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# **Local Planner's Quick Reference**

## **Hazard Mitigation Policy Examples from Florida County Comprehensive Plans**

**September 2006**

A companion to the *Integrating Hazard Mitigation into Comprehensive Planning Florida* County Profiles and the Florida Department of Community Affairs' *Protecting Florida's Communities* guidebook

# acknowledgments

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This document was produced by Continental Shelf Associates, Inc. It is available online at [www.csa-planning.com](http://www.csa-planning.com) or for additional copies of this reference please contact:


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Abbreviations Used in Policy Citations

CIE	Capital Improvements Element
CME	Coastal Management Element
CZM	Coastal Zone Management
FLUE	Future Land Use Element
ICE	Intergovernmental Coordination Element
OS	Open Space

# introduction

## Why Integrate Hazard Mitigation into the Comprehensive Plan?

Integrating hazard mitigation into local comprehensive plans and other land use, transportation, or redevelopment documents is essential for preventing future vulnerability. The comprehensive plan provides the legal framework to enforce land use and development regulations that guide all growth. Florida's population is growing rapidly and vulnerability to natural hazards is increasing. While the local mitigation strategy (LMS) should be a central repository for all hazard mitigation issues, relegating them only to this plan lessens the significance hazards pose to a community and reduces the community's ability to institutionalize hazard resiliency as a core goal.

## How to Integrate Hazard Mitigation into the Comprehensive Plan?

In 2004, the Florida Department of Community Affairs (FDCA) embarked on a project led by both its Community Planning Division and its Emergency Management Division to introduce the idea of integrating the LMS into the local comprehensive plan. The FDCA contracted with CSA Planning and PBS&J to implement this initiative statewide. The work effort included preparing profiles for each county and 13 pilot municipalities as well as facilitating regional workshops to introduce the subject of integration. The profiles included a discussion of current demographics, an analysis of selected natural hazards and the relationship of the hazards to existing and future land use patterns, a review of existing mitigation measures, and a set of recommended options for integrating hazard mitigation into the comprehensive plan. Each county's LMS, comprehensive emergency management plan (CEMP), and comprehensive plan were reviewed for strengths and weaknesses regarding natural hazard mitigation strategies. The strategies were derived from a soon-to-be published FDCA guidebook, "Protecting Florida's Communities". The five strategies were: 1) collaborate, coordinate, and educate; 2) get out of the way — provide evacuation and sheltering services; 3) make the environment less hazardous — protect and enhance natural protective features; 4) make structures more resistant to natural hazard forces; and 5) manage the development and redevelopment of land in hazardous areas. Other FDCA guidebooks were also used to shape the profile recommendations such as the *Wildfire Mitigation in Florida* and *Disaster Planning for Florida's Historic Resources* guidebooks. The project was recently completed and already several counties have begun taking steps to include new hazard mitigation policies in their comprehensive plans. From the feedback received at the completion of each workshop, it seems that one of the major benefits of the initiative was simply bringing local planners and local emergency managers together to discuss each other's roles in building more resilient communities.



# introduction

The County Profiles developed under this FDCA initiative, as well as the FDCA guidebooks, are a great place to begin considering how to incorporate hazard mitigation policies into your community's comprehensive plan and other planning documents. They can be found on the FDCA website at [www.dca.state.fl.us/fdcp/dcp/hazardmitigation](http://www.dca.state.fl.us/fdcp/dcp/hazardmitigation). This quick reference was developed as a companion to both the County Profiles and the FDCA hazards series guidebooks. A common request CSA received as we conducted the regional workshops for the FDCA project was for example policy language that incorporates hazards. The profiles suggest hazard mitigation strategies or tools that can be included in a community's comprehensive plan based on its vulnerabilities and existing comprehensive plan policies. The recommendations do not suggest specific policy language however, and many local planners felt they could better justify attempts to include these suggestions if they had examples of how other counties have done so. During our reviews we found notable hazard mitigation policies in many counties' comprehensive plans so we extracted the best policies for each of the five mitigation strategies analyzed and compiled them into this quick reference for local planners. This guide provides policies from large and small counties as well as urban and rural counties. As communities develop new hazard mitigation policies or if there are better examples of policies that we have not included, please send them to [info@csa-planning.com](mailto:info@csa-planning.com) and we will update the reference. We hope that knowledge of what other comprehensive plans include regarding hazard mitigation will spur your jurisdiction into including similar or better policies.

## **How to use this Quick Reference**

This reference is organized by the five hazard mitigation strategies discussed in the previous section: 1) collaborate, coordinate, and educate; 2) get out of the way — provide evacuation and sheltering services; 3) make the environment less hazardous — protect and enhance natural protective features; 4) make structures more resistant to natural hazard forces; and 5) manage the development and redevelopment of land in hazardous areas. Under each strategy, a series of questions suggest how the broad strategy could be addressed through policies in the comprehensive plan or LMS. These questions were used to analyze local comprehensive plans for the FDCA *Integrating Hazard Mitigation into Comprehensive Planning* County Profiles and would be a good tool for each jurisdiction to use in accessing their own plans regarding hazard mitigation. Under each question in this reference, example policies are sorted by the hazard type they refer to. Each policy includes a citation of the county's comprehensive plan and element it was obtained from.

# strategy one

## Collaborate, Coordinate, & Educate

### **QUESTION Is there information sharing and/or involvement in plan development between planners and emergency managers?**

all hazards

The Miami-Dade County Department of Planning and Zoning and the Office of Emergency Management shall facilitate the coordination of emergency planning issues by increasing interaction. (Miami-Dade County, ICE, 8C)

The Recovery Task Force shall review all interagency hazard mitigation reports as they are produced and make recommendations for amendments to the comprehensive plan accordingly. (St. Lucie County, CME Policy 7.2.4.9)

coastal

The Broward County Planning Council shall maintain a Broward County coastal high-hazard area map with information received from the Division of Emergency Management as part of the Natural Resource Map Series of the Broward County Land Use Plan. (Broward, ICE Policy 11.2.2.)

sinkholes

The County Emergency Management Division shall maintain a county-wide sinkhole inventory using existing sources such as the Soil Survey for Marion County and the Sinkhole Institute in Orlando and shall update the inventory using information from site plans submitted for the County's development review process, site inspections, and other sources as may become available. (Orange County, Fire Rescue Element, Policy 8.1)

# strategy one

## Collaborate, Coordinate, & Educate

### **QUESTION Do the Comprehensive Plan, LMS, CEMP, and other local and regional plans cross-reference each other and include consistent data on hazardous locations?**

Broward County should incorporate the recommendations of interagency hazard mitigation reports into the Broward County Comprehensive Plan. (Broward County, Natural Disaster Component, Policy 11.4.3)

Palm Beach County shall maintain a Local Mitigation Strategy program (LMS) with the purpose of developing and implementing a unified approach among County and municipal governments for dealing with identified hazards and hazard management problems. The program's primary objectives shall: 1. Improve the community's resistance to damage from identified natural, technological, and social hazards; 2. Increase Palm Beach County's eligibility for receiving local, state, federal, and other mitigation funds; 3. Reduce the cost of disasters; and 4. Expedite post-disaster community recovery. (Palm Beach County, CME Policy 2.4-d)

The County adopts, as a part of the Levy County Comprehensive Plan, the Peacetime Civil Defense Plan, by reference. The County shall prepare Land Development Regulations to implement Coastal Hazard Mitigation Plans which address pre-disaster and recovery activities. The Levy County Emergency Management Director shall develop and updated mitigation plans and recommend mitigation actions to the County as necessary. (Levy County, CME Policy 12.1)

Inventory Hazards. The County shall continue to maintain an inventory of any existing hazards within the County by using the hazards analysis and hazards mitigation criteria established within the DeSoto County Local Hazard Mitigation Strategy and shall also identify any grant sources available to mitigate the hazards listed on the hazard inventory. (DeSoto County, CIE Policy 1.3.2)

Dade County shall complete a Post-Disaster Redevelopment Plan for incorporation into the existing Dade County Hazard Mitigation Plan to provide comprehensive pre-disaster planning for pre- and post-disaster activities, development, and redevelopment. (Miami-Dade County, CME Policy 10A)

all hazards

# strategy one

## Collaborate, Coordinate, & Educate

hurricanes

The County shall update its Comprehensive Emergency Management Plan periodically in a manner consistent with Rules 9G-6 FAC to incorporate changes to population, highways/bridges, shelter modifications, hurricane hazard analysis, and forecast techniques. (Palm Beach County, CME Policy 2.4-c)

During post-disaster recovery and redevelopment, Dade County shall implement its Hazard Mitigation and Post-Disaster Redevelopment Plan and applicable CDMP policies and assist hurricane damaged areas with recovery and hazard mitigation measures that reduce the potential for future loss of life and property. (Miami-Dade County, CME Objective 11)

St. Lucie County shall continue to implement the Treasure Coast Hurricane Evacuation Plan. (St. Lucie County, CME Policy 7.2.3.3)

### **QUESTION Are hazard mitigation projects addressed in the 5-year schedule of Capital Improvement Projects?**

all hazards

Capital improvement needs will be evaluated and prioritized based on the following criteria for each element of the plan. The criteria are as follows: a. Elimination of a public hazards; b. Compliance with all legal mandates to provide facilities and services; c. Elimination of existing Level of Service deficiencies; d. Financial feasibility based of local budget; e. Reduction of operation costs or future improvement costs; f. Protects or increases the efficiency of prior infrastructure investments; g. Promotes compact development within the urban service area; h. Accommodates new development and redevelopment facility demands; i. Supports state agencies and water management districts plans; k. Respond to unseen opportunity, situations, and disasters. (Levy County, CIE Policy 1.2)

coastal

Limit public expenditures that subsidize development and establish criteria for prioritizing capital improvements in the North Unincorporated Coastal Area (NUCA). (Broward County, Natural Disaster Component Objective 11.1)

# strategy one

## Collaborate, Coordinate, & Educate

**QUESTION Are there measures to educate residents, homeowner/ property associations, and the business community of ways they can mitigate against hazards?**

all hazards

The County shall implement proactive, innovative, and creative educational programs concerning natural resource issues including, but not limited to: Flood and fire hazard mitigation. (Alachua County, Conservation Element Policy 2.2.2)

hurricanes

Monroe County shall seek an inter-local agreement, with one or more appropriate agencies, to draft and implement a comprehensive program for expanded resident and visitor hurricane awareness and evacuation procedures. The program will identify education needs and adequate funding sources to include, at a minimum, staffing requirements, distribution of hurricane public awareness brochures, media coverage, and public announcements in English and Spanish. (Monroe County, Conservation and Coastal Element Policy 216.1.7)

Dade County shall encourage its residents to be better prepared and more self-reliant in the event of a hurricane, including planning ahead for early evacuation and sheltering with family or friends living outside evacuation areas. (Miami-Dade County, CME Policy 8D)

floods

The County shall provide and update the flood plain management handout to inform and educate people about the County's flood plain protection regulations. (Citrus County, Conservation Element, Policy 3.2.1)

wildfire

The County shall implement a Firewise Medal Community Program that involves community fire preparation, evaluation and awards for program involvement. The County shall seek recognition of this program by the state Firewise Communities Recognition Program. (Alachua County, Conservation Element Policy 5.6.4)

# strategy two

## Get out of the Way: Evacuation & Sheltering

### **QUESTION Are there measures to provide adequate evacuation clearance time to support current population and projected population growth?**

Coordinate land use planning activities and coastal area population densities with the Broward County Hurricane Evacuation Plan. (Broward County, FLUE Objective 2.6)

The County shall provide for safe evacuation from coastal areas by reviewing all development proposals in the Hurricane Vulnerability Zone, which are submitted for certification through the zoning approval and development review committee processes, to determine whether the development is expected to result in an increase in hurricane evacuation times. Developments which cause such an increase shall be required to provide mitigation measures, including but not limited to safe rooms in homes or common facilities, or roadway improvements, such that hurricane evacuation times are not increased in the hurricane vulnerability zone. (Palm Beach County, CME Policy 2.1-c)

Develop the capability to evacuate all residents before roads become impassable and within eight (8) hours or less. (Hernando County, CME Policy 5.03A(2))

The County shall maintain or reduce hurricane evacuation times through the year 2005, by requiring that new developments not degrade the existing evacuation Level of Service (LOS). (Citrus County, Coastal, Lakes, & Rivers Element Objective 4.9)

Broward County, through the Mass Transit Division, shall provide a safe public transit network through implementation of, but not limited to, the following programs, activities, or actions: 3. Continue to provide transit service to assure the timely evacuation of the Coastal High Hazard Area during hurricanes. Timely evacuation means evacuation operations shall commence four (4) hours after an evacuation order is issued by the County Administrator and shall be in effect approximately 6½ hours for Plan A (i.e., Category 1 and 2) and 12 hours for Plan B (Cat. 3) and Plan C (Cat. 4 and 5). (Broward County, Transportation Element, Policy 3.1.2)

The County shall develop a prioritized list of road improvements necessary to alleviate transportation constraints on hurricane evacuation routes. (Gulf County, CME Policy 2.3.2)

## strategy two

### Get out of the Way: Evacuation & Sheltering

The existing network of designated major evacuation routes shall be kept up-to-date utilizing the regional hurricane evacuation study or the best information available to Dade County. (Miami-Dade County, CME Policy 8G)

Emergency evacuation mitigation requirements. All new developments which are projected to increase emergency evacuation clearance times above the adopted Martin County emergency evacuation clearance time shall mitigate their impacts fully prior to issuance of certificates of occupancy. (Martin County, CME Objective 3, Policy C)

The County shall ensure concurrency in the coastal zone as required in the Capital Improvements Element for all levels of service, including evacuation clearance time specified in Policy 8.4.B.4.a. (Martin County, CME Objective 5, Policy d)

Dade County shall set as a priority in its transportation planning program the provision of facilities and services to accomplish the timely evacuation of Dade County's barrier islands in advance of approaching hurricanes. (Miami-Dade County, Transportation Element Policy 4D)

The County's land development regulations shall limit residential development and resident populations within coastal high hazard areas to locations and numbers which can be safely evacuated during hurricane hazard periods. (Taylor County, CME Policy IX.6.4)

The County shall not utilize public funds for infrastructure expansion or improvements in coastal high-hazard areas unless such funds are necessary to provide services to the existing development and to provide adequate evacuation in the event of an emergency. (Broward County, Natural Disaster Component Policy 11.1.3)

# strategy two

## Get out of the Way: Evacuation & Sheltering

### **QUESTION Are there measures to provide adequate shelter space to meet population growth and special needs?**

New manufactured home parks outside hurricane surge areas shall include a building(s) for use as shelter(s) for park residents. These shelters shall be designed to meet the minimum ratio of 20 square feet per park resident and shall be sized to accommodate 100 percent of a park's residents. Additionally, adequate space must be provided for registration, showers/bathrooms, food preparation, health services, and fire and safety considerations. (Citrus County, Coastal, Lakes, & Rivers Management Element Policy 4.9.3)

Development orders issued for developments of regional impact should contain condition which require mitigative measures for impacts on hurricane shelter capacity and hurricane evacuation times for developments which generate a number of evacuating vehicles greater than the evacuation traffic capacity on designated hurricane evacuation routes. (Citrus County, Coastal, Lakes, & Rivers Element Policy 4.9.7)

The County shall provide shelter space in accordance with the Comprehensive Emergency Management Plan. Where deficits exist, the County shall seek to reduce the deficit through federal and state retrofit funds. (Palm Beach County, CME Policy 2.4-a)

The County shall coordinate with local governments and the School District on emergency preparedness issues which may include consideration of: 1. Design and/or retrofit of public schools as emergency shelters; 2. Enhancing public awareness of evacuation zones, shelter locations, and evacuation routes; 3. Designation of sites other than public schools as long term shelters, to allow schools to resume normal operations following emergency events. (Palm Beach County, Public School Facilities Element Policy 2.2-g)

The Dade Office of Emergency Management (OEM) shall maintain and annually update a listing of people with special needs to plan for the mobilization required to safely evacuate and shelter those who may need assistance due to physical or medical limitations. All public shelters should be wheelchair accessible. Special shelters within south, central, and north Dade County should be medically staffed and equipped for those persons in need. (Miami-Dade County, CME Policy 8J)

## strategy two

### Get out of the Way: Evacuation & Sheltering

County-funded buildings shall include the function of public hurricane shelter in their design. Some of the elements to be considered in the design are: a. Flooding potential; b. Accessibility; c. Rain surcharge on roofs; d. Window/door glass exposures; e. The use of dedicated roll up/down hurricane shutters; f. Adequate sanitary facilities; g. Emergency power supply; and h. Emergency water supply. (St. Lucie County, CME Policy 7.2.2.1)

All new residential development in excess of fifty units in areas subject to coastal flooding shall provide shelter space for twenty percent of the residents at a spacing requirement of forty square feet per person, or demonstrate the availability of the shelter space. (St. Lucie County CME Policy 7.2.2.4)

Monroe County shall determine the existing level of deficiency in number and location of shelter spaces for Category 1 and 2 storms according to the projected residential and transient population. Existing buildings shall also be identified that could serve as shelters along with actions needed to bring them up to American Red Cross and Emergency Management specified standards. By January 4, 1998, a plan of action for correcting deficiencies shall be presented for adoption by the BOCC. The plan shall be monitored and updated on an annual basis. (Monroe County, Conservation & Coastal Element Policy 216.2.1)

Dade County shall examine incentives for using privately-owned buildings for public shelters and incorporate into its emergency plans a strategy for providing post-disaster shelter and temporary housing to large numbers of disaster victims. (Miami-Dade County, CME Policy 8L)

# strategy three

## Make the Environment Less Hazardous

### **QUESTION Are there measures to protect and/or restore natural resources that might in turn decrease the risk from natural hazards?**

The County shall continue to reestablish damaged dunes and eroded beaches where possible to promote the enhancement of these resources and reduce damage resulting from storms. (Palm Beach County, CME Policy 1.2-e)

Coastal Area [9J-5.006(3)(b)5 and 6] Population concentrations shall be directed away from known Coastal High- Hazard Areas and wetland systems through the designation of Conservation areas and coordination with the appropriate local or regional hurricane evacuation plan. Coastal High-Hazard Areas shall include all lands in the category 1 evacuation zones. (Levy County, FLUE Objective 4)

The County shall avoid the use of shoreline armoring (except as a last resort measure) and shall use shore protection alternatives such as beach nourishment, dune restoration, and inlet sand transfer that reduce the need for armoring. (Palm Beach County, CME Policy 1.2-d)

Protect the water storage and water quality enhancement functions of wetlands, floodplains, and aquifer recharge areas through acquisition, enforcement of rules, and the application of land and water management practices which provide for compatible uses. (Broward County, Drainage & Aquifer Recharge Element Policy 7.5.11)

When feasible the future land use designation for wetlands that are to be preserved should be changed to Conservation, Park, or Open Space. (Broward County, Conservation Element Policy 13.9.4)

Develop and implement programs for protecting and expanding existing wetland areas such as Transfer of Development Rights, conservation easements, restrictive covenants, and tax incentives by 2002. (Broward County, Conservation Element Policy 13.10.2)

The County shall protect the flood storage and conveyance functions of the 100 year flood plain and properties within flood prone areas by limiting development and fill activities consistent with the policies and standards in the Future Land Use Element. (Citrus County, Conservation Element Objective 3.2)

coastal

floods

# strategy three

## Make the Environment Less Hazardous

Treatment of Wetlands for Development Approval. Wetlands within a project shall be placed in a conservation easement which shall run in favor of, and be enforceable by, the County, other governmental agency or a qualified non-profit conservation organization. The conservation easement shall require that the wetlands be maintained in their natural and unaltered state. The entity accepting said conservation easement shall enforce its provisions. In addition, wetlands shall not be included as part of any platted lot, but the wetland shall be shown on the plat as a common area, which shall be dedicated to the homeowners' association or the County, at its option, for ownership and maintenance. Wetlands may be included in the platted lots for subdivisions which have no homeowners' association and which contain 10 lots or less. Any isolated wetland of less than one acre shall be exempt from these requirements. (Lake County, FLUE Policy 1A-2.9)

Identify flood-prone areas on public and private lands and reserve those areas for open space, and/or appropriate recreational activities (ball fields, picnic areas, nature trails, open space, etc.) (Levy County, Recreation & OS Element Policy 3.7)

The County shall coordinate with the South Florida Water Management District to ensure consistency between the County's and the District's planning efforts and to address the combined long-term flood control and water supply needs of the environment, agriculture and urban areas through measures identified in Potable Water & Wastewater Policy 2.1-e. (Palm Beach County, ICE Policy 1.1-I)

Non-Structural Floodplain Management. The County shall continue to rely on a non-structural approach to floodplain management in order to maximize flood-holding capacity and minimize public expenditure for capital and maintenance costs. (Seminole County, Drainage Element Policy 3.1)

The County shall continue to implement and enforce land development regulations which require a minimum fifty (50) foot buffer zone of native upland and transitional vegetation along rivers, creeks, and estuaries, to be maintained from the landward extent of state waters or from mean high water of the rivers, creeks, and estuaries, whichever is greater. (St. Lucie County, CME Policy 7.1.2.3)

# strategy three

## Make the Environment Less Hazardous

### floods

The County's land development regulations shall include the use of programs to protect or maintain floodplain, such as reduced parking, conservation easements, cluster site planning and micrositing of buildings. The County shall continue to strictly enforce regulations that direct development away from floodplains and provide upland buffers along the floodplain. (St. Lucie County, Conservation Element Policy 8.1.3.1)

The County shall implement, through the land development regulations, the transfer of development rights which allows the transfer of density to off-site and on-site locations outside the wetland areas, and shall continue to investigate other techniques that promote and encourage the preservation of wetlands. (Polk County, FLUE Policy 2.123-C4)

### sinkholes

In order to minimize the adverse impacts of development in high recharge areas associated with Karst sensitive areas, the following criteria will be followed: a. minimizing the amount of impervious surfaces permitted. b. additional stormwater collection and protection measures such as requiring more pre-treatment and shallow drainage retention areas. c. requiring native vegetation to remain or be restored to provide vegetative buffers around sinkholes in excess of 50 feet in diameter in Karst sensitive areas. d. requiring, when feasible, alternatives to stormwater retention basins in Karst sensitive areas. e. directing development away from areas with sediment cover that is inadequate to protect the Floridian Aquifer. f. prohibiting nonresidential uses within 200 feet of a sinkhole, solution channel, or other Karst feature. (Marion County, FLUE Policy 4.2)

Outstanding geologic features, such as certain springs, sinkholes, and caves, shall be considered for acquisition, provided appropriate protective management can be assured. (Alachua County, Conservation Element Policy 4.4.2)

The County shall complete a special study, with the technical and financial assistance of the Water Management Districts, to identify Karst Sensitive Areas and implement performance standards to guide development in affected areas. As part of this Karst Area study significant Karst features such as sinkholes, solution channels, or caves shall be mapped. The Marion County Land Development Code shall be amended by October 1995 to reflect the findings of this Karst study and the applicable water management district regulations in order to prevent adverse impacts from development in Karst Sensitive Areas. (Marion County, FLUE Policy 4.3)

## strategy three

### Make the Environment Less Hazardous

The County shall require the development and implementation of management plans for all significant plant and wildlife habitat that is to be protected. The management plan shall be prepared at the expense of the developer by an appropriately qualified professional and provide for the following: 1. Removal of invasive vegetation and debris. 2. Replanting with native vegetation as necessary. 3. Maintenance of biodiversity, with special emphasis on protection of listed plant and animal species. 4. Any additional measures determined to be necessary to protect and maintain the functions and values of the habitat conservation areas while ensuring protection from wildfire. (Alachua County, Conservation Element Policy 4.9.3)

The County shall accommodate the use of prescribed burning as a tool to promote ecosystem health and wildfire prevention. (Alachua County, Conservation Policy 5.4.13)

Land Acquisition and Adequate Buffering. Lake County shall attempt to coordinate efforts to acquire public lands for conservation, preservation, and open space and shall provide for the adequate buffering of Public Resource Lands from potentially incompatible adjacent land uses. The County shall permit normal best management practices associated with native habitats such as controlled burning within Public Resource Lands. (Lake County, FLUE Policy 1-2.13)

The County will protect lives and property from wildfires on unmanaged lands. The Board may authorize and/or request prescribed burning by the Division of Forestry, in accordance with Silvicultural Best Management Practices guidelines and rules. (Levy County, Conservation Element Policy 4.7)

Areas of wildfire hazard with Alachua County shall be mapped and ranked using features such as plant community type and development stage, canopy cover, hydrography, soils, slope, aspect, and elevation. The initial mapping shall be based on the Fire Risk Assessment Model contracted by the FL Division of Forestry for completion in 2002. Mapping shall be reviewed annually and, as necessary, updated in response to changing fuel conditions. (Alachua County, Conservation Element Policy 5.6.1)

# strategy four

## Make Structures Hazard Resistant

### **QUESTION Are there measures that support relocating or retrofitting private and/or public structures in hazard areas?**

The County shall relocate or replace infrastructure located in the Coastal High Hazard Areas to limit public losses from various events including, but not limited to, storm damage, hurricanes, severe flooding, abandonment of facilities and/ or structures, and tornadoes. (Citrus County, Coastal, Lakes, & River Management Element Policy 4.10.6)

Utilize the County's power of eminent domain and regulatory authority to relocate threatened and/or damaged structures and infrastructure landward of the Coastal High Hazard Area. Consistent with the availability of budgeted funds, purchase property for relocation. (Sarasota County, Environment Element Policy 4.3.2)

New facilities which must function during a hurricane, such as hospitals, nursing homes, blood banks, police and fire stations, electrical power generating plants, communication facilities and emergency command centers shall not be permitted in the Coastal High Hazard Area and when practical, shall not be located in the Hurricane Vulnerability Zone. (Miami-Dade County, CME Policy 9D)

The County shall complete and maintain an inventory of existing infrastructure within the coastal high hazard area and develop a program to relocate or retrofit such facilities where feasible and as replacement becomes necessary. (Hillsborough County, CME Policy 13.5)

Flood proofing of sanitary sewer systems. New sanitary sewer facilities in the hurricane vulnerability zone shall be flood proofed to prevent inflow of raw sewage from leaking into sanitary sewer facilities during flood events. New septic tanks shall be fitted with backflow preventors. (Martin County, CME Objective 6, Policy j)

Public facilities shall be limited within the 100 year flood plain or in flood prone areas. Any public facilities that are built will be consistent with the County's Land Development regulations and shall be flood-proofed to minimize damage from floods, storms, and hurricanes. (Volusia County, CIE Policy 15.1.3.2)

Structural and functional designs of County buildings shall be reviewed and retrofitted for public shelters where it is cost effective and/or practical. (St. Lucie County, CME Policy 7.2.2.3)

coastal

floods

# strategy four

## Make Structures Hazard Resistant

### **QUESTION Are there measures to require compliance with or exceed building codes and/or design standards for certain hazard areas?**

all hazards

Monroe County shall continue its policy of reviewing the current Building Code and, as appropriate, adopting structural standards and site alteration restrictions that meet or exceed the minimum FEMA requirements. The Building Code shall be reviewed and revised at least every five years. The recommendations of the applicable interagency hazard mitigation report shall be considered in revisions to the Code. (Monroe County, Conservation & Coastal Element Policy 217.1.4)

The County shall prohibit construction seaward of the Coastal Construction Control Line including construction of coastal or shore protection structures, except where the Florida Department of Environmental Protection has issued the applicable permit authorizing that construction. ((St. Lucie County, CME Policy 7.1.5.1)

coastal

New construction or substantial improvements of any commercial, or industrial must have the lowest floor elevated one foot above the base flood elevation. In lieu of being elevated, structures may be flood proofed. A registered professional engineer or architect must certify that the building construction is sufficient to withstand hydrostatic and hydrodynamic loads and the effect of buoyancy. (Sumter County, FLUE Policy 7.1.2.8)

Lands seaward of the Coastal Construction Control Line shall be designated unsafe building areas consistent with Section 4.04.10 of the Land Development Code which shall serve as the line from which applicable setbacks are determined. (Flagler County, CME Policy 2.3.04)

floods

In order to protect the natural function of the 100-year floodway of the Peace River, Horse Creek, Charlie Creek and Payne Creek, a setback from the banks of the waterways is hereby established, in which only pasturing of livestock and residential development at a density of not more than one dwelling unit per 20 gross acres are permitted. Structures must be flood-proofed and the floor level shall be at least one foot above the 100-year flood elevation. The setback shall be 500 feet on each side of the river and creeks or the width of the 100-year floodway as shown on the FEMA flood map, whichever is less. (Hardee County, FLUE Policy Li.i2)

# strategy four

## Make Structures Hazard Resistant

floods

Innovative site design and construction materials (i.e., paving blocks and other paving alternatives) which retain soil permeability will be encouraged through density bonuses or other incentives. (Levy County, Conservation Element Policy 6.12)

The County shall participate in the National Flood Insurance Program and regulate development and the installation of utilities in flood hazard areas in conformance with the program's requirements. (Taylor County, FLUE Policy I.6.4)

New development and redevelopment within V or A flood zones as designated by the Federal Emergency Management Agency shall employ building construction techniques which are consistent with the requirements of the Federal Emergency Management Agency Flood Insurance Program and the County's Coastal Construction Code. (St. Lucie County, CME Policy 7.2.1.4)

The County shall require the finished floor elevation of all structures to be a minimum of eighteen (18) inches above the 100-year flood elevation or twelve (12) inches above the crown of the adjacent street, which ever is higher. (DeSoto County, Drainage Element Policy 1.6.2)

Orange County shall continue to improve and enforce the Orange County Floodplain Management Ordinance by requiring compensatory storage for encroachment in floodplains, restricting encroachment in floodways, and requiring habitable structures to be flood proofed. (Orange County, Conservation Element Policy 1.3.1)

Pre-development and post-development stormwater run-off rates shall be equal. (Orange County, Conservation Element Policy 2.2.7)

# strategy four

## Make Structures Hazard Resistant

**QUESTION** Are there measures to protect cultural resources from natural disasters?

all hazards

The County shall improve the protection of historic resources from the damage caused by natural disasters and recovery operations by implementing pre and post-storm hazard mitigation measures and code enforcement. (Miami-Dade County, CME Policy 12C)

St. Lucie County shall continue, with the assistance of the State of Florida and the St. Lucie County Historical Commission, to identify significant historic resources within the unincorporated areas which are in need of protection and develop management and restoration plans as appropriate. (St. Lucie County, FLUE Policy 1.1.6.1)

# strategy five

## Manage Re/Development in Hazardous Areas

### **QUESTION Are there measures to limit population densities in high-hazard areas?**

The County shall coordinate with coastal municipalities to control population densities in coastal high-hazard areas, in accordance with Coastal Management Objective 2.3. The County shall not increase the density in unincorporated areas located within the coastal high-hazard areas. (Palm Beach County, FLUE Policy 1.2-c)

Amend or maintain the Future Land Use Map to decrease or maintain permitted residential densities within the coastal high hazard zone outside the Downtown Redevelopment Area. (Lee County, Conservation & CZM Element Policy 9.1.1.2)

Charlotte County will actively facilitate the removal of density from the Coastal High Hazard Area by plat vacation and other means. (Charlotte County, Natural resources & Coastal Element Policy 1.16.6)

COASTAL

No new mobile home parks shall be allowed in areas subject to coastal flooding and any new mobile home parks outside the areas subject to coastal flooding shall include one or more permanent structures in accordance with current and applicable building and construction codes for use as shelter during a hurricane. All existing mobile home parks without on-site shelters shall submit a hurricane evacuation plan with shelter designations to the Dade County Office of Emergency Management (OEM). (Miami-Dade County, CME Policy 8N)

Dade County shall orient its planning, regulatory, and service programs to direct future population concentrations away from the Coastal High Hazard Area (CHHA) and FEMA "V" Zone. Infrastructure shall be available to serve the existing development and redevelopment proposed in the Land Use Element and population in the CRELA, but shall not be built, expanded, or oversized to promote increased population in the coastal high risk area. (Miami-Dade County, CME Objective 9)

New Communities shall not be permitted within the Coastal High Hazard Area. (Charlotte County, FLUE Policy 2.6.10)

The County's land development regulations shall limit residential development and resident populations within coastal high hazard areas to locations and numbers which can be safely evacuated during hurricane hazard periods. (Taylor County, CME Policy IX.6.4)

# strategy five

## Manage Re/Development in Hazardous Areas

floods

Dade County shall consider undeveloped land in areas most vulnerable to destructive storm surges for public or private recreational uses and open space, including restoration of coastal natural areas. (Miami-Dade County, CME Policy 9C)

Osceola County shall require the following location criteria for public schools:3. The proposed location shall not be located within a velocity flood zone/flood way. (Osceola County, FLUE Policy 1.7.4)

sinkholes

The County shall include the sinkhole phenomenon in its consideration of the suitability of land for development through the review process of land development codes, including appropriate stormwater management measures. (Hillsborough County, Conservation & Aquifer Recharge Element Policy 2.9)

wildfire

Alachua County shall carefully consider all land uses in areas at risk from wildfire and restrict or prohibit certain land uses as necessary to assure public health, safety, and welfare and the protection of property. Land uses and specific development plans for which adequate wildfire mitigation cannot be provided, or that would preclude or severely limit the use of wildfire mitigation or natural resource management options such as prescribed fire, shall not be authorized in severe wildfire hazard areas. (Alachua County, Conservation Element Policy 5.6.5)

# strategy five

## Manage Re/Development in Hazardous Areas

### **QUESTION Are there measures to limit public expenditures that subsidize development in high-hazard areas?**

The construction of County-funded public facilities in the coastal high hazard area shall be prohibited, unless the facility is necessary for public access, natural resource restoration or enhancement, or to provide for recreational facilities and other appropriate water dependent facilities. (St. Lucie County, CME Policy 7.2.1.3)

Miami-Dade County shall not sponsor any growth-subsidizing programs which promote future population growth and residential development on the barrier islands of Miami-Dade County. The provision of facilities and services to accomplish the timely evacuation of already developed barrier islands in advance of approaching hurricanes shall be a priority of Miami-Dade County's transportation planning and hurricane preparedness programs. (Miami-Dade County, FLUE Policy 3D)

The County shall avoid transportation improvements which encourage or subsidize increased development in coastal high hazard areas or environmentally sensitive areas identified in the Coastal Management and Conservation Elements. (Miami-Dade County, Transportation Element Policy 6A)

The County, through the Procedure for Monitoring and Evaluation of the Capital Improvements Element, shall limit expenditures that subsidize development within coastal high-hazard areas to the restoration or enhancement of natural resources, the construction and maintenance of roads necessary for public access, and the provision of public park facilities, including those which provide public access to the shoreline, subject to the provisions of Objective 1.8 and its related policies. (Taylor County, CME Objective IX.5)

# strategy five

## Manage Re/Development in Hazardous Areas

### **QUESTION Are there creative neighborhood design solutions or development regulations that mitigate hazards, such as clustering or transfer of development rights?**

all hazards

In order to carry out OBJECTIVE 4, the County shall use innovative techniques in the land development regulations for preservation of such areas, such as: designation and regulations of conservation areas; site plan review; on-site density transfers to allow clustering of allowable units to protect environmentally sensitive portions of a site; and, overlay zoning whereby density calculations and developable land expectations are based on net developable acreage after excluding the environmentally sensitive portions. (Taylor County, FLUE Policy V.4.5)

The land development regulations shall include criteria which allow utilization of Transfer of Development Rights (TDR) or other flexible methods of land development transfer that would direct development from unsuitable lands to those most suitable for active use. (St. Lucie County, Conservation Element Policy 8.1.8.4)

coastal

Utilize innovative or alternative zoning districts or techniques to protect coastal resources. Such techniques could include overlay districts, floating zones, bonus ordinances, performance standards, fast-tracking of development applications, quality development programs, Transferable Development Rights, or other incentive based methods. (Volusia County, CME Policy 11.2.2.2)

Within one year of the effective date of this plan, Monroe County shall adopt Land Development Regulations which establish a Permit Allocation System for new residential development. The Permit Allocation System shall limit the number of permits issued for new residential development to be consistent with the Future Land Use Element in order to maintain hurricane evacuation clearance times at a maximum of 24 hours. (Monroe County, Conservation & Coastal Element Policy 216.1.1)

# strategy five

## Manage Re/Development in Hazardous Areas

floods

PUD/Cluster Developments. The County shall encourage planned unit developments and cluster type developments in order to preserve large contiguous areas of wetlands and other environmentally sensitive communities. (Seminole County, Conservation Element Policy 3.8)

The land development regulations shall include the use of programs to protect or maintain wetlands, such as reduced paving, conservation easements, cluster site planning and micrositing of buildings. (St. Lucie County, Conservation Element Policy 8.1.4.6)

wildfire

Development in wildfire hazard areas shall comply with the following minimum standards: 1. All new development shall complete and implement a wildfire mitigation plan specific to that development, subject to review and approval by the Alachua County Fire Rescue Department, which shall be incorporated as part of the development plan approved for that development. a) The mitigation plan shall include project and parcel design features, such as defensible project perimeters, interior project fuel breaks, individual site defensible space, landscaping guidelines and plant material suggestions, and the placement of structures. b) The mitigation plan shall include provisions for periodic inspection by the County to verify construction, implementation, and maintenance of the wildfire mitigation features in accordance with the plan. The inspection period may range from once a year to once every three years depending upon the site conditions. (Alachua County, Conservation Policy 5.6.6)

# strategy five

## Manage Re/Development in Hazardous Areas

### **QUESTION Are there measures to limit redevelopment in hazard areas and procedures for post-disaster recovery that will lead to a more disaster resistant community?**

The County's land development regulations shall require the removal, relocation or structural modification of unsafe structures, as appropriate, if rebuilt, require structures which have suffered damage to an extent of more than 50 percent of their replacement value at the time of such damage to be rebuilt in conformance with current building requirements. (Taylor County, CME Policy IX.8.3)

The County's land development regulations shall limit redevelopment in areas of repeated damage by requiring structures which suffer repeated damage to rebuild landward of their current location or to modify the structure to delete the areas most prone to damage. (Taylor County, CME Policy IX.8.4)

The County shall, pursuant to the Comprehensive Emergency Management Plan, continue recommended hazard mitigation activities, including land development regulations and construction law administration. Post-disaster recommendations contained in Hazard Mitigation Plans shall be incorporated to avoid future destruction and loss of life. (Palm Beach County, CME Policy 2.5-e)

During post-disaster redevelopment, structures which suffer repeated damage to pilings, foundations, or load bearing walls shall be required to rebuild landward of their present location and/or be structurally modified to meet current building codes. (Miami-Dade County, CME Policy 11F)

If rebuilt, structures which suffer damage in excess of fifty percent of their appraised value shall be rebuilt to meet all current requirements, including those enacted since construction of the structure. (Flagler County, CME Policy 2.5.05)

The Post-Disaster Redevelopment Plan shall include, but is not limited to: the identification of land areas that should not be reconstructed, limiting redevelopment in documented areas of repetitive loss, abandonment and/or relocation of buildings, rebuilding of public facilities, reconstruction with structural modification and distinguishing between immediate repair/cleanup actions, and actions needed to protect public health and safety, and long-term repair and redevelopment. (Flagler County, CME Policy 11.5.4.1)

all hazards

# strategy five

## Manage Re/Development in Hazardous Areas

coastal

Development and redevelopment proposals shall consider the implications of potential rise in sea level. (Collier County, Conservation & CZM Element Policy 10.4.13)

During post-disaster redevelopment the capacities of evacuation routes shall be improved through redesign and reconstruction of the street network, signage, and expansion of public transportation systems and services. (Miami-Dade County, CME Policy 11G)

hurricanes

The County shall prohibit the rebuilding of non-conforming uses that have experienced damage of greater than or equal to 50 percent of value, in areas most vulnerable to the effects of storms. When structures are rebuilt, they shall be required to be brought up to code. (Palm Beach County, CME Policy 2.5-b)

The County shall explore the applicability of using transfers of development rights and other programs for the acquisition of property or property rights, as methods of compensating property owners who do not rebuild structures in those areas most vulnerable to the effects of storms. Lands so acquired shall be used for parks and other recreational uses. (Palm Beach County, CME Policy 2.5-c)

