	1	1	0	2	2	2	0	1	0	0	7	1	6
Emergency Medical Service	13	4	0	1	1	5	0	2	2	2	3	4	1	1	11	3	10
Fire Station	54	26	0	1	2	8	0	13	12	4	6	19	4	3	47	22	32
Law Enforcement	25	12	0	0	2	9	0	2	8	3	8	4	1	0	24	5	20
Health Care (All)	157	34	0	15	7	61	6	11	26	7	67	44	12	6	139	57	100
Adult Family Care Home	10	1	0	0	1	3	0	1	0	0	3	6	0	2	8	7	3
Ambulatory Surgical Center	12	3	0	0	0	12	0	1	2	0	9	0	0	1	11	2	10
Assisted Living Facility	28	7	0	3	0	3	0	3	4	1	5	15	4	2	22	18	10
Clinical Laboratory	76	18	0	7	5	32	6	4	14	5	33	14	7	1	68	19	57
Crisis Stabilization Unit	1	0	0	0	0	1	0	0	0	0	1	0	0	0	1	0	1
End-Stage Renal Disease	7	1	0	2	0	2	0	0	3	0	2	2	0	0	7	2	5
Hospice	2	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2	0
Hospital	6	1	0	1	0	3	0	1	0	1	3	1	0	0	6	1	5
Intermediate Care Facility	1	0	0	0	1	0	0	0	0	0	5	0	0	0	1	0	1
Skilled Nursing Facility	14	3	0	2	0	5	0	1	3	0	6	4	1	0	13	6	8
Mobile Home & RVs	123	34	1	13	20	14	2	9	19	20	31	42	25	3	95	67	56
Mobile Home Parks	108	30	0	11	18	14	0	8	17	19	28	36	19	2	87	56	52
Recreational Vehicles	15	4	1	2	2	0	2	1	2	1	3	6	6	1	8	11	4
Communications	36	5	0	3	1	6	0	2	3	3	4	24	7	10	19	23	13
Radio Tower	30	5	0	3	1	6	0	2	3	3	4	18	7	5	18	17	13
Television	6	0	0	0	0	0	0	0	0	0	0	6	0	5	1	6	0
Infrastructure	290	59	8	15	35	52	5	29	28	20	58	150	52	17	221	217	73
Public Water Supply	169	18	3	7	26	31	2	12	2	10	39	104	32	5	132	148	21
Solid Waste Facility	25	9	3	0	0	5	0	5	6	0	2	12	4	3	18	13	12
Wastewater Facility	96	32	2	8	9	16	3	12	20	10	17	34	16	9	71	56	40
Shelters	21	0	0	1	1	3	0	0	1	0	2	18	2	1	18	17	4

Appendix C: Map Source Table

Map	Title	Description	Data Required
Basemap	"Basemap Geographic features of Brevard County"	Locational basemap of Brevard County identifying Cities, Major Roads, and Rail Lines	"ECFRPC Data: Major Roads 2008; Water Bodies 2006; County Boundary 2006 ESRI: World Map"
Location Map - 302 Facilities	"Locations in Brevard County 302 ""Hazardous Materials"" Facilities within a Hazard Zone"	Locational Map Identifying 302 Facilities in Brevard County's Hazard Zones	"ECFRPC Data: Major Roads 2008; Water Bodies 2006; County Boundary 2006; Hazardous Materials 2009 ESRI: World Map"
Location Map - Bridges and Major Roads	"Location Major Bridges and Roads in Brevard County"	Locational Map Identifying Major Bridges and Roads in Brevard County	"ECFRPC Data: Major Roads 2008; Water Bodies 2006; County Boundary 2006; Bridges 2008 ESRI: World Map"
Location Map - Communication Infrastructure	"Locations in Brevard County Communication Infrastructure within a Hazard Zone"	Locational Map Identifying Communication Infrastructure in Brevard County's Hazard Zones	"ECFRPC Data: Major Roads 2008; Water Bodies 2006; County Boundary 2006; Communication 2009 ESRI: World Map"
Location Map - Community Resources	"Locations in Brevard County Community Resources within a Hazard Zone"	Locational Map Identifying Community Resources (Emergency Services, Logistics, and Military) in Brevard County's Hazard Zones	"ECFRPC Data: Major Roads 2008; Water Bodies 2006; County Boundary 2006; Community Resources 2009 ESRI: World Map"
Location Map - Critical Infrastructure	"Locations in Brevard County Critical Infrastructure within a Hazard Zone"	Locational Map Identifying Critical Infrastructure in Brevard County's Hazard Zones	"ECFRPC Data: Major Roads 2008; Water Bodies 2006; County Boundary 2006; Infrastructure 2009 ESRI: World Map"
Location Map - Emergency Services and Correctional Facilities	"Locations in Brevard County Emergency Services & Correctional Facilities within a Hazard Zone"	Locational Map Identifying Emergency Services Law Enforcement, Fire, EOC, Call Centers, Emergency Medical Services, and Correctional Facilities in Brevard County's Hazard Zones	"ECFRPC Data: Major Roads 2008; Water Bodies 2006; County Boundary 2006; Emergency Services 2009, Correctional Facilities 2009 ESRI: World Map"
Location Map - Health Care Facilities	"Locations in Brevard County Health Care Facilities within a Hazard Zone"	Locational Map Identifying Health Care Facilities in Brevard County's Hazard Zones	"ECFRPC Data: Major Roads 2008; Water Bodies 2006; County Boundary 2006; Health Care Facilities 2009 ESRI: World Map"

Map	Title	Description	Data Required
Location Map - Mobile Home and RV Parks	"Locations in Brevard County Mobile Home and RV Parks within a Hazard Zone"	Location Map Identifying Mobile Home and RV Parks within a Hazard Zone	"ECFRPC Data: Major Roads 2008; Water Bodies 2006; County Boundary 2006 Brevard County Parcels 2010; FDOH Mobile Home and RV Parks 2009 ESRI: Wold Map"
Location Map - Schools	"Locations in Brevard County Schools within a Hazard Zone"	Locational Map Identifying Schools in Brevard County's Hazard Zones	"ECFRPC Data: Major Roads 2008; Water Bodies 2006; County Boundary 2006; Schools 2009 ESRI: World Map"
Location Map - Shelters	"Locations in Brevard County Shelters within a Hazard Zone"	Locational Map Identifying Shelters in Brevard County's Hazard Zones	"ECFRPC Data: Major Roads 2008; Water Bodies 2006; County Boundary 2006; Shelters 2009 ESRI: World Map"
NRORS Map - 100 Year Floodplain	"Natural Resources of Regional Significance 100 Year Floodplain in Brevard County"	Natural Resources Map outlining Q3 100 Year Floodplain based on ECFRPC NRORS 2010 Package	"ECFRPC Data: Major Roads 2008; Water Bodies 2006; County Boundary 2006 ECFRPC NRORS 2010 ESRI: Wold Map"
NRORS Map - Biodiversity Hot Spots	"Natural Resources of Regional Significance Biodiversity Hot Spots in Brevard County"	Natural Resources Map outlining Biodiversity Hot Spots based on ECFRPC NRORS 2010 Package	"ECFRPC Data: Major Roads 2008; Water Bodies 2006; County Boundary 2006 ECFRPC NRORS 2010 ESRI: Wold Map"
NRORS Map - Committed Conservation and Mitigation Banks	"Natural Resources of Regional Significance Committed Conservation and Mitigation Banks in Brevard County"	Natural Resources Map outlining committed conservation and mitigation banks based on ECFRPC NRORS 2010 Package	"ECFRPC Data: Major Roads 2008; Water Bodies 2006; County Boundary 2006 ECFRPC NRORS 2010 ESRI: Wold Map"
NRORS Map - Eagle Nest	"Natural Resources of Regional Significance Eagle Nest in Brevard County"	Natural Resources Map outlining Eagle Nest based on ECFRPC NRORS 2010 Package	"ECFRPC Data: Major Roads 2008; Water Bodies 2006; County Boundary 2006 ECFRPC NRORS 2010 ESRI: Wold Map"

Map	Title	Description	Data Required
NRORS Map - FDEP Ecological Greenway Network	"Natural Resources of Regional Significance FDEP Ecological Greenway Network in Brevard County"	Natural Resources Map outlining FDEP Ecological Greenway Network based on ECFRPC NRORS 2010 Package	"ECFRPC Data: Major Roads 2008; Water Bodies 2006; County Boundary 2006 ECFRPC NRORS 2010 ESRI: Wold Map"
NRORS Map - Ground Water Recharge	"Natural Resources of Regional Significance Ground Water Recharge in Brevard County"	Natural Resources Map outlining Ground Water Recharge based on ECFRPC NRORS 2010 Package	"ECFRPC Data: Major Roads 2008; Water Bodies 2006; County Boundary 2006 ECFRPC NRORS 2010 ESRI: Wold Map"
NRORS Map - Hydrographic Water Bodies	"Natural Resources of Regional Significance Hydrographic Water Bodies in Brevard County"	Natural Resources Map outlining Hydrographic Water Bodies based on ECFRPC NRORS 2010 Package	"ECFRPC Data: Major Roads 2008; Water Bodies 2006; County Boundary 2006 ECFRPC NRORS 2010 ESRI: Wold Map"
NRORS Map - National Hydrography Dataset Flowlines	"Natural Resources of Regional Significance National Hydrography Dataset Flowlines in Brevard County"	Natural Resources Map outlining National Hydrography Dataset Flowlines based on ECFRPC NRORS 2010 Package	"ECFRPC Data: Major Roads 2008; Water Bodies 2006; County Boundary 2006 ECFRPC NRORS 2010 ESRI: Wold Map"
NRORS Map - Rare Species Habitat Conservation	"Natural Resources of Regional Significance Rare Species Habitat Conservation in Brevard County"	Natural Resources Map outlining Rare Species Habitat Conservation based on ECFRPC NRORS 2010 Package	"ECFRPC Data: Major Roads 2008; Water Bodies 2006; County Boundary 2006 ECFRPC NRORS 2010 ESRI: Wold Map"
NRORS Map - Wetlands	"Natural Resources of Regional Significance Wetlands in Brevard County"	Natural Resources Map outlining FLUCCS and NWI wetlands based on ECFRPC NRORS 2010 Package	"ECFRPC Data: Major Roads 2008; Water Bodies 2006; County Boundary 2006 ECFRPC NRORS 2010 ESRI: Wold Map"
Vulnerability Map - Housing & Wind	Housing Wind Vulnerability	Housing Wind Vulnerability Map based on Structure Year Built	"ECFRPC Data: Major Roads 2008; Water Bodies 2006; County Boundary 2006 Brevard County Parcels 2010 ESRI: Wold Map"
Vulnerability Map - Sea Level Rise	"Vulnerability Analysis Storm Surge in Brevard County"	5 Foot Storm Surge in Brevard County	"ECFRPC Data: Major Roads 2008; Water Bodies 2006; County Boundary 2006 ECFRPC Storm Surge 2009 ESRI: Wold Map"

Appendix C

Map	Title	Description	Data Required
Vulnerability Map - Storm Surge	"Vulnerability Analysis Sea Level Rise in Brevard County"	Sea Level Rise in Brevard County	"ECFRPC Data: Major Roads 2008; Water Bodies 2006; County Boundary 2006 ECFRPC Sea Level Rise 2009 ESRI: Wold Map"
Vulnerability Map - Wildfire Level of Concern	"Vulnerability Analysis Wildfire Level of Concern in Brevard County"	Wildfire level of concern based on a 10 category scale of "Unburnable", and "1 - 9"	"ECFRPC Data: Major Roads 2008; Water Bodies 2006; County Boundary 2006 Florida Division of Forestry, Florida Department of Agriculture and Consumer Services ESRI: Wold Map"
Vulnerability Map - Wildland-Urban Interface Fire Risk	"Vulnerability Analysis Wildland-Urban Interface Fire Risk in Brevard County"	Map determining the risk of fire to an urban area ranked from "No Risk" to "Very High Risk"	"ECFRPC Data: Major Roads 2008; Water Bodies 2006; County Boundary 2006 USGS, Florida Department of Agriculture and Consumer Services ESRI: Wold Map"
Vulnerability Map - Wind Risk Assessment	"Vulnerability Analysis Wind Risk Assessment Using HAZUS - MH with 50 Year Return Peak Gusts"	Wind Risk Assessment Using HAZUS - MH with 50 Year Return Peak Gusts in Brevard County	"ECFRPC Data: Major Roads 2008; Water Bodies 2006; County Boundary 2006 HAZUS Wind Risk ESRI: Wold Map"
Vulnerability Map - Wind Risk Assessment overlayed with Housing Vulnerability	"Vulnerability Analysis Wind Risk Assessment Using HAZUS Overlayed with Housing Vulnerability"	Wind Risk Assessment Using HAZUS - MH with 50 Year Return Peak Gusts in Brevard County overlayed with Housing Vulnerable to wind damage	"ECFRPC Data: Major Roads 2008; Water Bodies 2006; County Boundary 2006 HAZUS Wind Risk; Brevard County Parcels 2010 ESRI: Wold Map"
Vulnerability Map - Regional DOR Classification within Coastal High Hazrd Category 1	"Vulnerability Analysis Regional DOR Classification within Coastal High Hazrd Category 1"	Regional DOR Classification within Coastal High Hazrd Category 1	"ECFRPC Data: Major Roads 2008; Water Bodies 2006; County Boundary 2006 HAZUS Wind Risk; Brevard County Parcels 2010 ESRI: Wold Map"

APPENDIX D: GLOSSARY OF TERMS

Coastal High-Hazard Area: The area below the elevation of the Category 1 storm surge line as established by a Sea, Lake, and Overland Surges from Hurricanes (SLOSH) computerized storm surge model (Florida Statutes Chapter 163.3178).

Community Area Plan: Localized plans designed to address and offer solutions to the critical planning issues and concerns in Hillsborough County communities. The plans reflect an emphasis on implementation and accountability. In contrast to the Comprehensive Plan, Community Area Plans have a short-term planning horizon, focus on a limited number of strategic issues, are limited to smaller distinct geographic areas, and are more detailed. Also known as Community-Based Plans.

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.

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.

Continuity of Government Plan (COG): The document that established policy and guidance to support the continuation and line of succession for governmental functions.

Continuity of Operations Plan (COOP): Plans by individual departments and agencies to ensure the continued performance of minimum essential functions during a wide range of potential emergencies. This is accomplished through the development of plans, comprehensive procedures, and provisions for alternate facilities, personnel, resources, interoperable communications, and vital records/databases.

Critical Facilities & Infrastructure: Critical infrastructure is a term used by governments to describe assets that are essential for the functioning of a society and economy. Typically they are essential to public safety and security, public health, economic vitality. Disruption to these systems or facilities would have a debilitating effect on the community or beyond.

Damage Assessment: A systematic procedure for evaluating damage to public and private property based on current replacement cost. Used to determine if the area can qualify for federal or state disaster assistance.

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:

1. Catastrophic Disaster – A disaster that will require massive state and federal assistance, including immediate military involvement;
2. Major Disaster – A disaster that will likely exceed local capabilities and require a broad range of state and federal assistance; and
3. Minor Disaster – A disaster that is likely to be within the response capabilities of local government and to result in only a minimal need for state or federal assistance.

Disaster Declaration: A declaration made by the Hillsborough County Emergency Policy Group (Policy Group) that the community has sustained impacts from a natural catastrophe where damages are of a sufficient severity and magnitude to warrant major disaster assistance to supplement efforts and available resources to save lives and protect property and public health and safety, and to alleviate the damage, loss, and hardship or suffering caused thereby.

Disaster Recovery Center (DRC): A facility established in or near the community affected by the disaster designed to serve as a referral and information office for state and federal disaster assistance.

Emergency Cottage: A small temporary dwelling that may be utilized for emergency housing for a limited period following a Disaster Declaration, subject to the requirements of Section 6.11.112 of the Hillsborough County Land Development Code.

Emergency Operations Center (EOC): The central direction and control facility for county disaster response operations; also provides coordination of resources and services during disaster situations.

Emergency Support Function (ESF): A primary agency or agencies designated to facilitate coordination of disaster response and recovery activities. Hillsborough County uses 18 ESFs to align county response and recovery activities with those of the State based on their orientation, capabilities, and resources. The Hillsborough County CEMP includes details on the individual ESFs.

Florida Statutes: The formal written enactment of a legislative authority that governs the State of Florida which command or prohibit something, or declare policy. They are the written laws decided by the legislative branch of government.

Geographic Information System (GIS): GIS captures, stores, analyzes, manages, and presents data that is linked to location. GIS includes mapping software and its application with remote sensing, land surveying, aerial photography, mathematics, photogrammetry, geography, and tools that can be implemented with GIS software.

Hazard Mitigation Grant Program (HMGP): Provides grants to states and local governments to implement long-term hazard mitigation measures after a major disaster declaration. The purpose of the HMGP 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. The HMGP is authorized under Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act.

Land Development Code: The Land Development Code implements and enforces the objectives and policies outlined in the Comprehensive Plan.

Local Mitigation Strategy (LMS): Multi-jurisdictional pre-disaster 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 implemented by a countywide stakeholder committee.

Long-range Transportation Plan (LRTP): A 20-year guide for transportation investments throughout Hillsborough County. The LRTP identifies the location, size, and type of improvements in transportation infrastructure and services that can be afforded in Tampa, Temple Terrace, Plant City, and unincorporated Hillsborough County. It is a multi-modal plan, i.e., it includes projects for highways, sidewalks, trails, ports and airports, buses, and other public transportation.

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.

Major Damaged Structure: A structure that can be made habitable with extensive repairs. Damage may include foundation, roof structure, and major structural components. The indicator for this category is if the cost to repair is greater than 20% and up to and including 50% of the replacement cost at the time of damage (Hillsborough County Redevelopment Ordinance 93-20).

Minor Damaged Structure: A structure that can be made habitable in a short period of time with minimal repairs. Damages may include doors, windows, floors, roofs, and mechanical systems and other minor structural damage. The threshold in this category is if the cost to repair is less than or equal to 20% of the replacement cost of the structure at the time of damage (Hillsborough County Redevelopment Ordinance 93-20).

Mitigation: Sustained actions taken to reduce or eliminate long-term risk to people and property from hazards and their effects.

Mutual Aid: Mutual aid is an agreement among emergency responders to lend assistance across jurisdictional boundaries which may occur as a result of an emergency response that exceeds local resources.

National Incident Management System (NIMS): NIMS is a system used in the United States to coordinate emergency preparedness and incident management among various federal, state, and local agencies. It is mandated under Homeland Security Presidential Directive (HSPD)-5.

National Response Framework (NRF): The NRF is part of the National Strategy for Homeland Security that presents the guiding principles enabling all levels of domestic response partners to prepare for and provide a unified national response to disasters and emergencies. Building on the existing National Incident Management System (NIMS) as well as Incident Command System (ICS) standardization, the NRF's coordinating structures are always in effect for implementation at any level and at any time for local, state, and national emergency or disaster response.

National Flood Insurance Program (NFIP): A federal program that authorizes the sale of federally subsidized flood insurance in communities that agree to adopt and implement flood mitigation strategies and regulations.

Non-conforming use: Non-conforming uses arise when zoning for a particular area is changed in a way that does not encompass some land uses already present in the affected zoning district.

Nongovernmental Organizations (NGO): Entities with an association that is based on interests of its members, individuals or institutions and that is not created by a government, but may work cooperatively with government. Such organizations serve a public purpose, not a private benefit. Examples of NGOs include faith-based charity organizations and the American Red Cross

Post-Disaster Redevelopment Plan (PDRP): A plan that identifies policies, operational strategies, and roles and responsibilities for implementation that will guide decisions that affect long-term recovery and redevelopment of the community after a disaster. The plan 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 in the plan should include business resumption and economic redevelopment, housing repair and reconstruction, infrastructure restoration and mitigation, short-term recovery actions that affect long-term redevelopment, sustainable land use, environmental restoration, and financial considerations as well as other long-term recovery issues identified by the community.

Pre-disaster Mitigation (PDM): A program that provides funds to states, territories, Indian tribal governments, communities, and universities for hazard mitigation planning and the implementation of mitigation projects prior to a disaster event. Funding these plans and projects reduces overall risks to the population and structures, while also reducing reliance on funding from actual disaster declarations. PDM grants are awarded on a competitive basis and without reference to state allocations, quotas, or other formula-based allocation of funds.

Preparedness: Pre-disaster activities that ensure people are ready for a disaster and will respond to it effectively. It includes steps taken to decide what to do if essential services break down, how redevelopment should occur, developing a plan for contingencies, and practicing that plan.

Priority Redevelopment Area (PRA): A PRA is a regional or community center or a critical installation essential for disaster recovery and consistent with future land use plans. PRAs 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.

Public Information Officer (PIO): An emergency support position responsible for ensuring that sufficient public information and education are promulgated to affected citizens and entities concerning the recovery operations, available assistance programs, and how to apply for such assistance.

Reconstruction/Long-term Recovery: 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: A task force that oversees the reconstruction process and serves as an advisory committee to the Board of County Commissioners on recovery, redevelopment, and new development moratoria issues. This body also identifies opportunities to mitigate future damages through the management of recovery and redevelopment.

Response: Activities that address the immediate and short-term effects of an emergency or disaster. Response activities are contained within the Emergency Support Functions of the CEMP and include immediate actions to save lives, protect property, meet basic human needs, and restore water, sewer, and other essential services.

Short-term Recovery: Encompasses such activities as damage assessments, public information, temporary housing, utility restoration, and debris clearance. It does not include 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.

Stakeholder Organization (Group): Community PDRP Stakeholders comprising eight technical advisory committees: 1) Land Use, 2) Housing Recovery, 3) Public/Private Infrastructure and Facilities, 4) Environmental Restoration, 5) Financial Administration, 6) Economic Redevelopment, 7) Public Outreach, and 8) Health and Social Services.

Substantial Damage: Damage of any origin sustained by a building when the cost of restoring the building to its pre-damaged condition would equal or exceed 50 percent of the market value of the building before the damage occurred. Substantial damage is determined regardless of the actual repair work performed (FEMA: National Flood Insurance Program).

Substantial Improvements: Any reconstruction, rehabilitation, addition, or other improvement of a structure taking place within a one-year period for which the cost equals or exceeds 50% of the market value of the structure before the "start of construction" of the improvement. The term includes structures that have incurred substantial damage, regardless of the actual work performed, including repetitive loss.

The term does not, however, include either:

1. Any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code specifications which have been identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions; or
2. Any alteration of a "historic structure" provided that the alteration would not preclude the structure's continued designation as a "historic structure" (Hillsborough County Memorandum: Definition of Substantial Improvement).

Sustainable Priority Redevelopment Area: An area that can be sustainably re/developed to a higher intensity than current conditions and is a focus of future land use plans for the jurisdiction. A Sustainable PRA is consistent with regional visions for economic development and public transit.

- *Sustainable Regional Priority Redevelopment Area:* An area identified as a regional economic/activity center with the capacity to support additional residential and commercial development at least temporarily during the long-term recovery period.
- *Sustainable Community Priority Redevelopment Area:* An area envisioned for redevelopment or higher density/intensity development (e.g., community or neighborhood activity centers, business centers, community redevelopment districts, and Transfer of Development Rights

Technical Advisory Committee (TAC): The eight TACs (Land Use, Housing Recovery, Public/Private Infrastructure and Facilities, Environmental Restoration, Financial Administration, Economic Redevelopment, Public Outreach, and Health and Social Services) are the working bodies of the PDRP. It is at this level that new ideas for actions are developed as well as coordination of implementing PDRP actions during the pre-disaster and post-disaster periods.

Vulnerable Priority Redevelopment Area: An area that contains essential location-dependent facilities, is a well-established community center integral to economic recovery and returning to normalcy, and/or is a planned growth area critical to regional visions for the future. A Vulnerable PRA is 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 PRAs because damages will most likely be more severe.

- *Vulnerable Established Community Priority Redevelopment Area:* A major residential or commercial area that must be reestablished as soon as possible after a disaster despite its damage or future vulnerability. It might provide critical community facilities (i.e., medical care facility or large school, etc.) or may serve national businesses or regional economic development.
- *Vulnerable Location-Dependent Priority Redevelopment Area:* An installation that would be cost prohibitive to relocate after a disaster or would not be able to function in a different location but is vital for the recovery of the region (e.g., Tampa International Airport, Port of Tampa, MacDill Air Force Base, and the Central Business District of Tampa).
- *Vulnerable Planned Growth Priority Redevelopment Area:* An area identified in future land use plans that is envisioned for redevelopment or higher density/intensity development that does not meet the resilience criteria of Sustainable PRAs but is still critical to regional growth plans (e.g., County regional or community activity centers, business centers in the City, or community redevelopment districts).

ACRONYMS

-A-

ACS	American Community Survey
ASCE	American Society of Civil Engineers
ARC	American Red Cross

-B-

BEBR	Bureau of Economic and Business Research (University of Florida)
BFE	Base Flood Elevation
BOCC	Board of County Commissioners
BrevCEMP	Brevard County Comprehensive Emergency Management Plan
BRP	Business Recovery Plan

-C-

CCCL	Coastal Construction Control Line
CEDS	Comprehensive Economic Development Strategy
CEMP	Comprehensive Emergency Management Plan
CHHA	Coastal High Hazard Areas
COG	Continuity of Government Plan
COOP	Continuity of Operations Plan
CPIC	Citizens Property Insurance Corporation

-D-

DCA	Florida Department of Community Affairs
DFIRM	Digital Flood Insurance Map
DMP	Debris Management Plan
DRC	Disaster Recovery Plan
DRI	Development of Regional Impact
DOF	Division of Forestry
DOH	Department of Health
DOR	Department of Revenue

-E-

ECF	East Central Florida
ECFRPC	East Central Florida Regional Planning Council
EDB	Economic Development Board
EDC	Economic Development Commission of Florida's Space Coast
EDE	Economic Development Element of the Comprehensive Plan
EM	Emergency Management
EMS	Emergency Medical Services
EOC	Emergency Operations Center
EPA	Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-know Act
ESF	Emergency Support Function
EEL	Environmentally Endangered Lands Program
ERC	Environmental Remediation and Compliance Section

-F-

F.A.C.	Florida Administrative Code
F.S.	Florida Statutes
FBO	Faith Based Organization
FDCA	Florida Department of Community Affairs
FDEM	Florida Division of Emergency Management
FDEP	Florida Department of Environmental Protection
FDEO	Florida Department of Economic Opportunity
FDLE	Florida Department of Law Enforcement
FDOH	Florida Department of Health
FDOT	Florida Department of Transportation
FEMA	Federal Emergency Management Agency
FEC	Florida East Coast (Railway)
FHA	Federal Housing Administration
FHCF	Florida Hurricane Catastrophe Fund
FIRM	Flood Insurance Rate Map

FLUM	Future Land Use Map	MOU	Memorandum of Understanding
FOA	Fire Occurance Area		-N-
FRAI	Fire Response Accessibility Index	NASA	National Aeronautice and Space Administration
FWC	Florida Fish and Wildlife Conservation Commission	NFIP	National Flood Insurance Program
	-G-	NHD	National Hydrography Dataset
GIS	Geographic Information System	NIMS	National Incident Management System
	-H-	NMRO	National Management Resource Office
HazMat	Hazardous Materials	NRORS	Natural Resources of Regional Significance
HAZUS-MH	Hazards U.S. Multi-Hazard		-O-
HBCA	Home Builders and Contractors Association	OJT	On the Job Training
HMEP	Hazardous Materials Emergency Preparedness		-P-
HMGP	Hazard Mitigation Grant Program	PA	Public Assistance
HMVZ	Hazardous Material Vulnerability Zone	PIO	Public Information Officer
HVZ	Hurricane Vulnerability Zone	PDM	Pre-Disaster Mitigation Grant Program
	-I-	PDRP	Post-Disaster Redevelopment Plan
IA	Individual Assistance	PDERP	Post-Disaster Economic Redevelopment Plan
IFAS	Institute of Food and Agricultural Services	PUD	Planned Unit Development
	-J-		-Q-
JIS	Joint Information System	Q3	FEMA Flood Data
	-K-		-R-
KSC	Kennedy Space Center	REMI	Regional Economic Model, Inc.
	-L-	RIS	Resource Identification Strategy
LMS	Local Mitigation Strategy	RUDAT	Rural/Urban Design Assistance Teams (part of American Inst. Of Architects)
LOC	Level of Concern		-S-
LiDAR	Light Detection and Ranging	SBA	Small Business Administration
	-M-	SCAT	Space Coast Area Transit
MPO	Metropolitan Planning Organization	SERC	State Emergency Response Commission (Florida)

Appendix E

SJRWMD	St. Johns River Water Management District
SLOSH	Sea, Lake and Overland Surges from Hurricanes
SOP	Standard Operating Procedure
SRP	Strategic Regional Policy
SWFWMD	Southwest Florida Water Management District

-T-

TAC	Technical Adviosry Committee
TDHP	Temporary Disaster Housing Plan

-U-

UMCOR	The United Methodist Committee on Relief
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-V-

VOAD	Voluntary Organizations Active in Disasters
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-W-

WAVA	Wekiva Aquifer Vulnerability Assessment
WFSI	Wildland Fire Susceptibility Index
WMD	Water Management District

APPENDIX F: SOURCES

Brevard County Comprehensive Plan (2010)

Brevard County Local Mitigation Strategy (2009)

Brevard County Comprehensive Emergency Management Plan (2008)

Brevard County Sheriff's Office Continuity of Operations Plan

Brevard County 2025 Long Range Transportation Plan (March 2006)

Countywide Post-Disaster Redevelopment Plan, Palm Beach County, Florida (August 2006): Palm Beach County

East Central Florida Statewide Regional Evacuation Study (2010): East Central Florida Regional Planning Council

Hillsborough County Post-Disaster Redevelopment Plan: Hillsborough County

Manatee County Post-Disaster Redevelopment Plan (2008): Manatee County

Nassau County Post-Disaster Redevelopment Plan (June 30, 2009): Nassau County

Polk County Post-Disaster Redevelopment Plan (June 2009): Polk County

Post-Disaster Redevelopment Planning: A Guide for Florida Communities (2010): Florida Department of Community Affairs

