

PINELLAS COUNTY LOCAL MITIGATION STRATEGY

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The development of the Pinellas County Local Mitigation Strategy (LMS) was accomplished through the support of the Pinellas County Board of County Commissioners and the City Councils of the 23 municipalities within the jurisdiction.

The LMS was developed and approved by the overall Local Mitigation Strategy Working Group, which included the (24) representatives from each municipality and the county, as well as the (31) representatives from public and private sector agencies, organizations and corporations. The LMS was coordinated and prepared by the Pinellas County Office of Emergency Management. The following persons and agencies have contributed to the development of this project.

Agency

Belleair,
Belleair Beach,
Belleair Bluffs,
Belleair Shore
Clearwater,
Dunedin,
East Lake Fire,
Gulfport,
Indian Rocks Bch.,
Indian Shores,
Kenneth City,
Largo,
Lealman Fire Dist.,
Madeira Beach,
N. Redington Bch.
Oldsmar,
Pinellas Park,
P. C. E. M. (Chair/Vice),
P. C. Planning,
P. C. School Board,
Redington Beach,
Redington Shores,
Palm Harbor Fire,
Safety Harbor,
Seminole,
South Pasadena,
St. Pete Beach,
St. Petersburg,
Tarpon Springs,
Treasure Island,
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Tampa Bay RPC,
Verizon Communications,
Council Of Neighborhood Associations
Florida Renovators,
Fed. Mobile Home Owners,
Banker's Insurance Co.,
Fl. Assoc. Asst. Living
Child Care Industry
Business Contingency Planners
Morton Plant Mease Hosp.,
Veterans Adm. Med. Ctr.,
United Way,
Salvation Army
Gulf Beaches Chamber of Commerce
Clearwater Chamber of Commerce
Oldsmar Chamber of Commerce
Safety Harbor Chamber of Commerce
Seminole Chamber,
Tarpon Springs Chamber
St. Petersburg Chamber of Commerce,
Palm Harbor Chamber of Commerce
Dunedin Chamber of Commerce,
Largo Chamber of Commerce

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Ronald Hall

Patricia Schmorantz

Kathy Oathout

Robert Bellavance

Glossary

Base Flood Elevation (BFE): The highest elevation, expressed in feet above sea level, of the level of flood waters occurring in the regulatory base flood (i.e. 100-year flood event).

Building Codes: Regulations adopted by local government that establish standards for construction, modification, and repair of buildings and other structures.

Coastal High Hazard Area (CHA): Evacuation zone for a Category 1 hurricane as established in the Tampa Bay Regional Planning Council's Hurricane Evacuation Study.

Community Development Block Grants (CDBG): The objective of the CDBG program is the development of viable urban communities by providing decent housing and a suitable living environment and expanding economic opportunities primarily for persons of low- and moderate-incomes. Funds must be used so as to give maximum feasible priority to activities which will carry out one of the three broad national objectives of: benefit to low- and moderate-income families; or aid in the prevention or elimination of slums or blight; or activities designed to meet other community development needs having a particular urgency because existing conditions pose a serious and immediate threat to the health or welfare of the community where other financial resources are not available to meet such needs.

Community Rating System (CRS): An initiative of the Federal Insurance Administration to encourage increased efforts in the reduction of flood losses, facilitate accurate insurance ratings and promote the awareness of flood insurance.

Comprehensive Emergency Management Plan (CEMP): Required by Florida Statutes and addresses the four inter-related phases of emergency management: preparedness, response, recovery and mitigation.

Critical Facilities: A structure from which essential services and functions for victim survival, continuation of public safety actions, and/or disaster recovery are performed or provided.

Cultural Facilities: Establishments such as museums or art galleries of an historic, educational or cultural interest that are not operated commercially.

Development: The carrying out of any building activity or mining operation, the making of any material change in the use or appearance of any structure or land, or the dividing of land into three or more parcels.

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:

- 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.
- Major Disaster - A disaster that will likely exceed local capabilities and require a broad range of State and Federal assistance.
- Catastrophic Disaster - A disaster that will require massive state and federal assistance, including immediate military involvement.

Drainage: Surface water runoff or the removal of surface water or groundwater from land by drains, grading or other means.

Emergency Management, Preparedness and Assistance (EMPA) Trust Fund Grant Program: Competitive grant for the state or regional agencies, local governments and private non-profit organizations for the implementation of projects that will further state and local emergency management objectives.

Evacuation Routes: Routes designated by Pasco County Office of Emergency Management and the Tampa Bay Regional Planning Council for the movement of persons to safety in the event of a hurricane.

Floodplain Management Plan: The operation of a program containing corrective and preventive measures for reducing flood damage including, but not limited to, flood control projects, floodplain land use regulations, floodproofing of buildings and emergency preparedness plans.

Floodprone Areas: Areas inundated during a 100-year event or areas identified by the National Flood Insurance Program as an "A Zone" on Flood Insurance Rate Maps or Flood Hazard Boundary Maps.

Goal: Long-term end toward which programs or activities are ultimately directed.

Habitat: The particular natural community or communities that typically support a population of a particular plant or animal species.

Hazardous Material: Any substance or material in a quantity or form which may be harmful to humans, animals, crops, water systems, or other elements of the environment if accidentally released. Hazardous materials include: explosives, gases (compressed, liquefied, or dissolved), flammable and combustible liquids, flammable solids or substances, oxidizing substances, poisonous and infectious substances, radioactive materials, and corrosives.

Hazard Mitigation Grant Program (HMGP): The program operates under the authority of Public Law 100-707, the Robert T. Stafford Disaster Relief and Emergency Assistance Act. (The Hazard Mitigation Grant Program (HMPG) will be replaced in 2004 by Pre-Disaster Mitigation (PDM).) Section 404 provides 75/25 matching funds to eligible applicants to implement immediate and long-term hazard mitigation measures. A total of up to 15 percent of the combined public assistance and individual assistance programs are available to fund hazard mitigation projects. Section 406 is site-specific mitigation that is written if authorized by the federal/state/local officials and is in accordance with any applicable rules and regulations. This type of mitigation receives 75 percent federal money and requires a state/local match of 25 percent.

Historic Resources: All areas, districts or sites containing properties listed on the Florida Master Site File, the National Register of Historic Places, or designated by a local government as historically, architecturally, or archaeologically significant.

Hurricane Shelter: A structure which meets the shelter selection guidelines, designated by local officials to be pre-identified for sheltering residents during a hurricane.

Infrastructure: Man-made structures which serve the common needs of the population, such as: sewage disposal systems, potable water systems, potable water wells serving a system, solid

waste disposal sites or retention areas, stormwater systems, utilities, piers, docks, wharves, breakwaters, bulkheads, seawalls, bulwarks, revetments, causeways, marinas, navigation channels, bridges, and roadways.

Local Mitigation Strategy (LMS): Plan developed to minimize negative impacts (potential loss of life or property damage) from a natural, man-made or technological disaster.

Long-Term Temporary Housing: Tents, mobile homes, suitable rental housing, or other readily fabricated dwellings set-up for residents to live in until they are able to return to their own homes or find new homes. Utilization of this type of housing can last up to two weeks or longer.

Mitigate: To offset or reduce negative impacts through measures such as, but not limited to, the following:

- Not taking action or parts of a certain action.
- Limiting the degree or magnitude of the action.
- Repairing, rehabilitating, or restoring the affected resources.
- Preserving and maintaining operations over time during the life of the action, and
- Replacing or providing substitute resources or environment.

Mobile Home: A structure, transportable in one or more sections, twelve (12) body feet or more in width, and over forty (40) feet in length, which is built upon an integral chassis and designed to be used as a dwelling unit with or without a permanent foundation when connected to the required utilities, and includes the plumbing, heating, air conditioning, and electrical systems contained herein. If fabricated after June 15, 1976, each section shall bear a HUD label certifying that it was built in compliance with Federal Manufacturing Home Construction and Safety Standards 42 USC 5401 and 24 CR 3282 and 3283.

Mobile Home Park: A mobile home development consisting of a parcel of land under single ownership which has been, or is proposed to be, planned and improved for the placement of mobile homes for nontransient use.

Mobile Home Space: A plot of land for placement of a single mobile home within a mobile home park.

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

Objective: A specific, measurable, intermediate end that is achievable and marks progress toward a goal.

Open Space: Undeveloped lands suitable for passive recreation or conservation uses.

Post-Disaster Recovery: Long-term activity designed to return life to normal or improved levels following a disaster.

Project Impact: Federal Emergency Management Agency (FEMA) initiative that challenges communities to take actions that protect families, businesses and property by reducing the effects of natural disasters.

Public Facilities: Transportation systems or facilities, sewer systems or facilities, solid waste systems or facilities, drainage systems or facilities, potable water systems or facilities, educational systems or facilities, parks and recreation systems or facilities and public health systems or facilities.

Recreational Vehicle: Vehicle-type unit primarily designed as temporary living quarters for recreational, camping, or travel use, which either has its own motive power or is mounted on or drawn by another vehicle.

Recreational Vehicle (RV) Park: Place set aside and offered by a person, for either direct or indirect remuneration of the owner, leaser, or operator of such place, for the parking, accommodation, or rental of five or more recreational vehicles or tents; and the group camping and similar recreational facilities.

Retrofit: Corrective measures taken on an existing structure to minimize damage caused by water, wind and fire.

Runoff: The part of the rainfall that travels to surface streams and water bodies via surface or subsurface routes.

Storm Surge: The abnormal rise in water level caused by the wind and pressure forces of a hurricane or tropical storm. Storm surge produces most of the flood damage and drowning associated with storms that make landfall or that closely approach the coastline.

Stormwater: Flow of water resulting from a rainfall event.

Subdivision: The division of land, lot, tract, or parcel into two or more lots, parcels, plats, or sites, or other divisions of land for the purpose of sale, lease, offer, or development, whether immediate or future. The term also includes the division of residential, commercial, industrial, agricultural, or other land whether by deed, metes and bounds description, lease, map, plat, or other instrument.

Wetlands: Areas that are inundated or saturated by surface water or ground water at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soils.

References

Pinellas County Comprehensive Plan and Land Development Code
Belleair Comprehensive Plan and Land Development Code
Belleair Beach Comprehensive Plan and Land Development Code
Belleair Bluffs Comprehensive Plan and Land Development Code
Belleair Shore Comprehensive Plan and Land Development Code
Clearwater Comprehensive Plan and Land Development Code
Dunedin Comprehensive Plan and Land Development Code
Gulfport Comprehensive Plan and Land Development Code
Indian Rocks Beach Comprehensive Plan and Land Development Code
Indian Shores Comprehensive Plan and Land Development Code
Kenneth City Comprehensive Plan and Land Development Code
Largo Comprehensive Plan and Land Development Code
Madeira Beach Comprehensive Plan and Land Development Code
North Redington Beach Comprehensive Plan and Land Development Code
Oldsmar Comprehensive Plan and Land Development Code
Pinellas Park Comprehensive Plan and Land Development Code
Redington Beach Comprehensive Plan and Land Development Code
Redington Shores Comprehensive Plan and Land Development Code
Safety Harbor Comprehensive Plan and Land Development Code
St. Petersburg Comprehensive Plan and Land Development Code
St. Pete Beach Comprehensive Plan and Land Development Code
Seminole Comprehensive Plan and Land Development Code
South Pasadena Comprehensive Plan and Land Development Code
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PINELLAS COUNTY LOCAL MITIGATION STRATEGY PLAN

BACKGROUND

In early 1998, The State Department of Community Affairs requested that Pinellas County and its municipalities develop a unified, community-wide local mitigation strategy. Their request was aimed at controlling the skyrocketing costs of disasters. Most of the burdens of recovering from a disaster fall squarely on the shoulders of local government. A major disaster can bring extraordinary hardship to citizens, devastate the economic base, and diminish its quality of life for years to come. Disaster events create enormous pressure for local government to take action, and that action must be taken quickly. Therefore, it is critical to rebuild communities in ways that will guarantee that the same destruction and hardship will not be repeated in future disasters.

The purpose of this local mitigation strategy is to develop a “blueprint” or guide intended to provide a unified and consistent course of action needed to eliminate or reduce the impact of disasters that threaten Pinellas County and its municipalities. This strategy was developed in accordance with the Florida Department of Community Affairs publication, *The Local Mitigation Strategy: A Guidebook for Florida Cities and Counties*, and other applicable guidance promoted by the Department of Community Affairs and the Federal Emergency Management Agency.

The Department of Community Affairs, through a contractual agreement with Pinellas County as grantee, provided Grant funding for this effort. Municipal participation in the process was funded through subcontract agreements between Pinellas County and those municipalities that voluntarily agreed to produce a single, unified Local Mitigation Strategy.

In addition to county and municipal government representation, the local mitigation strategy process included a broad range of private and public sector interests: The Regional Planning Council, chambers of commerce, public utilities, health care, public transportation, community associations, the insurance industry, business contingency planners, volunteer and community-based organizations, construction industry, and education.

At the inception of the workgroup, it was decided that it would be divided into two groups, voting members and non-voting members. The voting members were the twenty-three (23) municipalities which officially committed to the process via their subcontract with Pinellas County and the Pinellas County Planning Department. The non-voting members were the remaining thirty-one (31) partners from the private and public sectors, who agreed to participate to share their insights and recommendations on the topics relevant to their areas of expertise.

The workgroup conducted its first meeting on March 11, 1998. Over the ensuing fifteen months, a total of twenty-two (22) meetings took place to produce the deliverables required by contract. Pinellas County and its municipalities developed a unified Local Mitigation Strategy during the late nineties. This 2004 Update to the Local Mitigation Strategy has been prompted by the Disaster Mitigation Act of 2000. By developing the Local Mitigation Strategy, Pinellas County can increase the resiliency of the community to the disruption and hardship of disasters and attempt to reduce the potential and actual costs of their impact.

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INTRODUCTION

The nation and the State of Florida can no longer afford to bear the extraordinarily high human and economic costs of disasters. All levels of government must take steps to decrease the vulnerability of their citizens, businesses, infrastructure, and institutions to the impact from these events. Every Florida community will always be vulnerable to hurricanes, other natural disasters, technological hazards, and man-made emergencies. However, the state's counties and municipalities do not have to remain unnecessarily vulnerable to these consequences. The development of a community-wide local mitigation strategy is a good first step in the effort to reduce or eliminate the costs of disasters and plan for an organized and timely post-disaster redevelopment.

The purpose of the Local Mitigation Strategy is to establish an ongoing process that will make hazard mitigation part of the daily functioning of the entire community. The Local Mitigation Strategy serves as a bridge between local governments' comprehensive growth management plans, the county comprehensive emergency management plan, land development regulations, and relevant ordinances and codes such as those for floodplain management. It may also fulfill some of the requirements of Florida Statutes Chapter 163, "Comprehensive Growth Management Plan," and Florida Administrative Codes "9J-5" and "9G-22". This strategy integrates mitigation initiatives established through various policies, programs, and regulations into a single stand-alone working document.

THE PROCESS

The creation of the local mitigation strategy is determined by who should be involved, defining how the process is going to work, and understanding how the process facilitates the production of the final product. With the inception of Administrative Rule 9G-22, the Local Mitigation Strategy Workgroup has re-defined itself and its methodology to meet the intention of the new rule.

The Planning Organization - The development of a mitigation strategy requires the involvement of representatives from the public, private, and governmental sectors. Therefore, every attempt has been made to include the following entities in the Workgroup membership: interested local municipalities, private organizations, civic organizations, Native American Tribes or authorized tribal organizations, water management districts, independent special districts, and non-profit organizations. Through the involvement of the members of the Local Mitigation Strategy Workgroup, the LMS was developed in coordination with neighboring communities, local and regional agencies involved in hazard mitigation activities agencies that have development review authority, businesses, academia and other private and non-private interests. All representatives are brought together to form the Pinellas County Local Mitigation Strategy Workgroup.

The Local Mitigation Strategy Workgroup affirmed that it would be divided into two groups, voting members and non-voting members. The voting members will remain the twenty-three (23) municipalities who were initially committed to the process via their participation in the formation of the initial Local Mitigation Strategy in cooperation with Pinellas County. The non-voting members will be the remaining partners from the private and public sectors, who agreed to participate to share their insights and recommendations on those topics relevant to their areas of expertise and organizational interests and concerns. The LMS Workgroup, at its

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regular annual meeting on November 6, 2001, elected a Chairperson and Vice-Chairperson. Currently, the LMS Workgroup meets on a monthly basis, as there is a large amount of work to be accomplished in re-writing this plan. However, the LMS Workgroup voted that the group should meet at least every quarter with additional meetings to be scheduled as the workload dictates. All business conducted by the LMS Workgroup is submitted for approval to the voting members and is passed or defeated by majority vote. The meeting calendar is provided in Appendix 2 and reflects the committee work through the development and the revision of the LMS.

Participation –The representatives' acceptance of the invitation and agreement to become committee members initiated their commitment to the effort. The representatives committed their time and available resources to develop a mitigation strategy that would protect life, property, and the environment as well as contribute to the economic well being of the county. The implication of the Hazard Mitigation Planning and Hazard Mitigation Grant Program Interim Final Rule is that each of the jurisdictions and representatives on the committee must show participation in the planning process to qualify for HMGP, Pre-Disaster Mitigation Program (PDM) and Flood Mitigation Assistance Program (FMA) funding. The definition of participation as determined by the committee is the mandatory attendance of two meetings during the year and/or submittal of a ranked mitigation initiative. Each member signed in at each meeting. This data was used to document participation. A CDROM is provided with the document which includes the meeting notice, agenda, sign-in sheet, and minutes of all meetings. Refer to Appendix 2 for the list of committee members and their jurisdiction/ association.

Community Involvement – In the initial phase, several approaches were taken to solicit community involvement in the development of the strategy. The approaches included sending letters to a variety of organizations, associations, and businesses; conducting county and city meetings on the topic of mitigation; using public service announcements and advertisements; scheduling interviews and speaking engagements; and including mitigation issues on governmental Internet home pages. Attendance by the private sector was intermittent based on the meeting agendas. They attended when the subject matter was relevant to their particular interests; although, they were kept informed throughout the process by facsimiles, mailings, and electronic messages. This approach is still in use today and attendance continues to be highly selective, depending on the subjects posted on the agenda.

Requirements - The State Department of Community Affairs and the Federal Emergency Management Agency define the local mitigation strategy requirements. The State requires that the Local Mitigation Strategy will provide the processes for application, project selection, and distribution of funds under the Hazard Mitigation Grant Program.

Under new Administrative Rule 9G-22, the Local Mitigation Strategy Workgroup must meet several new conditions to maintain compliance.

These requirements are:

1. No later than the last working weekday of each January, the Chairperson of the Board of County Commissioners shall submit to the Florida State Division of Emergency Management, a list of the members of the Local Mitigation Strategy Workgroup and its designated chairperson and vice-chairperson.
2. The Workgroup shall include, at a minimum, representatives from various agencies of county government, representatives from all interested municipalities in the county, and representatives from interested private and civic organizations, Native American tribes or

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organizations, trade and commercial support groups, property owners associations, water management districts, regional planning councils, independent special districts, and non-profit groups.

3. The county shall submit documentation that indicates that, within the preceding year, it has issued a written invitation to each group as specified above in #2.
4. The Local Mitigation Strategy Workgroup shall be charged with the responsibilities of designating a Chairperson and Vice-Chairperson; developing and revising the Local Mitigation Strategy as necessary; coordinating all mitigation activities within the County; setting an order of priority for local mitigation projects, and submitting an annual LMS update to the Florida State Division of Emergency Management by the last working weekday in January of each year. The update shall include changes to the hazard assessment, project priority list, critical facilities list, repetitive loss list, and revisions to all maps.

Supporting Analyses - One of the most important tasks required of the Local Mitigation Workgroup is to conduct, and maintain a hazard identification and vulnerability assessment. The information provided by the assessment is the foundation on which decisions about future mitigation initiatives are based. An analysis of both natural and technological hazards is ongoing. The hazard identification and vulnerability assessment data is gathered from the Tampa Bay Regional Planning Council (TBRPC); the National Hurricane Center SLOSH (Sea Lake Overland Surge in Hurricanes) model; the Laser Infrared Detection and Ranging system (LIDAR); the Municipalities and their departments; and Pinellas County Departments of Emergency Management, Planning, Building, Information Systems, Public Works, Utilities, and Developmental Review Services.

The Pinellas County 1999 LIDAR survey provided the workgroup with current and accurate hurricane evacuation information.

Mitigation Opportunities and Initiatives - The process of developing the local mitigation strategy culminated in the identification of mitigation opportunities and initiatives. Each workgroup member is required to review, evaluate, and analyze his or her current policies and ordinances regarding mitigation. The information is then shared and compared with the other members of the workgroup. This allows for the exchange of good ideas, accomplishments, and past experiences both successful and unsuccessful. The process also identifies any inconsistencies between communities. The most successful policies limit public expenditures in areas subject to repetitive damage from disasters; protect critical facilities and infrastructure; preserve, restore and enhance natural resources that can mitigate hazards; encourage economic diversification as protection from the loss of any one asset; encourage structural retrofitting, property acquisition and relocation; and identify procedures to expedite post-disaster recovery and permitting.

Because of the education gained from this process, the workgroup is better prepared to determine the future mitigation initiatives that should be or need to be pursued. Some of the needed mitigation initiatives require unified intergovernmental coordination and participation. Other initiatives can be accomplished on an individual community basis. Pinellas County and each of the twenty-three (23) participating municipalities submit a list of their unfunded mitigation initiatives. The initiatives are then placed on a consolidated county-wide list, which is divided into categories relevant to specific objectives.

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These categories are:

- Critical Facilities
- Public Shelter
- Drainage, Storm Water Management, and Flood Control
- Vegetative Management, Beach Management, and Soil Stabilization
- New Construction
- Infrastructure Protection
- Property Acquisition
- Planning Projects/Community Outreach
- Elevation of Flood Prone Structures

The philosophy of the workgroup was that each government would be encouraged to apply for a grant annually for at least one of their mitigation initiatives. Therefore, if each year at least one mitigation initiative were successfully completed, the county would be making more progress in the mitigation arena than it is today. To reach the goal of a disaster resistant community such planning and commitments will be required.

Adoption of the Strategy - The Local Mitigation Strategy Update will be adopted by the Pinellas County Board of County Commissioners and each participating city council by local resolution (See Appendix 15).

Strategy Maintenance and Enhancement - The Pinellas County Local Mitigation Strategy serves as a guide for hazard mitigation activities on a community-wide basis. The strategy is intended to be a dynamic document that will be updated regularly. It will also be further refined as more experience is gained in the implementation of mitigation initiatives and regulations intended to reduce vulnerability to hazards are enacted.

The Local Mitigation Strategy Workgroup will meet to update and review the effectiveness of the local mitigation strategy and will submit annual Local Mitigation Strategy updates to the Florida Division of Emergency Management no later than the last working weekday of each January. If implementation experience indicates a need to modify the strategy, a special meeting of the workgroup may be called. Any workgroup member may request a special meeting. Pinellas County Emergency Management will coordinate scheduling and notification of workgroup meetings. A minimum of thirty (30) days advance notice will be given for annual meetings. As much advance notice as possible will be given for regular and special meetings.

On an ongoing basis, new initiatives will be considered by the workgroup for inclusion into the strategy. Completed initiatives, termed Accomplishments, will be removed from the Initiatives List and detailed in the Accomplishments Listing. The new initiatives will be added as they are identified and approved by the Workgroup. Every five years, or after any major change, the strategy will be resubmitted to municipal councils/commissions and to the Board of County Commissioners for re-adoption.

PRODUCTS

Appendix One: Hazard Identification & Vulnerability Assessment - The Local Mitigation Strategy Workgroup conducts and maintains an analysis of Pinellas County's hazard vulnerabilities. The analysis includes a general geographic description, population and housing estimates,

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economic indicators, transportation routes and methods, and threats from natural and technological hazards. Captured in the documentation of each hazard analysis is a brief history that includes information about any significant related events, the probability of the specific hazard occurring in Pinellas County, the impact it would have, and an example to illustrate the maximum threat.

Appendix Two: Workgroup Members - The local mitigation strategy workgroup is comprised of representatives from the public, private and governmental sectors, in accordance with Administrative Rule 9G-22. Documentation that such invitation has occurred will be included in each annual update of the plan and detailed in Appendix Two. All members are encouraged to consistently attend the workgroup meetings.

Appendix Three: Conflict Resolution - Conflict resolution within the workgroup will focus on issues which are opposed by 50% or more of the voting workgroup. Some items can be deferred for future evaluation. However, for items that need immediate resolution, a majority vote will be required.

Appendix Four: Goals & Objectives - The goals and objectives of the workgroup are to serve as guidance in the planning of future hazard mitigation initiatives. The goals and objectives are applicable to both pre-disaster and post-disaster efforts. The three goals established were: increase public awareness regarding mitigation; create a disaster resistant community; and maintain a program of intergovernmental and interagency coordination, cooperation, and partnership to mitigate disasters, evaluate existing mitigation measures, and propose new or modified mitigation measures.

Appendix Five: Policies & Ordinances - Pinellas County and each municipality evaluated and compared existing local policies and ordinances regarding mitigation. Commonalities among jurisdictions were evident in floodplain management, restrictions on expansion of infrastructure and building densities in the Coastal High Hazard Area, and compliance with or exceeding requirements established by the Federal Emergency Management Agency (FEMA).

The inconsistencies between jurisdictions are primarily a result of geographic locations. Those municipalities located completely in the coastal high hazard areas were understandably more lenient toward building and development in the coastal high hazard area.

The workgroup has approved the following suggestions for strengthening policies and ordinances to achieve the stated mitigation goals:

- Improve policies that address retrofitting older buildings
- Require window protection for new construction
- Provide incentives to homeowners for retrofitting
- Redefine the coastal high hazard area using one foot elevation lines
- Add more extensive wind loading and impact resistant opening requirements
- Review plans for new public buildings for potential additional shelter space, pending the appropriate mitigation actions.

Appendix Six: Mitigation Functions - Pinellas County and each of the municipalities identifies the local hazard mitigation functions that are being practiced on a daily basis. The identification of these functions serve to complement the evaluation of the policies and procedures that have

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been conducted. The performance of these functions indicates that mitigation is a part of our daily operations.

Appendix Seven: Private & Public Sector Progress Report - To develop an effective mitigation strategy, partnerships between the private and public sectors have been formed. Businesses and citizens needed to understand the importance of building disaster resistant communities BEFORE a disaster strikes. A wide variety of different sizes of businesses and organizations is always invited to participate, as directed in Administrative Rule 9G-22.

Appendix Eight: Priority Procedures - Pinellas County and each municipality are responsible for submitting all of their unfunded mitigation initiatives to the workgroup annually. The workgroup, with the assistance of a subcommittee, has established a prioritization procedure that is to be used in the selection process. The procedures allow the local representatives to assign points to their initiatives, so that they can then rank them and determine which initiatives to submit.

Appendix Nine: Mitigation Initiatives - The list of mitigation initiatives reflects all of the initiatives submitted by the County and each municipality. The list has been divided into three separate funding groups:

- Initiatives estimated to cost up to, but no more than \$50,000
- Initiatives estimated to cost at least \$50,000 but no more than \$300,000
- Initiatives that are estimated to cost more than \$300,000

The Initiatives are then grouped into the following categories:

- Critical Facilities
- Public Shelter
- Drainage, Storm Water Management, and Flood Control
- Vegetative Management, Beach Management, and Soil Stabilization
- New Construction
- Infrastructure Protection
- Property Acquisition
- Planning Projects/Community Outreach
- Elevation of Flood Prone Structures

The primary reason that the lists were separated is because many major mitigation projects would exceed local government capabilities as well as the funding caps of existing grant programs. The most likely grant programs that could be pursued for mitigation have the previously mentioned funding caps:

- The Emergency Management Preparedness and Assistance Trust Fund (EMPA) Municipal Grant - \$50,000 cap
- The Emergency Management Preparedness and Assistance Trust Fund (EMPA) Open Grant - \$300,000 cap.

The Pre-Disaster Mitigation Program (PDM) authorized by Section §203 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act), will provide funding for mitigation efforts with a \$3 million cap awarded on a competitive basis (national total of \$118,000,000 in 2003). Funding for initiatives costing more than \$300,000 may be awarded

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after a disaster, at which time Hazard Mitigation Grant Program (HMGP) funding would become available.

Pinellas County and the twenty-three (23) municipalities placed all of their initiatives on each of the applicable funding lists. All governmental entities should actively pursue funds to accomplish as many initiatives as possible each year.

Note: The Flood Mitigation Assistance Program (FMAP) provides annual pre-disaster funds that are available to assist private property owners. Application for these funds is the responsibility of the property owner. Pinellas County and the municipalities will encourage eligible applicants to apply annually. The local governments will provide support through the administrative facilitation of the program. Since this program is dependent upon a private third party, it is not considered appropriate to list it for the prioritized mitigation initiatives.

If an unexpected amount of mitigation funds is made available to the Pinellas County area, the workgroup would refer to the Initiatives List and identify those that could be accomplished with the given funds. Next, the governments of those identified initiatives would be asked if they were interested and prepared to apply. Each entity must consider that it is likely that the applicant may need to provide some matching funds. If there is more interest than available funds, the workgroup will be convened to evaluate and rank the initiatives using the established prioritization procedures.

The Initiative List will be updated each year as part of the annual review process. Initiatives that have been accomplished shall be moved to the Accomplishments List.

The Initiative List and any prioritization procedures may also be updated following a major disaster event, a change in funding sources, or as determined appropriate by the workgroup. Appendix Ten: Accomplishments Listing – An accounting of completed projects detailed by municipality and showing cost data, an estimate of the total benefit and potential source of funding.

Appendix Eleven: Potential Funding Sources - Many potential funding sources exist for hazard mitigation projects. While Administrative Rule 9G-22 requires that “associated funding sources” are to be listed, this is difficult to accomplish in reality. The workgroup conducted research of the various state and federal grant programs, to become better educated about all potential options. The findings of the research indicate that a variety of programs is only available prior to a disaster, and others are only available following a disaster. Therefore, the workgroup’s list of potential funding sources is divided into pre-disaster and post-disaster sections. If and/or when a funding source is identified, the workgroup will meet and decide, by majority vote, which project/s will be accomplished. It is the goal of the workgroup to continually survey programs for potential sources of mitigation funding.

Appendix Twelve: Critical Facilities Inventory Listing – A print out of the Critical Facilities Inventory (CFI) Database for the entire county.

Appendix Thirteen: Repetitive Loss Properties Listing – A record of all of the Repetitive Loss Properties in Pinellas County, including a map depicting the special distribution of those parcels.

Appendix Fourteen: Extremely Hazardous Substance Facility Listing – A record of all of the Section 302 – Extremely Hazardous Substance Sites in Pinellas County.

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Appendix Fifteen: Resolutions Adopting the Local Mitigation Strategy – A copy of the (24) resolutions supporting mitigation programs and initiatives in the county and adopting the Local Mitigation Strategy, as revised, as a blueprint for mitigation activities.

CONCLUSION

The main goals of the Pinellas County Local Mitigation Strategy Workgroup are:

- Elevation of the criticality of mitigation to both public and private sectors
- Coordination between local governments and businesses on mitigation initiatives
- Motivation of local governments in seeking grant funding to accomplish mitigation projects

The establishment of the Pinellas County Local Mitigation Strategy Workgroup will improve the probability that local mitigation strategy grant applications will receive higher ratings. Participation in the local mitigation strategy has become a prerequisite to apply for grants. Therefore, the Pinellas County Local Mitigation Strategy will effectively facilitate local governments in accessing all available hazard mitigation funding sources.

Appendix 1

Hazard Identification and Vulnerability Assessment

In order to minimize loss of life, human suffering, damage to public and private property, and economic loss we must have complete knowledge of the types of hazards that affect Pinellas County. This Hazard Identification and Vulnerability Assessment is a vital component in the development of a county-wide Local Mitigation Strategy. Through the information gathered, we will be better able to determine and prioritize mitigation initiatives.

The Hazard Identification and Vulnerability Assessment include types of hazards, location, and population affected. The information was compiled by Pinellas County Emergency Management, Pinellas County Planning Department, Pinellas County Communications, Pinellas County Economic Development, Pinellas County Environmental Management, St. Petersburg Clearwater Airport, Albert Whitted Airport, Port Authority Tampa, FAA, Clearwater Airpark, National Weather Service, State of Florida DOT, Pinellas County Parks, U.S. Geological Survey, National Climatic Data Center, Local Mitigation Strategy Workgroup, and other sources.

Consistent with Federal and State Plans and the County Comprehensive Emergency Management Plan (CEMP), the Pinellas County LMS reflects an "All-Hazards" approach to mitigation. Therefore, the LMS Work Group researched technological and societal hazards, as well as natural hazards, that may confront the county.

General Description of Pinellas County

Pinellas County is a peninsula located on the west central coast of Florida, bordered on the west by the Gulf of Mexico, and on the east and south, by Tampa Bay. It is the second smallest county in Florida, based on geographic size, with a land area of 280 square miles or 179,314 acres and is the most densely populated. Pinellas County has a total of 587.77 miles of coastline.

NATURAL FEATURES: The elevation of Pinellas County ranges from Mean Sea Level (MSL) to 97 feet. The County is divided into five different topographic features that also correspond to elevation: the ridge, which consists of gently rolling hills, with elevations between 40 and 97 feet; the transition area, with elevations between ten and 40 feet; the flood plain, with elevations between zero and ten feet; the barrier islands, with elevations between zero and ten feet; and the coastal filled areas, that have elevations between zero and five feet. The filling of selected waterfront areas in Pinellas County began in 1920, as a means of providing commercial and residential real estate for construction. Since that time, approximately 4,790 acres of water surrounding the Pinellas Peninsula, have been filled. The most extensive filling was done in Boca Ciega Bay, where 25% of the Bay, or approximately 2,506 acres were filled. This practice has been discontinued.

RIVERS, CREEKS AND LAKES: Pinellas County has only one river, the Anclote. It exits into the Gulf of Mexico and is located in the extreme northern portion of the County, in the Tarpon Springs vicinity. There are numerous creeks and drainage channels in the county.

Lake Tarpon is the largest lake in the County, covering 2,534 acres. It is fed by groundwater and at the surface by Brooker Creek. Until 1967, the lake was connected hydrologically to Spring Bayou (eventually flowing into the Anclote River) but was subsequently damned off by the US Army Corps Of Engineers in order to control saltwater intrusion into Lake Tarpon. A controlled height canal is an outfall for the lake into Tampa Bay near the City of Safety Harbor and is used to maintain the water level at approximately 3.1 feet above mean sea level. Lake

Seminole is 980 acres in surface area and was formerly an estuary at the end of Long Bayou. Only about five feet deep, many outfalls from the western shoreline empty into the lake. Lake Maggiore is 380 acres in size and ten feet deep. Other large lakes in the County include: Salt Lake 220 acres; Lake Del Oro 75 acres; Alligator Lake 77 acres; Lake St. George and Lake Chautaugua each about 50 acres.

ISLANDS: There are a series of barrier islands in close proximity to the mainland coast. These islands extend about 34 miles along the western coastline of the County. With the exception of Caladesi Island and Anclote Key, all barrier islands are connected to the mainland by a series of 14 causeways and bridges. With the exception of Honeymoon and Caladesi Islands, the barrier islands are densely populated and completely built out. Their population consists of single-family houses, hotels/motels, condominiums and mobile home parks.

CLIMATE: The climate in Pinellas County is subtropical marine, characterized by long, humid summers and mild winters. Rainfall is abundant, especially during the summer months. The annual average rainfall is 51.9 inches, mostly occurring during June through September. The driest months of the year are April and November. Snowfall in Pinellas County is rare. The maximum recorded monthly accumulation was two inches in January, 1977.

The average annual temperature is 74.1 degrees Fahrenheit. The average high is 81.7 Fahrenheit and the average low is 60.6. In the winter months, the normal daily fluctuation in temperatures is from the low 50s to the low 70s. In the summer months, the temperatures range from the low 70s to the high 90s.

The number of freezes recorded, at Tampa International Airport, is an average of 3.3 days at 32 degrees Fahrenheit or below per year. Due to Pinellas County's exposure to shoreline, our average number of freezes may be less than those recorded at Tampa International Airport.

Pinellas County has a very active thunderstorm season during the summer. There is an average of 85.1 thunderstorms a year. Most occur during the months of June through September. The hurricane season extends from June 1 through November 30.

POPULATION: Pinellas County has the fifth largest population in Florida, with an estimated 899,445 permanent residents, 42,575 seasonal residents, and 88,629 tourists for a total of 933,994 persons (2002). Pinellas County hosts an annual total of 4.7 million tourists throughout the year. The current population density is 3,292 persons per square mile. A large percentage of residents live in coastal communities. It is estimated that by the year 2030, the total county resident population will be 1,103,027.

Permanent Population Estimates (2002)

Belleair	4,089	Oldsmar	12,701
Belleair Beach	1,633	Pinellas Park	46,534
Belleair Bluffs	2,238	Redington Beach	1,558
Belleair Shore	71	Redington Shores	2,337
Clearwater	109,719	Safety Harbor	17,479
Dunedin	36,865	St. Petersburg	250,354
Gulfport	12,578	St. Pete Beach	9,968
Indian Rocks Beach	5,210	Seminole	17,085
Indian Shores	1,716	South Pasadena	5,800
Kenneth City	4,440	Tarpon Springs	22,326
Largo	70,234	Treasure Island	7,503
Madeira Beach	4,521	Unincorporated	285,490
North Redington Beach	1,558		

Population Living in Hurricane Evacuation Levels

An estimated 676,250 residents will have to evacuate for a worst-case hurricane scenario. The figures below depict the cumulative numbers of people who would have to evacuate based on the severity or category of the hurricane.

Level A	Level B	Level C	Level D	Level E
Cat 1	Cat 2	Cat 3	Cat 4	Cat 5
392,010	482,190	581,000	647,190	676,250

Economic Indicators

- 2002 Annual Average Unemployment Rate was 2.6%
- Income County Ranking in State:
 - #4 Total personal income (\$27.8 billion in 2002)
 - #7 Total earned income (\$16.3 billion in 2002)
 - #8 Per capita income (\$27,311 in 1996)
- Pinellas County ranks first in the State in total retail sales, food stores, general merchandise stores, automobile dealerships, and building material/hardware establishments.
- The Pinellas County School district is the 7th largest school district in Florida.
- Tourism has continued to grow through 2000. Over 4.7 million people visited Pinellas County in 2000, spending an estimated \$2.56 billion. (2000 is the most recent year for which actual data is available.)

HOUSING: There are 481,573 housing units in Pinellas County. There are 49,493 mobile manufactured housing units, 77,930 condominiums, and 76,280 apartments.

The median sale price for existing single family homes in Pinellas County is \$137,500.

TRANSPORTATION: Pinellas County is serviced by five major highways, I-275, US Highway 19, US 19A, US 92, and Highway 60. Other major transportation routes are as follows: Tarpon Avenue/SR582, Tampa Road/752-SR584, Curlew Road/SR586, East Bay/SR686, Ulmerton Road/SR688, Park Boulevard/Gandy Boulevard, CR611, SR580, SR 693 and Gulf Boulevard/SR699.

Airports There are three airports located in Pinellas County, the St. Petersburg-Clearwater International Airport which houses the largest Coast Guard Air Station in the country, Albert Whitted Municipal Airport, and the Clearwater Airpark. Additionally, in close proximity, in Hillsborough County, are Tampa International Airport and MacDill Air Force Base.

Bus There are two bus lines operating in Pinellas County. One bus line, the Pinellas Suncoast Transit Authority with a fleet of 143 buses, provides intra-county public transportation. The other bus line, Greyhound, provides inter-state service. Additionally, the Pinellas County School Board operates a fleet of 573 school buses for the movement of students.

Railroad CSX operates a single line freight rail service through mostly industrial areas in Pinellas County. Most of the railway in Pinellas County has been converted into the Pinellas Trail, a recreational thoroughfare that traverses the county.

Waterways Pinellas County has two ports, Port of St. Petersburg and Port Tarpon for shallow draft ships. Deep draft ships must use Port Tampa in Hillsborough County or Port Manatee in Manatee County. In 1998, Port Tampa recorded 4,077 operations. The majority shipped fertilizer and phosphates. The total number of barges in Tampa’s operations is 1,251 and the total number of vessels and tugs are 1,172. There are several smaller ports and terminals throughout Tampa Bay.

The following are significant historical waterway accidents: 1980 Black Thorn and Capricorn both sunk, 1980 Summit Venture and the Skyway Bridge with major fatalities, and 1993 three vessels collided which caused a significant oil spill. There have been several groundings with no pollution.

SPECIAL FACILITIES/POPULATIONS:

There are 16 hospitals with 1 in evacuation Level A, 1 in evacuation Level C, 3 in evacuation Level E, and 10 in non-evacuation zones.

There are 79 nursing homes. 3 are in evacuation Level A, 8 are in evacuation Level B, 9 are in evacuation Level C, 11 are in evacuation Level D, 4 are in evacuation Level E, and 44 are in non-evacuation zones.

There are 265 assisted living facilities (ALF). 15 are in an evacuation Level A, 26 are in evacuation Level B, 29 are in evacuation Level C, 23 are in evacuation Level D, 18 are in evacuation Level E, and 154 are in non-evacuation zones.

There are 19 ambulatory surgical centers (ASC). 1 is in evacuation Level A, 4 are in evacuation Level B, and 2 are in evacuation Level D, with 11 situated in non-evacuation zones.

The following is an estimated number of patients who would require evacuation for the various levels/categories of hurricanes:

LEVEL	A	B	C	D	E	No Evac
Hospital	260	0	60	0	772	2311
Nursing Home	293	910	1060	1603	478	4836
ALF	420	2839	1931	434	669	4960
ASC	10	85	0	30	0	172
TOTAL	983	3834	3051	2067	1919	12279

There are approximately 30,000 people receiving home health care and 1,200 receiving Hospice Care in Pinellas County. To date, we have 2,000 registered in the Special Needs Program meaning they have no means of transportation in the event of a disaster.

HAZARDS VULNERABILITY ANALYSIS MATRIX

Hazard – Natural	Probability	Impact	Frequency	Distribution
Avalanche	None	None	N/A	N/A
Coastal Erosion	High	Major	Several a year	Coastal areas and barrier islands ¹
Dam Failure	None	None	N/A	N/A
Drought	Low	Minor	5-10 years	County-wide
Earthquake	Low	Major	Unknown	County-wide
Extreme Heat	Low	Minor	5-10 years	County-wide
Coastal Flooding	Moderate	Minor	5-10 years	Coastal areas and barrier islands
Flooding – Rainfall	Moderate	Minor	5-10 years	Localized ²
Freezes	Low	Minor	3 years	County-wide
Hailstorm	Low	Minor	10 years	Localized
Hurricane/Tropical Storm Minor Impact	High	Minor	2 years	County-wide
Hurricane/Tropical Storm Major Impact	High	Major	50 years	County-wide and Regional
Landslide	None	None	N/A	N/A
Severe Winter Storm	None	None	N/A	N/A
Sinkholes	Moderate	Minor	Several a year	Localized
Tornado	High	Major	2-3 a year	Localized
Tsunami	Low	Major	Unknown	County-wide
Volcano	None	None	N/A	N/A

¹ Coastal barrier islands include 13 incorporated jurisdictions and portions of St. Petersburg and the City of Clearwater. Due to their low elevation, restricted access to the mainland and direct location along the Gulf of Mexico, these areas are much more vulnerable to coastal flooding, erosion, severe winds, tropical storms and winter storms. See GIS Map for jurisdictional boundaries.

² See GIS Maps which illustrate the NFIP Flood Zones and Repetitive Loss Properties for specific area vulnerability.

Urban Wildfire	High	Minor	Several a year	Localized
Hazard - Technological	Vulnerability	Impact	Frequency	Distribution
Aircraft Incident	High	Minor	Several a year	Localized
Hazardous Materials Transportation	High	Moderate	50-100 a year	Localized
Hazardous Materials Fixed Facility	High	Major	5-10 years	Localized
Major Transportation Incident	High	Major	Several a year	County-wide and Regional
Power Failure Major	High	Major	Unknown	County-wide
Terrorism	Moderate	Minor	Unknown	Localized

The Hazards Vulnerability Analysis Matrix provides an overview of the probability, impact, frequency and distribution of natural hazards within the County. The table below specifically identifies each jurisdiction and its vulnerability to specific hazards. In Pinellas County, the primary difference in vulnerability relates to coastal vs. inland flooding. The table below color-codes the jurisdictions by location. Yellow indicates a barrier island community; blue denotes jurisdictions on the mainland with significant coastal areas and more inland communities subject only to inland flooding are coded green.

JURISDICTIONAL VARIABILITY IN VULNERABILITY

Natural and Manmade Hazards	Unincorporated	Belleair	Belleair Beach	Belleair Bluffs	Belleair Shore	Clearwater	Clearwater Beach area	Dunedin	Gulfport	Indian Rocks Beach	Indian Shores	Kenneth City	Largo	Madeira Beach	North Redington Beach	Oldsmar	Pinellas Park	Redington Beach	Redington Shores	Safety Harbor	St. Petersburg	St. Pete Beach	Seminole	South Pasadena	Tarpon Springs	Treasure island
Avalanche	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Coastal Erosion	M	L	H	N	H	M	H	M	M	H	H	N	N	H	H	M	N	H	H	M	M	H	L	M	H	H
Dam Failure	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Drought	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Earthquake	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Extreme heat	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Coastal Flooding	M	M	H	M	H	M	H	M	M	H	H	N	N	H	H	M	L	H	H	M	M	H	M	M	H	H
Flooding – Rainfall	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
Freezes	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Hailstorm	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Minor Hurricane/ Tropical Storm	M	L	H	L	H	L	H	M	M	H	H	L	L	H	H	M	L	H	H	M	M	H	M	M	M	H

Major Hurricane	H	M	H	M	H	M	H	H	H	H	H	M	M	H	H	H	M	H	H	H	H	H	M	H	H	H
Landslide	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Severe Winter Storm	L	L	M	L	M	L	M	L	L	M	M	L	L	M	M	L	L	M	M	L	L	M	L	L	L	M
Sinkholes	M	L	L	L	L	M	L	M	L	L	L	L	M	L	L	M	M	L	L	M	M	L	M	L	L	L
Tornado	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
Tsunami	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Haz Mat/ transportation	M	L	L	L	L	M	L	M	M	L	L	M	M	L	L	M	M	L	L	M	M	L	M	M	M	L
Haz Mat Open Water spills	M	L	M	L	M	L	M	L	L	M	M	L	L	M	M	M	L	M	M	M	M	M	L	M	M	M
Terrorism	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Utility Failure	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L

- ? Barrier Island Communities
- ? Jurisdictions with significant coastal areas
- ? Inland communities with some chance of flooding

H= High – Likely to experience threat, effect, or reoccurrence of event.
M = Moderate – Average to better than average likelihood of experiencing threat, effect or reoccurrence of event.
L = Low – Below average likelihood of experiencing threat, effect or reoccurrence of event.
N= Very little or no likelihood threat will occur.

Natural Hazards Affecting Pinellas County

Coastal Erosion

History: Pinellas County is a peninsula on the Florida Peninsula and has a total of 587.77 miles of coastline. Pinellas County also has 35 miles of fine sand beaches. The tourism industry is the largest industry in the county, with a median hotel occupation rate of about 73%, year round. Additionally, densely populated barrier islands run almost the entire length on the county's Gulf Coast. Coastal erosion events occur on an annual basis, including many small events and an occasional large impact event.

Probability: Based on historical trends, occurs several times each year.

Vulnerability: Almost the entire length of Pinellas County on the Gulf Coast is lined with fine, white sandy beaches. These beaches, a main tourism attraction, are highly vulnerable to erosion from coastal events as well as inland coastal exposures along the county coastline. These events typically have caused considerable loss of the beach front and wide spread damage to structures that line those beaches. Thus, the vulnerability to a coastal erosion event is high.

Maximum Threat: A worst-case scenario would be a pounding of the coastline from a category 3, 4, or 5 storm that was motionless or moving at a very slow forward speed on a parallel line to the beaches. Past events have caused almost complete loss of the beachfront at certain locations, which has a major economic impact on Pinellas County's tourism industry. It also has a major impact on the collection of tourism development tax, which is approximately \$1.3 million per month.

Drought

History: Drought occurs every few years even after periods of heavy rain. They can become severe if several months pass without significant precipitation. During such droughts, restrictions have been placed on water usage. As a result, alternative water sources, such as desalination plants, are being studied.

Probability: Based on historical trends, the frequency of drought in Florida is every five to ten years. Fortunately, the geographic location of Florida places it at far less risk for drought than the western states, because Florida remains humid, even with less than average rainfall. Thus, the occurrence of drought is considered to be low.

Vulnerability: Pinellas County does not have much open wildland. That which does exist is located mostly in the northern areas of the County; Safety Harbor, East Lake, and Oldsmar. When such wildland becomes parched, it becomes more susceptible to wildfires.

Pinellas County is surrounded by water, thus at first glance one might think that the area could never suffer from drought. Unfortunately, the water is saltwater and is not currently available for human consumption or daily uses. When considering how densely populated the County has become, and the high demands placed on the water supply daily, the area can be moderately vulnerable to drought.

Maximum Threat: A prolonged drought combined with sunny and warm conditions resulting in very low water levels and the need for water rationing.

Earthquake

The probability of an earthquake is very low, however the impact would be major throughout the county. None has ever been recorded in Pinellas County.

Flooding - Coastal

History: Pinellas County is a peninsula with a total of 587.77 miles of coastline, which makes it extremely vulnerable to coastal flooding. The County has experienced a number of damaging coastal floods caused by wind-driven water associated with an astronomical high tide.

June 1972: Hurricane Agnes, although well out in the Gulf of Mexico, caused a wind-driven high tide of 5.6 feet, which struck Pinellas County on June 19, 1972. It caused an estimated 12 million dollars in damages to public and private property.

June 1982: On June 18, 1982, Pinellas County was struck by severe coastal flooding from the “no-name” storm. The highest recorded winds from the storm were 49 mph and rainfall amounts were between four to six inches. The estimated public and private property damage from the “no-name” storm were over 16 million dollars.

March 1993: The “Storm of the Century” was a very powerful winter storm which generated Category 1 “hurricane - like” storm surges. A 7.7ft above normal reading was taken on Clearwater Beach.

Between 2000 and 2003, there were six relatively minor flooding events. The most notable occurred July 23, 2001 when a slow moving and persistent low pressure system, west of the mouth of Tampa Bay, produced coastal flooding, very heavy rain, sustained winds of 20 to 30 mph with occasional higher gusts of up to 50 mph, from Tampa south to Ft. Myers, along the West coast of Florida. In Pinellas County approximately 4 feet of coastal flooding caused an estimated \$1.7 million in property damage.

Jurisdiction	Date	Property Damage	Injuries
Treasure Island	6/08/2002	\$0	1
St. Petersburg	12/24/2002	\$25,000	0
St. Pete Beach	4/26/2003	\$30,000	0
Pass-a-Grille area (county)	9/14/2001	\$350,000	0

Source: NCDC, 2004

Probability: Serious coastal flooding has occurred in Pinellas County three times in the last 26 years. Statistically, the frequency of occurrence of tidal water elevation, based on a study conducted by the Coastal and Oceanographic Engineering Laboratory is shown below:

Water Level Elevation

- Above MSL:
- 3 feet or higher
- 4 feet or higher
- 5 feet or higher
- 6 feet or higher
- 7 feet or higher
- 8 feet or higher

Frequency:

- Once in 3 - 5 years
- Once in 20 years
- Once in 25 - 30 years
- Once in 30 - 50 years
- Once in 60 - 90 years
- Once in 90 - 100 years

Statistics indicate a high tide above five feet only once in 25 to 30 years, however, there have been three incidents of coastal flooding in the last 26 years, caused by a high tide of between five and six feet. This indicates that Pinellas County might expect severe coastal flooding once every 8.7 years. The probability of major coastal flooding is considered to be high.

Vulnerability: Based on historical information, Pinellas County remains highly vulnerable to wind blown high tide on the barrier islands and in other low lying areas along the coastline. The risk to both population and property continues to grow with development of vulnerable areas.

The location of repetitive loss structures also identifies specific areas in the community where flooding continues to be a problem and where mitigation efforts should be concentrated. For many of these coastal areas, mitigation will involve significant property owner investment and will probably be delayed until redevelopment/ reconstruction occurs. New construction or significant remodeling will require adherence to current floodplain management regulations will be enforced. (See Appendix 13)

	Clearwater	Unincorporated Pinellas County (primarily Crystal Beach, Ozona and Palm Harbor areas)	St. Petersburg	Dunedin	Tarpon Springs	Largo	Seminole	South Pasadena
No. of Repetitive Loss Properties	6	61	11	2	1	2	6	1

Maximum Threat: The maximum threat to Pinellas County is a storm generation gale force wind from the west or southwest, striking the coastline during an astronomical high tide. This would place over 60,000 persons at risk, as well as 30,000 dwelling units. Estimated damages would be between 30 and 40 million dollars.

Flooding - Rainfall

History: Fresh water flooding problems due to rainfall are evident in many sections of Pinellas County. Rapid development during the past twenty years has aggravated this problem, especially in areas of poor drainage. Prolonged periods of rainfall have shown increased potential for causing damage to property and evacuation of residents due to flooding. This problem becomes more severe if the heavy rainfall occurs at the same time as the astronomical high tide, which prevents much of the rainwater from flowing through the drainage system into the Gulf of Mexico or Tampa Bay. Pinellas County has experienced a number of damaging floods during the past twenty years. The most significant are:

June 1974: During the period of June 22 through June 30, 1974, Pinellas County received between 20 and 30 inches of rain. Damage to public and private property totaled more than twenty million dollars.

May 1979: Pinellas County was hit by torrential rains during the period of May 7-8, 1979. Portions of the County received between ten and 18 inches of rainfall during a 12-hour period. The City of Pinellas Park was particularly hard-hit. In several areas of the County, the rainfall surpassed the 100-year level. The amount of damage to Pinellas County resulted in Presidential Disaster Declaration 586.

September 1979: During the months of August and September 1979, Central Florida, including Pinellas County, experienced the most significant period of rainfall in over three decades. In some areas, the two month rainfall totaled more than 40 inches.

September 1988: After a week of light to moderate rains, flooding began to occur county-wide. Areas of Pinellas Park, Clearwater and Dunedin were hardest hit. 13.25 inches of rain were recorded.

On the morning of September 17, 2000, Pinellas Park again saw flooding which caused \$150,000 in damages.

Probability: Serious flooding has occurred four times in the past 20 years, with one incident, May 8, 1979, causing a Presidential Disaster Declaration. Although the drainage system has been greatly improved as a result of the past flooding, there is potential for the situation to occur again during periods of higher than normal rainfall. Based on past history, Pinellas County can expect heavy rainfall to cause flooding once every 3.3 years. Therefore, the probability for major flooding is considered to be high during any given year.

Vulnerability: With the high probability of fresh water flooding and the continued development throughout Pinellas County, both on low ground and high ground, the vulnerability of population and property must also be considered as high. Historically, the older sections of Pinellas Park, Dunedin, and Clearwater have shown a vulnerability to fresh water type flooding.

Maximum Threat: The maximum threat to Pinellas County would be a May 8, 1979 type of storm, which deposited almost 18 inches of rainfall in the lower central part of the County during a 12-hour period. The situation would become more critical if the storm was preceded by a long period of rainfall over a one to two month period, or if accompanied by a high tide situation. Although drainage has been improved, it is estimated that homes would still be at risk for potential flooding in the Pinellas Park and North St. Petersburg areas.

Freezes

History: Pinellas County is subject to frost and/or freezing temperatures from November through March each year. Since 1962, there have been 15 freezes that have affected Pinellas County. The month and year are shown below:

December 1962	January 1981	December 1985	Dec. 2000
November 1970	January 1982	January 1986	Jan. 2001
January 1977	January 1985	February 1989	Jan. 2003

Probability: Freezes have occurred in Pinellas County 15 times during the last 42 years. Therefore, the County can expect a freeze once every three years. The probability of a freeze is considered as high.

Vulnerability: Pinellas County is primarily an urban County with almost no acreage devoted to agriculture. However, the population most vulnerable to freeze is the elderly population. Past freezes have caused power outages in several areas. This has required the electrical power companies to institute rolling “brown-outs”, and have required the opening of shelters.

Maximum Threat: The maximum threat for Pinellas County would be a sustained period of low temperatures below 30 degrees in December or January. This main threat would be due to power outages. Only selected areas of the population would be at risk.

Hurricane/Tropical Storm

History: Historically, hurricanes are the natural disasters that pose the greatest threat to Florida and Pinellas County. They have caused the greatest amount of property damage and as more people move to Pinellas County, and more development takes place, the potential for hurricane-related deaths and damages, increases each year.

Pinellas County has experienced the effects (wind damage, beach erosion, etc) from a number of hurricanes since 1886. A total of five hurricanes have affected Pinellas County within the last 13 years. They were Hurricane Elena, Hurricane Erin, Hurricane Opal, Hurricane Earl, and Hurricane Georges.

Hurricane Georges threatened Central and Southwest Florida in the end of September 1998. From September 21st through the 30th, Hurricane Georges left a trail of destruction in the Caribbean region and across the southern U.S. Gulf coast. As the Hurricane threatened the Keys and Southwest Florida the potential threat to Pinellas County continued to develop. On Wednesday September 23rd the County activated the Citizens Information Center to answer the flood of calls from concerned citizens. On September 24th preparedness and response actions and planning accelerated. A final meeting of the Disaster Advisory Committee was held at 9:30 AM. The County EOC was partially activated at 11:00 AM. The Board of County Commissioners met in Emergency Session at 11:30 AM and declared a State of Local Emergency and issued a Mandatory A Level Evacuation, to be effective at 6 AM on September 25th. At 6 PM the National Weather Service issued a Flood Watch and at 11PM the National Hurricane Center issued a Tropical Storm Warning. On September 25th the State of Local Emergency became effective at 6 AM. County Offices and schools were closed and 55 Public Shelters were opened with a total capacity of 83,560 spaces. As the threat of Georges began to appear to lessen shelter operations were consolidated to relieve the load on first responders and management staff. By noon on the 25th of September the President of the United States declared a State of Emergency for Florida. On September 26th the threat to West Central Florida continued to lessen. Tropical Storm Warnings and Tornado Watches for Pinellas County were canceled. The Mandatory A Level Evacuation Order was lifted and by noon the Shelters were closed and the EOC deactivated.

On September 17, 2000 Hurricane Gordon moved northeast across the eastern Gulf of Mexico and brought 30 to 40 mph sustained winds and 50 to nearly 70 mph tropical storm force wind gusts to mainly coastal areas of Southwest and West Central Florida throughout the daylight

hours of the 17th. Hurricane Gordon produced maximum storm tides above mean sea level of 4 to 5.5 feet along the Pinellas and Hillsborough county coastlines. In Pinellas County, nearly a foot of water covered coastal roads from St. Pete Beach to Clearwater. The Courtney Campbell Parkway, separating Pinellas and Hillsborough counties, was closed for approximately 4 hours due to storm surge flooding. Beach erosion was minor to moderate over Pinellas County. In Pinellas County, 51 single-family homes, 32 mobile homes, 27 multi-family homes and 24 businesses sustained minor wind or water damage. Estimated cost of the damage in Pinellas County was \$500,000 dollars.

Tropical Storm Gabrielle began to affect the Southwest Florida coast during the pre-dawn hours of September 14th, 2001 with sustained winds of 40 to 50 mph along the coasts of Sarasota, Manatee, Charlotte and Lee counties. By sunrise, high end tropical storm force wind gusts of 60 to 70 mph were common from the mouth of Tampa Bay south to Charlotte Harbor. Gabrielle continued to move northeast and made landfall, south of Venice, in Sarasota County, between 6:45 and 7:00 a.m. EST In Pinellas and Hillsborough counties, northeast wind gusts of 50 to 65 mph were common across most of Tampa Bay and the southern portions of the counties. Storm tide values of up to three feet were common on the Pinellas county side (west) of Tampa Bay, from the Gandy Bridge south to Pinellas Point. Most wind damage and flooding were minor across Pinellas and Hillsborough counties. The most significant impact for Pinellas County was overhead power distribution lines brought down by falling tree limbs particularly in the City of St. Petersburg.

Probability: Based on the history of hurricane affecting the Tampa Bay area, Pinellas County can expect a hurricane to affect us at least once every 2.6 years. It is considered that the occurrence of a hurricane in the Tampa Bay area on an annual basis is high.

Vulnerability: The vulnerability of Pinellas County to potential hazards from hurricanes is analyzed prior to each storm. The population at risk and potential for property/economic damages is based on the specific characteristics of the threatening hurricane.

The principle tool for analyzing the expected hazards from potential hurricanes that may affect the Tampa Bay Region, is the Sea, Lake, Overland Surges from Hurricanes (SLOSH) numerical storm surge model. The SLOSH model predicts the tidal surge heights that result from test data about hypothetical hurricanes with various combinations of pressure, size, forward speed, track and winds.

Hurricane Hazards:

The three major hazards produced by a hurricane are the storm surge, high winds and rainfall.

Storm Surge: The storm surge is by far the most dangerous of the three hazards, historically causing nine out of ten hurricane related deaths. This surge, when coupled with the breaking waves, will cause great destruction. The more intense the hurricane, and the closer to perpendicular its track is, in relation to the coastline, the higher the storm surge and resulting destruction will be. Also impacting on the height of storm surge is the depth of the water along a threatened coastline. Because of the high shoaling factor (shallow water and gradual slope of the Gulf bottom) off the central west coast of Florida, Pinellas County will receive higher surges than those indicated in the generalized Saffir/Simpson Hurricane Scale.

High Winds: High winds will also render segments of the population vulnerable to the passing hurricane. Throughout Pinellas County, the approximately 56,000 mobile and manufactured homes will be unable to withstand hurricane force winds.

High winds will also have an impact on the timing of the evacuation order, since they arrive at the coastline several hours before the eye of the storm makes landfall. All evacuation activities must be completed prior to the arrival of sustained gale force winds (40 mph with significantly higher gusts).

Rainfall: Since the structure of every hurricane is unique, there is no way to determine the rate and distribution of the expected six to twelve inches of rainfall generally accompanying the storm. However, it is known that the rainfall has only a minor influence on the storm surge water levels. Rainfall, in itself, will not normally require the emergency evacuation of large numbers of residents during the passage of a hurricane as does the storm surge. However, rain may cause the slowing of traffic, it may sever evacuation routes which could severely reduce the number of hours available for the overall evacuation.

Maximum Threat: The worst case scenario for Pinellas County is a Category 5 Hurricane heading northeast at less than 15 miles per hour that makes landfall at high tide near New Port Richey. A 24 foot storm surge would inundate almost half of the County while the winds would destroy hundreds if not thousands of homes and cause damage to thousands more.

Lightning & Thunderstorms

History: The State of Florida has an unusually high incidence of lightning strikes and thunderstorms causing death and injury.

Lightning occurs mostly in the months of May through October. Between 1999 and 2003, lightning caused \$2,731,000 in damage with 19 injuries in Pinellas County.

In 1998, there were a recorded 645 severe thunderstorms in Florida. They caused two deaths, two injuries and \$13,244 million dollars in damages. Pinellas County had an estimated 175 severe thunderstorms from 1959-2003. Since 2000, 22 severe thunderstorms have caused about \$450,000 in property damage.

Probability: There is a high probability that lightning strikes and thunderstorms will continue to occur in Pinellas County. However, the risk to the population is relatively low concerning injury and death.

Vulnerability: Because of the very frequent occurrences, Pinellas County has a high vulnerability to these incidents. Additionally, with the waters of Tampa Bay and the Gulf of Mexico surrounding Pinellas County, there is an added vulnerability to fisherman, swimmers, and boaters.

Maximum Threat: The maximum threat is the potential for a lightning strike hitting a group of spectators during a large outdoor sporting event, or possibly, a strike into a group of sunbathers. In this situation, a number of individuals could be injured or killed.

Tornado

History: The tornado, potentially the most violent storm produced in nature, is a common occurrence in Florida and Pinellas County. In the past 20 years only two outbreaks of strong tornadoes have occurred, one in May of 1979 and the other in October of 1992. In 1998, there were 118 tornadoes, 42 deaths, 305 injuries and \$461 million dollars in damages in the United States. The last major event occurred in Pinellas County on October 3, 1992.

From 1959 to 1997, Pinellas County recorded 99 tornado incidents, some minor, but all causing varying degrees of property loss, some ranging in the millions. The most severe incident occurred on May 4, 1978, when a tornado struck Highpoint Elementary School during a school day. Three children were killed, 15 hospitalized and another 84 injured, with property damages totaling \$4 million dollars. The last major event occurred October 3, 1992, when tornadoes damaged and destroyed a subdivision of homes and a mobile home park in the City of Pinellas Park. Four were killed, 130 were injured; the property damages totaled 37 million dollars.

On August 12, 2000, two waterspouts caused approximately \$35,000 total in property damage with no injuries.

Probability: Based on historical trend of the past 13 years, Pinellas County can expect to receive 2.2 tornado touchdowns per year. Thus, the occurrence of a tornado touchdown on an annual basis would be considered high. The expected tornado size would be approximately 100 yards wide, with a two to three mile path moving from the southwest to northeast. Most tornadoes are expected to touchdown for relatively short periods of time in a bounce type pattern.

Vulnerability: Because of the high frequency and unpredictable pattern of tornadoes, all of Pinellas County is vulnerable to tornado induced damages. The damage potential is high because of the population density, and also due to the large number of mobile homes and manufactured housing units throughout the County. Because of their construction, the estimated 56,000 mobile homes and manufactured housing units are especially vulnerable to the high winds of a tornado.

Maximum Threat: A worst case scenario involving a tornado incident in Pinellas County would call for multiple tornadoes numbering at least f4 on the Fujita Tornado Intensity Scale, touching down in the central part of the County, and moving on a southwest to northwest track for about three to four miles. This would be very similar to the series of tornadoes that moved through the central part of the County on May 8, 1979.

Tsunami

The probability is very low, however the impact would be tremendous. Tsunamis offer little or no warning of the pending coastal flooding. Such an unexpected event would cause a large loss of life and property.

Wildfire

History: In the last five years, there has been an average of 200 wildfires per year in Pinellas County, despite the fact that the county is almost "built out". The East Lake area near the power line corridor is the most likely location for wildfires to occur. The County does conduct controlled burning in the entire northeast corner of the County and small burns at county parks

and other properties throughout the year. The State also conducts annual controlled burns at state parks located within the county.

In March of 2000, the City of Clearwater experienced minor property damage (\$5000) from a small wildfire. Between May 23rd and May 25th, 2001, the County did experience smoke from fires in adjacent counties. Luckily there were no damages and no injuries.

Probability: Based on an analysis of recent fire histories, Pinellas County can expect about 200 small wildfires each year. This number will probably decrease as the remaining brush areas are developed.

Vulnerability: Vulnerability is low. The highest risk is found primarily in the wildland/urban interface developments located at various sites throughout the county. Wildfires are usually kept small and extinguished quickly.

Maximum Threat: A worst case scenario would involve damage to or the destruction of two or three adjacent homes, most likely in the wildland/urban interface setting.

Urban Fire

History: The following table breaks down the past five years of response to structure fires and those that were determined by responding units to be Working Fires. Working Fires are defined as those that caused significant damage to at least the structure of origin.

Year	Responses	Working Fires
1999	2372	272
2000	2592	292
2001	2408	288
2002	2308	284
2003	2253	242
5 Year Total	11933	1378

Source: Pinellas County Emergency Communications

Probability: The likelihood of urban fire is high and the potential impact major. Because of aggressive fire prevention and suppression efforts, the effects have been minimized. Additionally, quick response and a large number of firefighting resources contribute to mitigate the impact of such an occurrence.

Vulnerability: Vulnerability is high due to the age of the structures in St. Petersburg, Clearwater, and Largo.

Maximum Threat: The maximum threat is most likely to be a fire incident in an older large high-rise building with an elderly population. Many of the older structures are still without fire suppression sprinkler systems. Most of these buildings are required to be retrofitted in the next few years.

Sinkholes

History: Sinkholes, a common occurrence in many parts of Florida, have a history of occurring in Pinellas County. A geological survey conducted for the Pinellas County General Plan (1979) indicates that the central and northern portions of the County are more prone to sinkhole development due to the heavy limestone composition of the substrate in the area.

Sinkholes in Pinellas County have generally developed rather slowly and are fairly shallow and small in diameter. From January 1989 through December 2003 there have been an estimated 1400 occurrences of subsidence resulting in damage to structures. Only a small percentage of these reports were determined to be actual sinkholes. Most were subsidence resulting from clay shrinkage or fill deterioration. However, virtually all occurrences of subsidence are generally, and, incorrectly identified as sinkholes

Probability: There is a high probability that sinkholes will develop in the sinkhole-prone areas of the County. However, there is a low probability that these sinkholes will be large enough to cause extensive damage or casualties.

Vulnerability: Based on historical and geological information, Pinellas County is vulnerable to sinkhole occurrences. However, the population-at-risk is moderate, due to the nature of sinkhole development.

Maximum Threat: A sinkhole of unprecedented size, similar to the one that developed in Winter Park, Florida, in 1981, occurring in downtown Clearwater in the vicinity of Gulf-to-Bay Blvd. and North Ft. Harrison Ave., during a working day. With a depth of 100 feet, a sinkhole of this size would cause an enormous amount of property damage and possible fatalities and injuries to the work force in the area.

Technological Hazards Affecting Pinellas County

Aircraft Incidents

History: St. Petersburg-Clearwater International Airport and its tenants currently employ a total of 1600 people on site. As of the end of 2003, its annual economic impact was estimated to be \$ 783 million. In 2003 a total of 997,761 domestic and international passengers and 18,471 tons of air cargo traveled through the airport. An estimated 212,714 aircraft operations (take off and landings) occurred at the facility. From May 1994 to present, there have been eight accidents resulting in three deaths and eight injuries to crew and passengers.

Albert Whitted Municipal Airport is a general aviation facility. It supports general, specialized and charter aviation. User agencies include BayFlite medical air transport, Florida Highway Patrol air services, and a local banner towing company. In 2003 the airport averaged 100,000 aircraft operations which included 2,500 charter flights. Since 1995, there have been three aircraft accidents involving landings in the water of Tampa Bay. There have been no fatalities during this same time.

Clearwater Airpark is a general aviation airport with mostly piston airplanes, two corporate airplanes and one helicopter. They do an average of 60,000 operations annually. In 1988, an

airplane crashed into the side of a house near the airport; the pilot died. In 1997, a student pilot ran an airplane into a ditch; there were no injuries. In 2002 a twin engine aircraft crashed in a residential area while on final approach. Of the three people on board, two were fatalities. In January of 2004 two single engine aircraft collided near the airport. One was approaching the facility while the other was departing. One of the aircraft crashed in a field adjacent to a recreation facility killing the pilot. The other aircraft was able to make a safe landing at the airport.

Probability: The probability of minor aircraft accidents in Pinellas County is high and of major accidents, low.

Vulnerability: Although the entire County must be considered vulnerable, the areas with the highest vulnerability are along the designated flight paths of the three airports in Pinellas County and Tampa International Airport in Hillsborough County. A greater vulnerability exists on the flight paths for the St. Petersburg-Clearwater International Airport and Tampa International, simply because of the high volume of large passenger and cargo aircraft that utilize each facility.

Maximum Threat: The crash of a large passenger aircraft into a densely populated area in either St. Petersburg or Pinellas Park, represents the maximum threat in the southern portion of the County. In the north, the same situation exists if a large aircraft would crash in Safety Harbor, or striking the Countryside High School, during a school day. In either case, the crash would threaten 50 to 100 homes and 200-400 people. The crash of a large aircraft into Countryside High School would place over 2,700 staff and students at risk. In this situation, it is expected that fatalities and injuries would be extremely high.

Hazardous Materials (fixed facility)

History: One hundred and twenty sites in the county produce, store, or use extremely hazardous substances in reportable quantities. The Pinellas County Hazardous Materials Response Team responded to 450 incidents in 2002 and 419 in 2003. The majority of these releases are small, affecting only the building of origin and, in a few instances, immediately adjacent buildings.

Probability: The probability of a release or spill is high. Chlorine is the most abundant extremely hazardous substance stored and used in Pinellas County. In recent years, the number of facilities with extremely hazardous materials has significantly dropped as many users of chlorine have converted to less toxic materials. Approximately half of both Clearwater and St. Petersburg facilities (Waste Treatment Plants, community pools, etc.) have converted from chlorine.

Vulnerability: Vulnerability to a release or spill is moderate, depending on the amount and type of material, and the location of the release. The Pinellas County Hazardous Materials Response Team has 105 members trained to the technician level, 25-35 of whom are on duty at any time. The Haz Mat Team's capabilities are instrumental in minimizing the effects of spills and/or releases on the citizens of the County.

Maximum Threat: The largest threat is from Brenntag Mid-South, a facility that stores approximately 360,000 pounds of chlorine on site. The chlorine is repackaged at the facility into containers of various sizes, contributing to the possibility for a leak or other release to occur. The facility is located in the center of the County. A release of the worst case would be the failure of one of the largest containers, on a day with high humidity, little to no wind, and during tourist season. This would be a 180,000 pound (one rail car) release at 1.0 miles per hour wind

speed, atmospheric stability class D that would generate a vulnerability zone of at least a 10 mile radius from the site. The potential number of citizens affected by this incident could be well over 500,000 persons, depending on time of day and year.

Hazardous Materials (transportation)

History: Spills or releases from road transport vehicles are common. Maritime accidents have occurred, but are rare. There have been no rail incidents in the last 10 years.

Probability: The probability of a hazardous materials transportation incident is moderate. The event most likely to occur is a road transport vehicle accident, conceivably a tanker truck.

Vulnerability: Five major roadway corridors service the County from the north, east, and south. Marine delivery routes border the county on the east, south, and west. One main railroad corridor services the county. Thus the county is vulnerable to a transportation accident.

Maximum Threat: Rail deliveries of chlorine to Clearwater pose the largest threat. The threat would exactly duplicate the **Hazardous Materials (fixed facility)** scenario above, except that the location would be unknown. This incident could occur at any point along the rail delivery corridor throughout the northern half of the county.

Power Failure

History: Pinellas County receives its power from the Crystal River Power Plant that is located approximately 100 miles north of the County. The power is brought into the County via a single power corridor. To date, the County has never experienced a total loss of power. However, in December 1989, as a result of severely cold temperatures, the demand for power exceeded availability. The power company rationed the power by conducting "rolling brown-outs." This procedure alternated the power supply temporarily to parts of the County on a grid by grid basis.

Probability: There is a low probability that a total power failure will occur in Pinellas County/ although, if it were to happen, the impact would be extremely high. Since the County is so densely populated, and there is a high number of elderly who are electrically dependent, an extended period without power would have a significant impact.

Vulnerability: The single power corridor spans approximately 100 miles above ground from the power plant to Pinellas County. This main transmission line that serves the County is vulnerable to being damaged or destroyed by wildfire, tornado, aircraft crash, acts of terror, and extremely hot or cold temperatures.

Maximum Threat: The maximum threat that is likely to affect Pinellas County's power source is, a large segment of the power corridor being destroyed by tornado (es).

Terrorism

History: There has never been a known terrorist incident in Pinellas County.

Probability: The probability of a terrorism incident in the County is low.

Vulnerability: Vulnerability to an incident of terrorism is moderate. The County recently has conducted and been involved in numerous large scale multi-jurisdictional terrorism exercises. Joint planning efforts with a number of response agencies are currently under way. It is expected that resultant changes in a number of procedures will ultimately minimize the potential effects of a terror incident, should one occur.

Maximum Threat: Considering the large population concentration in the County, the likelihood of affecting a large number of persons is great. The threat increases with the large influx of tourists during the winter months. In 2004, approximately 4 million persons visited the County.

Water Supply

History: Most of Pinellas County receives its potable water from a regional water supply system, Tampa Bay Water, which draws from sources in Pinellas, Pasco, and Hillsborough Counties. Water is transmitted to the County through 84", 36" and 48" transmission mains. The cities of Dunedin and Belleair have their own water supply and transmission systems, which do not require dependence on sources outside of the County. Clearwater and Tarpon Springs also have their own resources to a lesser extent, although they continue to rely on Pinellas County Utilities to provide potable water. The County and cities have agreements to exchange water on an emergency basis. To date, Pinellas County's water source has never been totally severed. However scheduled and unscheduled repairs have occurred. Normally when repairs are scheduled, interconnections with municipal systems can be used as a backup to minimize the impact on the availability of water and water pressure.

Probability: There is a low probability that total failure in the water system will occur in Pinellas County. Interconnections between municipal, regional, and County transmission lines help to maintain the availability of potable water, albeit at a reduced rate. Many prudent actions have been taken to protect the integrity of the system, such as multiple generators being connected to the system to ensure the power source is not interrupted.

Vulnerability: Pinellas County is extremely vulnerable since almost all (96%) current sources are from outside the County's control and the daily demand is extremely high.

Maximum Threat: The maximum threat that is likely to occur to Pinellas County's water source is the intentional contamination of the water supply. However, such an act of terrorism would require great planning and access to tremendous resources and would be very difficult to execute effectively.

Estimating Potential Dollar Losses

Describing vulnerability in terms of potential dollar loss provides the local government, the State and the federal government with a common framework with which to quantitatively measure the effects of hazards on the community and more accurately determine the benefit-cost ratio of investments in mitigation activities. It is an essential component to risk assessment and the ability to implement a strategy to prevent or reduce future losses. In Florida, it is a vital tool for decision-makers who must make the sometimes difficult decisions regarding growth-management, land development regulations, and funding for infrastructure and mitigation projects.

Hazard Modeling Using TAOS

The Florida Department of Community Affairs funded an update of the comprehensive storm hazard modeling project using the TAOS model as part of the Local Mitigation Strategy. Storm hazard modeling using TAOS is part of an effort to produce a consistent state-wide assessment of storm hazard risk. It is useful to have a calculation of property risk that is consistent throughout the state.

The TAOS model is an integrated hazards model that will enhance the local government's ability to do effective hazard mitigation planning. The TAOS model can perform calculations of hazard risk for the county, jurisdictions or specific sections (Zip Codes) as well as the entire state, and the results are available for addition to the GIS data base.

The new TAOS model data also includes components to assess damage potential from not only storm surge, but inland flooding and severe winds. It also looks at risk from sinkholes, earthquake and wildfire. When interfaced with the most current Property Appraiser files, local governments are able to more accurately determine the total number and type of structures at risk, property values and potential loss. This greatly enhances the information available to local governments and enhances the opportunity to implement a strategic mitigation program.

LMS Mapping Data Sets Methodology Quick Reference

The following describes the methodology used for developing the TAOS model for the LMS mapping data sets.

1. Hurricanes/Winter Storms

Historical storms (past 153 years for tropical cyclones and past 50 years for winter storms) were simulated using the TAOS model, version 10.2. Winds, wave, rainfall, and storm surge perils were computed, and hazard zones created. Flood zones and wind layers were created, and tables were created based on percent damage expected. Additionally, FEMA Flood Insurance Rate Map (FIRM) data was ingested, and the tabular data sets were run for comparison.

2. Tornadoes

Tornado track data since 1950 from the National Weather Service was analyzed to determine the annual probability that a tornado would cause damage to a structure in each 90m grid cell in Florida. The data was stratified into four annual probability classes: High risk (1 in 100 or greater), Medium risk (1 in 101 to 1 in 250), or low (1 in 250 to 1 in 500 chance).

3. Tsunami

Tsunami risk in Florida is difficult to assess, as there are minimal reliable historical records. Consequently, simulation techniques were used. Three classes of initiating events were simulated: Caribbean volcanic events, Caribbean and Central American earthquakes, and East Atlantic (Azores) volcanic events. In general, in north Florida, these events produced at worst a 4

meter wave, while in some parts of south Florida this value grew to nearly 6 meters. Expert Opinion suggests that this would be approximately a 1 in 500 year event. Note that these tsunami zones are all smaller than those of a category 5 hurricane, which is probably an event of comparable frequency. However, a tsunami wave from the Azores would more than likely inundate virtually all of the Atlantic coastline, as opposed to only a few dozen miles of coastline in the case of a hurricane.

4. Wildfire Potential

The wildfire potential map was created by reclassifying the land cover data sets created for the hydrologic models. These data sets were reclassified to equate the Anderson Level II classification to fuel models used in the National Fire Danger Rating System (Burgan et al, 2000). These fuel models are an indication of the ability of a fire to start and spread in the given terrain type, and are used as the input to the Fire Potential Index as well as fire spreading models. The resulting map was compared with the NFDR Fuel Model Map created by the US Forest Service (USFS). The NFDR Fuel Model Map is used for the next generation fire danger rating system being developed by USFS, and is a nationwide map at a resolution of 1000 meters per grid cell based on data from 1997. The KAC developed map for Florida is at a resolution of 90 meters, and compares well the much more general national map while providing a great deal of additional detail, as well as being more up to date due to land cover changes.

Each of the fuel models was assigned to a risk code of “low”, “medium”, or “high”, based on fire spreading potential during a climatologically “dry” year, and processed with the statewide parcel data base to create the tables supplied with the LMS analysis. The mode of the fuel types within 500 meters of the parcel was used to determine risk category for the parcel.

5. Sinkhole Potential

Sinkhole potential was determined according to points assigned to each 90m grid cell in the state. Three classes of points were assigned, for distance to historic sinkholes, geology, and soils:

- 2 points if cell was within 2000m of an existing sinkhole;
- 1 point if cell between 2000m and 5000m of an existing sinkhole;
- 1 point if the cell was in the same USGS surface geologic unit as an existing sinkhole;
- 1 point if the cell was in the same NRCS soil unit as an existing sinkhole.

Thus, each cell as assigned a value from 0 to 4:

- 0: no significant risk
- 1: low risk
- 2: moderate risk
- 3: high risk
- 4: very high risk.

6. Earthquake Risk

The USGS 50 year 10% likelihood data set was used to assign earthquake risk. The peak ground acceleration (PGS) value was used to create four zones:

< 0.01g	Almost none
0.01g	Minimal (0.01, 0.02)
0.02g	Very low (0.02, 0.03)
0.03g	Low (0.03, and higher)

Note that the earthquake risk, even in the “highest” risk zone in the state, is quite small.

7. Exposure Data Base

The 2000 Department of Revenue Tax Records and Census 2000 data sets were used to create the structure inventory data base. First, the DOR records were address matched against the TIGER Road files. This resulted in positions for approximately 70% of the records statewide. The remaining records were either partial matched (15%), matched to the zip code (5%), or to the nearest TRS point (10%).

TAOS Results for Pinellas County

According to the information obtained from the TAOS model, Pinellas County has a total exposure to structural losses from hazardous events of nearly \$29 billion. In terms of average annual loss to wind, the model estimates the economic loss to be nearly \$48 million while that for flood is nearly \$601 million. The following is a summary of the results of the application of the TAOS model to Pinellas County by hazardous event. The detailed TAOS report, by hazard event can be found at the conclusion of this section.

TAOS Economic/Structural Impacts

TAOS Flood Events				
Number Buildings Damaged/Value	Flood Event			
	10 Year	25 Year	50 Year	100 Year
In Wave/Current	0	106	4,254	19,045
Value	0	\$5,488,800	\$301,399,552	\$1,523,712,000
In Flood Zone	61,692	89,724	112,495	120,187
Value	\$5,989,857,280	\$8,733,334,528	\$10,567,171,072	\$10,987,724,800
Not in Flood Zone	311,954	283,816	256,897	234,414
Value	\$22,536,259,584	\$19,787,161,600	\$17,657,769,984	\$16,014,903,296

TAOS Wind Zone				
Number Buildings Damaged/Value	Wind Zone			
	10 Year	25 year	50 Year	100 Year
Moderate (10 - 30%)	0	0	0	26,112
Value	0	0	0	\$2,730,704,384
Light (<10%)	156,625	373,646	373,646	347,534
Value	\$14,069,573,632	\$28,526,643,200	\$28,526,643,200	\$25,795,651,584
None	217,021	0	0	0
Value	\$14,456,920,064	0	0	0

TAOS Flood Zone by Category					
Number Damaged Buildings/Value	Category				
	1	2	3	4	5
Wave/Current	5,472	18,885	50,130	102,389	124,093
Value (\$000)	\$420,247	\$1,556,347	\$4,693,603	\$9,312,324	\$10,947,741
In Flood	111,891	129,399	131,522	103,657	97,222
Value (\$000)	\$10,429,191	\$11,619,123	\$10,848,876	\$7,776,542	\$7,181,942
In None	256,283	225,362	191,994	167,600	152,331
Value (\$000)	\$17,676,995	\$15,350,888	\$12,983,858	\$11,437,339	\$10,396,798

TAOS Wind Zone by Category					
Number Damaged Buildings/Value	Category				
	1	2	3	4	5
Light (<10%)	373,646	130,204	0	0	0
Value (\$000)	\$28,526,643	\$10,165,370	0	0	0
Moderate (10 - 30%)	0	243,442	357,051	0	0
Value (\$000)	0	\$18,361,115	\$27,065,530	0	0
Heavy (30 - 50%)	0	0	16,595	104,867	0
Value (\$000)	0	0	\$1,461,209	\$8,442,325	0
Severe (50 - 80%)	0	0	0	268,779	20,990
Value (\$000)	0	0	0	\$20,083,995	\$2,011,165
Destroyed (80%>)	0	0	0	0	352,656
Value (\$000)	0	0	0	0	\$26,515,257

Identified on FEMA FIRM		
Flood Zone	# Buildings	Value
AE	108,082	\$9,048,147,968
X500	30,684	\$2,332,444,160
X	206,222	\$14,204,961,792
A	5,356	\$556,370,752
VE	16,437	\$1,799,094,016
Undesignated	4,895	\$497,659,072
AO	33	\$1,762,100
D	95	\$5,199,000
AH	1,842	\$80,531,920

Identified by TAOS as Subject to Miscellaneous Flood Hazards		
Zone	# Buildings	Value
None (>100 year)	371,676	\$28,201,773,056
Frequent (2 year)	1,970	\$324,922,368

Population identified by TAOS subject to Tornado Risk, Sinkhole Potential, Wildlife Potential, 500+ Year Tsunami Zone, and USGS 50-year Ground Motion		
Event	# Buildings	Value
Tornado Risk		
1 in 200	373,646	\$28,526,643,200
Sinkhole Potential		
Very Low	343	\$48,594,100
Low	267,416	\$20,060,301,312
Medium	103,262	\$8,097,209,856
High	2,624	\$320,108,608
Very High	1	\$101,900
Wildfire Potential		
Low	323,582	\$23,421,229,056
Medium	15,263	\$1,526,660,096
High	34,801	\$3,578,16,736
500+ Yr Tsunami Zone		
Out of Zone	214,482	\$15,023,659,008
1 in 500	159,164	\$13,502,939,136
USGS 50-yr Ground Motion		
Minimal (0.01g)	373,646	\$28,526,643,200

Vulnerable Population

Using the County's 2000 population, the TAOS model was able to generate a listing of the population at risk to the hazards previously described. The following tables identify the vulnerable population by hazard event.

Population in TAOS Flood Zone						
Event	Affected Population	Minority	Elderly (65+)	Disabled	Below Poverty	Single-parent
10 Year						
Wave/Current	0	0	0	0	0	0
Flood	128,559	8,398	35,538	44,463	8,507	2,438
None	792,923	121,973	172,025	323,377	81,552	29,269
25 Year						
Wave/Current	764	69	177	271	177	21
Flood	188,426	20,489	46,932	64,631	14,710	4,874
None	732,292	109,813	160,454	302,938	75,172	26,812
50 Year						
Wave/Current	17,177	4,353	5,090	7,839	2,158	602
Flood	236,420	28,356	54,522	79,574	17,800	6,545
None	667,885	97,662	147,951	280,427	70,101	24,560
100 Year						
Wave/Current	23,665	4,537	6,861	10,136	2,632	691
Flood	268,048	37,245	62,320	93,586	20,681	7,604
None	629,769	88,589	138,382	264,118	66,746	23,412

Population in TAOS Wind Zone						
Event/Damage	Affected Population	Minority	Elderly (65+)	Disabled	Below Poverty	Single-parent
10 Year						
Moderate (10 - 30%)	0	0	0	0	0	0
Light (<10%)	331,917	38,645	80,199	125,944	30,122	9,917
None	589,565	91,726	127,364	241,896	59,937	21,790
25 Year						
Moderate (10 - 30%)	0	0	0	0	0	0
Light (<10%)	921,482	130,371	207,563	367,840	90,059	31,707
None	0	0	0	0	0	0
50 Year						
Moderate (10 - 30%)	0	0	0	0	0	0
Light (<10%)	921,482	130,371	207,563	367,840	90,059	31,707
None	0	0	0	0	0	0
100 Year						
Moderate (10 - 30%)	61,537	5,289	14,947	22,497	5,516	1,484
Light (<10%)	859,945	125,082	192,616	345,343	84,543	30,223
None	0	0	0	0	0	0

Population in TAOS Flood Zone by Category						
Category	Affected Population	Minority	Elderly (65+)	Disabled	Below Poverty	Single-parent
1						
Wave/Current	14,180	4,207	4,786	6,944	2,004	509
Flood	240,924	30,005	55,483	82,739	18,374	6,761
None	666,378	96,159	147,294	278,157	69,681	24,437
2						
Wave/Current	27,409	4,994	7,216	11,421	2,937	852
Flood	296,843	38,876	70,117	104,669	22,474	8,314
None	597,230	86,501	130,230	251,750	64,648	22,541
3						
Wave/Current	103,922	17,317	25,178	37,666	8,783	2,828
Flood	319,853	39,087	71,913	117,866	25,855	10,159
None	497,707	73,967	110,472	212,308	55,421	18,720
4						
Wave/Current	231,417	35,768	54,262	86,134	20,012	6,886
Flood	259,131	30,874	55,756	96,432	21,662	8,813
None	430,934	63,729	97,545	185,274	48,385	16,008
5						
Wave/Current	286,385	45,560	65,432	103,732	23,272	8,868
Flood	232,683	27,288	49,687	91,278	23,762	8,536
None	402,414	57,523	92,444	172,830	43,025	14,303

Population in TAOS Wind Zone by Category						
Category/Damage	Affected Population	Minority	Elderly (65+)	Disabled	Below Poverty	Single-Parent
1						
Light (<10%)	921,482	130,371	207,563	367,840	90,059	31,707
Moderate (10 - 30%)	0	0	0	0	0	0
Heavy (30 - 50%)	0	0	0	0	0	0
Severe (50 - 80%)	0	0	0	0	0	0
Destroyed (80%>)	0	0	0	0	0	0
2						
Light (<10%)	363,433	36,315	80,796	137,116	31,666	11,463
Moderate (10 - 30%)	558,049	94,056	126,767	230,724	58,393	20,244
Heavy (30 - 50%)	0	0	0	0	0	0
Severe (50 - 80%)	0	0	0	0	0	0
Destroyed (80%>)	0	0	0	0	0	0
3						
Light (<10%)	0	0	0	0	0	0
Moderate (10 - 30%)	886,186	127,867	199,402	356,617	87,673	30,918
Heavy (30 - 50%)	35,296	2,504	8,161	11,223	2,386	789
Severe (50 - 80%)	0	0	0	0	0	0
Destroyed (80%>)	0	0	0	0	0	0
4						
Light (<10%)	0	0	0	0	0	0
Moderate (10 - 30%)	0	0	0	0	0	0
Heavy (30 - 50%)	297,426	29,420	66,151	109,396	25,069	9,481
Severe (50 - 80%)	624,056	100,951	141,412	258,444	64,990	22,226
Destroyed (80%>)	0	0	0	0	0	0
5						
Light (<10%)	0	0	0	0	0	0
Moderate (10 - 30%)	0	0	0	0	0	0
Heavy (30 - 50%)	0	0	0	0	0	0
Severe (50 - 80%)	66,279	6,138	15,553	22,905	5,315	1,994
Destroyed (80%>)	855,203	124,233	192,010	344,935	84,744	29,713

Population identified by TAOS on FEMA FIRM						
Flood Zone	Affected Population	Minority	Elderly (65+)	Disabled	Below Poverty	Single-Parent
AE	182,459	20,138	42,711	65,981	14,656	5,248
X500	76,569	12,158	15,636	28,852	5,918	2,608
X	59,284	91,045	123,884	239,235	62,637	21,457
A	33,393	2,036	6,701	8,544	1,411	811
VE	43,910	1,389	11,322	14,424	2,954	787
Undesignated	14,647	2,498	5,388	6,289	1,399	379
AH	8,252	995	1,144	3,453	921	371
Off FIRM	2,968	112	777	1,062	163	46

Population identified by TAOS subject Miscellaneous Flood Hazards						
Zone	Affected Population	Minority	Elderly (65+)	Disabled	Below Poverty	Single-Parent
None (>100 year)	901,957	128,836	203,638	361,718	89,072	31,231
Frequent (2 year)	19,525	1,535	3,925	6,122	987	476

Population identified by TAOS subject to Tornado Risk, Sinkhole Potential, Wildfire Potential, 500+ Year Tsunami Zone, and USGS 50-year Ground Motion						
Event	Affected Population	Minority	Elderly (65+)	Disabled	Below Poverty	Single-Parent
Tornado Risk						
1 in 200	921,482	130,371	207,563	367,840	90,059	31,707
Sinkhole Potential						
Very Low	2,658	94	392	454	89	33
Low	659,635	108,385	146,155	278,335	71,205	24,161
Medium	257,583	21,819	60,578	88,782	18,710	7,501
High	1,606	73	438	269	55	12
Wildfire Potential						
Low	777,974	110,915	178,988	316,983	78,250	27,055
Medium	27,148	4,044	6,349	11,779	3,156	860
High	116,360	15,412	22,226	39,078	8,653	3,792
500+ Yr Tsunami Zone						
Out of Zone	565,502	76,515	126,297	236,485	58,179	20,353
1 in 500	355,980	53,856	81,266	131,355	31,880	11,354
USGS 50-yr Ground Motion						
Minimal (0.01g)	21,482	130,371	207,563	367,840	90,059	31,707

For more detailed analysis and maps, go online to www.PinellasLMS.org.

Pinellas County will continue to work with the State of Florida to develop a model with a consistent methodology to address other specific hazards before the next update of the LMS and to better assess the potential impacts of future development.

Appendix 2

Workgroup Members

Membership Requirements

Florida Administrative Rule 9G-22 stipulates membership of the local mitigation strategy workgroup with the following excerpt. The Workgroup shall include, at a minimum, representatives from various agencies of county government, representatives from all interested municipalities in the county, and representatives from interested private and civic organizations, Native American tribes or organizations, trade and commercial support groups, property owners associations, water management districts, regional planning councils, independent special districts, and non-profit groups. In the revision and update of the LMS, adjacent communities including Hillsborough, Manatee and Pasco County were also invited to participate.

Meeting Notification

All agencies, regardless of voting status are invited to every meeting either via a fax or via e-mail notification.

Voting Members

Each participating municipality in Pinellas County has one voting member. Additionally, the Pinellas County Planning Department also has one vote, as a representative of the unincorporated areas of Pinellas County.

The cities that have a voting member that sit as the Local Mitigation Strategy Workgroup, in alphabetical order, are: Belleair, Belleair Beach, Belleair Bluffs, Clearwater, Dunedin, Gulfport, Indian Rocks Beach, Indian Shores, Kenneth City, Largo, Madeira Beach, North Redington Beach, Oldsmar, Pinellas Park, Redington Beach, Redington Shores, Safety Harbor, Seminole, South Pasadena, St. Pete Beach, St. Petersburg, Tarpon Springs, and Treasure Island.

Independent Special Districts

All special districts not otherwise represented by a municipal entity are also invited, although they are not voting members.

These districts are: Lealman Fire Control District, Indian Rocks Special Fire Control District, Palm Harbor Special Fire Control District, and the East Lake Special Fire Control District.

County Government

The following Pinellas County government agencies are invited to each meeting: Pinellas County Building Department, Development Review Services, Emergency Communications Radio Systems, Public Works, and Utilities.

Native American tribes or organizations

No Native American tribes or organizations have been identified for the Pinellas County area.

Non-Voting Members

This list includes a number of trade and commercial support groups, representatives from interested private and civic organizations, interested non-profit groups, and state government.

The agencies, listed in no particular order, are invited via either fax or e-mail to all meetings: Local Red Cross Chapter, Florida Department of Emergency Management Area 4 representative, Florida Department of Community Affairs LMS Liaison, Paul J. Sierra Construction Co., Banker's Insurance, Child Care Associates, Dunedin Chamber of Commerce, Florida Renovators, Florida Federation of Mobile Home Owners, Morton Plant Mease Healthcare, Greater Seminole Area Chamber of Commerce, Verizon Communications, Pinellas County United Way, and Insurance Industry Representatives.

Several interested citizens are also invited to the Local Mitigation Strategy Workgroup meeting, as the meetings are open to the public. The meeting calendar is provided below and reflects the committee planning process throughout the development and the revision of the LMS.

Participation –The representatives' acceptance of the invitation and agreement to become committee members initiated their obligation to the effort. The representatives committed their time and available resources to develop a mitigation strategy that would protect life, property, and the environment as well as contribute to the economic well being of the county. The implication of the Hazard Mitigation Planning and Hazard Mitigation Grant Program Interim Final Rule is that each of the jurisdictions represented on the committee must show participation in the planning process to qualify for HMGP, Pre-Disaster Mitigation Program (PDM) and Flood Mitigation Assistance Program (FMA) funding. The definition of participation as determined by the committee is the mandatory attendance of two meetings during the year and/or submittal of a ranked mitigation initiative. Each member signed in at each meeting. This data was used to document participation and is provided along with meeting notices, agendas, minutes on the CDROM enclosed.

Pinellas County LMS Meeting Calendar

1998

March 11, 1998	July 22, 1998
March 25, 1998	August 12, 1998
April 8, 1998	September 16, 1998
April 22, 1998	October 7, 1998
May 6, 1998	October 21, 1998
June 24, 1998	December 9, 1998
July 8, 1998	

1999

January 13, 1999	April 14, 1999
February 3, 1999	April 21, 1999
February 17, 1999	April 28, 1999
March 3, 1999	June 30, 1999
March 31, 1999	

2000

January 21, 2000
February 9, 2000

2001

November 6, 2001
November 27, 2001
December 11, 2001

2002

January 8, 2002	September 10, 2002
January 29, 2002	October 8, 2002
March 12, 2002	November 12, 2002
May 15, 2002	November 26, 2002
June 18, 2002	

2003

February 11, 2003	October 14, 2003
June 17, 2003	October 28, 2003
July 15, 2003	

2004 (Scheduled)

January 13, 2004
April 13, 2004
July 13, 2004
October 12, 2004

Appendix 3

Mitigation Strategy Conflict Resolution

At every point of this process, the workgroup will be advised of the status and consulted on future actions. Workgroup members are welcomed to participate in all meetings to help reach a compromise. Every effort will be made to reach a compromise before proceeding to the next step. Progression to the next step will only occur, if the workgroup deems it appropriate and necessary.

Non-Contractual Issues

If any non-contractual issue is opposed by 50% or more of the voting workgroup, the item will be deferred and recorded for future planning and evaluation purposes.

For any issue that is opposed by less than 50% of the voting workgroup, resolution will be attempted utilizing the below steps:

- A separate meeting/conference call will be scheduled with those opposed to the issue. The meeting will focus on identifying the root cause(s) of the opposition and determine if a compromise is possible.
- If the first meeting/conference call is unsuccessful, a second attempt will be scheduled. This meeting will include representatives from county administration and the managers from the municipalities involved. The meeting will focus on confirming whether or not compromise is possible.
- If a resolution appears possible, but further discussion is needed, a third meeting may be scheduled between a representative of the BCC and the mayors of the municipalities opposed.
- The last attempt at resolution will be a meeting with the entire BCC and the councils/commissions involved. This step will only be utilized when a very small minority of the workgroup remains opposed to an issue and more than 75% of the voting workgroup recommends taking it to this level.

Opposition to issues from non-governmental entities will be handled in a similar manner.

Contractual Issues

If any contractual issue is opposed by any member of the workgroup, they will be provided a copy of the contract requirement.

If 50% of the voting workgroup requests interpretation of the contract language or intent, the State Contract Coordinator will be contacted to provide clarification.

The full workgroup will be provided the clarification. If 50% of the voting workgroup recommends additional attempts be made, the State Director of Emergency Management will be contacted.

Relief from contractual issues can only be approved by the State Division of Emergency Management.

Appendix 4

Local Mitigation Strategy Goals and Objectives

The first step in the LMS planning process was the development of definitive, realistic goals and objectives, and the examination of existing County and municipal policies. Pinellas County currently has several existing programs and plans related to hazard mitigation and post-disaster redevelopment. These programs and plans include the Comprehensive Emergency Management Plan (CEMP), the (24) Local Government Comprehensive Plans and Local Land Development Regulations, the National Flood Insurance Program Floodplain Management Plans and Community Rating System Plans and Stormwater Management Plans (See Appendix 5).

Pinellas County and all 23 of its municipalities participate in the National Flood Insurance Program and are participating in the Flood Plain Modernization Program following a comprehensive restudy of the county in 2002. Once received, the new digital FEMA flood maps with a “look up” capability will be available to the public via the County web site. The review of existing programs and resources provided the foundation necessary to identify additional planning and regulatory requirements necessary.

Mitigation tools and techniques fall into three broad categories: structural techniques including design and construction; environmental interventions and non-structural interventions. Structural mitigation projects include strengthening of vulnerable structures and public facilities to withstand wind, fire and other forces, elevation of structures to protect them from flood damage, construction of storm water control facilities and drainage improvements. Environmental intervention refers to actions that reduce the vulnerability of communities by armoring them against the elements. This term includes beach restoration and stabilization projects. Non-structural mitigation refers to policies for avoiding hazard impacts, applying zoning restrictions, land acquisition in the floodplain, promoting citizen awareness and public education initiatives. The implementation of a mitigation program is a key component in the achievement of a “sustainable community”, one in which citizens, businesses and institutions are protected from the disruptions and impacts of disasters. In an urbanized metropolitan county such as Pinellas County, coordination among and between levels of government is critical to the success of the program.

The LMS established the following goals and objectives as a foundation of the countywide mitigation strategy.

PUBLIC EDUCATION

GOAL: INCREASE PUBLIC AWARENESS REGARDING MITIGATION

- a. Objective: Provide information on proven mitigation projects to churches, non-profit and civic organizations.
- b. Objective: Provide education and information to property and business owners about storm damage and ways to properly protect structures.
- c. Objective: Raise the awareness of the need for mitigation and develop ways to better educate the public and elected officials.
- d. Objective: Utilize print media, television, radio, and computer technology to educate the public on mitigation.
- e. Objective: Provide an ongoing mitigation educational campaign.

PHYSICAL PROPERTY AND INFRASTRUCTURE ISSUES

GOAL: CREATE A DISASTER RESISTANT COMMUNITY

- a. Objective: Reduce the number of repetitive loss properties.
- b. Objective: Review and improve existing land development regulations.
- c. Objective: Protect existing public facilities and infrastructure and construct new public facilities and infrastructure to be disaster resistant.
- d. Objective: Enhance building codes to reduce structural failures.
- e. Objective: Design all new publicly owned buildings as public shelters or for other emergency purposes.
- f. Objective: Provide incentives for improving substandard properties and for eliminating non-conforming uses as it applies to hazard mitigation.
- g. Objective: Protect the shoreline by natural and man-made systems that are designed to reduce potential damages and erosion.
- h. Objective: Limit residential density increases within the coastal high hazard area.
- i. Objective: Identify hazardous substances located within the coastal high hazard area and measures taken to minimize the risk of releases.
- j. Objective: Retrofit existing schools to public shelter standards and construct all new schools to public shelter standards.
- k. Objective: Use mitigation techniques to reduce the economic impacts of natural disasters.

COORDINATION ISSUES

GOAL: MAINTAIN A PROGRAM OF INTERGOVERNMENTAL AND INTERAGENCY COORDINATION, COOPERATION AND PARTNERSHIP TO MITIGATE DISASTERS, EVALUATE EXISTING MITIGATION MEASURES, AND PROPOSE NEW OR MODIFIED MITIGATION MEASURES

- a. Objective: Establish frequent coordination among local governments and other groups regarding mitigation issues.
- b. Objective: Establish an intergovernmental and interagency group to evaluate the effectiveness of existing mitigation measures after the occurrence of a disaster and propose modifications to existing mitigation measures and/or propose new mitigation measures and strategies.
- c. Objective: Develop strategies to have cooperation between the municipalities, the County, the School Board and other public and quasi-public entities within the County to coordinate mitigation efforts.
- d. Objective: Develop and coordinate strategies to locate funding mechanisms and financial incentives to promote mitigation efforts.
- e. Objective: Develop channels of communication, programs, and partnerships with the business community to promote mitigation efforts.

**Appendix 5
Policies and Ordinances**

Pinellas County

PINELLAS COUNTY COMPREHENSIVE PLAN

FUTURE LAND USE

1.2 Pinellas County shall annually review, and amend as necessary, land use and development code provisions which restrain development and redevelopment in areas such as hurricane velocity zones and flood-prone areas to comply with the most recent standards of the National Flood Insurance Program and all other applicable federal and state regulations, including any relevant findings derived from interagency hazard mitigation reports, in order to protect property and the health, safety and welfare of all residents.

Evaluation Limits development in the Coastal High Hazard Area (CHHA) as defined by the evacuation zone for a category 1 hurricane (Evacuation Level "A"); reduces flood damage and repetitive loss by requiring new structures and structures with substantial improvements to be built to more stringent standards.

1.2.1 Development or redevelopment in storm impact areas shall be restricted based upon the Natural Disaster Planning objectives and policies listed in the Coastal Management Element. The policies associated with those objectives shall be consistent with the criteria in the National Flood Insurance Program, and the County's Flood Damage Prevention and Flood Plain Management provisions of the Land Development Code.

Evaluation Limits development in the CHHA; reduces flood damage and repetitive loss by requiring new structures and structures with substantial improvements to be built to more stringent standards.

1.2.2. The Land Development Code provisions regulating development or redevelopment in flood-prone areas shall **be** reviewed and amended as necessary based upon the criteria in the National Flood Insurance Program.

Evaluation Allows County to update building requirements to help mitigate potential damage.

1.2.3. The Local Planning Agency shall review those interagency hazard mitigation report recommendations addressing the elimination or reduction of land uses that are susceptible to damage by natural hazard, and shall recommend to the Board of County Commissioners any changes to the Pinellas County Future Land Use Map and/or Plan policies considered critical to reducing, or mitigating, such hazards.

Evaluation There have been no recommendations from recent hazard mitigation reports that direct the county to take such actions.

2.2.1. Significant wetlands and twenty-five year floodplains shall continue to be protected and conserved by their existing designations of Preservation on the Future Land Use Map (FLUM), as adopted by the Board and based upon the comprehensive assessments performed by Pinellas County to evaluate, and

subsequently identify, those wetland and floodplain resources with significant value or function.
Evaluation Protecting and conserving significant wetlands and twenty-five year floodplains helps to reduce the hazard of flooding.

2.2.5. Shorelines shall be protected by preservation land use designations, aquatic preserves, development setbacks, public acquisitions, or other measures as deemed necessary.

Evaluation Protection of shorelines helps to mitigate hazards by preserving a buffer between waves resulting from storm surge and developed upland areas.

NATURAL, HISTORIC AND CULTURAL RESOURCES

7.1. Pinellas County shall continue to protect floodplains, flood ways, and all other natural areas having functional hydrological characteristics.

Evaluation By protecting these areas through their designation as Preservation on the Future Land Use Map of the Pinellas County Comprehensive Plan, as well as through the implementation of related measures in the County's Land Development Regulations, the County is able to mitigate hazards by restricting development in floodplains, flood ways, and similar natural areas.

7.1.1 All construction in floodplains and flood ways shall be required to comply with Federal Emergency Management Agency or Federal Insurance Administration standards and county building codes.

Evaluation Reduces damage to structures constructed in floodplains and floodways; reduces potential for repetitive loss. This policy is implemented through the County's Land Development Regulations.

7.1.2. Developers shall be required, through the site plan review process, to incorporate those wetland portions of sites which are within 100-year floodplains as conservation easements.

Evaluation Restricts new development in 100-year floodplains, also reduces the chance of structures adjacent to the 100-year floodplain from being damaged by floods.

7.1.3. Construction in floodplains shall continue to be limited by the enforcement of Section 158, the Pinellas County Floodplain Management portion of the Land Development Code, as amended.

Evaluation Restricts development in floodplains; reduces damage to structures due to flooding; reduces chance for repetitive loss.

7.1.4. Pinellas County shall not approve any request to increase residential density above 5.0 units per acre on the Future Land Use Element for areas within 100 year floodplains.

Evaluation Limits development within the 100-year floodplain; directs concentration of population away from the 100-year floodplain.

7.1.5. Wetlands and floodplains shall continue to be preserved through such means as a preservation on the Future Land Use Map, and shall be protected as conveyance systems, as well as wildlife and vegetative habitat.

Evaluation Helps to establish the Future Land Use Map of the Comprehensive Plan as a hazard mitigation tool.

COASTAL MANAGEMENT

- 1.1 Pinellas County shall continue to implement its Post-Disaster Redevelopment Plan as part of the Pinellas County Comprehensive Emergency Management Plan (CEMP), and shall continue to implement hazard mitigation measures to reduce the exposure of human life and public and private property to natural hazards.
- Evaluation Assists Pinellas County with pre-disaster and post-disaster redevelopment decisions. Specific explanations in the associated policies.
- 1.1.1 The Redevelopment Plan shall distinguish between the immediate emergency period actions needed to protect the public health and safety and long-range restoration activities.
- Evaluation A procedure has been established in the Comprehensive Emergency Management Plan (CEMP). In that procedure, essential services that need to be restored immediately after a disaster are identified, and which organizations are responsible for assisting in the restoration of those services.
- 1.1.2. The Redevelopment Plan shall establish who will be responsible for making crucial decisions after a natural disaster regarding repair, reconstruction, relocation and hazard mitigation; this body could take the form of a recovery task force.
- Evaluation The Plan has yet to be utilized; however, it would allow decisions that could result in the reduction of loss to be made in a timely manner. The post-disaster redevelopment task force identified in the CEMP would also make recommendations to the Board of County Commissioners (BCC) regarding long-range redevelopment and reconstruction.
- 1.1.4 The Redevelopment Plan shall establish procedures for evaluating the effectiveness of current hazard mitigation measures at preventing damage.
- Evaluation These procedures have been developed and are part of both the County's Post-Disaster Redevelopment Plan (PDRP) and the CEMP.
- 1.1.5. The Post-Disaster Redevelopment Plan shall establish procedures for utilizing information obtained from damage assessment teams in expediting post-disaster recovery.
- Evaluation These procedures have been developed and are part of both the PDRP and the CEMP.
- 1.1.6. The Post-Disaster Redevelopment Plan shall contain provisions for enactment of a temporary restriction on issuing permits for reconstruction and repair not immediately needed to protect the public health, safety and welfare.
- Evaluation Potential value is to help ensure that non-conforming structures that sustain substantial damage are rebuilt to current standards.

- 1.1.7 The Post-Disaster Redevelopment Plan shall establish criteria for evaluating the options for repairing, replacing, modifying or relocating public and private facilities and infrastructure within Coastal High Hazard Areas. Any actions chosen by Pinellas County to repair, replace, modify, or relocate public facilities and infrastructure within the Coastal High Hazard Area shall be consistent with federal and state funding standards.
- Evaluation Potential value is to reduce repetitive loss to facilities and infrastructure and possibly reduce the chances of service interruption due to a catastrophic disaster.
- 1.1.8. The Post-Disaster Redevelopment Plan shall establish that structures damaged by fire or natural forces to the extent that the cost of reconstruction or repair exceeds 50 percent of the market value of the structure before the damage occurred shall be rebuilt to meet all applicable federal, state and local regulations.
- Evaluation Should result in the reduction of repetitive loss properties.
- 1.1.9. The Post-Disaster Redevelopment Plan shall include guidelines and criteria for determining priorities for the acquisition of storm-damaged property in the Coastal High Hazard Area. These guidelines shall give priority to eliminating unsafe conditions and inappropriate uses. These guidelines/criteria will also be used to prioritize potential coastal acquisitions through the State's land acquisition program.
- Evaluation If the acquisition of storm-damaged property results in the removal of any structures on the property, this could provide for additional protection of structures on adjacent properties and for the reduction of the number of repetitive loss areas. Presently, additional criteria are being developed and will be included within the PDRP to recognize pristine coastal properties or properties of significant or important environmental sensitivity.
- 1.1.10. Pinellas County shall continue to implement its existing hazard mitigation programs that include shoreline restoration and enhancement, building code and floodplain regulations, development management techniques such as land use, zoning, and subdivision regulations, and other applicable hazard mitigation measures. Recommendations from interagency hazard mitigation reports may be incorporated, at the discretion of the County. These mitigation programs shall be amended, as necessary, to remain consistent with federal and state requirements.
- Evaluation Restricts development in the Coastal High Hazard Area. Reduces the potential for repetitive loss.
- 1.1.11. Pinellas County will use its Comprehensive Plan, its Land Development Code, and other applicable hazard mitigation measures, including appropriate recommendations from interagency hazard mitigation reports, to reduce unsafe conditions and inappropriate uses as opportunities arise, and to limit redevelopment in areas of repeated damage.
- Evaluation Restricts development in the Coastal High Hazard Area. Reduces potential for repetitive loss.

- 1.1.12. Pinellas County shall re-visit both its Post Disaster Redevelopment Plan and its Comprehensive Plan within six months of completion of the Local Mitigation Strategy in order to determine if any amendments or revisions are required in order to facilitate implementation of the final strategies.
- Evaluation Defines area in which development is to be limited or restricted. This policy reflects a State requirement.
- 1.3. Pinellas County shall restrict development within the Coastal High Hazard Area, and shall direct population concentrations out of the Coastal High Hazard Area.
- Evaluation Limits development in the Coastal High Hazard Area.
- 1.3.1. The Coastal High Hazard Area (CHHA) shall be the Evacuation Level “A” areas identified in the most recent regional hurricane evacuation study.
- Evaluation Defines Coastal High Hazard Area in accordance with State requirements.
- 1.3.2. Pinellas County shall prohibit the location of new or expansion of existing hospitals, nursing homes, and assisted living facilities within the Coastal High Hazard Area. The County shall discourage the siting of these facilities within the Evacuation Level “B” area.
- Evaluation Limits the development of these facilities within the Coastal High Hazard Area. Reduces risk to special needs population.
- 1.3.3. Pinellas County shall not approve any request for residential density above 5.0 units per gross acre on the Future Land Use Element for areas within the Coastal High Hazard Area.
- Evaluation Restricts development within the Coastal High Hazard Area. Directs concentration of population away from the Coastal High Hazard Area.
- 1.3.4. Pinellas County shall prohibit the siting of new or the expansion of existing mobile home development within the Coastal High Hazard Area.
- Evaluation Restricts development within the Coastal High Hazard Area, especially for a kind of development that is more likely to be damaged or destroyed than other structures.
- 1.3.5. On an annual basis, the County's existing hazard mitigation programs, including those within the Land Development Code, shall be reviewed and revised if necessary to reduce the vulnerability of future development in Coastal High Hazard Areas. This review shall evaluate the recommendations of existing interagency hazard mitigation reports and the mitigation functions chapter of the Pinellas County Comprehensive Emergency Management Plan.
- Evaluation Strengthens Land Development Code, restricts development in Coastal High Hazard Area, reduces possibilities of damage to structures constructed within the Coastal High Hazard Area.

- 1.3.6. Consistent with the goals, objectives and policies of this Element and the availability of budgeted funds, the County shall evaluate the acquisition of storm-damaged property in the Coastal High Hazard Area.
- Evaluation Potential to reduce repetitive damage through the acquisition of storm-damaged property. If as a result of the County's acquisition of storm-damaged property any structures on the site are either removed or not rebuilt, this could result in the possible reduction of damage to structures on surrounding properties. This could also result in a reduction in repetitive loss properties.
- 1.3.7. By December 31, 1998, Pinellas County shall evaluate the feasibility of limiting the capacity of hospitals, nursing homes, and assisted living facilities proposed to be located within the Evacuation Level "B" area, as identified within the most recent regional evacuation study.
- Evaluation This project has yet to be started.
- 1.4 Pinellas County shall restrict public expenditures that subsidize development in the Coastal High Hazard Area.
- Evaluation The intent of this objective is to limit development within the Coastal High Hazard Area. It is a State requirement that this objective be included within the Pinellas County Comprehensive Plan. In actuality, the County's Coastal High Hazard Area is fully developed with infrastructure.
- 1.4.1. County-funded infrastructure shall be prohibited within the Coastal High Hazard Area except for the following:
- a. the expenditure for the maintenance, repair or
 - b. replacement of existing facilities; or
 - c. the expenditure for restoration or enhancement of natural resources or public access; or
 - d. the expenditure needed to address an existing deficiency identified in the Pinellas County Comprehensive Plan; or
 - e. the expenditure for the retrofitting of stormwater management facilities for water quality enhancement of stormwater runoff; or
 - f. the expenditure for the development or improvement of public roads and bridges identified in the Transportation Element of the Pinellas County Comprehensive Plan; or
 - g. the expenditure for a public facility of overriding public interest to ensure public health and safety.
- Evaluation Restricts development of County-funded infrastructure in the Coastal High Hazard Area. As a result, infrastructure that would support additional private residential development in the Coastal High Hazard Area would not be available, and this would discourage the concentration of population in the Coastal High Hazard Area. In actuality, the County's Coastal High Hazard Area is fully developed with infrastructure.

1.4.2. When public infrastructure within the Coastal High Hazard Area is destroyed or receives damage that equals or exceeds 50 percent of the cost of replacing the facility at its current location, the County shall analyze the feasibility of relocating this infrastructure landward of the Coastal High Hazard Area. This requirement is included within the Pinellas County Post-Disaster Redevelopment Plan as adopted within the Pinellas County Comprehensive Emergency Management Plan.

Evaluation While this policy has not yet been applied, it could result in the reduction of damage to public infrastructure, as well as the possibility that in the event of a disaster that services will either not be interrupted or would only be interrupted for a brief period of time.

1.4.3. Pinellas County shall not construct bridges or causeways to barrier islands not serviced by such infrastructure at the time of the Pinellas County Comprehensive Plan adoption.

Evaluation Prohibits development in such areas. This is a State requirement, as the barrier islands within the County that can be developed have been developed.

3.1.6. Pinellas County shall utilize the guidelines in the Pinellas County Post Disaster Redevelopment Plan to prioritize potential coastal acquisitions through the State's land acquisition program. Additional criteria will be developed and included in the Post Disaster Redevelopment Plan by January 31, 1998 to recognize pristine coastal properties or properties of significant or important environmental sensitivity.

Evaluation Potential to reduce repetitive damage through the acquisition of storm-damaged property. Potential to reduce the possibility of damage to surrounding properties.

HOUSING

1.5.8. The Pinellas County land development regulations may allow a density bonus for affordable housing developments as specified in the County's adopted Affordable Housing Incentive Plan, and subject to program guidelines and specifications as well as compatibility with surrounding development, site constraints, and other appropriate consideration as determined through the Pinellas County Comprehensive Zoning Regulations and the site plan review process. Subject to the above constraints and considerations, any density bonus allowed for an affordable housing development shall not exceed 50 percent of the existing allowable density on a property as determined by the Future Land Use Map or the applicable land development regulations, whichever is more restrictive. A density bonus shall not be allowed for affordable housing developments located within the Coastal High Hazard Area or the Evacuation Level "A" area.

Evaluation Restricts development of affordable housing in the Coastal High Hazard Area. Helps reduce the concentration of population in the Coastal High Hazard Area.

1.5.16. Affordable Housing Developments (AHD), as defined in the Pinellas County Affordable Housing Incentive Plan (AHIP) and in the Pinellas County Comprehensive Zoning Regulations and certified by the County as an AHD, may be permitted at densities up to 10 units per acre in the Residential/Office/Retail, Residential/Office General, Commercial Neighborhood and Commercial General land use categories. The permitting of affordable housing developments within these land use categories shall be subject to program guidelines and specifications as well as compatibility with surrounding development, site constraints, and other appropriate considerations as determined through the Pinellas County Comprehensive Zoning Regulations and the site plan review process. Where an affordable housing development occurs as upper stories to underlying development in these land use categories, the allowable floor area permitted for the underlying use is not required to be reduced. Application of this affordable housing incentive shall not be allowed within the Coastal High Hazard Area or the Evacuation Level "A" area.

Evaluation Restricts development of affordable housing in the Coastal High Hazard Area. Helps reduce the concentration of population within the Coastal High Hazard Area.

1.7.1. The County shall continue to allow for licensed group homes and foster care facilities in all residential districts, and shall encourage their location where there is adequate supporting infrastructure and medical and public facilities; provided that they are not located within a specified distance of a similar facility, hurricane vulnerability area, Evacuation Level "A" Zones and areas where potential for flooding exists.

Evaluation Restricts the location of group homes and foster care facilities.

CAPITAL IMPROVEMENTS ELEMENT

1.2. Public expenditures that subsidize development in the Coastal High Hazard Area shall be limited to those improvements that are consistent with applicable goals, objectives, and policies in the Coastal Management, Future Land Use, Surface Water Management, and Natural, Historic and Cultural Resources Elements of the Pinellas County Comprehensive Plan.

Evaluation Limits development of infrastructure within the Coastal High Hazard Area. This, in turn, limits private development within the Coastal High Hazard Area.

1.2.1. County-funded infrastructure shall be prohibited within the Coastal High Hazard Area except for the following:

- a. the expenditure is for the maintenance, repair or replacement of existing facilities; or
- b. the expenditure is for restoration or enhancement of natural resources or public access; or
- c. the expenditure is needed to address an existing deficiency identified in the Pinellas County Comprehensive Plan; or
- d. the expenditure is for the retrofitting of stormwater management facilities for water quality enhancement of stormwater runoff; or

- e. the expenditure is for the development or improvement of public roads and bridges identified in the Transportation Element of the Pinellas County Comprehensive Plan; or
 - f. the expenditure is for a public facility of overriding public interest as determined by the Board of County Commissioners.
- Evaluation Restricts development of County-funded infrastructure in the Coastal High Hazard Area. As a result, infrastructure that would support additional private residential development in the Coastal High Hazard Area would not be available, and this would discourage the concentration of population in the Coastal High Hazard Area. In actuality, the County's Coastal High Hazard Area is fully developed with infrastructure. See Coastal Management Policy 1.4.1.
- 1.5.3. Amendments to the Pinellas County Comprehensive Plan and requests for new development or redevelopment shall be evaluated according to the following guidelines:
- a. contribute to a condition of public hazard as described in the Surface Water Management, Coastal Management, Natural, Historic and Cultural Resources, Water Supply, Future Land Use, Transportation, Sanitary Sewer, and/or Solid Waste and Resource Recovery Elements.
 - b. aggravate any existing condition of public facility deficiencies, as described in the Surface Water Management, Water Supply, Recreation and Open Space, Sanitary Sewer, Solid Waste and Resource Recovery, and Transportation Elements.
 - c. generate public facility demands that may exceed capacity increases planned in the Six Year Schedule of Improvements.
 - d. conform with land uses as shown on the Future Land Use Map of the Future Land Use Element.
 - e. accommodate public facility demands based upon adopted level of service standards and attempts to meet specified measurable objectives when public facilities are provided by developers.
 - f. demonstrate financial feasibility, subject to the Capital Improvements Element of the Pinellas County Comprehensive Plan, when public facilities will be provided, in part or whole, by Pinellas County.
 - g. affect on state agencies' and the Southwest Florida Water Management District's facility plans.
- Evaluation Prohibits, restricts, or limits new development or redevelopment that would contribute to a public hazard or aggravate existing facility deficits in accordance with the BCC's Comprehensive Plan, as well as in accordance with any local department's or State agencies' facility plans.

ANALYSIS OF POLICIES AND ORDINANCES

Upon analyzing all of policies and ordinances, the workgroup observed the following:

- We have a lot of policies/ordinances pertaining to flooding.
- Several are administratively outdated.
- All discuss reducing infrastructure in the Coastal High Hazard Area.
- None for wind damage, however, a few accidentally benefit mitigating wind damage (sign ordinances).

- All discuss reducing densities in the Coastal High Hazard Area.
- All are in compliance and some exceed FEMA requirements.
- Land Development and Land Use Policies have loopholes.
- The barrier island municipalities have a number of policies regarding beach/ dune renourishment projects and beach/seawall stabilization projects.
- Few policies address public education or better intergovernmental coordination

The workgroup offered these suggestions on strengthening our policies and ordinances to better achieve our mitigation goals:

- Policies addressing retrofitting older buildings
- Require window protection for new construction
- Providing incentives to homeowners for retrofitting
- Redefine the Coastal High Hazard Area (Category One Evacuation Zone) using one foot contours
- More extensive wind loading and impact resistant opening requirements
- All plans for new public buildings should be reviewed to consider if a mitigation measure was appropriate to obtain additional shelter space
- Develop policies regarding excessive heat, drought and water shortage
- Develop policies regarding wildfires
- Develop policies that adequately address repetitive loss areas and properties

Belleair

Fire Dept.	The Town of Belleair follows national fire protection codes 101, life safety code, and the Southern Building Codes
Evaluation	Ensure safety of citizens and structures through enforcement of codes
Building	Adopts FEMA, NFPA, Southern Building Codes
Evaluation	Ensures minimization of loss caused by various disasters, wind and other storm events.

Belleair Beach

Code Chapter . . .	
3	provides a uniform system of code enforcement to deal with possible violations of flood regulations
Evaluation	has insured that reviews for flood code violations are done continually
5	provides standards for marine construction which reduce the possibility of property damage during a storm event
Evaluation	has prevented the construction of unsafe marine structures which could be damaged or cause damage during a storm event
6	provides for regulation of contractors and the requirement of building permits

Evaluation which enables proper enforcement of flood regulations
has prevented improper construction methods and materials in the City and insured flood codes are followed during the construction phase

10 FLOOD PROTECTION REGULATIONS
Evaluation enforcement of which prevents/reduces threat to public safety and property

12 requires contractor licensing
Evaluation has enhanced City's ability to enforce flood codes by regulating contractors

22 provides a uniform system of subdivision review for approval, at which time
consideration can be made of the flood zone and the proper controls to
reduce flood damage for new subdivisions
Evaluation has provided the opportunity to analyze the flood vulnerabilities of new
development

27 provides for construction materials and standards in conformance with
SBCCI and high-wind and flood zones in the City
Evaluation has prevented loss to new construction which is built higher, stronger and
better in order to withstand storm events

City Emergency Operations Plan

Evaluation provides a plan for emergencies involving threats to public safety and
property, notification for evacuation and property protection/removal
notification allows for increased property protection measures and
evacuation which has reduced the threat to public safety and reduced
property damage

Comp. Plan includes elements such as the City's storm water system, identification of
shoreline land use conflicts, hurricane evacuation analysis, a coastal
hazards inventory, post disaster redevelopment policies and coastal
construction code and siting requirements.

Evaluation allows for analysis of current infrastructure and provides planning for
improvements to infrastructure in the key elements, allows for analysis of
City vulnerabilities to threats to public safety and property and planning for future
events.

Belleair Bluffs

Statement Belleair Bluffs follows National Fire Protection Agency 101 Life Safety and the
Southern Building Code through Pinellas County.

Evaluation Insure safety of residents and structures through enforcement of codes

Clearwater

Chapter 15 Emergency Management - It is the intent of this chapter to provide the necessary organization, and authority to enable the timely and effective use of all available city resources to prepare for, respond to, and recover from emergencies, natural and manmade, likely to effect the security, safety or health of the city and its residents, whether such events occur within or without the corporate limits of the city.

Evaluation Provides ongoing planning for and coordination of those actions necessary to ensure continuous service during and after a disaster.

Chapter 30
sec. 30.006 Detouring Traffic - At the advice of the city manager shall deem it advisable for public safety or convenience, temporarily alter traffic flow to meet the needs of the city during a possible evacuation period.

Evaluation Provides better evacuation control and service in a timely manner.

Chapter 32, article VI. Sec. 32.246 Storm water Utility Fund

Chapter 32, article X. sec. 32.391

Storm water Systems - Maintain efficient, economic and safe operation of the storm water system, and to protect the health, safety, and general welfare of the public within the City of Clearwater.

Evaluation Reduces the possibility of flood due to storm water retention.

Chapter 40, sec. 40.621

Floodplain Overlay District - The floodplain overlay district is created to recognize interior riverine, lacustrine and palustrine systems in the city for which the 100 year storm event probability floodplain has been identified.

Evaluation Regulates the use of land, alteration of the landform and all development activities consistent with the hazards and limitations of such designation.

Chapter 42, article II. Sec. 42.29

Coastal Construction control line - The line of reference from which setback shall be measured from the Gulf of Mexico.

Evaluation Provides a safer coastal environment.

Chapter 42, article II. Sec. 42.33

Storm water Detention Facilities - Provides developmental standards and design specifications relating to storm water drainage and detention.

Evaluation Establishes proper detention of storm water areas.

Chapter 46, article III. Sec. 46.74

Storm water drainage and retention - Ensures that proper design factors are used to provide proper retention and /or drainage of storm water run-off.

Evaluation Reduces possible damage to structures due to flooding with proper drainage and retention areas.

Chapter 47, article I. Sec. 47.005

Minimum Floor Elevation provides that all new or additional structures will have a floor line of a minimum one-foot above the crown of the road.

Evaluation Reduces possible flooding.

Chapter 47, article I. Sec. 47.004

Exception to Coastal Construction Zone; Flood proofing Certification - Certification shall be preformed by a professional engineer or/ architect

Evaluation Reduces flooding

Chapter 50, article II. Sec. 50.41

Erosion and Siltation Control - Minimizes the impact of land alteration, development and construction activities on storm water and surface water systems.

Evaluation Protects the public health, safety and welfare; and conserve wildlife and aquatic habitats.

Chapter 51,

Flood Damage Prevention - it is the purpose of this chapter to promote the public health, safety and general welfare and to minimize public and private losses due to flood condition in specific by provisions designed to: Restrict, Require, Control, Prevent.

Evaluation Reduces flooding

Chapter 53, article I. Sec. 53.03

Minimum Elevation of Seawalls on Clearwater Harbor - The elevation of the seawalls on the west shore of Clearwater harbor or/ Clearwater bay shall be not less than six (6) feet above mean sea level.

Evaluation Reduces erosion and flood problems along the harbor area.

Policy, Basic Emergency Plan

The citizen of the City of Clearwater expect their government to help prepare them to recognize, avoid where possible, plan for and cope with the consequences of disasters and emergencies.

Evaluation Provide mitigation efforts.

Executive Order Number 80-29

“Disaster Preparedness” - Provides the authority for any governing body of a political subdivision of the State to order an evacuation.

Evaluation Saves lives.

Dunedin

Comprehensive Plan . . .

CCM, IV-A-1 Strictly enforce building and construction codes in accordance with FEMA standards and the National Flood Insurance Program's (NFIP) regulations and all state, regional and county standards.

Evaluation Requires elevation within flood zones.

CCM, IV-A-2 As part of the City's post-disaster redevelopment practices, address stormwater management, wastewater collection and treatment, land use and other infrastructure elements to evaluate hazard mitigation. Practices shall include, but not be limited to, the following:

- a. Prioritize immediate repair and cleanup actions and permitting activities subsequent to a natural disaster by collecting and analyzing storm damage data and basing the tasking of essential activities based on this data;
- b. Relocate habitable structures which have incurred damage from a natural disaster, where damage is greater than 50 percent of their assessed value, to new locations outside the coastal high hazard area, provided that sufficient land is available on the subject parcel for such relocation;
- c. Any disturbance of natural shoreline resources that provide shoreline stabilization and protect landward areas from effects of storm events shall not be allowed if the disturbance would cause shoreline destabilization or increase storm risk to landward areas as compared to pre-development conditions;
- d. Prohibit the construction of new seawalls and limit the repair or reconstruction of seawalls unless no other alternative shore stabilization techniques are available which afford reasonable property protection.

Evaluation While there are no local statistics available, activities in subparagraphs b and c would have the most effect.

CCM, IV-A-3 Apply appropriate in-place procedures for professional and timely post-storm damage assessment.

Evaluation Provides for assessments potentially leading to mitigation activities.

CCM, IV-A-4 City-funded infrastructure shall be prohibited within the coastal high hazard area except for the following:

- a. The expenditure for the maintenance, repair or replacement of existing facilities; or
- b. The expenditure for restoration or enhancement of natural resources or public access; or

	<p>c. The expenditure needed for the maintenance and reconstruction of existing City facilities; or</p> <p>d. The expenditure for retrofitting for water quality enhancement of stormwater runoff; or</p> <p>e. The expenditure for a public facility of overriding public interest to ensure public health and safety.</p>
Evaluation	Limits new infrastructure in the coastal high hazard area except in the public interest.
CCM, IV-A-5	The City shall prohibit the construction of hospitals, nursing homes and additional, or expansions to, mobile home parks within the coastal high hazard area. The City shall prohibit the construction of adult congregate living facilities within the coastal high hazard area. The City shall prohibit new ACLFs and the expansion of the existing ACLFs within the CHHA. This provision shall not be in conflict with the mandates of Chapter 419, Florida Statutes, Community Residential Homes.
Evaluation	Has not allowed new or expanded facilities in the coastal high hazard area.
CCM, IV-C-1	Apply infrastructure standards that recognize high hazard zone potentials.
Evaluation	No local statistics available, but has great potential to enhance infrastructure to withstand storm effects.
CCM, IV-C-2	Limit or delete consideration of non-essential public projects.
Evaluation	No local statistics available, but provides potential for eliminating projects within the coastal high hazard area (and elsewhere) if they are termed not essential.
CCM, IV-C-3	By the year 2001, investigate the feasibility of an Urban Forestry Program.
Evaluation	This sets the stage for the study of an Urban Forestry Program which would inventory trees in relation to infrastructure and take steps to prevent trees from damaging such infrastructure if they were to fall.
CCM, IV-D-1	Post-disaster redevelopment plans shall identify areas requiring redevelopment (e.g., CRA District) and shall eliminate unsafe conditions and inappropriate uses as opportunities arise and may include temporary measures to reduce impacts.
Evaluation	Sets the stage for mitigation practices following a disaster.
CCM, IV-D-2	Infrastructure design shall account for wave, wind and flooding damage potentials.

Evaluation	No local statistics available, but has great potential to enhance infrastructure to withstand storm effects.
CCM, IV-D-3	Private development standards shall be closely monitored for damage mitigation.
Evaluation	Allows for review of site plans for development. Very effective
CCM, IV-D-4	To prepare the post-disaster redevelopment plan, the City shall utilize strategies and techniques outlined in the Pinellas County Comprehensive Emergency Plan, and shall consider the recommendations contained in any hazard mitigation reports.
Evaluation	Sets the stage for the creation of a post-disaster redevelopment plan. Pursuant to results of Hazard Mitigation Study, such mitigation measures should be included in the redevelopment plan.
FLU, I-1	During the development review process, any additional residential development within the City's hurricane vulnerability area shall be examined carefully vis-à-vis the hurricane evacuation plan. Development or redevelopment that poses serious threats to the efficacy of the hurricane evacuation plan shall be denied.
Evaluation	Would effectively limit those few remaining vacant areas in the coastal high hazard area to the existing land use density.
Uniform Dev.Code Section 122-85	<p>The Floodplain Management Ordinance provides for the following:</p> <p>a. "All new construction and substantial improvement to structures shall be required to comply with all related sections of the Standard Building Code, as adopted by the city in chapter 98 of this code, pertaining to methods, materials and anchorage, so as to minimize flood damage, with the pertinent rules and regulations established by the Federal Emergency Management Agency...as they exist as of the date of this article, or as they may be amended in the future...."</p> <p>b. Prohibits encroachments, new construction or substantial improvements within a floodway.</p> <p>c. Sets down specific standards in A-zones, including requirements for elevated buildings and for manufactured/mobile homes.</p> <p>d. Sets down specific standards in V-zones, including requirements for elevated buildings and for manufactured/mobile homes.</p> <p>e. Minimum flood proofing requirements for electrical and gas systems, potable water connections, backflow preventers, and sanitary sewer and storm drainage systems.</p> <p>f. Minimum consideration for development goals which states, "The formulation of community development goals following the occurrence of a flood disaster shall consider at least the following:</p>

- (1) Preservation of the floodprone areas for open space purposes.
- (2) Relocation of occupants away from floodprone areas
- (3) Acquisition of land or land development rights for public purposes consistent with the policy of minimization of future property losses.
- (4) Acquisition of frequently flood-damaged structures."

g. Review of subdivision proposals to ensure that they are consistent with the need to minimize flood damage to both property and public utilities, and to ensure that adequate drainage is provided.

h. Requires "new or replacement water supply systems and/or sanitary sewer systems to be designed to minimize or eliminate infiltration of floodwaters into the system and discharges from the systems into floodwaters and require on-site disposal systems to be located so as to avoid impairment of them or contamination from them during flooding."

i. The granting of variances "with extreme caution."

Evaluation

Has been very effective in enforcing the FEMA requirements for new construction or substantial improvement.

The originally revised adopted Floodplain Management Plan (1999)

The revised Floodplain Management Plan, prepared pursuant to Community Rating System (CRS) guidelines provides for the following activities to be implemented through the Action Plan:

a. Preventive Activities

-Continue the extensive use of open space throughout the City and particularly within the floodplain. This includes Hammock Park, Fisher Field and the Dunedin Country Club.

-Continue the enforcement of Article 6 of the *Uniform Development Code* entitled "Stormwater Management," particularly as it relates to the construction of systems regulating stormwater runoff.

-Continue the maintenance of the City's drainage system. This includes routine inspection, removal of debris, repairs, top and slope mowing, and aquatic maintenance.

b. Property Protection Activities

-Continue the mail-out of flood proofing information to the residents of each repetitive loss area.

-Encourage the elevation/retrofitting of structures to FEMA requirements through then enforcement of the 50% rule, through the distribution of information to repetitive loss areas, and through obtaining federal funds for such structural work.

-Investigate by December 31, 1998, the feasibility of offering a design for a "dry flood proofing barrier" for use in repetitive loss areas. This would also include provisions for technical assistance.

c. Natural Resource Protection Activities

-Complete and submit the Edgewater Drive Shoreline Stabilization Dredge and Fill Permit Application by December 31, 2001.

d. Emergency Services Measures

-Continue the cooperative implementation of the Comprehensive Emergency Management Plan with Pinellas County.

-Send letters to owners of structures or facilities which produce, use or store highly volatile, flammable, explosive, toxic and/or water-reactive materials. These letters should encourage the owners or operators to follow proper procedures in the event of an impending disaster.

-Continue the annual distribution of the *All Hazards Guide* or *Hurricane Guide* for as long as it is produced and made available to residents and local governments.

-Continue advising the Florida Department of Transportation of the critical nature of the Alternate US 19/Curlew Road intersection. Request that some type of improvement to the elevation conditions at this location be made.

-Inventory existing and, if appropriate, develop additional methods of storm notification by September 30, 1999.

e. Structural Projects

-Continue the permitting of erosion protection projects as outlined in Section 27-8-8 of the *Uniform Development Code*.

-Continue the enforcement of Article 6 of the *Uniform Development Code* entitled "Stormwater Management," particularly as it relates to the construction of systems regulating stormwater runoff.

f. Public Information Activities

-Continue to provide the Map Determination Service, including the publicizing of the service.

-Develop brochures and reproducible forms by December 31, 1999, for real estate agencies regarding information relating to flood hazards of property.

-Continue to maintain and publicize the Flood Library documents available at the Dunedin Public Library.

-Continue to provide technical assistance where possible on flood issues.

-Continue to publish, update and make available the *Urban Stormwater Improvement Guidance* booklet.

Evaluation The vast majority of activities have been effectively implemented for several years, providing for a more disaster-resistant community. Many of the activities carry out the various policies and requirements of the comprehensive plan and the *Uniform Development Code*.

An update of the Action Plan in 2003 lead to the inclusion of all of the above activities, with the following changes:

-Continue providing information for a "dry flood proofing barrier" for use in repetitive loss areas. (The concept having been developed and sketched.)

-Determine the necessity and most efficacious manner of stabilizing the Edgewater Drive Shoreline. (The original 1994 Dredge and Fill Application is very much out of date.)

-The storm notification requirement was deleted, having been completed in 1999.

-Continue to develop and send brochures and reproducible forms to real estate agencies regarding information relating to flood hazards of property. (The initial brochure being created earlier.)

The Local Mitigation Strategy (LMS) with the City's Action Plan included as an appendix, now serves as the City's Floodplain Management Plan.

Gulfport

2. Periodic inspections of storm water control structures are conducted to ensure proper function and maintenance.
Evaluation Reduces flooding
- Obj. 4 The City shall ensure that development activities in coastal high hazard areas are carried out in a manner which minimizes danger and/or damage to private and public property and human life. Development within high hazard areas shall be restricted and public funding for facilities within coastal high hazard areas shall be limited.
Evaluation Reduces storm vulnerability to new development
- Policy 4.2 High density developments in areas projected to receive major hurricane damage from coastline storms surges shall be avoided.
Evaluation Reduces flooding
- Policy 4.3 New residential developments and/or redevelopment within the Coastal High Hazard Area shall not be permitted to exceed the density provided for on the Future Land Use Map, as amended from time to time.
Evaluation Reduces flooding
- Policy 4.4 The City shall review its development regulations to ensure at a minimum that the requirements of the State's Model Coastal Development Code are met.
Evaluation Reduces flooding
- Policy 4.5 The City shall, at a minimum, require building elevations at or above the 100 year flood plain as defined by the National Flood Insurance Rate Maps.
Evaluation Reduces flooding
- Policy 4.7 The City shall restrict the expenditure of public funds for facility development in coastal high hazard areas, unless the facility is for public access or resource restoration.
Evaluation Protect infrastructure
- Policy 4.8 The City shall continue to implement FEMA requirements through continued participation in the National Flood Insurance Program.
Evaluation Reduces flooding
- Policy 7.2 The City shall review and amend its development regulations to ensure hazard mitigation measures for all reconstruction in severely damaged coastal areas are included.
Evaluation Reduces flooding.

Indian Rocks Beach

Comprehensive Plan

FLUE 1.3.5	The land development regulations shall ensure that residential land uses are located and designed to protect life and property from natural and manmade hazards such as flooding, excessive traffic, subsidence, noxious odors, noise, and deterioration of structures.
Evaluation	Reduces exposure of residential properties to flooding
CME 1.2.1	New development or redevelopment approvals shall require that post-development runoff rates, volumes, and pollutant loads do not exceed predevelopment conditions.
Evaluation	Prevents new development and redevelopment from creating additional local flooding problems
INFR 4.1.5	The land development regulation shall contain provisions which, at a minimum, protect natural drainage features found within the city as follows: <ul style="list-style-type: none">• The flood-carrying and flood storage capacity of the 100-year flood plain shall be maintained;• Development along the Intracoastal Waterway shall have sufficient setbacks to maintain any existing areas of natural coastal/marine habitat;• The prevention of erosion, retardation of runoff, and protection of natural functions of the floodplain shall be enforced through land development regulations; and• The City shall require development or redevelopment proposals to be consistent with the performance standards regulating development within the designated floodplain.
Evaluation	Prevents the creation of additional areas subject to flooding
CME 1.2.5	Recognizing that the entire community is located within the Hurricane Vulnerability Zone and the 100-year floodplain, the City shall continue to strictly enforce all appropriate federal, state, and local coastal construction codes, coastal setback requirements, special Coastal Construction Control Line facility siting restrictions, and floodplain management regulations.
Evaluation	Reduces risk by limiting exposure of structures to hydrodynamic forces during a storm event
FLUE 1.7.8	The Land Development Regulations shall require the protection of coastal vegetative communities, coastal wildlife habitats, and dune systems from the adverse effects of development.
Evaluation	Protects dunes which serve as a barrier against storm surge

CME 1.9.3	The City shall adopt and enforce a beach management plan which shall prohibit excavations, destruction of native vegetation, and activities which affect the natural fluctuation of the dunes.
Evaluation	Protects dunes which serve as a barrier against storm surge
FLUE 1.2.4	The City shall continue to enforce land development regulations that contain specific and detailed provisions required to implement this comprehensive plan, which, at a minimum shall: <ul style="list-style-type: none"> • Regulate the subdivision of land; • Protect the limited amount of marine wetlands remaining in the community and those lands designated as Preservation on the <i>Future Land Use Map</i> and in the <i>Coastal Management and Conservation Element</i>; • Regulate signage; • Ensure that all development is consistent with National Flood Insurance Program regulations; • Ensure that all development is consistent with those coastal construction regulations as may be adopted and/or amended by the State of Florida, Pinellas County, or the City of Indian Rocks Beach; • Ensure the compatibility of adjacent land uses and provide for adequate and appropriate buffering; • Ensure that development orders and permits are issued only when it is documented that such development is consistent with the level of service standards for the affected public facilities adopted by this comprehensive plan; • Provide for drainage and stormwater management, based on the minimum criteria established by the Southwest Florida Water Management District, as may be amended, the City of Indian Rocks Beach, or other appropriate governmental agencies, and the <i>Pinellas County Master Drainage Plan (1976, as amended)</i>; • Provide requirements for the provision of open space, and safe and convenient on-site traffic flow and parking requirements; • Encourage the use of native vegetation in the landscaping of multifamily and commercial developments; • Provide provisions for the control of erosion and runoff from construction sites; and • Encourage land development which highlights scenic amenities and ensures public access to the waterfront.
Evaluation	Maintains beaches, coastal berms, and dunes to provide protection against storm surge.
CME 1.9.1	Land development regulations shall require the use of native vegetation to stabilize nonseawalled shorelines, where feasible.
Evaluation	Maintains beaches, coastal berms, and dunes to provide protection against storm surge by minimizing erosion of coastline

CME 1.9	The City of Indian Rocks Beach shall protect and maintain its beaches, dunes, and natural systems, and establish construction standards which minimize the impacts of man-made structures on these systems.
Evaluation	Maintains beaches, coastal berms, and dunes to provide protection against storm surge
CME 2.3	The City shall maintain or reduce hurricane evacuation times.
Evaluation	Reduces losses to life or property by maintaining a timely and orderly evacuation during evacuation
CME 2.4	The City shall reduce the risk of exposure of human life and public and private property to natural disasters through preparedness planning and implementation of hazard mitigation measures, and through annual update of the Indian Rocks Beach Emergency Response Manual.
Evaluation	Reduces risk exposure and losses by reducing hazard exposure
FLUE 1.2.3	The City shall adopt land development regulations which recognize the limitations of development on a barrier island (e.g., 100-year floodplain, vulnerability to tropical storms, topography and soil conditions).
Evaluation	Reduces risk exposure and losses by reducing hazard exposure
CME 1.2.3	The City shall protect the natural functions of the 100-year floodplain so that the flood-carrying and flood-storage capacities are maintained.
Evaluation	Reduces exposure to flood by restricting development in areas subject to flooding
INFR 4.1.4	The following management techniques shall be incorporated into the city's land development regulations or operating budget: <ul style="list-style-type: none"> • No more than 70 percent of a non-residential lot shall be covered by impervious surface, except as indicated in Objective 1.1 of the Future Land Use Elements; • Expansion and regular maintenance of gutters and drains adjacent to city roadways; • Use of front, rear, and side lot line swales in new development and redevelopment; • Use of erosion and runoff control devices during construction; • Where necessary, consider construction of drainage retention areas in the public right-of-way and acquisition of property for drainage retention purposes; • The replacement material for failed or damaged existing concrete seawalls shall be rip-rap or planting of native marine

	<p>vegetation, e.g. mangroves and marsh grass, where technically feasible; and</p> <ul style="list-style-type: none"> • Where possible, adopt vegetation and planting practices encouraging the strengthening of seawall areas.
Evaluation	Reduces the potential for flooding by maintaining areas necessary for percolation
CME 1.3.1	Mangroves and marsh areas shall be designated Preservation land on Map LU-4: Future Land Use.
Evaluation	Maintains mangroves to prevent coastal erosion
CME 1.4.3	Land development regulations shall encourage shorelines lacking wetland vegetation to be planted with native vegetation in order to minimize potential flood damage, stabilize the shoreline, trap sediments and other non-point source pollutants, and provide additional habitat for fish and wildlife.
Evaluation	Maintains mangroves and other durable native vegetation to prevent coastal erosion and provides protection against storm surge
CME 1.6.2	The City shall support the Pinellas County Pollution Prevention (P2) Program to regulate small generators of hazardous wastes, in order to protect natural resources and public health.
Evaluation	Reduces the amount of hazardous waste stored in the City which may be released into the environment during severe storm events
CM 1.6.3	The City shall promote the recycling of hazardous waste products such as oils, solvents, and paints.
Evaluation	Reduces the amount of hazardous waste stored in the City which may be released into the environment during severe storm events
CME 1.6.4	The City, in conjunction with Pinellas County and the neighboring local governments, shall continue using regular bill mailings to inform residents of effective methods to safely store and dispose of household and commercial hazardous material and of procedures to follow in emergencies.
Evaluation	Reduces the amount of hazardous waste stored in the City which may be released into the environment during severe storm events
CME 1.9.2	Land development regulations shall require that the replacement material for failed or damaged existing concrete seawalls be rip-rap or planted native vegetation, e.g., mangroves and marsh grasses, where feasible.
Evaluation	Provides protection against storm surge by minimizing erosion of coastline
CME 2.3.1	Coordinating with the Metropolitan Planning Organization (MPO), the City shall ensure that major evacuation routes are adequately

	maintained and, when necessary, improved to facilitate an efficient and safe evacuation.
Evaluation	Reduces potential loss of life by promoting a fast and orderly evacuation of the City when threatened by a hurricane
CME 2.3.2	The City, in cooperation with the Pinellas County Department of Emergency Management and the South Pinellas County Chapter of the American Red Cross, shall sponsor annual hurricane preparedness seminars to increase hurricane awareness.
Evaluation	Reduces potential losses of life and to property by providing hurricane preparedness training
CME 2.3.3	City emergency response personnel and volunteers shall coordinate with county and state emergency response agencies in emergency planning, including communications, traffic control, and warning operations, in order to effect a safe and efficient evacuation.
Evaluation	Reduces potential loss of life by promoting a fast and orderly evacuation of the City when threatened by a hurricane
CME 3.3.1	Where feasible, property which has received recurring hurricane damage from storm surge may be publicly acquired or designated Preservation on Map LU-4: Future Land Use, to prevent redevelopment of the property to its pre- disaster land use.
Evaluation	Provides a buffer against storm surge and prevents losses from future storm events
CME 3.3.2	The City shall consider one or more of the following strategies in those areas which receive major or moderate damage: Reconstruction according to more stringent building and construction standards; and Public acquisition of damaged areas.
Evaluation	Provides a buffer against storm surge and prevents losses from future storm events
INFR 4.1.1	Stormwater management systems shall be designed to accommodate a 10-year, 60 minute storm event.
Evaluation	Reduces damages caused by local flooding.

FLUE=Future Land Use Element
CME=Coastal management and Conservation Element
INFR=Infrastructure Element

Indian Shores

Indian Shores Comp. Plan Evaluation:	Establishes impervious surface ratio on construction projects. Run-off flooding more manageable.
Indian Shores Comp. Plan Evaluation:	Sets land use desist/intensity standards. Reduces potential for severe weather/flood damage and repetitive loss.
1993 Repetitive Loss Plan Evaluation:	Comprehensive guide describing how the town deals with flood problems. Reduced level of repetitive loss properties.
NFIP CRS Evaluation:	Establishes formal activities to reduce flood losses. Compliance measures resulted in rating of seven. Flood insurance premium reduced 15%.
Code 26-38 Evaluation:	Requires comprehensive emergency management plan. Evacuation clearance times should be reduced.
Code 86-40 Evaluation:	Establishes methods of reducing flood losses. Varies with type and degree
Code 86-41 Evaluation	Imposes new construction standards on structures suffering more than 50% damage. Reduces non-conforming structures/damages.
Code 86-87 Evaluation	Construction standards to minimize wind and flood damage in special flood hazard and coastal high hazard zones. Addresses weakness in material/application historically identified.
Code 86-88 Evaluation:	Requires new construction and substantial improvements be elevated 11MSL. Raises flooding threshold by one foot/two foot freeboard.
Code 90-56 Evaluation:	Intergovernmental coastal planning Participation in Sand Key Master Drainage Plan/Flood Management
Code 90-130 Evaluation:	Restricts town expenditures in coastal high hazard areas. Vulnerability recognition through policy/ordinance
Code 110-4 Evaluation:	Requires non-conforming structure to come into compliance/conditions Flood reduction through elevation
Resolution 14-92 Evaluation:	Adopt Pinellas County Hurricane Evacuation Guide NFIP/CRS Flood plans. Appointment of staff coordinator

Resolution 11-91 Evaluation:	NWS modernization of equipment. Support AWIPS Early warning enhancement
Resolution 4-88 Evaluation;	Endorsement of State's Beach Restoration Management Plan Beach nourishment
Resolution 5-88 Evaluation:	Request Pinellas County schedule a plan for erosion control Wide stable beach as protection barrier in hurricane
Resolution 6-88 Evaluation	Request Pinellas County solicit funds for dune construction Beach nourishment
Resolution 1-87 Evaluation	Supporting development, evaluation and revision of local comprehensive plan Public participation
Resolution 11-85 Evaluation	Requesting Pinellas County initiate beach restoration project establish erosion control line
Resolution 3-84 Evaluation	Request US Corps of engineers develop storm protection plan erosion control/public safety
Resolution 3-98 Evaluation	Intent to revitalize and develop town square district Improved storm water drainage, encourage retrofit (elevation) or repetitive loss property
Resolution 7-97 Evaluation	Supports FDOT study of Park/Gandy Boulevard as evacuation routes Critical regional evacuation route
Resolution 2-97 Evaluation	Urging Florida legislature to dedicate funding source to statewide beach Recognize beach sand as first management/line protection against hurricanes
Resolution 14-96 Evaluation	Adopt Southern Building Code Model Uniformity in Statewide Building Regulations
Resolution 2-95 Evaluation	Comprehensive Plan Resolution Changes to future land use map
Resolution 14-94 Evaluation	Request PPC amend countywide future land use plan Determination of consistency
Resolution 9-94 Evaluation	Statewide Mutual Aid Agreement for catastrophic disaster Pooled resources and assistance
Resolution 10-93 Evaluation	Adopting repetitive loss plan Enact and enforce floodplain regulation

Kenneth City

Comprehensive Plan 1.1.3 Evaluation	Future Land Use Element Policies ... Requires location to guard against flooding Reduces loss from flood water damage
1.4.1/1.4.2 Evaluation	Requires development to respect ecological function and suitability Preserves natural function of flood plain
1.5.2 Evaluation	Requires recognizing SWFWMD conservation standards Reduces flood risk during storm events to insure pervious area for percolation
1.6.1 Evaluation	Requires new development to manage storm water runoff so that post development rates do not exceed pre-development rates Reduce loss associated with new construction
Kenneth City Building 62-73(e) Evaluation	Codes/Coastal & Conservative Elements ... Requires compliance with standards in comprehensive plan city code section 70 article v Reduce damage due to storm induced flooding
70-161/70-181/70-167 Evaluation	Adopts the National Flood Insurance Program and Related Regulations Provides flood insurance and lower rates for residents
70-170 Evaluation	Building director responsible for compliance with standards Insures that flood reduction policies are adhered to
70-172 Evaluation	Requires flood proofing of all structures Reduces loss due to flooding
70-174 Evaluation	Outlines general standards for flood damage control Explains in laymen terms the structural requirements for flood control
70-175 Evaluation	Specific standards for flood damage control Requires that structures meet minimum standards in order to reduce flood damage

LARGO

FUTURE LAND USE ELEMENT

POLICIES

It shall be the policy of the City to:

2.1.1: Restrict developed land areas in coastal high hazard areas from redeveloping at residential densities of greater than 7.5 units per acre, or to redevelop as industrial uses. The City may designate developed land areas in coastal high hazard areas with residential densities of less than 7.5 units per acre. The Coastal High Hazard Areas are depicted on Figure NR-5 of the Natural Resources Element.

Evaluation: Limits development in the coastal high hazard area.

2.1.2: Prohibit vacant land areas in coastal high hazard areas from developing at residential densities of greater than 2.5 units per acre or as industrial uses. The City may designate vacant land areas in coastal high hazard areas with residential densities of less than 2.5 units per acre.

Evaluation: Limits development in the coastal high hazard area.

2.1.3: Coordinate Future Land Use Map amendments with the TBRPC's Hurricane Evacuation Plan.

Evaluation: Limits development in the coastal high hazard area.

2.1.4: Prohibit care and rehabilitative uses from locating in Coastal High Hazard Areas.

Evaluation: Limits development in the coastal high hazard area. Reduces or eliminates the exposure of human life and property to natural hazards.

2.1.5: Prohibit critical facilities (hospitals, nursing homes, police and fire stations, vital public utilities, etc.) from locating within Coastal High Hazard Areas, 100-year floodplains or other Special Flood Hazard Areas, as designated by the Federal Emergency Management Agency.

Evaluation: Limits development in the coastal high hazard area. Reduces or eliminates the exposure of human life and property to natural hazards.

2.1.6: Prohibit mobile homes within Coastal High Hazard Areas.

Evaluation: Limits development in the coastal high hazard area.

2.1.7: Encourage the transfer of development rights out of Coastal High Hazard Areas and 100-year floodplains, and other areas determined to be environmentally sensitive, and prohibit these areas from receiving transfers of additional development rights or housing density bonuses.

Evaluation: Limits development in the coastal high hazard area.

2.1.8: Continue to meet or exceed the flood damage prevention standards set forth by the Federal Emergency Management Agency.

Evaluation: Limits development in the coastal high hazard area. Reduces or eliminates the exposure of human life and property to natural hazards.

TRANSPORTATION ELEMENT

POLICIES

It shall be the policy of the City to:

1.1.16: Ensure the availability of adequate transportation facilities for the safe and timely evacuation of high risk areas, consistent with the Hurricane Evacuation Plan, as depicted in Figure T-7. Following the completion of the Tampa Bay Regional Council's hurricane evacuation study of the Tampa Bay Region, which is scheduled to occur in 1999, the City will work with Pinellas County to utilize the study information to assess the adequacy of its transportation system to provide for the evacuation of the public, and make appropriate amendments to the Comprehensive Plan, including existing and future hurricane evacuation routes and shelters as depicted in Figures T-5 and T-11, to ensure consistency and adequate protection of the public.

Evaluation: Strives to maintain or improve hurricane evacuation times and reduce or eliminate the exposure of human life to natural hazards.

DRAINAGE SUBELEMENT

POLICIES

It shall be the policy of the City to:

1.3.12: Maintain open ditches, and other aspects of the stormwater management system, to enhance its overall function.

Evaluation: Reduces or eliminates the exposure of human life and property to natural hazards.

1.3.13: Ensure that post-development stormwater flow does not exceed pre-development stormwater flow for projects pursued within the City.

Evaluation: Prohibit development and redevelopment that would contribute to a public hazard or aggravate existing drainage facility deficits.

1.5.1: Actively participate on drainage basin committees with Pinellas County and surrounding communities in order to ensure that stormwater management system improvements for various drainage basins are coordinated.

Evaluation: Coordinate planning and implementation of multi-jurisdictional drainage facility improvements.

1.5.2: Coordinate with Southwest Florida Water Management District (SWFWMD), the US Army Corps of Engineers, Pinellas County Environmental Management, Florida Department of Transportation (FDOT), Department of Environmental Protection (DEP), and the Environmental Protection Agency (EPA) to comply with the NPDES and other local, state, and federal regulations governing stormwater quality and quantity.

Evaluation: Promote use of best management practices. Coordinate planning and implementation of multi-jurisdictional drainage facility improvements. Prohibit development and redevelopment that would contribute to a public hazard or aggravate existing drainage facility deficits.

1.5.3: Conduct and share methods of data collection, analysis, and modeling of stormwater management systems to prevent flooding, monitor stormwater quality, and maintain stormwater facilities.

Evaluation: Promote use of best management practices. Coordinate planning and implementation of multi-jurisdictional drainage facility maintenance and improvements.

1.5.4: Pursue partnership projects with the SWFWMD and other public and private entities.

Evaluation: Coordinate planning and implementation of multi-jurisdictional drainage facility maintenance and improvements.

NATURAL RESOURCES ELEMENT

It shall be the policy of the City to:
POLICIES

2.1.1: Avoid the siting of non-water dependent public structures in CHHA.

Evaluation: Minimizes expenditure of public funds within the coastal high hazard area. Minimizes exposure of public facilities to potential damage by natural hazards.

2.1.2: Minimize damage through the design and retrofit of public facilities located in the CHHA.

Evaluation: Minimizes exposure of public facilities to potential damage by natural hazards.

2.1.3: Design capital improvement projects in the CHHA to assist in restoring or enhancing natural resources.

Evaluation: Minimizes exposure of public facilities to potential damage by natural hazards by maintaining or restoring natural vegetative buffers in the coastal high hazard area.

2.1.4: Maintain the City's Class 7 rating of the National Flood Insurance Program (NFIP) Community Rating System (CRS.)

Evaluation: Third-party evaluation of the City of Largo's effectiveness at enacting, implementing, and monitoring codes and policies that limit development and redevelopment of flood-prone structures in the coastal high hazard area and flood zone. Reduces or eliminates the exposure of human life and property to natural hazards.

2.1.5: Insure consistency between the standards of the Comprehensive Development Code (CDC) and the NFIP.

Evaluation: Promote use of best management practices.

2.1.6: Limit residential development in the CHHA.

Evaluation: Limits development in the coastal high hazard area.

2.1.7: Promote the retrofitting of mobile home park assembly facilities to meet Red Cross Standards for shelter locations.

Evaluation: Reduces or eliminates the exposure of human life to natural hazards.

2.2.1: Jointly adopt and implement a countywide Local Mitigation Strategy (LMS).

Evaluation: Promote use of best management practices. Coordinate multi-jurisdictional hazard mitigation planning and implementation.

2.2.2: Insure consistency among citywide regulations, the Emergency Operations Plan (EOP), and the LMS.

Evaluation: Strives to maintain and improve coordination between all City departments and other local jurisdictions. Assists with the preparation and adoption of pre- and post-disaster redevelopment plans which reduces or eliminates the exposure of human life to natural hazards.

2.2.3: Annually assess the EOP to ensure proper response to natural disasters.

Evaluation: Strives to maintain and improve coordination between all City departments and other local jurisdictions. Assists with the preparation and adoption of pre- and post-disaster redevelopment plans which reduces or eliminates the exposure of human life to natural hazards.

2.2.4: Actively participate in hurricane evacuation planning with Pinellas County and other local, regional, and state organizations in order to improve existing evacuation routes and shelter spaces as depicted on maps T-5 and T-11 of the map series for the Transportation Element.

Evaluation: Strives to maintain and improve coordination between all City departments and other local jurisdictions. Strives to maintain or improve hurricane evacuation times and reduce or eliminate the exposure of human life to natural hazards.

2.2.5: Direct public investment away from the CHHA.

Evaluation: Minimizes expenditure of public funds on public and private development or redevelopment within the coastal high hazard area. Minimizes exposure of public facilities to potential damage by natural hazards.

2.2.6: Distinguish, in the LMS, between the immediate emergency period actions needed to protect the public health, safety, and welfare and those associated with long-range recovery activities.

Evaluation: Assists with the preparation and adoption of pre- and post-disaster redevelopment plans which reduces or eliminates the exposure of human life to natural hazards.

2.2.7: Establish temporary restrictions in the LMS for the issuance of building permits for reconstruction and repair work that is not immediately necessary for the protection of the public health, safety and welfare during periods following a disaster.

Evaluation: Assists with the preparation and adoption of pre- and post-disaster redevelopment plans which reduces or eliminates the exposure of human life to natural hazards.

2.2.8: Establish criteria in the LMS for the evaluation of alternatives for the repair, replacement, modification, or relocation of public and private facilities and infrastructure within the coastal high-hazard area which are consistent with the Pinellas County Post-Disaster Redevelopment Plan and federal funding provisions.

Evaluation: Assists with the preparation and adoption of pre- and post-disaster redevelopment plans which reduces or eliminates the exposure of human life to natural hazards.

2.2.9: Utilize the Largo Comprehensive Plan, Comprehensive Development Code, and other appropriate techniques to reduce unsafe conditions and inappropriate uses and limit redevelopment in areas of repeated damage caused by natural events.

Evaluation: Assists with the preparation and adoption of pre- and post-disaster redevelopment plans which reduces or eliminates the exposure of human life to natural hazards.

CAPITAL IMPROVEMENTS ELEMENT

It shall be the policy of the City to:
POLICIES

1.2.1: Maintain, but limit the expansion of, existing public infrastructure and facilities located in CHHAs except those services necessary to protect the health, safety, or welfare of the community.

Evaluation: Minimizes expenditure of public funds within the coastal high hazard area. Minimizes exposure of public facilities to potential damage by natural hazards.

1.2.2: Design and retrofit public facilities located in CHHAs to minimize potential damage from natural events.

Evaluation: Minimizes expenditure of public funds within the coastal high hazard area. Minimizes exposure of public facilities to potential damage by natural hazards.

1.2.3: Maintain a reserve emergency fund earmarked for expenditures to repair public facilities damaged during natural events.

Evaluation: Assists with the implementation of post-disaster redevelopment plans which reduce or eliminate the exposure of human life to natural hazards.

1.2.4: Design drainage projects in CHHAs and SFHAs to lessen the potential for flood damage.

Evaluation: Assists with the implementation of drainage facility improvements which reduce or eliminate the exposure of human life to natural hazards.

1.2.5: Cooperate with Southwest Florida Water Management District (SWFWMD) and other agencies in the study and mitigation of drainage problems in CHHAs and SFHAs.

Evaluation: Promote use of best management practices. Coordinate planning and implementation of multi-jurisdictional drainage facility improvements.

Madeira Beach

Coastal Management and Conservation Elements . . .

1.2.1 Redevelopment approvals shall require that post-development runoff rates, volumes and pollutant loads do not exceed pre-development conditions.

Evaluation Reduce future loss

1.2.2 Recognize that the community is located within the 100-year flood plain, the City strictly enforces all appropriate federal, state, and regional coastal construction codes and coastal setback regulations.

Evaluation Reduces loss associated with new construction

1.2.3 The City shall protect the natural functions of the 100-year flood plain so that the flood carrying and flood storage capacity are maintained.

Evaluation Preserves the Natural Beneficial function of the flood plain

1.4.3 Land development regulations shall encourage shorelines lacking wetland vegetation to be planted with native vegetation in order to minimize potential flood damage.

Evaluation Native vegetation helps stabilize shorelines

1.6.4	Amnesty Days and other methods shall be used to facilitate the collection and disposal of individual and small business hazardous waste.
Evaluation	Reduces stock piling of hazardous materials and waste
1.8.1	No new point sources shall be permitted to discharge from the City of Madeira Beach into Boca Ceiga Bay or into ditches or canals that flow into the above named water body except for the correcting of existing inefficient sources to protect the area from rainwater flooding.
Evaluation	Controls future construction
2.1.1	As of the effective date of this Comprehensive Plan, the City of Madeira Beach shall designate the Coastal High Hazard Area as that portion of the community which is seaward of the Department of Natural Resources (DNR) Coastal Construction Control Line and the Federal Emergency Management Agency (FEMA) Velocity Zone (V-Zone).
Evaluation	Controls future construction
2.1.2	The City shall not support or finance new local transportation corridors which lie within the Coastal High Hazard Area, although existing corridors may be maintained or improved as necessary to protect the health, safety and welfare of residents.
Evaluation	Reduces infrastructure cost, maintains current densities
2.1.3	The City shall not finance and does not finance and does not support sewer and water line extensions or expansions within the Coastal High Hazard Area which will encourage future growth/higher densities in those vulnerable areas.
Evaluation	Reduces infrastructure investment, discourages high density growth
2.2.2	The City shall maintain or reduce allowable density in the Hurricane Vulnerability Zone (the entire Island community) consistent with the Future Land Use Map of this Comprehensive Plan.
Evaluation	Maintains or reduces densities
2.2.3	The City of Madeira Beach shall continue to implement the growth management directives which prohibit; development other than recreational purposes within the Coastal High Hazard Area consistent with the Future Land Use Map of the Comprehensive Plan.
Evaluation	Reduces infrastructure cost, reduces loss from development
2.4.4	Recognizing that the entire community is located within the Hurricane Vulnerability Zone and the 100-year flood plain, the City shall adopt and strictly enforce all appropriate federal, state, and local coastal construction codes, coastal setback requirements, special CCCL facility siting restrictions and floodplain management.
Evaluation	Limits potential loss

2.4.5	Special care facilities shall not be located in the Coastal High Hazard Area. Special care facilities are discouraged in the Hurricane Vulnerability Zone unless adequate provisions for safe and efficient evacuation and shelter are ensured.
Evaluation	Reduces potential life loss, reduces evacuation problems
3.3.1	Where financially feasible, property which has received recurring major hurricane damage from storm surge should be publicly acquired or designated preservation or conservation on the Future Land Use Map to prevent redevelopment of the property to its pre-hurricane land use.
Evaluation	Reduces land available for development in vulnerable areas
3.3.3	The City shall interrelate hazard and non-hazard mitigation goals during reconstruction decision-making including the following objectives; Enhancement of local recreational and open space opportunities; Enhancement of local public beach access; Enhancement and restoration of local natural ecosystems; Reduction of traffic congestion, noise, and other transportation related problem; and Enhancement of the long-term economic vitality of the local commercial base.
Evaluation	Reduces available land for development, reduces densities, provides for post disaster policies reducing future loss

North Redington Beach

Ord 6-16	Only structures meeting requirements of Building Code are allowed to be built within Town. No mobile homes are permitted. Additions and structures must meet 110 M.P.H. wind loads and floodplain regulations.
Evaluation	Reduces amount of damage from coastal flooding, storm surge and wind.
Hurricane Evacuation Implementation Guide;	Disaster Plan - In General
Evaluation	Policies and working procedures for effective coordination of property protection and life saving efforts made before, during and after a disaster. Educates residents about threats to the Town and steps needed to protect themselves and property from natural and man-made disasters.
Chapter 9	Flood prevention and control chapter; Requires all new or substantially improved construction to be above base flood elevation.
Evaluation	Limits the number of structures damaged by coastal flooding and storm surge.

Policy 101.601	Require all uses requesting development authorization to submit a site plan for review with particular emphasis on drainage retention and storm water management, open space and flood protection.
Evaluation	Allows the Town to monitor and implement storm water management to reduce flooding within the Town.
Policy 101.1001	Encourage adjacent coastal communities to reduce allowed densities and protect road carrying capacities.
Evaluation	Reduces densities in coastal areas and enhances evacuation routes, evacuation times, and evacuation shelter space availability.
Policy 101.1201	Review methods and techniques for development which reduce land coverage, storm water runoff, etc.
Evaluation	Reduces flooding potential by limiting impervious surfaces.
Policy 301.203	Rigidly enforce building and safety codes.
Evaluation	Reduces amount of damage from coastal flooding, storm surge and wind.
Policy 403.103	Require pervious paving for all non-required parking area and temporary drive areas.
Evaluation	Reduces flooding potential by limiting impervious surfaces.
Policy 403.104	Reduce paving requirement where practical.
Evaluation	Reduces flooding potential by limiting impervious surfaces.
Policy 403.105	The Town shall maintain a storm water drainage system which is capable of providing a LOS sufficient to handle a 25-year, 6-hour storm event during normal tide levels.
Evaluation	Provides for storm water retention to reduce flooding potential.
Policy 501.203	Storm water management systems shall be required of all new development and for substantial redevelopment.
Evaluation	Offsets storm water quantity and water quality impacts created by new development.
Policy 502.102	Proposed or requested increases in residential densities in evacuation areas shall document the availability of adequate public shelter spaces for the additional residents before they are approved.
Evaluation	Limits the number of persons that inhabit evacuation areas, and reduces demand for public shelter spaces.
Policy 502.103	Town shall designate an official of the Town to coordinate with the county and state in the development of emergency management plans and the dissemination of pertinent information.
Evaluation	Provides updated emergency management information to the Town to aid in its protection, and improves upon coordination during storm events.

Policy 502.201	Continue to participate in the federal flood insurance program (FEMA) including the maintenance of flood proofing development standards and by designating all areas seaward of the coastal construction line or FEMA designated V (Velocity) zones as coastal high hazard areas, limiting development in these areas through rezoning and reduction of allowed density.
Evaluation	Reduces or eliminates potential loss of life and property caused by coastal storms.
Policy 502.202	Preserve mangrove areas as protective buffers against storm winds and waves through development of protective ordinances.
Evaluation	Provides a buffer for the Town from storm surge, coastal flooding and improves erosion control.
Policy 502.204	Expansion of public infrastructure will be permitted in the coastal high-hazard areas only for the purpose of water-dependent recreation or resources restoration, to protect the health, welfare and safety of existing residents, or where there are no alternatives for meeting infrastructure deficiencies identified in the local comprehensive plan. Where possible, infrastructure shall be replaced or relocated away from these areas.
Evaluation	Limits infrastructure subject to damage in high-hazard areas.
Policy 502.205	Since no unsafe conditions or inappropriate uses presently exist in the coastal high hazard area, the Town's Building Inspector shall conduct an inspection annually to determine if any structures within the coastal high hazard area are in need of redevelopment or the correction or elimination of unsafe conditions or inappropriate uses.
Evaluation	Reduces or eliminates potential loss of life and property caused by coastal storms.
Policy 502.207	The Town shall adopt and enforce all appropriate federal, state and regional coastal construction codes, coastal setback requirements, and the state minimum building code as it deals with coastal areas.
Evaluation	Reduces amount of damage from coastal flooding, storm surge and wind.
Policy 502.303	Following a natural disaster, the Town shall appoint damage assessment teams who shall assess the effectiveness of current hazard mitigation measures and give a report on their findings to those making redevelopment decisions.
Evaluation	Provides an evaluation of existing hazard mitigation strategies to be used to improve upon responses to future natural disasters.
Policy 502.404	As a part of the development review process on all developments which are proposed for subdivision and transfer by deeds for sale, the Town shall require the developer to disclose by written statement to the purchaser, the property's relative probability of damage from hurricane surge.

Evaluation	Provides purchaser with knowledge of potential damage in area allowing them to anticipate construction costs associated with development in these areas as well as providing them with an opportunity to reduce their exposure to coastal storms and flooding.
Policy 506.101	North Redington Beach shall continue to support and foster a county-wide program for restoring and renourishing sandy beaches and dunes.
Evaluation	Provides protection from storm surge and coastal flooding.
Policy 506.201	New development shall be prohibited in the frontal dune and beach area within North Redington Beach.
Evaluation	Limits area of construction and regulates the type of construction allowed reducing potential damage from storm surge and coastal flooding.
Policy 506.202	Vehicle and foot traffic over the frontal dune systems (both natural and artificial) shall be restricted so as not to destabilize these unstable natural features.
Evaluation	Protects dune systems that provide a natural buffer from storm surge and coastal flooding.
Policy 701.301	Acquire where possible vacant land for additional public recreation/open space lands.
Evaluation	Open space limits construction and provides additional area for absorption of storm water. It also provides protection from storm surge and coastal flooding.
Policy 901.401	North Redington Beach shall discourage any future development in high hazard coastal areas and where possible shall remove these areas from development through purchase or development transfer.
Evaluation	Limits population and development within the high-hazard coastal areas and reduces or eliminates potential loss of life and property caused by coastal storms.

Oldsmar

Comprehensive Plan . . .

22.4 Infrastructure	New development and redevelopment comply with all 25 year frequency storm event
Evaluation	Reduces flooding and potential flooding
1.2.1 Coastal Cons.	Strictly enforce federal, state and regional coastal construction codes and setbacks
Evaluation	Minimize flood damage and structure damage
1.2.3 Coastal	Protect natural function of 100 year floodplain
Evaluation	Maintain floodplain as active system
2.2 Coastal	Direct population concentrations away from the designated CHHA
Evaluation	Minimize population in CHHA and potential damage
6.2.3 Land Dev	New construction and substantial improvement within SFHA to require BFE one foot above FEMA minimum
Flood Control	
Evaluation	Increase free board in SFHA

Pinellas Park

Land Development Codes . . .

Article 2	Sets forth the drainage requirements for the City of Pinellas Park
Evaluation	All new or substantially altered structures or properties must comply
18-901	Adoption of Building, Life Safety, Electrical, Gas, Mechanical, Plumbing and Housing Codes.
Evaluation	Requires that structures meet minimum building standards so that damage is reduced
18-911	Requires that all new structures be at 24 inches and above the highest elevation of any abutting road, but not less than the base flood elevation
Evaluation	Moves new structures out of the floodplain
Article 11	Adoption of National Fire Prevention Codes
Evaluation	Requires that structures meet the minimum fire codes
Article 8	Adoption of a Floodplain Management Ordinance
Evaluation	Requires that new construction or substantial improvements meet specific requirements to mitigate flood damage
Article 15	Adoption of Zoning Codes
Evaluation	Promotes appropriate utilization of land; limits nuisance and harmful impacts upon abutting properties

Article 1 Evaluation	Adoption of Subdivision Codes Promotes appropriate utilization of land; limits nuisance and harmful impacts upon abutting properties
Comprehensive Plan . . .	
POLICY D.1.2.2	Drainage channels serving drainage basins greater than one square mile shall be sized to contain a 25-year/24-hour storm event within the channel banks. Peak post-development runoff shall not exceed peak pre-development runoff rates.
Evaluation	Reduces threat of low level and street flooding during the rainy season
POLICY D.1.2.3	Closed conduit (storm sewer) systems serving drainage basins greater than one square mile shall be sized so that the hydraulic grade-line is no higher than the inlet grate, inlet throat or rim elevations for a 25-year/24-hour storm event. No surcharging will be allowed.
Evaluation	Reduces threat of low level and street flooding during the rainy season
POLICY D.1.2.4	Drainage channels serving drainage basins less than one square mile shall be sized to contain a 10-year/24-hour storm event within the channel banks. Peak post-development runoff shall not exceed peak pre-development runoff rates.
Evaluation	Reduces threat of low level and street flooding during the rainy season
POLICY D.1.2.5	Closed conduit (storm sewer) systems serving drainage basins less than one square mile shall be sized so that the hydraulic grade-line is no higher the inlet grate, inlet throat or rim elevations for a 10-year/24-hour storm event. No surcharging will be allowed.
Evaluation	Reduces threat of low level and street flooding during the rainy season
POLICY D.1.2.6	Retention or detention facilities shall be sized so that the post-development condition discharge amount does not exceed the pre-development condition discharge amount for a 25-year/24 hour storm event and one foot of freeboard is maintained.
Evaluation	Reduces threat of low level and street flooding during the rainy season
POLICY D.1.2.7	The 100-year/24-hour storm event shall be confined to streets and yards for all new construction in order to protect human life and minimize structural damage.
Evaluation	Reduces property loss due to 100-year flood; insures consistency with NFIP policies
POLICY D.1.2.10	Continue to control encroachment in the 100-year floodplain.

Evaluation	Reduces property loss due to 100-year flood; insures consistency with NFIP policies
POLICY D.1.3.9	The City through the land use planning and development review processes, shall control encroachment into the 100 year floodplain.
Evaluation	Ensures new or redeveloped properties implement flood protection measures; reduces property loss
POLICY D.1.5.4	Development shall be prohibited in areas where there is insufficient drainage facilities, unless improvements will be in place at the time of development impact. Reduces property loss through accommodating drainage before development
OBJECTIVE D.1.7	The City of Pinellas Park shall continue to guide floodplain construction, reconstruction and redevelopment within the City.
Evaluation	Ensures new or redeveloped properties meet/implant flood protection measures
POLICY D.1.7.1	The City of Pinellas Park shall implement the Floodplain Management Plan which describes ongoing activities to disseminate information about flood hazards of the area to residents.
Evaluation	Through education and implementation the public is instructed on how to prepare for and avoid damage due to flood
POLICY D.1.7.2	The Floodplain Management Plan will focus on: Availability of Public Information; Mapping and Regulatory Activities; Flood Damage Reduction Activities; and Flood Preparedness.
Evaluation	Educates the public on how to prepare or avoid damage due to flood
POLICY D.1.7.3	The City of Pinellas Park shall complete elevation certificates based upon Finished Floor Surveys (actual construction) for all buildings located within the Special Flood Hazard Area(SFHA). These completed certificates shall be maintained in hard copy form and on computer format, as provided by the Insurance Services Office (ISO).
Evaluation	Documentation of elevations in accordance with NFIP/CRS program provides for flood insurance and lower flood insurance rates for residents
POLICY D.1.7.4	The City of Pinellas Park shall provide flood zone determinations from the latest Flood Insurance Rate Maps (FIRM) to all inquirers for property located within the corporate limits of Pinellas Park.
Evaluation	Provision of information in accordance with NFIP/CRS program provides for flood insurance and lower flood insurance rates for residents

POLICY D.1.7.5	The City of Pinellas Park shall provide inquirers, upon request, verbally or in written form, the following information from the latest FIRM: Community Number; Panel Number and Suffix; Map Revision Date; The FIRM Zone; Base Flood Elevation.
Evaluation	Provision of information in accordance with NFIP/CRS program provides for flood insurance and lower flood insurance rates for residents
POLICY D.1.7.6	All properties located in an SFHA, the City of Pinellas Park shall inform the inquirer that the purchase of flood insurance is mandatory according to the Flood Disaster Protection Act of 1973.
Evaluation	Provision of information in accordance with NFIP/CRS program provides for flood insurance and lower flood insurance rates for residents
POLICY D.1.7.7	The City of Pinellas Park shall be responsible for the review of all development and redevelopment site plans and construction plans for compliance with Stormwater Management regulations.
Evaluation	Reduces loss due to flood
OBJECTIVE D.1.8	The City shall continue to educate the community and enhance residents' awareness and preparedness of flood hazards in the City of Pinellas Park in accordance with FEMA Regulations.
Evaluation	Provision of information in accordance with NFIP/CRS program provides for flood insurance and lower flood insurance rates for residents
POLICY D.1.8.1	The City of Pinellas Park shall conduct outreach projects which are produced and distributed throughout the community to enhance residents awareness and preparedness of flood hazards.
Evaluation	Provision of information in accordance with NFIP/CRS program provides for flood insurance and lower flood insurance rates for residents
POLICY D.1.8.2	A floodplain information section of the City of Pinellas Park Newsletter shall be mailed annually to all addresses within the City.
Evaluation	Provision of information in accordance with NFIP/CRS program provides for flood insurance and lower flood insurance rates for residents
POLICY D.1.8.3	A Floodplain Notice will be prepared and mailed annually to all addresses within the City located in an SFHA. The distribution of this document shall coincide with the start of the rainy season.
Evaluation	Provision of information in accordance with NFIP/CRS program provides for flood insurance and lower flood insurance rates for residents
POLICY D.1.8.4	The Floodplain Notice shall contain information on the following subjects: Local Flood Hazard; Local Flood Hazard Map; Local Flood Warning System; Flood Safety; Flood Insurance; Property Protection;

	Permit Requirements Substantial Improvement Requirements; and Drainage Maintenance.
Evaluation	Provision of information in accordance with NFIP/CRS program provides for flood insurance and lower flood insurance rates for residents
POLICY D.1.8.5	The City of Pinellas Park shall maintain and annually update in the Reference Section of the public library the following information: a copy of the Flood Insurance Rate Map with an explanation of its use; documents on flood insurance; documents on retrofitting flood prone buildings; documents on community floodplain management and flood hazard mitigation; and a directory of addresses and telephone numbers of local offices that can provide additional information on the above topics.
Evaluation	Provision of information in accordance with NFIP/CRS program provides for flood insurance and lower flood insurance rates for residents
POLICY D.1.8.6	The City of Pinellas Park shall provide the following flood protection assistance: <ul style="list-style-type: none"> a. Site-specific flood and flood related data such as floor elevations, data on historical flooding in the neighborhood, or other similar information that is available; b. Information on how to select a qualified contractor and what recourse people have if they are dissatisfied with a contractor's performance. c. Site visits to review flooding, drainage and storm sewer problems and provide one-on-one guidance to the property owner. d. Guidance and assistance on retrofitting techniques to the property owner.
Evaluation	Provision of information in accordance with NFIP/CRS program provides for flood insurance and lower flood insurance rates for residents
POLICY D.1.8.7	The City of Pinellas Park shall develop and maintain digitized FIRM maps. These maps shall be updated to include all new revisions to the City's FIRMs, Letters of Map Amendments and Letters of Map Revisions and any changes as appropriate.
Evaluation	Ensures that the public is informed about flood hazard and how to address flood hazards
POLICY D.1.8.8	The City of Pinellas Park shall maintain a database in which the following information is tracked: <ul style="list-style-type: none"> a. Whether the property is located in an SFHA; b. The specific flood zone of the property; and c. The base flood elevation, if applicable. This information shall be updated to include all new revisions to the City's FIRMs, Letters of Map Amendments, Letters of Map Revisions and any changes as appropriate.

Evaluation	Ensures that best possible data is used regarding new development and redevelopment in the City. Use of this data ensures that appropriate construction methods are used and insurance purchased
POLICY D.1.8.10	The City of Pinellas Park shall update the Pinellas Park Disaster Operations Plan annually.
Evaluation	Ensures coordination with Pinellas County Emergency Management
OBJECTIVE D.1.9	The City shall continue to maintain an operationally effective drainage system through inspections and routine maintenance.
Evaluation	Ensures a properly functioning drainage system that won't back up and cause flooding
POLICY D.1.9.1	The City of Pinellas Park shall be responsible for inspection, maintenance, and removal of debris from the City's drainage system and shall include those canals, ditches, channels, stream enclosures, culverts, bridge openings, street gutters, underground storm sewers, inlets, catch basins and any retention basins over which the City has jurisdictional authority.
Evaluation	Ensures a properly functioning drainage system that won't back up and cause flooding
POLICY D.1.9.2	The City of Pinellas Park will conduct annual inspections of the drainage system and maintain records of inspections and debris removal.
Evaluation	Ensures a properly functioning drainage system that won't back up and cause flooding
POLICY D.1.9.3	The City of Pinellas Park shall prohibit anyone from throwing any garbage, trash or refuse in any stream or other body of water.
Evaluation	Ensures a properly functioning drainage system that won't back up and cause flooding
POLICY LU.1.6.1	The density and/or intensity of use shall not be increased within flood hazard areas.
Evaluation	Limits the exposure to flood damage
OBJECTIVE LU.1.16	In recognition of the fact that a portion of the City of Pinellas Park is located within the Coastal High Hazard Area (CHHA), as defined by Section 9J-5.003(19), F.A.C., the City shall, to the extent practical, limit public expenditures that subsidize development only to existing or future development which is consistent with the Future Land Use Map adopted with this plan.
Evaluation	Limits the exposure to flood damage
POLICY LU.1.16.1	Recognizing that the CHHA within the City of Pinellas Park lies within the 100 year floodplain of the Cross Bayou Canal, the City shall enforce all appropriate federal, state, and local construction codes appropriate for such location.
Evaluation	Limits the exposure to flood damage

POLICY LU.1.16.2	The City shall maintain the adopted densities or intensities and continue to implement growth management measures which limit densities or intensities of use within the CHHA consistent with the Future Land Use Element of this Comprehensive Plan.
Evaluation	Limits the exposure to flood damage
POLICY LU.1.16.3	The City shall not finance new local transportation corridors or sewer and water line extensions which would encourage increased densities or intensities that lie within the CHHA, except as necessary to protect the health, safety, and welfare of the public.
Evaluation	Limits the exposure to flood damage

Redington Beach

Resolution 91-40 Evaluation	Substantial Improvement Policy Cumulative 50% rule over five year period/reduce risk, flood damage
Ordinance Sec. 10 Evaluation	Flood Prevention and Protection Protect human life, health, and property. Minimize damage to public facilities, sewer lines, and utilities
Ordinance 10-72 Evaluation	Elevation above BFE Reduce vulnerability to natural disasters. Protect lives and property.
Ordinance 15-56 Evaluation	Adoption of Comprehensive Plan Establishes policies and procedures, future land use map, land use definitions
Ordinance 7-3 Evaluation	Level of Service Standards Potable water, solid waste, sanitary sewers, as set forth in the Comprehensive Plan
Ordinance 15-58 Evaluation	Water Management Regulations Control and storage of all surface water, flood prevention and protection
Ordinance 19-4 Evaluation	Use of Swale Areas Control flooding, drainage by percolation
Ordinance 6-59 Evaluation	Submission of Drainage Plan Required building permit for new construction and major alterations

Redington Shores

Comprehensive Plan . . .	Establishes current and future land use
Evaluation	Restricts density levels on all future development
	Defines impervious surface percentage on construction
Evaluation	Assist in storm water management
Ordinance 82-3	Creates recreation and open space Capital Asset Fund
Evaluation	Removes land from higher density development and reduces risk of loss of property and life from natural disaster
Resolutions . . .	
10-92	Repetitive Loss Plan
Evaluation	Assists and educates homeowners in building methods available to remove their property from repetitive loss list
5-94	Mutual Aid Compact for Disaster Recovery Plan
Evaluation	Not tested at this time
11-94	Sand Key Renourishment Project
Evaluation	Provides additional protection along beaches from natural disasters
13-95	Federal Assistance in restoring storm ravaged beaches
Evaluation	Provides additional protection along beaches from natural disasters
2-96	Florida Legislature to provide funds for preservation and repair of State beaches
Evaluation	Makes coastal communities less vulnerable to natural disasters and protects the economy of these areas
5-97	To create a dedicated funding source for Statewide Beach Management
Evaluation	Provide storm protection for coastal area and properties. Protects against critical erosion
9-97	Supports FDOT in improvements to Gandy/Park Boulevard's evacuation corridor
Evaluation	Critical regional hurricane/natural disaster evacuation route
16-97	New sanitary sewer lines
Evaluation	Will enhance continued operations during flooding and in resuming sewer operations in post disaster recovery.
17-97	Floodplain Management Plan
Evaluation	Will ensure compliance with P&Z Board of Adjustments and Building Codes and establish goals to make the community less vulnerable to natural disasters

3-98 Evaluation	Extension of Pennies for Pinellas Will provide funds to build new public facilities and refurbish existing ones so they will be in conformance with current NFIP/FEMA Requirements
Building Codes Evaluation	Conforms with wind load, substantial improvement, substantial damage, building materials, NFIP and FEMA Requirements Makes the community less vulnerable to natural disasters
Floodplain Mgt Evaluation	Actively seeks out and assists owners of repetitive loss properties to apply for grants to put their property in conformance with current NFIP/FEMA Standards Forwarded 10-15 applications under FMAP. Awarded \$44,000 grant for this purpose
Floodplain Mgt. Evaluation	To engineer necessary improvements in storm water runoff and seek state assistance in funding. Currently a finalist for a \$400,000 grant for this purpose

Safety Harbor

Comprehensive Plan 1.8.2 Evaluation	Future Land Use Element Policies . . . Requires review of soil suitability as part of development review Ensures protection measures where unsuitable soils exist
1.8.9 Evaluation	Requires preservation of stream corridors and coastal vegetation Natural functions of these areas preserved
1.9.1 1.9.2 1.9.4 Evaluation	Requires compliance with National Flood Insurance Program for flood plains & flood ways Reduce loss associated with new construction
2.1.2 Evaluation	Directs population away from coastal high hazard areas reduces densities in coastal high hazard areas; ensures that densities stay low
2.1.4 Evaluation	Requires preparedness planning and implementation of hazard mitigation techniques Reduces exposure through disaster planning and hazard mitigation
2.1.5 Evaluation	Requires use of available Hazard Mitigation Reports Provides for learning from hazard experiences of other jurisdictions
Comprehensive Plan 1.1.1;1.8 15 2.2 Evaluation	Future Land Use Element Policies/Coastal & Conservative Elements . . . Minimize development in high risk areas, such as hurricane velocity zone. Requires low intensity development in hazardous areas

1.8.5;1.8.6 1.3.3;1.3.4 Evaluation	Requires preservation of wetlands Natural functions of wetlands preserved
1.9.3 1.3.7 1.4.3 1.8.1 1.8.2 Evaluation	Encourages use of native vegetation to stabilize shorelines Reduces damage from manmade erosion control structures (i.e. seawalls)
2.1.1 2.1 Evaluation	Limits public expenditures in coastal high hazard areas Reduces investment in infrastructure
Comprehensive Plan 1.5 Evaluation	Infrastructure Element . . . Requires Hazardous Waste Ordinance provides inventory and containment of known hazardous waste sites for Fire Officials
2.1 Evaluation	Requires Master Drainage Plan Studies and capital improvements to improve drainage corridors and reduce flooding
2.3.3 Evaluation	Requires use of Storm water Utility Fee Provides dedicated funding for improved maintenance of drainage system.
Comprehensive Plan 1.2 Evaluation	& Coastal Conservation Element . . . Requires enforcement of Flood Protection Ordinance Reduces loss from inappropriate development in the flood plain
1.2.7 Evaluation	Requires participation in the NFIP/CRS Program Provides incentive for voluntary programs to reduce loss and reduce coast of flood insurance
2.1.1 Evaluation	Designates coastal high hazard area as that area which evacuates in a Category One storm Provides geographic area for coastal high hazard area policies
2.2.1; 2.2.2 Evaluation	Defines an area vulnerable to hurricanes and requires the maintenance or reduction of densities Maintains or reduces densities
2.2.4 Evaluation	Implements a public land acquisition program in vulnerable areas Reduces amount of land area available for development in vulnerable areas
2.4.4 Evaluation	Prohibits new special care facilities in coastal high hazard areas and places restrictions in vulnerable areas Limits new facilities that are difficult to evacuate in hazardous areas
3.3.1	Encourages purchasing property that has recurring damage from storms

Evaluation	Reduces future losses
2.4.6 2.4.7 3.1.2 3.3.3 Evaluation	Establishes strategies for post disaster redevelopment Implements post disaster mitigation policies to reduce future loss

Land Development Code Sections . . .

53.00-53.01 Evaluation	Establishes wetlands protection measures and shoreline buffers Preserves natural functions of floodplain and increases setbacks for structures along water bodies/wetlands
170.00 Evaluation	Establishes criteria for hurricane evacuation impact study Requires use of structure mitigation and other mitigation strategies where shelter deficit exists
City Code . . .9 Evaluation	Flood Prevention and Control Ordinance Requirements for construction/reconstruction in 100 year floodplain - designed to reduce loss
9.04 Evaluation	Requires cumulative substantial improvement over the life of the structure (50%) rule Protects additions from greater loss
9.18 Evaluation	Requires any addition regardless of 50 % rule to meet base flood elevation Protects additions from greater loss
SWFWMD Permit Evaluation	Requires no net encroachment in 100 year floodplain Preserves natural beneficial function of floodplain

Seminole

Comp. Plan '98 Evaluation	The City of Seminole Comprehensive Plan is under extensive revision due to EAR Process, but is similar to Safety Harbor Generally and specifically seeks to minimize the threat to health, welfare, and safety posed by hazards, incompatible land use, and environmental degradation.
Emerg. Ops '97 Evaluation	Establishes City's officially adopted mitigation, preparedness, response, and recovery plans for all hazards Identifies documents and coordinates City's official emergency management play by Ordinance June 27, 1997.
Land Dev. 5-91 Evaluation	Restricts zoning, land use and development consistent in FEMA/FIRM Reduces vulnerability to health, welfare, and safety due to flooding in designated areas.

South Pasadena

502.308 Evaluation	To the maximum extent feasible redevelopment in the V zone should be transferred outside of V zone Limits potential loss
502.309 Evaluation	Post disaster redevelopment of structure with 50% damage must consider removal relocation and structural modification Limits potential loss
Comp. Plan 502.4 Evaluation	Discourage redevelopment in the V zone
504.104 Evaluation	Require review procedure to examine proposed project impact on area evacuation times
901.103 Evaluation	Eliminating hazard to public safety shall be top priority in funding capital improvements
Ch 108 City Code Evaluation	Flood damage Prevention Chapter City Code requires elevation of residential structures and elevation for flood proofing of commercial structures
Ch 130 CC 69-76 Evaluation	Storm water runoff control requires retrofit of all redevelopment to retain storm water on site. Reduces flooding
502.207 Evaluation	Stringently enforce all adopted building codes Results in construction of structures which can survive storms
502.301 Evaluation	Post disaster permitting shall require Commission review if 50% or more of a structure is damaged Reduces repetitive loss by requiring
502.302 Evaluation	Consider temporary moratorium on permits following a natural disaster
502.303 Evaluation	Appoint a damage assessment team Ensures structure damaged more than 50% are not built back or built to higher standards
502.304 Evaluation	Establishes repair priorities beginning with repair of immediate hazards, public infrastructure damaged property Ensures structure damaged more than 50% are not built back or built to higher standards

502.305 Evaluation	Limits repair of infrastructure to pre-disaster capacity Limits potential loss
502.306 Evaluation	Limits redevelopment to areas where public services and facilities have been restored Limits potential loss
502.307 Evaluation	Requires expertise in damage assessment team membership Limits potential loss
502.104 Evaluation	Participate in developing emergency management plans Reduces likelihood of loss of life
502.105 Evaluation	Consider the evacuation level and location of any proposed development Reduces likelihood of loss of life
502.201 Evaluation	Stringent enforcement of minimum elevation and flood proofing standards of City Code Has limited the number of homes and businesses in flood plain
502.202 Evaluation	Preserve mangrove areas as protective buffers against storm winds and waves Reduces storm damage
502.203 Evaluation	Encourage state funding for public acquisition of property damaged in natural disasters Reduces repetitive loss
502.204 Evaluation	Limit expansion of public infrastructure in coastal high hazard areas Limits potential loss
502.205 Evaluation	Redevelopment in coastal high hazard areas shall emphasize the use of hazard mitigation measures including relocation of structures Limits potential loss
502.206 Evaluation	New development in coastal high hazard are shall be designated as suitable only for reduced density Limits potential loss
403.103 Evaluation	Require pervious paving for all non required parking Reduced potential flooding
403.104 Evaluation	Require 10% of required parking to be permeable paving Reduced potential flooding
403.204 Evaluation	The City shall maintain a storm water drainage system capable of providing an LOS sufficient to handle a 25 year 6 hour storm event Reduced potential flooding

403.206	Post development peak rate of surface discharge shall not exceed historic rates
Evaluation	Reduced potential flooding
403.302	Storm water management systems shall be required for all new development or redevelopment involving more than 25% of building site
Evaluation	Reduced potential flooding
502.101	Support MPO in construction of improvements to critical links in evacuation routes
Evaluation	Reduces likelihood of loss of life
502.102	Develop and equip an emergency fallen tree and pole removal team for evacuation routes
Evaluation	Reduces likelihood of loss of life
502.103	Appoint a representative to work with TBRPC and County to assure adequate shelter space
Evaluation	Reduces likelihood of loss of life
101.402	All requests for land use amendments shall consider potential hazards such as flooding
Evaluation	
101.601	Require site on drainage retention, storm water management flood protection
Evaluation	Has limited the number of homes and businesses subject to flooding
101.802	Consider the purchase of properties which provide undesired densities
Evaluation	Has resulted in high density property located in the V zone being acquired
101.1001	Deny development authorization to any development which would impede existing emergency evacuation systems
Evaluation	No such projects have been proposed
101.1002	Coordinate coastal areas population with regional hurricane evacuation plan
Evaluation	City population has risen less than 3% in past decade
101.1404	The reconstruction of any legally non-conforming residential structure shall adhere to all development regulation in effect at the time the development order is issued
Evaluation	Has limited the number of structure subject to flooding

401.101	Replace one City lift station every other year until all lift stations are flood proof. Provide sealed manholes in flood prone area
Evaluation	Two lift station out of six have been flood proofed
401.201/401.101	Require on site retention for all new and remodeled development in the City
Evaluation	Reduced potential flooding.

St. Pete Beach

FUTURE LAND USE ELEMENT

GOAL 2	The promoting of sound coastal management shall be encouraged to ensure that maximum long-term benefits are attained in the use of the coastal zone by the residents of and visitors to the City of St. Pete Beach.
EVALUATION	Ensures the long-term protection and stability of the coastal area.
Objective 2.1	The City shall continue to participate with the City of Treasure Island and Pinellas County, and appropriate state and federal agencies in the implementation of a coastal management plan.
EVALUATION	Ensures intergovernmental cooperation and coordination of efforts to protect the coastal area.
Policy 2.1.1	Through the implementation of land development code regulations, beach areas will continue to be protected and restored to their natural state to the fullest extent possible, while only encouraging beach re-nourishment projects that are in the overall public interest.
EVALUATION	Provides for a mechanism to ensure the protection of the coastal areas.
Policy 2.1.2	The land development regulations shall ensure that all development along the coastline is in accordance with the Coastal Construction Control Line as established by the State of Florida, City of St. Pete Beach, or other appropriate governmental agencies.
EVALUATION	Includes the both the City of St. Pete Beach and the State Coastal Construction Control Line regulations as part of the local land development regulations.
Policy 2.1.3	The City of St. Pete Beach will re-evaluate its Coastal Construction Control Line from time to time in order to measure its effectiveness.
EVALUATION	Ensures the continued effectiveness of the local Coastal Construction Control Line.
Policy 2.1.4	The land development regulations shall ensure that all development or any other activities which disturb the coastal dune system are prohibited except when a proper permit has been issued that will include provisions to ensure that the dune system is maintained through restoration and enhancement.
EVALUATION	Ensures the reparation of damaged dunes and the enhancement of the dune system where needed.

Policy 2.1.5	The Beach Management Regulations shall be enforced to ensure for the restoration and maintenance of the coastal dune system on new developments or redevelopment projects.
EVALUATION	Sets forth the timing of restoration and enhancement of dunes.
Policy 2.1.6	Sensitive coastal resources shall be protected, through provisions contained in the land development regulations, from degradation and erosion resulting from improper development practices and recreational misuse.
EVALUATION	Protects the beaches from damage caused by development and misuse.
Policy 2.1.7	Beach stabilization projects, using appropriate vegetation as the stabilizing medium, shall be incorporated into development plans, where appropriate.
EVALUATION	Encourages the use of appropriate stabilizing vegetation to protect the coastal areas.
Policy 2.1.8	The land development regulations shall include provisions whereby sand dunes are protected and enhanced and native vegetation shall be planted to stabilize shorelines and protect upland areas from flooding hazards.
EVALUATION	Ensures that measures will be taken to stabilize shorelines and mitigate flood damage.
Policy 2.1.9	The City shall protect the public health, safety and welfare by requiring that development in high-risk areas, such as the hurricane velocity zone, meets all current construction standards and by fully supporting Coastal Construction Zone limitations.
EVALUATION	Ensures that construction standards will be used to mitigate coastal hazards.
GOAL 3	The City, in cooperation with Pinellas County and neighboring communities, establish an effective and workable hurricane evacuation plan.
EVALUATION	Ensures intergovernmental cooperation and coordination with respect to hurricane evacuation planning.
Objective 3.1	Recognizing its vulnerability to the effects of tropical storms, the City shall maintain an up-to-date hurricane evacuation plan.
EVALUATION	Ensures the on-going updating and maintenance of an effective hurricane evacuation plan for the City.
Policy 3.1.1	Because the entire community is located within the identified coastal high hazard area, as redefined by Rule 9J-5, Florida Administrative Code, the City shall, to the extent practical, limit public expenditures that subsidize development only to existing development or new development, thus limiting population growth, consistent with the Future Land Use Map.

EVALUATION	Ensures that the City will limit public expenditures in the coastal high hazard area where possible.
Policy 3.1.2	The Hurricane Evacuation Plan will set forth hurricane clearance times which will either be maintained or reduced.
EVALUATION	Ensures an on-going effort to reduce evacuation times.
Policy 3.1.3	The risk of exposure of human life and public and private property to natural disasters shall be reduced through preparedness planning and implementation of hazard mitigation measures.
EVALUATION	Ensures a continuous effort to work towards hazard mitigation measures.
Policy 3.1.4	The City shall coordinate plans for evacuation of coastal area populations with appropriate local or regional hurricane evacuation plans.
EVALUATION	Ensures intergovernmental coordination of hurricane planning
Policy 4.1.1	The City shall adopt and implement land development regulations which recognize the limitations of development on a barrier island, including its location in the 100-year flood plain, its vulnerability to tropical storms, and its topography and soil conditions.
EVALUATION	Ensures that the land development regulations recognize the need to include regulations appropriate to hazard mitigation.
Policy 4.1.2	<p>The City shall adopt and implement land development regulations that contain specific and detailed provisions required to implement this comprehensive plan, as amended, which, at a minimum shall:</p> <ul style="list-style-type: none"> - Regulate the subdivision of land: - Protect the limited amount of marine wetlands remaining in the community and those lands designated as Preservation on the Future Land Use Map; - Regulate signs - Ensure that all future development is consistent with Federal Emergency Management Agency regulation - Ensure that all future development is consistent with any coastal construction control regulations as may be adopted and/or amended by the State of Florida, Pinellas County, or the City of St. Pete Beach - Ensure the compatibility of adjacent land uses by requiring adequate and appropriate buffering between potentially incompatible uses - Ensure that development permits are issued only when it has been documented that such development is consistent with the level of service standards for the affected public facilities adopted by this comprehensive plan - Provide for improved drainage and storm water management by requiring compliance with the minimum criteria established by the Southwest Florida Water Management District, the City of St. Pete Beach Drainage Ordinance, the regulations of other

appropriate governmental agencies and the Pinellas County Master Drainage Plan

- Provide requirements for the provision of open space safe and convenient on-site traffic flow and parking requirements
- Encourage the use of native vegetation in the landscaping of multi-family and commercial developments
- Provide regulations requiring the control of erosion and runoff from construction sites
- Encourage land development which highlights scenic amenities and ensures public access to the waterfront

EVALUATION Ensures that the City will implement land development regulations that are consistent with hazard mitigation policies of the Comprehensive Plan and other agencies' policies.

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Policy 4.1.3 The City shall adopt land development regulations that shall prohibit the re-platting of existing recorded platted lots for the purpose of increasing the development density within existing single-family residential areas.

EVALUATION Ensures that single-family densities will not be increased through the platting process.

COASTAL AND CONSERVATION ELEMENT

Objective 1.2 Regulations for development within the 100-year flood plain shall be strictly enforced.

EVALUATION Ensures enforcement of flood hazard mitigation measures.

Policy 1.2.1 New development or redevelopment approvals shall require that post-development run-off rates, volumes and pollutant loads do not exceed redevelopment conditions.

EVALUATION Ensures that new development projects will not increase flood hazards.

Policy 1.2.2 Recognizing that the community is located within the 100-year flood plain, the City shall adopt and strictly enforce all appropriate federal, state, and regional coastal construction codes and coastal setback regulations.

EVALUATION Ensures implementation of measures to enforced all regulations and policies relating to hazard mitigation.

Policy 1.2.3 The City shall protect the natural functions of the 100-year flood plain so that the flood-carrying and flood storage capacity are maintained.

EVALUATION Ensures the protection of natural flood mitigation.

Policy 1.4.3 The City shall encourage shorelines lacking wetland vegetation to be planted with native vegetation in order to minimize potential flood damage, stabilize the shoreline and trap sediments and other non-

	point source pollutants, and provide additional habitat for fish and wildlife.
EVALUATION	Ensures measures to protect the natural shoreline and water quality.
Objective 1.9	In accordance with this Comprehensive Plan, the City of St. Pete Beach shall protect and restore its beaches, dunes and natural system and establish construction standards which minimize the impacts of man-made structures on these systems through the land development regulations.
EVALUATION	Ensures that regulatory measures will protect the coastal areas.
Policy 1.9.1	Construction seaward of the Coastal Construction Control Line shall be subject to the permitting procedures pursuant to Chapter 161 of the Florida Statutes.
EVALUATION	Ensures that state permits will be required for activities seaward of the Coastal Construction Control Line.
Policy 1.9.2	Where existing waterways are not sea walled, native marine vegetation shall be used for shoreline stabilization where technically feasible.
EVALUATION	Ensures that, where feasible, native marine vegetation will be used to stabilize the shoreline.
Policy 1.9.3	Dune preservation shall be required by development regulations to protect the primary dunes, and which shall address prohibitions on excavations, destruction of native vegetation, and other activities which affect the natural fluctuation of the dunes.
EVALUATION	Ensures the preservation of the dunes along the Gulf of Mexico within the City.
Policy 1.9.4	The City shall continue a program for the restoration and maintenance of the coastal dune system. The program shall include: <ul style="list-style-type: none"> - Stabilization projects utilizing native vegetation - Develop an educational program emphasizing the need to protect the coastline - Construction of dune walkover structures
Evaluation	Ensures the City will continue it's program to restore and enhance the public beaches.
Goal 2	The City shall provide a set of guidelines for development that protects the lives and property of its residents from the effects of natural disasters.
EVALUATION	Ensures that the City will continue its program to implement measures aimed at the protection of life and property from natural hazards.
Objective 2.1	In recognition of the fact that the entire community is located within the identified coastal high hazard area, as redefined by Rule 9J-5, Florida Administrative Code, the City shall, to the extent practical, limit public expenditures that subsidize development only to existing

EVALUATION	development or new development, thus limiting population growth, consistent with the Future Land Use Map as adopted Ensures that public moneys will not serve to subsidize over-development of the coastal areas.
Policy 2.1.1	As of the effective date of this Comprehensive Plan, the City of St. Pete Beach shall designate the coastal high hazard area as that portion of the community which is seaward of the State Coastal Construction Control Line and the Federal Emergency Management Agency (FEMA) Velocity Zone (V-Zone).
EVALUATION	Sets forth the designated coastal high hazard area.
Policy 2.1.2	The City shall not support or finance new local transportation corridors which lie within the coastal high hazard area, although existing corridors may be maintained or improved as necessary to protect the health, safety and welfare of existing residents.
EVALUATION	Ensures that while existing transportation corridors will be maintained, no new corridors will be created; thereby limiting increased population growth in the coastal high hazard area.
Policy 2.1.3	The City shall not support or finance sewer and water line extensions or expansions within the coastal high hazard area, which will encourage future growth/higher densities in those vulnerable areas
EVALUATION	Ensures that other infrastructure construction will be used to promote increased development in the coastal high hazard area.
Policy 2.1.4	The City shall continue to plan and fund infrastructure and services consistent with the level of service adopted herein and shall ensure that permits for development and redevelopment activities are issued only if public facilities necessary to meet the level of service standards adopted pursuant to this Comprehensive Plan are available concurrent with the impacts of the development.
EVALUATION	Ensures that public expenditures on infrastructure will only maintain level of services standards and not promote increased development activities.
Objective 2.2	Because the entire community is located within the coastal high hazard area, the City shall require appropriate development and construction standards to mitigate the adverse effects of coastal hazards
EVALUATION	Ensures that new construction will address hazard mitigation strategies.
Policy 2.2.1	The City of St. Pete Beach, acknowledging its particular vulnerability to coastal hazards as a barrier island community, recognizes the entire City within the "Hurricane Vulnerability Zone" and the first geographic area to be evacuated in the event of a hurricane threat
EVALUATION	Ensures the City's awareness of its vulnerability to coastal hazards.
Objective 2.3	The City shall maintain or reduce hurricane evacuation times.

EVALUATION	Ensures an on-going program to reduce storm vulnerability.
Policy 2.3.1	The City shall coordinate with state, regional and county agencies to ensure that major evacuation routes are adequately maintained and, when necessary, improved to facilitate an efficient and safe evacuation.
EVALUATION	Ensures intergovernmental cooperation in hazard mitigation planning.
Policy 2.3.2	The City, in cooperation with the Pinellas County Department of Civil Emergency Services and the South Pinellas County Chapter of the American Red Cross shall sponsor annual hurricane preparedness seminars to increase hurricane awareness.
EVALUATION	Ensures that the City will provide annual programs to provide public awareness of the coastal hazard.
Policy 2.3.3	City emergency response personnel and volunteers shall coordinate with county and state emergency response agencies in emergency planning, including communications, traffic control and warning operations, to effect a safe and efficient evacuation of the City
EVALUATION	Ensures inter-agency cooperation and coordination of emergency response activities relating to hurricane evacuations.
Policy 2.2.2	The City shall maintain allowable densities in the Hurricane Vulnerability Zone (the entire island community) consistent with the Future Land Use Map of this Comprehensive Plan.
EVALUATION	Ensures that the City will not increase development densities beyond those called for by the Comprehensive Plan.
Policy 2.2.3	The City shall require a coastal hazard disclosure statement on all real estate transfers or leases.
EVALUATION	Ensures that new residents will be made aware of the coastal hazard areas.
Objective 2.4	The City shall continue to try to reduce the risk of exposure of human life and public and private property to natural disasters through preparedness planning and implementation of hazard mitigation measures.
EVALUATION	Ensures an on-going effort by the City to reduce hazard vulnerability.
Policy 2.4.1	The City, in coordination with other agencies, shall continue to maintain and update its local Hurricane Plan.
EVALUATION	Ensures annual updates to hazard mitigation measures.
Policy 2.4.2	The emergency management coordinator, as designated by the City, shall oversee the maintenance and ongoing updates of the hurricane plan; act as a liaison between state, regional, county and city emergency response and planning agencies; and ensure coordination between emergency management and development activities in the City.

EVALUATION	Appoints a City Official to assume the responsibility for coordinating hazard mitigation strategies.
Policy 2.4.3	The City shall periodically review existing coastal construction building codes and implement changes to the standards as are found appropriate and useful.
EVALUATION	Ensures maintenance of high construction standards relating to the mitigation of hazards.
Policy 2.4.4	Recognizing the entire community is located within the Hurricane Vulnerability Zone and the 100-year flood plain, the City shall adopt and strictly enforce all appropriate federal, state, and local coastal construction codes, and coastal setback requirements, as amended.
EVALUATION	Ensures enforcement of the hazard mitigation regulations and requirements of other agencies in addition to local requirements.
Policy 2.4.5	Special care facilities shall be permitted with the City provided that verification is provided that adequate provisions for safe and efficient evacuation and sheltering are assured.
EVALUATION	Limits the location of special care facilities within the hazard area.
Policy 2.4.6	The City shall continue to participate, through available programs, with other federal, state and local agencies in seeking, developing, improving and implementing hazard mitigation strategies.
EVALUATION	Ensures an intergovernmental effort to find and implement hazard mitigation strategies.
Goal 3	The City shall work to expedite post-disaster recovery and reduce the future risk to human life, and public and private property from natural hazards through recovery and redevelopment strategies
EVALUATION	Ensures that emergency procedures will be in place to handle post-disaster recovery.
Objective 3.1	The City shall have a Recovery Task Force to provide preliminary damage assessments and direct post-disaster recovery and redevelopment activities.
EVALUATION	Provides for the establishment of task force to oversee post-disaster recovery.
Policy 3.1.1	The Recovery Task Force shall consist of the City Emergency Management Coordinator, the Building and Inspection Department and other members as appointed by the City Commission.
EVALUATION	Establishes who will serve on the recovery task force.
Policy 3.1.2	The Recovery Task Force shall fulfill the following responsibilities, as well as others deemed necessary: <ul style="list-style-type: none"> - Asses preliminary damage reports - Take necessary steps to seek financial assistance from the appropriate state and federal agencies

- Authorize immediate clean-up and repairs necessary to protect the public health, safety and welfare,
- Identify areas within the community where minor, moderate and major damage has occurred
- Recommend to the City Commission appropriate hazard mitigation policies that should be implemented in response to the disaster
- Prepare a report evaluating post-disaster redevelopment responses and make recommendations for necessary changes to this Comprehensive Plan

Evaluation Sets forth the responsibilities of the post-disaster recovery task force.

Objective 3.2 In order to effectively manage the timing and sequence of reconstruction, the City will establish, in advance, a set of reconstruction permitting procedures and shall continue to review key reconstruction and redevelopment strategies which will be considered to promote hazard mitigation.

EVALUATION Ensures that special permitting procedures will be in place during emergency situations.

Policy 3.2.1 Following a major hurricane event, the City Council will adopt a temporary post-disaster building moratorium to allow sufficient time for immediate damage assessment, the identification of redevelopment opportunities, and hazard mitigation policy implementation. The time period and type of moratorium will be decided by the City Commission.

EVALUATION Ensures that proper damage assessments can be made prior to the recovery process beginning.

Policy 3.2.2 The City shall adopt a post-disaster procedure that will expedite permitting for minor repairs. The procedure shall include development plan review, engineering approval and building permitting and shall provide that all permitting is coordinated with the appropriate agencies and consistent with the objectives of this Comprehensive Plan.

EVALUATION Provides for separate measures are in place to permit minor repairs that will limit additional damage to properties.

Objective 3.3 The City shall enact key reconstruction and redevelopment strategies which will promote hazard mitigation applicable to St. Pete Beach.

EVALUATION Ensures that the City will implement hazard mitigation strategies during the post-disaster recovery process.

Policy 3.3.1 Where feasible, property which has received recurring major hurricane damage from storm surge should be publicly acquired or designated conservation on the Future Land Use Map to prevent redevelopment of the property to its pre-hurricane land use.

EVALUATION Ensures that measures will be implemented where possible to reduce repetitive losses.

Policy 3.3.2	The City shall consider one or more of the following strategies in those areas which receive major or moderate damage: <ul style="list-style-type: none"> - Relocation further inland (away from the coast) - Reconstruction according to more stringent building and construction standards
Evaluation	Sets forth basic strategies to implement mitigation
Policy 3.3.3	The City shall interrelate hazard and non-hazard mitigation goals during reconstruction decision-making including the following objectives: <ul style="list-style-type: none"> - Enhancement of local recreational and open space opportunities; - Enhancement of local public beach access; - Enhancement and restoration of local natural ecosystems - Reduction of traffic congestion, noise and other transportation related problems - Enhancement of the long-term economic vitality of the local commercial base.
Evaluation	Ensures that hazard mitigation requirements during post-disaster reconstruction will not conflict with the public interests in other facilities.
Policy 3.3.4	The City shall establish performance standards which allow for the redevelopment of sensitive historic resources providing some portion of the said resource is still existing and can safely be returned to its natural pre-hurricane state.
EVALUATION	Ensures that post-disaster recovery effort will include procedures so that historic resources will not be lost.

CAPITAL IMPROVEMENTS ELEMENT

Objective 1.4	In recognition of the fact the entire community is located within the identified coastal high hazard area, as redefined by Rule 9J-5, F.A.C., public expenditures that subsidize development in coastal high hazard areas shall be limited, to the extent practical, to those improvements necessary to existing development or new development that is consistent with the Future Land Use Map, adopted in 1998.
EVALUATION	Restates the City's determination to limit public expenditures that might subsidize increases in development intensities within coastal areas.
Policy 1.4.1	The City shall expend funds in coastal high hazard areas only for existing development or new development that is consistent with the Future Land Use Map.
EVALUATION	Limits public expenditures in the coastal high hazard area.

City of St. Pete Beach CRS Policies

ACTIVITY 240 - FLOODPLAIN MANAGEMENT

On January 30, 1992, the City of St. Pete Beach submitted a Floodplain Management Plan for credit under the Community Rating System. This plan was primarily an extension of the City's Municipal Comprehensive Plan and utilized policies previously adopted by the City Commission. These policies cover essentially four major areas of concern; 1) Controlling development seaward of the Coastal Construction Control Line (CCCL), 2) Encouraging the development of a coastal dune system to aid in protection from storm events, 3) Enforcement of strict construction codes, and 4) Implementation of the city's Master Storm water Drainage Plan.

CONTROLLING DEVELOPMENT SEAWARD OF THE CCCL

St. Pete Beach has two CCCL's which are utilized to control development activities. The City has its own CCCL, which was enacted prior to the development of a State CCCL. All activities seaward of either line are controlled through Section 12.J. of the Land Development Code. Construction activities landward of these lines are prohibited when they involve any excavation of beach materials.

The Velocity Zone, as identified in the 1983 Flood Insurance Rate Maps, correlates with the State CCCL. Less than 2 percent of the structures built on the Gulf front are in the Velocity Zone. All of these are post FIRM with no new development being allowed seaward of the CCCL. All new structures within 300 feet of the CCCL (State coastal zone 2) are constructed in accordance with Velocity Zone standards.

ENCOURAGING THE DEVELOPMENT OF A COASTAL DUNE SYSTEM

The City has required new commercial Gulf front properties to submit, as part of the site plan review process, a dune mitigation plan. This plan will show excavation activities and sediment relocation for existing systems. Properties with no dune system are required to indicate dune fence locations and vegetative details along with proposed dune walkover structure locations.

The City is continuing its efforts to promote Coastal resource protection through an aggressive dune development and maintenance program, public education and technical assistance. The City's Planning Department in conjunction with the City's Local Planning Agency developed a Beach Management Plan. The mission of this plan is "the systematic conservation, maintenance, and reconstruction of the natural beach ecosystem of St. Pete Beach...". This plan was adopted on January 17, 1995.

ENFORCEMENT OF STRICT CONSTRUCTION CODES

The City continues to actively enforce Chapter 39 of the Pinellas County Building Code. The chapter was developed for the Barrier Islands in Pinellas County to provide minimum standards for the design and construction of residential structures, enclosed commercial structures or other substantial structures of a semi-permanent nature. These standards specifically address design features which affect the structural stability under design storm conditions and which affect the stability of the beach, dunes, and topography of the adjacent property. In the wake of Hurricane Andrew in August of 1992, the City has been an active participant in all seminars for the development and modification of building codes, as well as seminars sponsored by FEMA. All new structures within 300 feet of the CCCL (State coastal zone 2) are constructed in accordance with Velocity Zone standards.

IMPLEMENTING THE STORMWATER DRAINAGE PLAN

The City developed a Master Storm water Drainage Plan with the assistance of Tampa Bay Engineering Inc. Twenty-five drainage basins were identified as problem areas for a comprehensive analysis. These areas were identified by the amount of flooding, which occurred during significant storm events. Repetitive losses were then utilized to determine a priority ranking for funding of improvements as part of the City's Capital Improvement Program.

ACTIVITY 510 - REPETITIVE LOSS

St. Pete Beach completed its Master Storm water Drainage Plan in early summer of 1993. This plan analyzes drainage basins, which have experienced flooding during significant storm events. Through the utilization of a Geographical Information Mapping System (GIS), insurance claim data was overlaid onto the City's drainage basins. This analysis was used to locate areas that are not only seeing flood damage, but repetitive damage as well.

The level of service was determined utilizing a 25 year storm event. Infrastructure improvements were identified for each basin and priorities have been set based on the number of repetitive losses and the overall cost per repetitive loss. The improvements specified in the Master Drainage Plan have been identified in the City's 5 year Capital Improvements Plan (CIP). The City is currently in the process of researching the feasibility of implementing a stormwater utility. This stormwater utility will reduce the number of repetitive losses due to street flooding.

ACTIVITY 610 - FLOOD WARNING PROGRAM

The City was actively involved with the relief effort following Hurricane Andrew. Staff members were sent to the south Florida area the day after this storm event occurred to observe relief efforts and assist as needed.

The information and experience obtained from this event has proven invaluable in updating the City's Hurricane Plan. Not only has this proven valuable in planning efforts, but the video and photographic documentation was assembled for presentation purposes. City staff members have made numerous presentations to citizen and homeowner groups stressing the importance of building structures to withstand high winds and wave activity.

Since Hurricane Andrew, the City has been the host community in association with the Tampa Bay Regional Planning Council, for the continued development of pre and post disaster plans; these seminars are ongoing. The City has made several modifications to its own Disaster Plan - Standard Operating Procedures to fine tune the process, and continues to have training sessions for all Emergency Operations Center personnel.

The City continues to provide information to the residents of this community by regularly holding public information seminars. Prior to the "No Name Storm" which hit this region in March 1993, the City hosted a seminar with guest speakers from the Public Utility Companies, the County Emergency Operations Coordinator, ABC (local affiliate) Weatherman, and officials from the City's Emergency Operations Center. This seminar stressed the need for early preparation in order to reduce losses to life and property. Since the storm events in 1993, the City has increased its efforts for early warning and evacuation (when necessary), and has increased the distribution and availability of public information on preparing for storm events. Printed information is provided to the residents at no charge in public buildings. Presentations are advertised in the newspaper as well as over the local

cable channel 15 via the City's graphic generator. This channel is dedicated for City use. The actual presentations are televised on channel 15 for Citywide viewing.

St. Petersburg

Comprehensive Plan . . .

D1.2 The City of St. Petersburg will continue to update the prioritized municipal drainage improvement projects based on current EPA, DEP and SWFWMD requirements.

Evaluation Projects are ongoing to address flood prone areas. The Engineering and Storm water Department lists priority storm water projects subject to change due to appropriations, permitting and actual costs.

D1.4 St. Petersburg will continue to undertake special studies of drainage areas with specific problems. Recommendations from such studies may influence review criteria and design storm requirements for drainage systems in those areas.

Evaluation The City periodically reviews areas in need of drainage improvement projects and implements necessary mitigation measures. Payment-in-lieu of site specific drainage improvements has been implemented in areas to transfer the responsibility of storm water improvements from developers to the City which allows the creation of an overall basin treatment program.

D2.2 The City will seek and consider the recommendations of regional, state and federal agencies and other City Departments in the design and construction of these projects.

Evaluation FDOT runoff standards and SWFWMD permit requirements are used for design criteria to limit storm water runoff.

D2.4 Priority in drainage improvement projects will be given to areas which have existing flooding conditions, or impact hurricane evacuation routes.

Evaluation Flood improvement projects in areas with existing flood conditions are given priority.

D3.1 The City will continue to implement the storm water utility fee as a dedicated source of funding for the *Storm water Management Master Plan*.

Evaluation Since 1990, the City has collected a storm water utility fee from utility customers to implement the *Storm water Management Master Plan* and construct drainage improvement projects.

D4.2 The City will continue perfecting the backflow prevention device to replace the flap gates where storm water out falls into surface waters.

Evaluation Backflow prevention vaults have been designed and patented by the City Engineering and Storm water Department to hold tidal water and

subsurface drainage pushed into the streets by high tide overflows. These vaults store water until the tide subsides.

D4.3

The City will continue an ongoing maintenance program for lakes, creeks, canals and other storm water retention and conveyance features in a manner which protects the natural drainage features and adjacent natural resources.

Evaluation

Aquatic weed control, machine and hand ditch cleaning programs improve the quantity of water retention which reduces flooding.

D5.3	Drainage improvements will utilize best management practices to reduce potential for adverse environmental impacts.
Evaluation	These management practices maximize water retention of drainage areas.
D5.4	Coordination among local, regional, state and federal environmental regulation agencies will continue to be sought by St. Petersburg in relation to drainage improvements.
Evaluation	Various local, state and federal agencies are consulted on drainage improvements when necessary.
D5.5	St. Petersburg will continue to seek permits from appropriate regional, state and federal agencies relating to dredge and fill, water quality, drainage system maintenance and other environmental issues.
Evaluation	Various local, state and federal agencies are consulted on drainage improvements when necessary.
D6.1	The City shall require redeveloped sites, other than single family lots up to a quadruplex that are not part of a larger common plan of development, to incorporate water quantity and quality controls, recognizing case by case limitations or payments in lieu of improvements. All sites are required to retrofit for water quality to the degree it is being redeveloped.
Evaluation	The City requires either site specific drainage improvements or payments-in-lieu.
D6.2	As a condition of municipal development approval, applicants shall be required to obtain a SWFWMD surface water management system permit or letter of exemption.
Evaluation	The City requires the appropriate SWFWMD review for the design and construction of drainage projects to meet quantity standards.
D6.9	The City will continue to implement the Street Sweeping program to reduce debris entering the municipal drainage system.
Evaluation	The drainage system is at a higher capacity when debris is limited.
CM1.3	Mitigation and restoration sites shall be recorded as developed preservation and/or conservation easements within which no further development will be permitted.
Evaluation	Limits development in flood hazard areas.
CM2.4	The City shall support the purchase and preservation of endangered waterfront lands, particularly those being considered for acquisition under the Pinellas County Endangered Lands program, including the Clam Bayou tracts.
Evaluation	Limits development in flood hazard areas.
CM6.10	The City shall participate in the development and implementation, within watersheds of the City, of the Surface Water Improvement Management (SWIM) basin plans.

Evaluation	These plans intend to reduce the quantity of storm water runoff.
CM6.11	Natural drainage characteristics will be retained, restored and enhanced, where possible, for filtration of pollutants, control of runoff rates and aquifer recharge.
Evaluation	Maintains the holding capacity of natural drainage features.
CM6.16	The issuance of municipal development approval shall be conditioned upon the applicant securing a SWFWMD surface water management permit, where applicable.
Evaluation	SWFWMD permit requirements limit storm water runoff.
CM7.4	Dredging and filling below the mean high water line to create developable land shall only be permitted where the applicant can document an overriding public interest.
Evaluation	Eliminates or significantly reduces the development of new sites along coastal high hazard areas.
CM10.4	Expanded infrastructure in the coastal high hazard area shall only be permitted as is necessary to protect the public health, welfare and safety, including storm water and sewer improvements and to service the demand generated by the planned for development identified in the Future Land Use Plan.
Evaluation	Reduces the intensity of development and vulnerability in the CHHA.
CM10.6	The City shall direct population concentrations away from known or predicted coastal high hazard areas by not locating water line extensions in the coastal high hazard area, beyond that which is necessary to service planned zoning densities as identified in the adopted Land Use Plan.
Evaluation	Reduces the intensity of development and vulnerability in the CHHA.
CM11.1	Variances to required flood elevations shall not be approved unless documented to be in the best interest of the public health, safety and welfare.
Evaluation	Limits the vulnerability of new development in the floodplain.
CM11.2	The City shall enforce applicable recommendations of Post-Disaster Hazard Mitigation plans, required under Section 406 of the Disaster Relief Act of 1974.
Evaluation	Intended to improve hazard mitigation.
CM11.3	The City shall minimize the disturbance of natural shorelines which provide stabilization and protect landward areas from storm impacts.
Evaluation	Reduces the proximity and intensity of development along coastal areas.
CM11.4	Comprehensive plan amendments shall consider the effect on hazard mitigation.

Evaluation	Intended to improve hazard mitigation.
CM11.5	Solid waste and commercial hazardous waste management facilities, including regional storage, treatment or transfer sites shall not be located in the hurricane vulnerability zone.
Evaluation	Reduces the storm vulnerability of waste facilities and contamination risk.
CM11.7	Site plan review criteria shall consider flood potential and hurricane hazards, including evacuation levels and sheltering, in a comprehensive manner.
Evaluation	Reduces the storm vulnerability of development.
CM11.11	The City shall maintain an inventory of repetitive loss properties and target hazard mitigation programs to these properties.
Evaluation	Repetitive loss properties are provided flood mitigation information.
CM12.3	Temporary building moratoriums may be declared in the coastal high hazard area when 50% or more homes have been destroyed in order to assess impacts and feasibility of redevelopment.
Evaluation	The City intends to decrease future storm vulnerability through compliance with applicable state, county and regional coastal construction guidelines.
CM12.6	The City shall identify properties recommended for acquisition after a storm.
Evaluation	Reduces vulnerability of post-disaster redevelopment by not rebuilding on selected sites. These properties are not currently identified.
C1.1	The City will actively enforce minimum building standards identified in the adopted Flood Damage Prevention Ordinance for construction within the 100-year flood plain.
Evaluation	The City attempts to reduce the potential for property damage and safety hazards caused by storm flooding through complying with or exceeding minimum FEMA standards.
C1.2	The City will cooperate with the Federal Emergency Management Agency to regularly update the 100-year flood plain and to continue FEMA regulations.
Evaluation	The City attempts to reduce the potential for property damage and safety hazards caused by storm flooding through complying with or exceeding minimum FEMA standards.
C4	The City of St. Petersburg shall protect green open space areas and the native vegetation and wildlife in St. Petersburg in the manner identified in the Recreation/Open Space Element of the <i>Comprehensive Plan</i> so as to maintain a citywide total of 50% green permeable open space.

Evaluation	Reduces the intensity of development in all areas of the City including the floodplain and allows for natural drainage.
C6	The City of St. Petersburg shall conserve and protect preservation areas through implementation of Section 29-208 of the City Code, as revised.
Evaluation	Reduces the intensity of development in all areas of the City including the floodplain and allows for natural drainage.
H4.1	The City shall review and issue permits for mobile homes that meet the requirements of the Building Code and Zoning Ordinance.
Evaluation	The City allows mobile homes in existing mobile home parks when vacancies exist and but does not allows mobile home parks to be developed or expanded in the Coastal High Hazard area.
H5.1	Community-based residential care facilities licensed by the State of Florida Health Care Administration shall be permitted at convenient, adequate and non-isolated sites within the residential or institutional areas of the City, where there is adequate infrastructure; provided they meet all the requirements of the Zoning Ordinance including the specified spacing to another facility, are not within the Coastal High Hazard Area or susceptible to documented or anticipated flooding.
Evaluation	Reduces density in flood prone areas and the CHHA.
LU6.1	Residential density increases in Hurricane Evacuation Level A and B Zones shall not be approved unless adequate evacuation and shelter facilities are available or appropriate mitigation is provided consistent with the goals, objectives, and policies of the Coastal Management Element.
Evaluation	Reduces the density in flood prone areas.
LU6.2	All approval of new proposed development will consider the hurricane evacuation level/location of the proposed development, and provide appropriate mitigation.
Evaluation	Reduces the storm vulnerability of new development.
LU6.3	Prohibit the new construction of hospitals, nursing homes, and convalescent homes in Evacuation Level A Zones, discourage the siting or expansion of these facilities in Evacuation Level B Zones and limit the expansion of existing sites to the boundaries of the currently developed lot.
Evaluation	Reduces the storm vulnerability of new and existing hospitals, nursing homes and convalescent homes.
LU6.4	Prohibit the siting of new mobile home parks within the Evacuation Level A Zone and limit the expansion of existing sites to the boundaries of the currently developed lot.
Evaluation	Reduces the storm vulnerability of new and existing mobile home parks.

LU6.5	Requests for residential density increases beyond the planned densities on the FLUP Map in the FEMA V Zone shall not be approved.
Evaluation	Reduces the storm vulnerability of new residential development.
LU6.6	Opportunities to decrease residential development potentials on the remaining vacant tracts in the FEMA V Zone through plan amendments to less intensive uses, land purchase or transfer of development rights shall be considered.
Evaluation	Reduces the storm vulnerability of new development.
LU6.7	The City will encourage the mitigation, reduction or elimination of uses that are inconsistent with any interagency hazard mitigation report recommendations that the City determines appropriate.
Evaluation	Reduces the storm vulnerability of new development.
City Code... Chap 8, Article 2 Evaluation	Building Code Minimum building standards reduce storm damage.
Chap 16 Evaluation	Land Development Code: Drainage and Surface Water Management Regulates and controls the management and storage of all drainage and surface waters to reduce flooding.
Chap 16 Evaluation	Land Development Code: Flood Damage Prevention Minimizes public and private losses due to flood conditions in special flood hazard areas and the Coastal High Hazard Area.
Chap 18, Article 3 Evaluation	Anchoring and Blocking Mobile Homes Reduces storm vulnerability for mobile homes.
Chap 27, Article 6 Evaluation	Storm water Management System Maintains an operational drainage system to limit backflows.
Chap 29 Evaluation	Zoning These regulations reduce the storm vulnerability of development. This Chapter also establishes various commissions. The Planning Commission, Environmental Development Commission and Board of Adjustment each review development and site plans to ensure compliance with the <i>Comprehensive Plan</i> and all ordinances including Drainage and Surface Water Management.

Tarpon Springs

2-180 City Code Provides for declaration of emergency; provides for designated official(s) to declare a state of emergency; provides for the effect of a declaration of emergency; provides penalties for violation

Evaluation Requires updating from time to time in response to changing plans at the State, County, and local level.

Coastal Management Element . . .

Policy 12 Implement FEMA Regulations

Evaluation Requires finished floor grades to be at or above FIRM base flood elevations

Policy 13 Comply with the hazard mitigation annex of the Local Peacetime Emergency Plan

Evaluation This appears to be an obsolete reference and the Local Mitigation Strategy and TBRPC's Post Disaster Recovery Plan are more appropriate

Policy 14 Implement selected provisions of the Pinellas County Post Disaster Redevelopment Plan, as adopted.

Evaluation This document has not yet been adopted. In addition, Chapter 163 FS now requires the City to adopt its own Post Disaster Recovery Plan.

Policy 16 Restrict the development of new nursing facilities, hospitals, and ALFs with greater than 15 residents from Evacuation Levels A and B.

Evaluation Effective implementation of proposed new facilities.

Policy 18 Require new development proposals which would in evacuation Levels A, B and C to provide an analysis which assesses the impact of the development on available shelter spaces and provide appropriate mitigation measures where a shelter deficit is projected.

Evaluation This is addressed in the City's adopted concurrency management system. It has resulted in financial contributions for early warning and/or shelter construction.

Policy 19 Require new mobile home parks to provide on-site shelter space at the ratio of 10 to 20 square feet per park resident.

Evaluation This standard has been adopted as part of the concurrency management system, however, there have been no new mobile homes proposed.

Policy 20 Coordinate with the Pinellas County MPO in order to schedule improvements to hurricane evacuation routes.

Evaluation This factor has been considered by the MPO. It was a consideration in lobbying the County to restore funding for the expansion of Keystone Rd. between US 19 and East Lake Rd.

Policy 22 All hurricane evacuation routes will be clearly posted.

Evaluation	These are posted and the City's Emergency Plan calls for Police Dept traffic control during an evacuation.
Policy 23	Fire Dept. to implement public awareness campaign to discuss hurricane procedures.
Evaluation	The Fire Dept. does coordinate with and disseminate information to civic groups, homeowners, residents, associations, nursing home and ALF managers and the general public.
Policy 24	Update Comprehensive Hurricane Evacuation Plan on an annual basis.
Evaluation	In 1997, the Fire Dept. Issued a comprehensive rewrite entitled Hurricane Implementation Guide.
Policy 25	Establish a damage assessment team.
Evaluation	The Emergency Operations Plan provides for such damage assessment team.
Policy 26	Damage assessment turned over to Pinellas County Dept. Of Civil Emergency Services.
Evaluation	This is standard procedure after a declaration of an emergency. The appropriate agency is now known as Emergency Management.
Policy 27	Institute emergency repair and cleanup actions following a natural disaster.
Evaluation	In case of a disaster, it would be a priority of the City to institute immediate emergency repair and emergency cleanup actions as needed.
Policy 28	Institute long range restoration activities in accordance with the Pinellas County Post Disaster Redevelopment Plan.
Evaluation	This plan has not yet been adopted. The Local Mitigation Strategy of which this table is part my provide guidance in this area.
Policy 29	Require removal or structural modification in accordance with the FEMA 50% rule.
Evaluation	This is part of the standard flood plain management ordinance required for participation in the National Flood Insurance Program and is also a state law.
Policy 30 damage.	Remove or modify any infrastructure that experiences repeated storm

Evaluation	The LMS may provide guidance in this area.
Policy 33 Evaluation	Define the CHHA as the FIRM "V" Zone. In 1995, this definition was superseded by Chp. 163, FS.
Policy 35 Evaluation	Make no infrastructure investments in the CHHA. As the newly defined CHHA encompasses 70% of the City, this not a realistic policy.
Policy 21 Conservation	Designate properties eligible for acquisition through Federal and State programs.
Evaluation	Using funding from the Florida Communities Trust, the City acquired 77 acres of high density residential land which will be passive park and nature center.
Future Land Use . . . Policy 27	Require development proposals to comply with the local hurricane evacuation needs, shelter space, and local/regional disaster preparedness plans.
Evaluation	Shelter space is addressed through the City's concurrency management system.
Policy 29	Restrict further intensification of development in flood prone areas, except in areas designated for redevelopment.
Evaluation	All new development is required to comply with FEMA base flood elevations. Redevelopment in flood prone areas is generally limited to commercial structures which are eligible for flood proofing.
Policy 6 Intergovernmental Coord. Element Evaluation	Designate the Fire Dept. As the local agency for natural disaster planning. The Fire Chief plays a leading role in emergency management and planning.
Tarpon Springs Hurricane Implementation Guide . . .	Designates Fire Chief as the Executive Director of Emergency Management.
Evaluation	Engages in constant training, preparation and update.
Fire/EMS Dept.	Provides staffing assignments, warning and evacuation duties, response protocol, and severe weather checklist for the Fire Dept.'s role preceding, during and after a hurricane.
Evaluation	The Fire Dept. Conducts annual training classes in preparation for the beginning of each hurricane season. Additional information is provided in the "Municipal Departments and Mitigation Functions" table.
Police Dept.	Provides staffing assignments, warning and evacuation duties, traffic control, severe weather and support checklists for the Police Dept.'s role preceding, during and after a hurricane.

Evaluation	The Fire Dept. conducts annual training classes in preparation for the beginning of each hurricane season. Additional information is provided in the “Municipal Departments and Mitigation Functions” table.
All other Dept.	Provides functions, staffing needs and severe weather checklist for role in warning, evacuation, securing of property and post-hurricane damage assessment and clean up.
Evaluation	The Fire Dept. conducts annual training classes in preparation for the beginning of each hurricane season. Additional information is provided in the “Municipal Departments and Mitigation Functions” table.

Treasure Island

Emergency Preparedness Ordinance creates emergency management agency, adopts emergency action guide, defines authority, state of emergency, emergency measures, curfew, use of water, price gouging.

Storm water Ordinance regulates discharge into storm water system and establishes a storm water system.

Land Development Regulations adopt building, plumbing, electrical, mechanical, and fire codes for safety of citizens.

Housing Code adopted to ensure safety and maintenance of dwelling structures.

Flood Control Ordinance adopted to regulate new construction and substantial improvements to existing structures for compliance with flood regulations.

Land Use Regulations adopted to regulate density, land use, setbacks, building heights, on-site storm water retention, and previous areas.

Marine Structures Ordinance regulates the construction of seawalls.

Planning and Zoning Ordinance regulates site plan review, variances, and planning, and zoning board activities.

Utilities Ordinance regulates connections to the sewer system.

ANALYSIS OF POLICIES AND ORDINANCES

Upon analyzing all of the policies and ordinances, the workgroup observed the following:

- We have a lot of policies/ordinances pertaining to flooding.
- Several are administratively outdated.
- All discuss reducing infrastructure in the coastal high hazard area.
- None for wind damage, however, a few accidentally benefit mitigating wind damage (sign ordinances).
- All discuss reducing densities in the coastal high hazard area.
- All are in compliance and some exceed FEMA requirements.

- Land Development and Land Use Policies have loopholes.
- The barrier island municipalities have a number of policies regarding beach/ dune renourishment projects and beach/seawall stabilization projects.
- Few policies address public education or better intergovernmental coordination

The workgroup offered these suggestions on strengthening our policies and ordinances to better achieve our mitigation goals:

- Policies addressing retrofitting older buildings
- Require window protection for new construction
- Providing incentives to homeowners for retrofitting
- Redefine the coastal high hazard area (Cat. One Evacuation Zone) using one foot contours
- More extensive wind loading and impact resistant opening requirements
- All plans for new public buildings should be reviewed to consider if a mitigation measure was appropriate to obtain additional shelter space
- Develop policies regarding excessive heat, drought and water shortage
- Develop policies regarding wildfires

Appendix 6

County Departments and their Mitigation Functions

Planning

Loss Reduction Maintain the Pinellas County Comprehensive Plan. Identify how the County will implement policies, and evaluate proposed amendments/policies.

Building

Loss Reduction Assess damages and determine level of safety and habitability. Expedite issuance of permits. Protects victims from unsafe situations and gets them back into their homes/businesses in a timely manner.

Environmental Management

Loss Reduction Housing Code Enforcement PC Code Chapter 22-256 Et Seq. Requires repair or removal of unsafe residential structures.

Loss Reduction Habitat Management Code Enforcement PC Code Chap. 166-36 Et. Seq. Protects and encourages vegetated shorelines, protects wetlands, encourages removal of undesirable trees, i.e. diseased or exotic.

Loss Reduction Water & Navigation Code Enforcement PC Code 166241 Et. Seq. Requires removal of unsafe dock structures, requires construction standards for docks and seawall, and protects wetlands.

Loss Reduction Pollution Prevention/Hazardous Waste Reduction Program Works with local business and industry to insure environmental compliance re: Resource Conservation and Recovery Act (RCRA) and waste minimization.

Loss Reduction Zoning Code Enforcement PC Code 138 Et. Seq. Insures development is compatible with land use classification standards, i.e. structure height, setback use. Sign Code Enforcement minimizes wind driven projectiles.

Loss Reduction Air Quality Code Enforcement PC Code 58-86 Et. Seq. Minimizes off site contamination to the atmosphere, land or water by toxic substances by insuring proper storage.

Loss Reduction Trash and Debris Code Enforcement PC Code Chap. 58-301 Et. Seq.
Minimizes wind and water driven projectiles and vermin infestation.

Developmental Review Services

Engineer Floodplain Management.

Loss Reduction Preserve stormwater storage capability, minimizing flood drainage.

Engineer Water Quality Mitigation.

Loss Reduction Allow water quality treatment at secondary niter, where unattainable
or unreasonable on primary nite, assuming compliance with various
requirements (National Pollutant Discharge Elimination System,
NPDES, permits, etc.).

Zoning Regulate development in evacuation areas.

Loss Reduction Prohibit development of hospitals, Assisted Living Facilities (ALF),
mobile parks, nursing homes in Evacuation "A" Zones.

Municipal Departments and their Mitigation Functions

Belleair Beach

Legislative	<ul style="list-style-type: none"> Supports beach nourishment by providing public access Establishes, enforces and maintains city codes Oversees a complete review of emergency management policies Establishes long-range mitigation guidelines Establishes data gathering plan for after storm events Provides for comprehensive planning
Loss Reduction	<ul style="list-style-type: none"> beach nourishment reduces vulnerability of property to storm surge Full implementation of codes insures increased standards for buildings Insures that proposed actions are consistent with emergency needs Provides for review of mitigation strategies for effectiveness Insures that data gathering is done after storm event Provides review of zoning which might be vulnerable to losses
Administrative	<ul style="list-style-type: none"> Insures that emergency plans and policies are implemented Plans and manages communication process for emergencies Writes and proposes emergency plans and plan amendments Maintains contacts with emergency coordinators in other agencies Administers plan activities before and during storm events Provides review of variance requests Provides for Repetitive Loss Committee to oversee loss reduction Provides for public outreach activities on flood risks
Loss Reduction	<ul style="list-style-type: none"> Minimizes danger to individuals and property damage Insures effectiveness of plan activities during emergency Insures that experiences and new data are part on ongoing plans Insures effective coordination with other agencies during event Insures effective coordination with the City during storm event Insures that variances are not granted which might be detrimental to repetitive loss reduction efforts Provides repetitive loss reduction planning documentation Insures public awareness of flood risks and mitigation strategies
Public Safety	<ul style="list-style-type: none"> Enforces emergency management policies during storm event Tracks citizens with special evacuation needs throughout the year
Loss Reduction	<ul style="list-style-type: none"> Reduces danger to safety and property through evacuation Reduces danger to safety through advanced evacuation
Code Enforcement	<ul style="list-style-type: none"> Prepares and updates repetitive loss plan Identifies FEMA grant opportunities Maintains and upgrades community rating system Periodically inspects sea walls Updates storm and repetitive loss data
Loss Reduction	<ul style="list-style-type: none"> Reduces repetitive loss to properties in the City

Assists homeowners to bring properties up to new flood standards thereby reducing future repetitive losses
Increases public awareness of risks and aids loss reduction
Provides follow up data to aid in adjusting repetitive loss plans

Public Works

Continuously evaluates physical condition of storm drain system
Initiates post recovery activities
Maintenance of beach vegetation

Loss Reduction

Insures that system is ready for storm events
Quick action in recovery phase will reduce losses
Aids in soil retention and beach stability, a natural surge barrier

Belleair Bluffs

Administration, Mayor, Comm. Loss Reduction	Promulgate plan for safeguarding of life and property of the citizens of the city. Insure city departments plan and train to support emergency procedures for disasters before, after, and during an emergency
Fire Dept. Loss Reduction	Coordinate with Pinellas County Emergency Plan and insure education and training of personnel Minimize suffering, loss of life, personal injury, and damage to property resulting from emergency and disaster situations
Police Dept. Loss Reduction	Pinellas County Sheriff's Department is policing agency and is responsible for evacuation and reentry procedures Maintain law and order throughout any disaster and coordinate traffic throughout a disaster situation
Public Works Loss Reduction	Plans and procedures to ensure safety of city personnel, equipment, and property and the protection of infrastructure and have a debris clearance plan. Assets available for recovery and reconstruction operations following the disaster, clear roads to assure movement of traffic and personnel, and coordinate and control debris clearance and removal operations.

Belleair

Fire Dept.	Coordinate with Pinellas County, Town of Belleair, emergency plans, and insure proper training and education to all personnel
Loss Reduction	Minimize suffering, loss of life, personal injury, and damage to property resulting from emergency and disaster conditions
Police Dept.	Emergency Operations Planning/High Clearance Police Vehicle
Loss Reduction	Establishes policy and procedures for emergency operations and recall procedures for police personnel and assessment/Reduces the flooding and submerging of police vehicles during a disaster/flood through higher body clearance
Public Works	Emergency Management planning related to streets and drainage, solid waste and wastewater
Loss Reduction	Establishes policies and procedures to protect town infrastructure and restore same following a disaster
Building Dept.	To assure that all permitted construction complies with new codes and standards for debris prevention; and minimization of property damage.
Loss Reduction	All new and retrofit construction adheres to the most stringent permitting requirements contained in adopted building codes

Clearwater

City Manager Loss Reduction	Coordinates mitigation policies with city commission. Establishes mechanism for policy review and approval.
Clearwater Gas Loss Reduction	Coordinates policies and procedures for protecting lives and property against natural or propane gas releases or/ other potential hazards. Establishes policies and procedures for protecting natural and propane gas facilities from external damage caused by natural or man-made disaster.
Information Mgt.	Coordinates the protection of city computer systems and data. Provides public communications and marketing, broadcast public information via city cable television channel. Up to and after any disaster.
Loss Reduction	Establishes proper procedures. Provides communication equipment to city facilities, which assist in the relaying of more accurate information to both city/county government as well as local citizens.
Police Dept.	Provides assistance to the fire department with evacuation areas in danger of sustaining substantial damage or loss of human life. Conducts traffic control along designated evacuation routes. Secures evacuated areas by establishing a perimeter and allowing access only to designated persons. Maintain security at designated evacuation shelters. Maintain the emergency operations center.
Loss Reduction	Established procedures to perform in a disaster type operation. Asst. in the Coordination of the city evacuation plans and procedures. Patrols the city for vandalism after evacuation, which could create additional loss to both citizens and the city of Clearwater.
Fire & Rescue/ Emergency Management Office	Establishes emergency management planning Provides coordination and training including public education. Coordinates all activities within the EOC. Helps coordinate the dept./divisions preparation planning.
Loss Reduction	Reduces the affects of a disaster through preparedness, response and recovery planning. Reviews the city in general through testing and evaluation of their action plan. Also reviews the city for any area of protection that may be identified prior to a disaster helping with damage and possible loss to city infrastructure.
Fire & Rescue	Provides response to fire, medical emergencies, and all other rescue operations. Performs initial evacuation procedures. Assist in staffing evacuation shelters with medical personnel and supplies. Establishes fire and life safety codes and code enforcement, hazardous materials and public education.

Loss Reduction	<p>Protection against loss of Life and Property. Providing continuous EMS care and response. Performance of building inspections and damage assessments to help mitigate the hazard impact. Provides public education for mitigation initiatives.</p> <p>Finance and Technology: Department Maintains the financial aspect of an overall disaster program for the city that combines financial administration, accounting, treasury, purchasing, payroll, insurance, and safety. It incorporates the financial and assessment needs both during and after the disaster strikes. It includes a concerted effort to maintain and manage a disaster from the financial aspect.</p>
Loss Reduction	<p>Maintain proper accountability, funding availability. Provides a risk and business impact analysis, City-wide program of loss control, a series of emergency response procedures, and insurance coverage tailored specifically to the City's needs.</p>
Central Permitting	<p>Coordinates polices and procedures for hazard mitigation efforts with the building and fire safety codes, flood plain management codes, land development codes, and comprehensive plan. Provides an inspection process to ensure that each structure within the city is constructed to the standard building codes identified by the City of Clearwater. Provides inspectors that would review/oversee rehabilitation efforts and ensure the structure design mitigates hazard impacts.</p>
Loss Reduction	<p>Provides the review of developmental projects in the city to ensure the proposed plans meet the code requirements to mitigate hazard impacts. Also coordinates Inspections and corrective action of existing buildings, which are in poor condition to mitigate hazard impact. This process will provide the city with less of a loss in structural damage and loss of work time to its community.</p>
Library Dept.	<p>Coordinates the acquisition and distribution of food supplies to designated facilities for the feeding of City staff on duty during a hazard/emergency.</p>
Loss Reduction	<p>Provides the quality of ongoing service without interruption.</p>
Solid Waste Dept.	<p>Coordinates and implements mutual-aid agreements with the cities of St.Petersburg and the city of Largo. Provides debris removal teams. Performs pre and post disaster solid waste removal.</p>
Loss Reduction	<p>Provides debris removal mitigation, allowing the city to return to normal operation in a timely manner.</p>
Marina	<p>Oversees small fuel spills (less than 250 gal.), providing booms and diking material for control measures. Coordinates with a contractor the cleanup effort for those spills of more than 250 gal. . Also provides video pre and post incident for damage assessment during a disaster/emergency within the marina.</p>

Loss Reduction	Provides a damage assessment and mitigates small fuel spills within the marina area.
City Auditors	Assist with the accumulating cost, etc. for submission to the Federal and State Governments for reimbursement.
Loss Reduction	Assist in collection procedures of lost revenue to the City.
City Clerk Loss Reduction	Preserves City records Mitigates loss of city records through microfilming and requesting that all departments develop a disaster plan for records in their departments.
Engineering	The site plan review section of production assures that all new developments comply with traffic concurrency requirements. Also assures that finished floor elevations are in conformance with FEMA requirements and assure that flooding will not be increased. The design section (PD& Evaluation) designs all city facilities to the above criteria; plans & designs flood control projects; shoreline protection; bridge replacements; traffic improvements, and upgrade the airport. PD& Evaluation also has hazmat expertise in case of spills, crashes, etc.
Loss Reduction	Provide plans and inspection to control possible loss too private and city facilities.
Public Services	Has provided a hurricane preparedness plan but is basically for pre & post activities by WPC employees at the plants. Provided emergency back-up power supply's to maintain facility operation's required by FDEP.
Loss Reduction	Ensures continuous overall service operations.
Employee Dev.	Provide general information and explains the role that employees serve in the emergency plan in the event of an emergency.(specifically, a hurricane)
Loss Reduction	Helps address the needs of the employee, in relation to there activities during a disaster.
Building & Maint. Loss Reduction	Asst. installing shutters systems for city facilities, Provides inspection procedures for damage assessment after a disaster Helps reduce damage to structures throughout the city
Tourism Office Loss reduction	Serves as a point of contact/ liaison for certain business industries within the city. Coordinates mitigation policies with hotel / motel industry related businesses.

Dunedin

Comm. Services Loss Reduction	Community Rating System Tasks. Advertises Map Determination Service. Sends flood protection and insurance information annually to repetitive loss areas.
Library Loss Reduction	Flood Protection Library. Provides information on flood protection, insurance, and mitigation.
Leisure Services Loss Reduction	Maintain open space areas. Retain open space areas in the coastal high hazard area.
Building Loss Reduction	Ensure FEMA requirements are met. Elevates structures above flood levels.
Fire Department Loss Reduction	Emergency Management Planning/ Public education presentations Est. procedures for mitigation activities and post disaster recovery/Educating the public on how to minimize damage to private property.
Wastewater Loss Reduction	Sealing of lift station vent pipes and hatch covers Reduces damages to lift stations

Gulfport

Public Services/ Planning	Maintenance and implementation of the City Comprehensive Development Plan.
Loss Reduction	Minimizes future risk from natural events and assures redevelopment supports the objectives and policies of the City's Comp Plan.
Administrative Service	
Acctng & Finance and Technology:	assist with the financing of mitigation projects.
Loss Reduction	Minimizes the potential damage to City owned properties caused by natural events through physical improvements
Mgt. Info. Svc.	Maintain and protect the City's computer hardware and software.
Loss Reduction	Minimizes potential damage to the City's computer network caused by natural events.
Risk Mgt.	Secures appropriate insurance
Loss Reduction	Insures against financial losses associated with damage to City owned properties caused by natural events.

Indian Rocks Beach

Public Srv. Loss Reduction	Catch basin clearing Helps prevent flooding
City Clerk Loss Reduction	Records Management Plan (i.e. microfilming and off-site storage) Ensures protection of vital records
Public Srv. Loss Reduction	Sanitary sewer storm water/sewer line rehabilitation Reduces infiltration during storm water events to prevent environmental impact
Comm. Dev. Loss Reduction	Implementation of the Flood Damage Protection and Prevention Ordinance The City's building inspection program reduces the amount of valuation permitted below BFE which is subject to flooding
Public Serv. Loss Reduction	Design and construction of additional storm water drainage systems Reduces exposure to local flooding during storm events
Comm. Dev. Loss Reduction	Building permitting and inspection program Reduces losses due to wind load and flooding by ensuring that buildings are in compliance with building and flood damage protection and prevention ordinances
Finance and Technology: Loss Reduction	EDP Disaster Recovery Ensures that the City's personnel and financial systems could continue to operate after a storm event support recovery efforts
Administration Loss Reduction	Purchase of low lying environmentally sensitive property Reduces property damage by ensuring that such land will not permit high density development
Public Srv. Loss Reduction	Sand bag program Reduces flood damage by providing limited flood proofing materials which can be used on a temporary basis
Public Srv. Loss Reduction	Beach maintenance Programs designed to minimize the amount of sand erosion to provide a sand barrier against storm surge
Public Srv.	Hurricane evacuation

Loss Reduction

Reduces losses to life and property by promoting the orderly evacuation of the islands population before a storm event

City Mgr Scetry Loss Reduction	Monitoring of storm advisories Notifies city staff of NOAA weather radio advisories to provide as much advance warning of a potential storm
Comm. Dev. Loss Reduction	Implementation of the Flood Plain Management Plan Public education programs educate residents on actions that can be taken that can reduce exposure to storm hazards on their properties
Public Srv. Loss Reduction	Back up and auxiliary pumping capabilities for sanitary sewer Ensures that the sanitary sewer collection system continues to work during flood events and during power outages
Comm. Dev. Loss Reduction	Building maintenance standards Reduces potential losses by ensuring that existing structures are structurally sound and maintained, reducing losses caused by wind, storm and flooding.
Comm. Dev. Loss Reduction	Code Enforcement Program Reduces potential damages caused by trash and debris becoming projectiles and causing additional damage
Comm. Dev. Loss Reduction	Commercial site plan standards Reduces potential flooding by establishing maximum impervious surface area and requiring on site retention for new development
Public Srv. Loss Reduction	Hazard Clean up Days Reduces the volume of hazardous waste stored on properties in the city that may be released during a storm event.

Indian Shores

Town Council Loss Reduction	Supported gulf beach nourishment and renourishment Reduced vulnerability to storm wave action and tidal surge
Town Council Loss Reduction	Establishment and oversight of revitalization of Town Square District Improved storm water drainage and retrofit of non-conforming structure and regional storm water retention
Town Council Loss Reduction	Property acquisition Two non-conforming structure removals/storm water management enhanced
Planning, Zoning, Building Comm Loss Reduction	Designated as flood damage control administration Through permit review, approval, and interpretation of flood hazard boundary maps
Building Official Loss Reduction	Updates and coordinates with NFIP/CRS Establishes policies and procedures for flood damage reduction
Building Official Loss Reduction	Prepares and administers repetitive loss plan Repetitive loss reduction
Building Official Loss Reduction	Develop update and enforce local Comprehensive Plan Ensures appropriate land use/storm water management
Building Official Loss Reduction	Assists with FMAP Grant applications Elevates non-conforming structures/reduces flooding
Police Chief Loss Reduction	Emergency Management Coordination Provides evacuation assistance/reduces loss of life potential
Town Clerk Loss Reduction	Disaster Outreach Program CRS Provides preventive measures to public
Public Works Loss Reduction	Vegetation establishment and control Encourage dune development
Public Works Loss Reduction	Seawall inspection/repair/replace Erosion control

Kenneth City

Police Department/ Chief of Police	Coordinate mitigation Policies with Mayor and City Council Provide traffic control and re-entry control Coordinate post disaster recovery with Lealman Fire Department
Loss Reduction	Sets up EOC, controls traffic, helps Fire Department Coordinate evacuation
City Clerks Office/ Finance and Technology: Department	Act as information officer during emergency. Provides information to general public, the EOC and employees families. Insures food and supplies available in community hall for employees required to work and their families.
Loss Reduction	Insures police officers and public works employees available for traffic and re-entry control
Building Regulations/Codes Loss Reduction	Enforces flood protection ordinances and building codes Provides regulations for new construction and post disaster rebuilding
Public Works	Maintain city facilities, maintain storm drain system. Plans upgrades to storm drain system.
Loss Reduction	Secures city facilities prior to a storm. Plans and oversees upgrades to the storm drain system. Plans for protection and providing emergency power to EOC.

Largo

Public Works

Facilities Mgmt Assists in securing all City facilities and preparing buildings for emergencies

Loss Reduction Minimizes potential damage to City-owned facilities caused by natural events through physical improvements including storm windows and emergency generators.

Community Development Department . . .

Maintenance and implementation of the Comprehensive Development Code;

Loss Reduction Minimizes future risk from natural events and assures that redevelopment supports the Objectives and Policies of the City's Comprehensive Plan.

Assist in disaster planning, including the design of a Local Mitigation Strategy.

Loss Reduction Eliminates redundant disaster preparation efforts by coordinating intra and inter-municipal activities through the identification of common problems and the creation of common solutions.

Management Services Department . . .

Acct & Finance and Technology: Assist with the financing of mitigation projects.

Loss Reduction Minimizes potential damage to City-owned facilities caused by natural events through physical improvements including storm windows and emergency generators.

Mgt Info Srv Maintain and protect the City's computer hardware and software.

Loss Reduction Minimizes potential damage to the City's computer network caused by natural events.

Risk Mgt. Ensure that appropriate insurance coverage is in place;

Loss Reduction Insures against financial losses associated with damage to City-owned facilities caused by natural events.

Madeira Beach

City Mgr. Office Loss Reduction	Coordinate mitigation policies with Commission/Capital improvement planning Establishes mechanism for policy review and approval/Provides mitigation improvements for city infrastructure
Building Loss Reduction	Enforces local, State and Federal Codes, Ordinances, and Programs Provides regulation for new construction pre and post disaster rebuilding
Building/Planning Loss Reduction	Administers Comprehensive Plan Post disaster redevelopment
Building/City Mgr. Loss Reduction	Capital improvement planning Provides mitigation improvements for city infrastructure
Public Works Loss Reduction	Maintains city infrastructure Secures infrastructure prior to disaster, if possible plans for upgrading and protection of infrastructure
Public Wks/Cty Mgr Loss Reduction	Capital improvement planning and scheduling Schedules mitigation improvements for city facilities and infrastructure
Fire Dept. Loss Reduction	Comprehensive emergency management planning Link to Pinellas County Environmental Management to coordinate pre and post disaster mitigation and post disaster recovery
Fire Dept/City Mgr Loss Reduction	Develop and institute city emergency management plan
Fire Dept/City Mgr Loss Reduction	Capital improvement planning Provides mitigation improvements for city infrastructure

North Redington Beach

Emergency Mgt Loss Reduction	Comprehensive Emergency Management Planning. Establishes policies and procedures for mitigation efforts and provides for structured post disaster redevelopment.
Emergency Mgt Loss Reduction	Coordinates with Pinellas County Emergency Management to assure the safe evacuation and orderly return of residents. Reduces loss of life, prepares citizens as to proper manner of evacuation and educates them as to what to take out.
Brd of Commrs Loss Reduction	Promulgates plans for keeping citizens and property within the community safe. Town personnel know procedures for disasters before, after and during an emergency.
Building Loss Reduction	Enforces building codes and FEMA regulations. Estimates damage and ensures rebuilding done to meet proper codes. Buildings built to withstand 110 MPH wind; built to base flood elevation; roofs have proper hurricane tie-downs.
Fire Department Loss Reduction	Conducts evacuation. Coordinates with county. Moves equipment to secondary center on higher ground. Saves lives and property taken off premises. Saves fire equipment from coastal flooding.
Police Department Loss Reduction	Conducts evacuation. Patrols Town. Calls in public service and business personnel for repairs, as needed. Saves lives and property taken off premises. Saves police equipment from coastal flooding. Saves costlier repairs of infrastructure by catching early.
Public Works Loss Reduction	Prepares buildings and equipment for evacuation i.e. shutters, window covers, elevation wherever possible, removal of Town vehicles and equipment to higher ground. Regularly removes debris from storm drains. Reduces wind damage to municipal buildings; and saves equipment from coastal flooding. Allows storm water entry in storm drains with less backup.

Oldsmar

Fire Department
Loss Reduction

Emergency Management Planning
Establishes policies and procedures for emergency situations

Community Dev.
Loss Reduction

Post-Disaster Redevelopment
Enforces SFHA Rules for redevelopment

Public Works
Loss Reduction

Facilities location planning and construction
Establishes policies and procedures to construct new facilities above flood hazard areas

Pinellas Park

Community Development Department . . .

Planning . . .

- Loss Reduction Maintains the Comprehensive Plan
Establishes policies for development and redevelopment
- Loss Reduction Schedules the Capital Improvements Program
Provides for timely scheduling and coordination of capital projects
- Loss Reduction Maintains the Disaster Response and Recovery Plan
Ensures plan coordination with Pinellas County
- Loss Reduction Coordinates local activities relative to the Community Rating System (CRS) / National Flood Insurance Program (NFIP)
Educates citizens to flood hazards and means of protection; reduces flood insurance costs

Zoning Division

- Loss Reduction Implements the Land Development Code
Reduces threats to people and structures; reduces potential loss

Building Development Division . . .

- Loss Reduction Implements the Building Codes
Reduces threats to people and structures; reduces potential loss
- Loss Reduction Implements the Floodplain Management Ordinance
Reduces threats to people and structures; reduces potential loss
- Loss Reduction Implements CRS/NFIP requirements
Reduces threat to people, structures, and property; maintains consistency with NFIP requirements; reduces flood insurance costs

Recreation Division

- Loss Reduction Maintains the City Employee Shelter
Ensures readiness of local forces to respond quickly

Economic Dev.

- Loss Reduction Acquires property for mitigation measures
Reduces threat through acquisition; implementation tool for mitigation projects, such as retention ponds

Public Works Department . . .

Traffic Division

- Loss Reduction Maintains traffic control devices, signals, signs, and markings; maintains street lights
Loss Reduction reduces manmade hazards by providing a structured environment for safe transportation and travel

Water Division	Maintains water reservoir structures and telemetry controlled pumping system
Loss Reduction	Ensures sufficient water reserves and pressure are available to provide fire fighting ability
Loss Reduction	Maintains bacteriological levels of the Potable Water System Reduces threat of contamination to and/ or illness from the potable water supply
Parks Division	Maintains drainage retention facilities
Loss Reduction	Ensures capacity; reduces potential for flooding Employees trained on hazardous materials
Loss Reduction	Reduces potential for mishap; reduces costs of clean up
Bldg Maintenance	Maintains fire, police, and public works fleet readiness
Loss Reduction	Ensures all fleet vehicles are in peak readiness to respond in emergency situations
Loss Reduction	Maintains operating condition of all emergency generators in City Ensures ability of City facilities to maintain operations Maintains operating system of all shuttering systems in City
Loss Reduction	Reduces threat to public structures
Sanitary Sewer	Maintains continuous operation and proper functioning of Sanitary Sewer System
Loss Reduction	Reduces threat to people, structures, and property; reduces threat to infrastructure and ground water systems
Streets & Drainage	Maintains Secondary Drainage Network
Loss Reduction	Reduces threat of flooding Monitors discharges into the Storm water System
Loss Reduction	Ensures compliance with water quality standards; reduces threat from hazardous materials
Engineering Srvc	Maintains floodplain maps and drainage atlas
Loss Reduction	Reduces loss through participation in NFIP; provides accurate data when developing properties
Loss Reduction	Monitors compliance with drainage requirements for municipal projects Ensures threat of flood risk does not increase
City Clerk's Office	Maintains City records

Loss Reduction	Reduces potential loss of critical data; increases ability to maintain/regain normal operations
Mgt Info Srv Loss Reduction	Maintains electronic records Reduces potential loss of critical data; increases ability to maintain/regain normal operations
Loss Reduction	Maintains telephone and computer communications Ensures readiness of communications equipment between City buildings in the event of an emergency event; ensures quick recovery after an event
Fire Department Loss Reduction	Addresses daily emergency management activation Provides fire and EMS service
Loss Reduction Police Department Loss Reduction	Provides information and educational programs on hazards Educates citizens of hazards and how to prepare for them Addresses daily civil security and communication Provides for a secure, stable environment in which to live and work
Loss Reduction	Maintains an Emergency Operations Center Ensures readiness to respond quickly
Finance and Technology: Department . . . Accounting Loss Reduction	Maintains financial records Ensures sufficient funds for recovery operations; provides quick return to operations after an event
Purchasing Loss Reduction	Oversees all City purchases; implements direct purchase procedure in times of emergency Ensures purchases meet legal requirements; allows City to respond quickly to an event without a bid process
Library Loss Reduction	Maintains reference area of hazard data, including preparation and response information Educates citizens, thereby increasing awareness and reducing potential threat
Utility Billing Loss Reduction	Maintains utility account records Provides for a quicker return of operations after an event
Loss Reduction	Responsible for distribution of hazard preparedness materials Educates the public and increases awareness, thereby reducing threat
Risk Management Loss Reduction	Assesses local hazards and liabilities; determines extent of exposure; maintains sufficient insurance coverage for the City Reduces exposure and costs to the City; allows the City to return to normal operations more quickly after an event

City Manager's Ofc Loss Reduction	Responsible for all functions of the community Establishes and formalizes administrative policies and procedures of the City
Loss Reduction	Produces and distributes information to the public regarding preparedness Educates the public and increases awareness, thereby reducing threat

Redington Beach

Planning Board/Planning Agency . . .	Future land Use Elements Comprehensive Plan and Hurricane Hazard Analysis
Loss Reduction	Establishes policies and procedures for mitigation efforts. Provide for redevelopment
Loss Reduction	Recovery Plan Post Disaster Redevelopment Planning
Public Works . . .	Calibrated monthly flow meter sealed unit master station below ground level submersible pumps
Loss Reduction	Maintains integrity of system/reduce loss
Loss Reduction	Wet well two submersible pumps at each lift station total three lift stations Maintains integrity of system/reduce loss
Loss Reduction	Electrical panel box 5' to 6' above ground Maintains integrity of system/reduce loss
Loss Reduction	Done quarterly maintenance of swales Controls flooding drainage by percolation
Loss Reduction	Maintenance of storm sewer outfall installed duck bill valve Elevate problem of tides backing up control flooding
Loss Reduction	Liner inside manhole covers Prevents infiltration
Building Department . . .	Standard Building Code of 1994
Loss Reduction	Rules and regulations for construction, alteration, removal, demolition, etc.
Loss Reduction	Updates on storm events and repetitive loss data National Flood Insurance Program CRS Cycle 12/97
Loss Reduction	Enforces Building Codes Ordinances etc. Protect human life health and property, reduce risk of flood damage
Emergency Mgt. Loss Reduction	Repetitive loss, inform public, outreach projects An entire package of flood facts and flood information delivered to all residents two times a year.

Redington Shores

Board of Commissioners . . .	Property Acquisition
Loss Reduction	Purchased parcel zoned for development and nonconforming structure, changed to Town Park and continue to look for property to acquire
& Floodplain Mgt. Loss Reduction	Floodplain Management Plan in conformance with NFIP Public education on hazard mitigation with assistance in removing/elevating structures through FMAP and other programs.
Loss Reduction	Continuous support of State and Federal Beach Renourishment Projects. Provides our Town with first and best line of defense against high tides and natural disasters
Loss Reduction	Establishes and provides oversight to all Storm water Management Activities Reduces flooding in certain flood prone areas of our community
Loss Reduction	Responsible for the public safety of all citizens Establishes policies and necessary procedures to reduce loss of life and property from natural disasters
Building Off. Loss Reduction	Educates permit applicants on current NFIP/FEMA building regulations More residents are making modifications to existing structure in conformance with regulations
Building Off. Loss Reduction	Assists with FMAP Grant Application Elevates non-conforming structures above BFE in accordance with FIRM
Building Off. Loss Reduction	Coordinates with P&Z Board & Board of Adjustments on current and new building regulations Insures compliance with current hazard mitigation techniques as applied to development and additions
Building Official Loss Reduction	The Community Rating System Coordinator Coordinates Floodplain Management requirements with necessary town employees, officials, and citizens.
Planning/Zoning Loss Reduction	Reviews all requests concerning changes to the Comprehensive Plan Controls further development throughout the Floodplain Area
Brd of Adjustments Loss Reduction	Reviews all requests for variances to existing building codes Ensures compliance with Floodplain Management Plan

Police Chief
Loss Reduction

Emergency Management Coordinator
Provides early warning and evacuation control/assistance. Reduces loss of life and property.

Seminole FD
Loss Reduction

Emergency Management Coordinator
Assists in evacuation of citizens with specific needs during flooding and natural disasters

Sewer
Loss Reduction

Responsible for continuous operation of sanitary facilities
Reduces risk of flooding and to resume operations in post-disaster environment

Safety Harbor

City Managers Ofc. Loss Reduction	Coordinates mitigation policies with City Commission Establishes mechanism for policy review and approval
Fire Dept. Loss Reduction	Comprehensive Emergency Management Planning Direct link with Pinellas County Emergency Management to coordinate county wide mitigation efforts and post disaster recovery.
Building Dept. Loss Reduction	Enforces Flood Protection Ordinance and administers NFIP/CRS Program Provides regulations for new construction and post disaster rebuilding
Planning Dept. Loss Reduction	Administers Comprehensive Plan and growth management policies/requirements Coordinates post disaster redevelopment planning with other development activities and departments
Engineering Dept. Loss Reduction	Capital Improvement Program planning Schedules mitigation improvements for city facilities and infrastructure
Leisure Services Loss Reduction	Maintains city facilities Secures city facilities prior to a storm, plans for protection and upgrading these facilities
Public Works Loss Reduction	Maintain city facilities Secures city facilities prior to a storm, plans for protection and upgrading these facilities

Seminole

City Loss Reduction	Established first Emergency Management Plan, June 27, 1998. Documents coordinated plans and procedures for emergencies to minimize losses.
Comm. Dev./Fire Dept. Loss Reduction	Local Mitigation Strategy Produces coordinated city/county/state emergency plan.
Comm. Dev./Fire Dept. Loss Reduction	Grants for essential facilities: shutters/hardening Emergency Operations/Shelters able to operate during worse emergencies
Comm. Dev. Loss Reduction	During Building permit reviews request higher design wind velocities for "critical" facilities. Reduce shelter deficit per Comprehensive Plan increase refuges of last resort and improve recovery capability
City Engineer Loss Reduction	Assist with paving and drainage of unimproved roadways Keeps roadways open & accessible longer during emergencies
City Engineer Loss Reduction	Request updated water and sewer utilities to meet current standards Protect public facilities and environment during emergencies of any type
Public Works Loss Reduction	Check evacuation route signs Facilitate evacuation during declared emergencies

South Pasadena

Administration	Provide personnel to answer phones and disseminate public information pre and post disaster. Secures City records
Loss Reduction	Limits loss of life and property
Public Safety	Preparation and updates of City's Emergency Action Guide. Represent City and Fire District on PC Disaster Advisory Comm. Evacuation of residents who have no transportation. Direct Civil Defense Comm. Sheriff provides traffic control and Search and Rescue.
Loss Reduction	Limits loss of life
Public Works	Pre-disaster preparation including fueling vehicles, moving equipment to EOC, securing City buildings and lift stations. Keeping trees trimmed in Hurricane Season. Post disaster debris removal, hazard identification, damage assessment of Public Infrastructure. Emergency repair of sanitary sewer lines.
Loss Reduction	Limits damage to City property
Community Impr.	Post disaster building Off. and Code Enforcement Officer shall be members of Damage Assessment Team. Coordinate City's participation in CRS.
Loss Reduction	Ensures that structures damaged more than 50% undergo review for possible relocation and flood proofing.
Finance and Technology:	Prepares all necessary documentation for emergency acquisition of equipment and supplies for disaster operations. Maintain records of expenditures and personnel during disaster and post disaster
Loss Reduction	Increase likelihood of receiving Federal Funds

St. Pete Beach

City Commission	Adoption of policies that relate to emergency operations; adoption of necessary ordinances and resolutions to implement St. Pete Beach Emergency Management Standard Operating Procedures, Pinellas County's Comprehensive Emergency Management Plan, St. Pete Beach Municipal Comprehensive Plan and associated land development regulations.
Loss Reduction:	Establishes procedures and conduct for city operation before during and after an emergency; establishes recovery and redevelopment policy,
City Commission	Support and actively pursue beach re-nourishment funds and projects.
Loss Reduction	Reduces potential losses from flooding due to storm surge.
Public Works	Assists all departments in securing all City facilities, records & equipment and preparing buildings for emergencies.
Loss Reduction	Minimizes potential damage to City owned facilities.
Planning	Maintenance and implementation of comprehensive plan, land development codes, building codes, code enforcement and CRS program.
Loss Reduction	Minimizes future risk from natural disaster; and assures a redevelopment strategy that supports federal, state and city objectives and policies for barrier island communities and floodplain management.
Finance and Technology:	Prepares documentation for emergency acquisition of equipment and supplies for disaster operations. Maintains records of expenditures and personnel costs for post disaster reimbursement.
Loss Reduction	Insures against documentation loss
Risk Management	Ensures that appropriate insurance coverage is in place for all city facilities and equipment.
Loss Reduction	Insures against Financial losses associated with damage caused by natural disasters.
City Manager	Overall management of City functions and activities, Interact with the City Commission for overall direction of the City, Ensures that appropriate insurance coverage is in place for all City facilities and equipment
City Clerk	Ensure City codes, ordinance and policies are followed regarding a state of emergency declaration. Record actions of the City

Commission. Ensure policies of the City Commission are implemented. Ensure electronic records are made and retained in accordance with record retention laws and policies

City
Commission

Review and adoption of policies relating to emergency operations. Adoption of necessary ordinances and resolutions necessary to implement the City of St. Pete Beach's Emergency Management Standard Operating Procedures (SOPs). Adoption of necessary ordinances and resolutions necessary to implement Pinellas County's Comprehensive Emergency Management Plan (CEMP). Adoption of necessary ordinances and resolutions necessary to implement the City of St. Pete Beach's Municipal Comprehensive Plan. Adoption of necessary ordinances associated the City's Land Development Codes. Support and actively pursue beach renourishment funds and projects. Reducing potential losses form flooding due to storm surge. Support and actively support policies favoring loss prevention resulting from, mitigation against the damaging effects from, planning/preparation for, and the recovery from emergencies using a all hazards approach.

Planning

Maintenance and implementation of the comprehensive plan, land development codes, building codes, municipal codes and other policies as they relate to emergency management focused primarily on construction, permitting, code enforcement, and redevelopment. Implement requirements of the FEMA National Flood Insurance Program – Community Rating System (CRS). Regularly review the FEMA National Flood Insurance Program – Community Rating System (CRS) to determine whether required compliance issues are properly addressed and whether or not to further implement activities that will lead to a higher class rating and provide additional flood management protection. Perform damage assessments and estimates after a emergency. Coordinate any permitting process that may be necessary before and after an emergency event.

Finance and Technology: Prepares documentation for emergency acquisition of equipment and supplies for disaster operations. Maintains records of expenses and personnel costs for post disaster reimbursement. Maintain functions of Accounts Receivable (A/R) and Accounts Payable (A/P) and payroll. Assist managers in the determination of financially appropriate actions.

Fire

Coordinate and manage all activities related to and surrounding an emergency event (Fire Chief is the City's Emergency Operation Manager). Coordinate training related to the four phases of emergency management (Mitigation, Preparedness, Planning and Recovery).

Leisure Services	Assist the City's Public Works Department with tasks as become necessary
Police	Within the physics of the environment, respond to life threatening incidents/situations as they occur
Public Works	Clear streets of debris and other hazards, providing a means of transportation throughout the City. Coordinate solid waste collections with our service provider. Maintain and manage the extensive records which accompany an emergency situation. Maintain wastewater systems minimizing the effects of flooding and environmental hazards. Maintain and operate City-owned facilities as needed realizing the potential uses in emergency situations. Maintain and operate the stormwater drainage system in such a way that promotes mitigation.

St. Petersburg

Fire & Rescue/ Emerg. Mgt Ofc.	Comprehensive emergency management planning, coordination and training including public education.
Loss Reduction	Reduces the affects of natural hazards through preparedness. Promotes mitigation plans and initiatives.
Fire & Rescue/ Fire Marshall	Fire and life safety codes and code enforcement, hazardous materials, public education
Loss Reduction	Reviews building plans and inspects buildings to mitigate hazard impacts. Provides public education for mitigation initiatives.
Development Srv./ Planning Programs	Mitigation Planning
Loss Reduction	Coordinates policies and procedures for natural hazard mitigation efforts including floodplain management and comprehensive planning.
	Planning Commission
	Recommends approval of land use and <i>Comprehensive Plan</i> changes.
Development Srv./ Deve. Review	Site Plan Review
Loss Reduction	Coordinates the review of development to ensure site design mitigates hazard impacts.
	Environmental Development Commission
	Review and approves site plans and ensures compliance with the drainage and surface water ordinance.
	Board of Adjustment
	Reviews and approves variances to flood elevations.
Development Srv./Permitting and Construction Srv.	Building plan review
Loss Reduction	Coordinates the review of building construction to ensure building design mitigates hazard impacts. Assists with FMAP grant applications.
	NFIP/CRS Coordinator
	Maintains the National Flood Insurance's Community Rating System.

Building Official
Responsible for substantial improvements, building codes and elevation certificates.

Building Inspectors
Enforce construction and building codes.

Engineering and Storm water

Storm water maintenance, planning and engineering

Loss Reduction

Establishes and coordinates storm water projects to alleviate flooding.
Maintains storm water drainage systems including all water bodies.

Tarpon Springs

<p>Exec. Dir. Fire/EMS Loss Reduction</p>	<p>Coordinate planning, response, recovery and mitigation phases Activate and conduct operations of the EOC, represent City at the Pinellas County Disaster Advisory Board, keep abreast of all information concerning potential problems requiring action form the Municipal EOC, transport disabled to shelters</p>
<p>Police Dept. Loss Reduction</p>	<p>Responsible for traffic control evacuation, policing of shelters Commands/supervise field operations, communications and police building, supervise support and services details, assist Fired Dept. To set up EOC, helps coordinate evacuation process</p>
<p>Building Dept. Loss Reduction</p>	<p>Assist transportation officer, damage assessment Implements FEMA - Flood Insurance base floor elevations for new construction and substantial improvements, alert and brief personnel on storm, assist with evacuation, lead damage assessment in recovery phase</p>
<p>Building Main. Loss Reduction</p>	<p>Secure City buildings, prepare City Hall for shelter Secure City Hall, procure emergency supplies from purchasing, secure other City buildings, assist Personnel Director with family shelter at City Hall</p>
<p>Comm. Officer/ MIS Director</p>	<p>Acquire, maintain, communication equipment; coordinate with departments for communication needs</p>
<p>Engineering Loss Reduction</p>	<p>Identify location of utilities, provide damage assessment in response/recovery phase Coordinate Community Rating System (CRS) program, review road elevations, develops and maintain necessary reference material for response/recovery from severe weather, Consultant to emergency response personnel, member of Damage Assessment Team</p>
<p>Public Srv./Wks/ Utilities Loss Reduction</p>	<p>Open streets for evacuation, secure City grounds Secure sandbags/barricades for mitigation damage, clear roadways for emergency vehicles, cleanup of debris, post disaster</p>
<p>Purchasing Loss Reduction</p>	<p>Provide equipment and supplies for response Order, stock emergency supplies requested by other City departments, maintain emergency contract for necessary purchases</p>
<p>Planning/Zoning</p>	<p>Coordinate transportation for patients in health care facilities, special needs people, and citizens without transportation to shelters</p>

Loss Reduction

Implementation and update of Comprehensive Plan including Coastal Management element, prepare mitigation plan in response to repetitive loss designation by FEMA, Relay City's transportation needs to the Planning Division of County Civil Emergency Services, coordinate the delivery of buses from School Board, Notify health care facilities of transport schedule to shelters

Treasure Island

Mayor/Comm. Loss Reduction	Formulation of policy for conduct of emergency operations, adopt necessary ordinances and resolutions to implement emergency action guide plans, comprehensive plan, and land development regulations. Establishes procedures for conduct of city operations before, during, and after an emergency. Comprehensive plan and land development regulations establish procedures for development and redevelopment to reduce future damage.
Mayor/Comm. Loss Reduction	Supports beach nourishment/re-nourishment projects. Reduces loss from flooding and tidal surges.
Administration Loss Reduction	Implementation of procedures established in emergency action guide and land development regulations. Emergency procedures provide coordination of city departments in order to effect evacuation of citizens as well as city equipment and personnel and recovery plan to return to normal operations. Land development regulations affect density and construction/re-construction for compliance with flood regulations.
Administration	Established and maintains an internet web site with local information on emergency preparedness, ordinances, meeting schedules, etc.
Loss Reduction	Informs citizens on hurricane awareness, land development regulations, flood hazard reduction, special needs registration., etc.
Administration	Established Information Technology divisions to broadcast local information, meetings, scheduled events, emergency management information, and live updates via local cable channel.
Loss Reduction	Informs citizens on preparedness information and actions necessary to protect lives and property.
Fire/EMS	Fire Chief/Emergency Management Coordinator responsible for development and updating of emergency action guide. Participation in Pinellas Disaster Advisory Committee and coordination with Pinellas County Emergency Management Department.
Loss Reduction	Emergency procedures provide coordination of city departments in order to effect evacuation of citizens as well as city equipment and personnel and recovery plan to return to normal operations.
Fire/EMS Loss Reduction	Evacuation assistance for special needs registrants. Reduces loss of life potential.
Fire/EMS Loss Reduction	Annual Hurricane Awareness Programs Reduces loss due to greater public awareness of damage/loss of life potential, preparedness information, flood reduction information.

Fire/EMS & Police Loss Reduction	Public notification of evacuation order/recommendation. Reduced loss of life and damage potential due to early notification.
Police Loss Reduction	Evacuation traffic control. Aids in controlling flow and direction of evacuation traffic for effective and efficient evacuation of city.

Public Works Loss Reduction	Storm drain maintenance and street sweeping. Reduces exposure to flooding.
Public Works Loss Reduction	Construction/maintenance of dune line along beachfront. Reduces exposure to flooding, tidal surges, and erosion.
Public Works Loss Reduction	Maintains fire, police, public works vehicles and equipment. Ensures vehicles and equipment are operational to respond in emergency situations.
Public Works Loss Reduction	Maintains operational condition of sewer system. Reduces infiltration of sewer system, health hazard, and potential backups into buildings, streets, and storm water system.
Building Loss Reduction	Implementation of Land Development Regulations. Reduces losses due to density controls, compliance with flood regulations, building codes, and site planning requirements.
Building Loss Reduction	Building permitting and inspection program. Reduces loss due to wind and flooding by ensuring buildings comply with codes.
Building Loss Reduction	Participation in Community Rating System. Reduces loss by increased public awareness of flood damage reduction, identification of repetitive loss properties, and enforcement of flood regulations.
City Clerk Loss Reduction	Maintains city records. Reduces loss of critical data necessary for daily operation and return to normal operation following disaster.
Public Works Loss Reduction	Operates local buses used during evacuation. Reduces loss of life potential by providing necessary transportation during evacuation.
Transportation Loss Reduction	Operation of causeway drawbridge and toll facility. Control of drawbridge and elimination of toll collection during evacuation permits effective and efficient evacuation.
Transportation	Replacement of Treasure Island Causeway bridges that serve as designated evacuation route to mainland. Two fixed bridges currently under construction; drawbridge in planning and design stages for expected replacement in 2005-2007.
Loss Reduction	Improved evacuation of island due to higher elevation bridges with wider traffic lanes.
Finance and Technology:	Provides for normal and emergency Purchase of services and supplies for city operations.

Loss Reduction	Ensures purchases to allow daily and emergency operations of city government.
Planning/ Zoning	Site plan review, review of variance requests, serves as local planning commission.
Loss Reduction	Ensures compliance with land development regulations, reviews and recommends updates to comprehensive plan and land development regulations
All Departments	Responsible for implementing procedures in emergency action guide and designation of important records and equipment that must be removed to prevent loss or damage.
Loss Reduction	Ensures emergency procedures are followed, reduces loss of records and equipment and permits return to normal operations quicker.

Appendix 7

Private/Public Sector Progress Report

- The Workgroup Adheres to “Sunshine Regulations” for Open Meetings.¹
- All documents are public and made available at Pinellas County Emergency Management’s Office and the local municipalities.
- Pinellas County Emergency Management invited many organizations/ departments to help in the planning process:

American Red Cross	County Communications
Bankers Insurance	County Community Development
Business Contingency	County Construction Licensing
Child Care Association	County Development Review Services
City of Belleair	County Economic Development
City of Belleair Beach	County Planning
City of Belleair Bluffs	County Public Works
City of Clearwater	County Utilities
City of Dunedin	Dunedin Chamber
City of Gulfport	Fed. Mobile Home Owners
City of Indian Rocks Beach	First Floridian Auto & Home Ins. Co.
City of Indian Shores	Florida Assisted Living
City of Largo	Florida Power
City of Madeira Beach	Florida Renovators
City of Oldsmar	GTE
City of Pinellas Park	Gulf Beaches Chamber
City of Safety Harbor	Gulfport Chamber
City of St. Petersburg	Insurance Management Solutions
City of St. Pete Beach	Group
City of Seminole	Largo Chamber
City of South Pasadena	Morton Plant
City of Tarpon Springs	Palm Harbor Chamber
City of Treasure Island	Paul Sierra Construction
Clearwater Chamber	Pinellas Park Chamber
Clearwater Gas	Pinellas Suncoast Transit Authority
Communities Association Institute	Regional Planning Council
Council of Neighborhood Assoc.	Safety Harbor Chamber
County Building	St. Petersburg Chamber

¹ Florida is renowned for putting a high priority on the public's right of access to governmental meetings and records. In fact, the principles of open government are embodied not only in Florida statutes, but also guaranteed in the state Constitution. Reference Florida's *Government in the Sunshine* Manual.

Salvation Army

Town of North Redington Beach

Town of Redington Beach

School Board

Town of Redington Shores

Seminole Chamber

United Way

Tarpon Springs Chamber

Veterans Medical Center

TECO/Peoples Gas

Town of Kenneth City

- We engaged Public Affairs' interest in activities and publicizing meetings. The meeting information is disseminated to interest citizens, homeowner groups, and all local media. Meetings are also noticed on the County's Community Calendar and web site (www.pinellascounty.org).
- Emergency Management has developed a mitigation handbook for homeowners on how to protect their homes.
- We provide agendas and minutes to the following participants and interested parties to insure their continued participation:

American Red Cross

County Public Works

Bankers Insurance

County Utilities

Business Contingency

Dunedin Chamber

Child Care Association

Fed. Mobile Home Owners

City of Belleair

First Floridian Auto & Home Ins. Co.

City of Belleair Beach

Florida Power

City of Belleair Bluffs

Florida Renovators

City of Clearwater

GTE

City of Dunedin

Gulf Beaches Chamber

City of Gulfport

Insurance Management Solutions Group

City of Indian Rocks Beach

Largo Chamber

City of Indian Shores

Morton Plant

City of Largo

Paul Sierra Construction

City of Madeira Beach

Pinellas Suncoast Transit Authority

City of Oldsmar

Tampa Bay Regional Planning Council

City of Pinellas Park

Safety Harbor Chamber

City of Safety Harbor

St. Petersburg Chamber

City of St. Petersburg

School Board

City of St. Pete Beach

Seminole Chamber

City of Seminole

TECO/Peoples Gas

City of South Pasadena

Town of Kenneth City

City of Tarpon Springs

Town of North Redington Beach

City of Treasure Island

Town of Redington Beach

Clearwater Gas

Town of Redington Shores

Communities Association Institute

United Way

County Building

Veterans Medical Center

County Communications

County Construction Licensing

County Planning

- The workgroup has acquired the assistance of Bankers Insurance Group to reach out and set an example of private industry mitigation actions.
- Through this process, we have insured the interest and viability for the Wind Mitigation Home Center. The center will model state of the art building technology designed for wind resistance. The center will have areas left unfinished, or open for viewing the construction techniques and materials used.

- Through presentations to large homeowner groups, we have discussed the Local Mitigation Strategy and the importance of personal mitigation and had the opportunity to receive citizen input.
- Since 1998 Pinellas County has hosted an annual Hurricane Expo to provide preparedness and mitigation information free to the public. This well-attended event typically draws over 1,000 residents. Participation is sought from home improvement stores, the construction industry, and vendors as well as state and local agencies with emergency response or regulatory responsibilities. We will have hands-on exhibits demonstrating everything from gabled roofs to plywood shutters.
- There were several Expos/Home Shows held annually, exhibiting mitigation methods using a "Hurricane Alley." It demonstrated the best practices in fortifying your home and gave another opportunity for citizen input on mitigation practices. Several LMS Members including the planning department and Tampa Bay Regional Planning Council helped staff these events.
- Emergency Management has added mitigation tips, the importance of mitigation, and the ability to join the Local Mitigation Strategy Process to our web site. We will have an interactive web site by September, for citizens to access the proposed revised strategy and provide comment. (www.PinellasLMS.org)
- The Local Mitigation Strategy Update will be adopted in a public forum with the Pinellas County Public Affairs conducting a public education campaign to solicit input and participation.
- Since the adoption of the Local Mitigation Strategy in 1998, the County assisted in developing a County Flood Management Plan, which was approved by the Insurance Services Office and FEMA, to satisfy a Community Rating System Requirement. The County conducted several meetings at public libraries from Treasure Island to Palm Harbor to receive citizen input and questions regarding the flood hazard and mitigation opportunities.
- Since the adoption of the LMS in 1998, the County has also spearheaded the Flood Mitigation Assistance Program for the unincorporated areas. Meetings were held to inform citizens of the program, the need to take precautionary action to prevent future damages and to receive citizen input. Like meetings were held in many of the participating NFIP/CRS communities as well.
- Many municipalities have established Community Emergency Response Team (CERT)/ Citizen Corps programs to train residents how to prepare and respond to emergencies when public emergency forces are serving more critical areas. The personal protection of their home is included as part of their training.
- TBRPC has developed a web site (www.PinellasLMS.org) which discusses the LMS planning process and the importance of mitigation in our community. The site will link directly to the Pinellas County Emergency Management web site, as well as FEMA and the State of Florida. This new web site, contains an executive summary, .pdf version of basic plan and a public forum feedback section for interested citizens to respond back to the LMS workgroup.
- Pinellas County participates in a regional public education campaign on the importance of mitigation and preparedness for all types of disasters. The RPC and the County coordinate to produce and distribute brochures, press releases and power point presentations.
- Pinellas County also participates with private sector partners including the utilities,

chambers of commerce and economic development agencies in the development and distribution of a Small Business Disaster Planning Kit which features an interactive CDROM, guidebook, template and web site.

Appendix 8 Priority Procedures

Based upon the Hazards Analysis and Vulnerability Assessment, the LMS Prioritization Procedures outlines below are utilized to identify and prioritize projects and programs that appear to (1) have technical merit, (2) be cost beneficial, and (3) be environmentally sound and acceptable to the public upon implementation. Annually, new projects are brought forward and evaluated by the Committee for inclusion in the Local Mitigation Strategy. The total score is then used as the basis for the preliminary ranking of projects and programs on the list.

Local Mitigation Strategy Prioritization Procedures			
Criteria	High - 6 points	Medium - 3 points	Low - 1 point
Health and Safety	Immediate Concern	Intermediate Concern	Long term Concern
Hazard Vulnerability Analysis	High Vulnerability	Medium Vulnerability	Low Vulnerability
Critical Facilities or Services	Alleviates Existing Safety Hazard	Alleviates Potential Safety Hazard	Promotes or Maintains Safety
Life Expectancy	Long Term 10+ years	5 - 10 years	Less than 5 years
LMS Goals and Objectives	Meets 3 or more	Meets 2	Meets 1
Emergency Management Goals and Objectives	Meets 3 or more	Meets 2	Meets 1
Cost Effectiveness ¹	Potential for Return on Investment	Cost Effective	Can not be Readily Computed

¹ Points are awarded based on a positive Benefit Cost Ratio (BCR). The BCR is obtained by dividing the estimated value of the project benefit(s) by the estimated project costs (i.e. Benefit = \$100,000, Cost = \$50,000, BCR = 2.0) Projects with a BCR of 1.0 or greater will be awarded a high of 6 points. If the BCR can not be computed at this time, only 1 point is awarded. Projects with a BCR less than 1.0, applying for PDM or HMGP funding, will need to provide additional information during the grant application process.

Coincidental Benefits - Tie Breakers: receive one point for each	
Economic Development	
Protection of Natural Resources	
Preserve Open Space	
Consistent with Local Government Comprehensive Plan	
Shown in Local Government Capital Improvement Program	
Local Community Participates in NFIP Program	
Project Recommended by Storm water Master Plan or Watershed Management Plan	
Cooperative Effort Between Public and Private Interests	
Within Coastal High Hazard Area	
Eliminates Repetitive Loss Problem	
Complies With Floodplain Requirements	
TOTAL	

Appendix 9

Pinellas County Mitigation Initiatives Updated 9/13/2004

Local Mitigation Strategy Initiatives \$ 1 - \$ 50,000		
Project	Cost	Funding
Belleair		
Initiative: Town Hall (901 Ponce de Leon Blvd.) storm mitigation. The Hall includes police and all communications & EOC, employee shelter, etc. Project includes vulnerability assessment and corrective work on doors, windows, and roof	\$40,000	
Belleair Beach		
Initiative: Complete a professional survey of basic flood elevations for all existing residential housing units and public buildings including intakes and outfalls essential to the elimination/control of repetitive flooding within the city. The survey to include verification of all monument markers and the placement of additional monuments necessary for effective flood plain management.	\$27,500	
Belleair Bluffs		
Initiative: Commercial roll-down storm shutters to protect City Hall and the Fire Department.	\$45,000	
Clearwater		
Initiative: Develop a CERT that is trained on How to Educate Homeowners on Mitigation Techniques.	\$37,000	
Dunedin		
Initiative: Storm Shutters for Municipal Services Building, 750 Milwaukee Ave., City Hall, 542 Main St. and the Sheriff's North County Sub-station, 737 Loudon Ave. (Benefit/Cost = 20.1)	\$25,000	
Gulfport		
Initiative: Replace skylights in City Hall to withstand hurricane force winds; install window protection devices at critical city facilities to withstand hurricane force winds (2401 53rd St S., 5330 23rd Ave. S. & 5314 23rd Ave. S.).	\$25,000	
Initiative: Design and develop a new City EOC, 2401 53rd Street South.	\$20,000	
Initiative: Replace aging generator for the Fire Station/EOC.	\$35,000	
Initiative: Purchase Thermal Imaging camera for post-storm search and rescue and hazard abatement.	\$20,000	

Project	Cost	Funding
Indian Rocks Beach		
Initiative: Beach Management Plan. This project would fund a portion of the city's proposed beach management plan. This would specifically include planning activities necessary to establish a comprehensive dune system. The dune system would serve as a barrier against storm surge and deflect wind on the gulf beach. Also included is to identify and plan a beach vegetation program to provide erosion control and foster dune development; identify and plan any additional physical improvements, which would be necessary to reduce the effects of storm surge and erosion. This includes such items as breakwaters, jetties, groins, etc. Also, we would identify prudent beach usage practices which would reduce collateral damage during a storm (e.g. placement of boats and other unsecured objects on the beach); identify additional land development regulations within the coastal construction zone necessary to reduce potential losses; and to foster public support for beach management practices .	\$20,000	
Indian Shores		
Initiative: Purchase and installation of an auxiliary generator for the Critical Facility, Town Hall, 19305 Gulf. Blvd.	\$33,455	
Initiative: Roll-Down storm shutters to protect critical facility exposed openings. Town Hall annex, 19305 Gulf Blvd.	\$30,000	
Initiative: Erosion Control. Seawall replacement with tiebacks at Intracoastal Waterway and Town Street.	\$50,000	
Kenneth City		
Initiative: Install storm shutters on police department (EOC) and City Hall (alternative EOC and Admin. Center).	\$46,000	
Madeira Beach		
Initiative: Harden City Hall, Emergency Storm Shutters.	\$25,000	
Initiative: Upgrade to secondary EOC (Nations Bank located in non evacuation zone) .	\$15,000	
North Redington Beach		
Initiative: Storm Sewer - "flapper" valve to prevent storm water/tidal backup into streets. This is a pilot program that will eventually lead to the installation of a total of 12 valves.	\$45,000	
Oldsmar		
Initiative: Emergency Temporary Shelter to be used in emergency events to provide temporary shelter for displaced persons.	\$10,000	
Initiative: Reinforcement/shuttering of the Oldsmar EOC/ Fire Station (#54).	\$30,000	
Initiative: Demolition/mitigation of flood prone properties, lying below the adopted base flood elevation. Oldsmar Cultural Arts Center: City-owned/controlled property, currently non-conforming lying below 11' NGVD.	\$15,000	
Initiative: Demolition/mitigation of flood prone properties, lying below the adopted base flood elevation. South Trust Bank: Recently acquired City-owned/controlled property, currently non-conforming lying below 11' NGVD.	\$20,000	

Project	Cost	Funding
Pinellas Park		
Initiative: A community outreach program, which will include mitigation measures.	\$50,000	
Redington Beach		
Initiative: Microfilming of municipal records and method to educate residents, City Hall 105 164th Avenue.	\$46,000	
Redington Shores		
Initiative: Flood proofing the Town's existing Maintenance facility located at 155 174th Ave. East. Located in FEMA Zone A-12. Storm proofing activities planned are the in kind replacement of existing bay and office doors with water tight ones to minimize storm surge/flooding. Building modifications to included raised shelving to reduce flooding damage to vital post storm recovery equipment and installation of storm shutters to all doors and windows and hydrostatic relief per FEMA Technical Bulletin 93-1, for the protection of the building from wind induced projectiles. 155 174th Ave	\$50,000	
Safety Harbor		
Complete a vulnerability and hazard assessment of the cities potable water system to determine possible threats from hazards and terrorism, and to mitigate against these threats	\$35,000	
Initiative: Replacing of overhead doors and bracing of parks and building maintenance building; storm shutters for community center, Rigsby Center, parks and building maintenance, 333 9th Ave. N., 605 2nd St. N., and 650 9th Ave. S.	\$15,000	
Initiative: Replace Portable Generator at Public Works Compound.	\$35,000	
Initiative: Thermal Imaging System for Search and Rescue.	\$30,000	
St. Petersburg		
Initiative: Mobile Home Tie Down Program, this program will provide information about mobile home tie-downs, demonstrate tie-down methods and offer voluntary inspections for the 27 mobile homes parks in St. Petersburg.	\$50,000	
St. Pete Beach		
Initiative: Community Education Program. This education program will produce a better interface between the City and its stakeholders regarding emergency management, continuation of business, hazard mitigation, environmental concerns, etc.	\$10,000	
Initiative: Vehicle lift, high lift jacks, air compressor and related tools to tire repair. As tires will require constant changing and repair during an emergency situation, the City will need this equipment which will allow an area to be set up for this purpose or to equip a vehicle, creating a mobile tire changing station.	\$20,000	
Initiative: Install storm shutters to the Fire Department #23 Building. As emergency operations will be heavily focused in this building and as this is building will serve as living quarters for many of the Fire Department's employee's additional flood proofing measures must be taken to ensure their safety.	\$35,000	
Initiative: Provide shutters for the City's EOC	\$40,000	

Project	Cost	Funding
Work Order System w/GIs enhancements. These enhancements will better allow the City to make use of its present GIS system to produce planning decisions and other functions as they relate to building construction, public works, emergency management, etc.	\$35,000	
South Pasadena		
Initiative: Install additional roll down storm shutters - rear window and in front office area - addition to EOC (for certification \$20,000, other pre-storm team operations \$30,000, 911 Oleander Way S.	\$50,000	
Tarpon Springs		
Initiative: Four generators to be mounted on pick-up trucks (110v-single phase) To be used as needed during any phase of a storm event	\$10,000	
Initiative: Boat & Motor (16ft) to be used for access of critical facilities at a time of flooding	\$12,000	
Initiative: Storm proof Treatment Plant by shutters on windows & electronic protection systems	\$18,000	
Initiative: Wood Chipper (16 inch) for clearing	\$22,000	
Initiative: Equipment to test and decontaminate water mains and water systems	\$25,000	
Initiative: Portable diesel pump (12 inches) to be used to bypass damaged lift stations	\$35,000	
Initiative: Two 4-wheel drive utility vehicles used to access critical facilities	\$44,000	
Treasure Island		
Initiative: Funding to develop and implement plans formulated by Beach Stewardship Committee to enhance beach area in order to reduce potential storm losses. Anticipated projects to include planning costs, construction of additional dunes, dune vegetation, sand sharing, renourishment program, erosion control structures, and similar projects to reduce erosion, mitigate flooding, and enhance the beach.	\$50,000	
	\$1,054,955	

Local Mitigation Strategy Initiatives \$ 51,000 - \$ 300,000		
Project	Cost	Funding
Belleair Beach		
Initiative: Develop engineering data to support installation of a complete flood protection system designed to prevent residential and public building flooding up to a class 4 or 5 hurricane. Purchase, install and maintain a system which will include but is not limited to back flow prevention, flood gates, sea walls, pumps, elevation levies. At all storm water discharge points, sea water back flow points and areas of recorded repetitive loss and potential flooding within the city.	\$283,500	
Clearwater		
Initiative: Hardening of City's mainland Fire Stations by purchase of Hurricane rated overhead doors and emergency generators.	\$300,000	
Dunedin		
Initiative: Installation of hurricane shutters on Library Facility (223 Douglas). (Benefit/Cost = 6.0)	\$95,000	
Gulfport		
Initiative: Construct storm doors for commercial businesses within the 100-year floodplain of the Waterfront Redevelopment District.	\$60,000	
Initiative: Install sewer backflow prevention devices in residential and commercial areas in the 100-year floodplain in the WRD.	\$200,000	
Initiative: Harden Fire Station 17 overhead apparatus bay doors, doors and windows of Fire Administration Building to withstand 125mph+ winds.	\$100,000	
Indian Rocks Beach		
Initiative: Beach Management Plan Implementation. This project would be used to implement portions of the beach management plan intended to reduce potential storm losses. This would include: Establishment of a dune and erosion control system using native vegetation, construction of facilities necessary to accommodate a dune system. This includes such as beach walkovers, dune retaining walls, other structures, perform detailed engineering studies, in cooperation with the County Coastal Management Division. This will provide additional physical improvements which would be necessary to reduce the effects of storm surge and erosion, such as breakwater, jetties, groins, etc. Prepare and implement regulations which promote prudent beach usage practices to reduce potential collateral damage during a storm (e.g. placement of boats and other unsecured objects on the beach and prepare and implement land development regulations within the coastal construction zone necessary to reduce potential losses. Estimated Cost \$150,000 (15% City match of estimated total cost of \$ 1,000,000).	\$150,000	
Indian Shores		
Initiative: Reduce flood damage by creating a detention pond and storm water drainage system in the community redevelopment area	\$100,000	

Project	Cost	Funding
Kenneth City		
Initiative: Repair, rework, and replace components in the Kenneth City Storm Drain System. This should mitigate water damage should a storm strike Pinellas County. Location: Kenneth City and surrounding area including Dixie Hollins High School.	\$300,000	
Largo		
Initiative: Hardening the new Public Works administration building by adding storm shutters and installing emergency generators. This facility contains the Public Works EOC.	\$89,151	
Initiative: Hardening the new Environmental services (sewer) administration building by adding storm shutters and installing emergency generators. This facility contains the Environmental Services EOC	\$89,151	
Initiative: Acquisition of repetitive loss properties along McKay and Allen's Creek for the construction of storm water retention facilities. Status: Ongoing initiative. Two properties along McKay Creek will be purchased in 2003. Benefit: Removes repetitive loss properties from the flood plain. When sufficient contiguous properties are acquired, the City can construct stormwater retention ponds to improve drainage and decrease the upstream potential for future flood damage.	\$300,000	
Madeira Beach		
Initiative: Install 20 Flap valves to reduce tidal backup in storm drains.	\$150,000	
North Redington Beach		
Initiative: SEWER - North Redington Beach provides sewer service for Redington Shores and NRB. Raise main lift station electrical and controls above flood plain (\$75,000). Raise emergency generator and fuel tank above flood plain (\$50,000). Raise lift station electrical and controls above flood plain - two stations (\$140,000). Lift Stations - 100 Bath Club Concourse, 300 N. Bath Club Blvd.	\$265,000	
Oldsmar		
Initiative: Storm water Treatment Plan. Preparation of a citywide drainage plan to minimize flooding throughout the City.	\$240,000	
Pinellas Park		
Initiative: To install a culvert to improve the secondary drainage system capacity in a residential neighborhood, eliminate loss due to localized flooding, and eliminate a large open channel which poses a threat to children in a nearby exceptional school, pedestrians, and motorists. The channel is within the 46th St. ROW in the Fortuna Park Subdivision.	\$200,000	
Redington Beach		
Initiative: Elevate street and lift station wet well. The portion of 161st Avenue causeway including 4th and 5th streets.	\$99,380	
Redington Shores		
No Project for this category.		

Project	Cost	Funding
St. Petersburg		
Initiative: Fire Station Window and Door Storm Protection. This project will retrofit nine fire stations to protect against storm impacts by providing window protection and replacing vulnerable overhead doors. Downtown Master Fire Station 455 8th St. S., Palmetto Park Station #3 3101 5th Ave. S., North Shore Station #4 2501 4th St. N., Fossil Park Station #7, 975 9 th St. N., Lake Maggiore Station #8, 4701 Dr. Martin Luther King St. S., Lake Pasadena Station #9 475 66th St. N., Ponce de Leon Station #10 2800 30th Ave. N., Lakewood Station #11 5050 31st St. S., Gateway Station #13 11600 Roosevelt Blvd.	\$250,000	
St. Pete Beach		
Initiative: Purchase and installation of a SCADA system for the City's 17 wastewater pump/lift station. The SCADA system will reduce the number of employees needed to monitor the lift stations, preventing sanitary sewer overflows.	\$90,000	
Initiative: Emergency Generators and electrical equipment for Lift Stations #2 and #3. Benefits: The installation of the of these emergency generators will ensure the proper operating conditions of the two main wastewater pumping station during a emergency event.	\$100,000	
Initiative: City-wide drainage repairs and upgrades. Drainage upgrades (pipes, grading inlets and outfalls) for flood mitigation and repetitive loss in single family residents. Area of Moody Street & 44 th Ave and Boca Ciega Isle.	\$125,000	
South Pasadena		
Initiative: Emergency generator, City Hall (\$60,000) and Public Works building to allow staff to not be dependent on Public Utilities prior to evacuation and begin recovery long before the Public Utilities are back in service (\$60,000), 7047 Sunset Dr. S.	\$120,000	
Tarpon Springs		
Initiative: Fixed generator (60 KW) to be located at the Public Services Complex used to power fuel pumps and other vital service needs within the complex	\$60,000	
Initiative: "Flood Way" study to determine effects storm surge and receding waters of the Anclote River has on bridges crossing at Alt 19 & US HWY 19N-propose alternative measures for storing and routing these waters	\$75,500	
Initiative: Three generators (60 KW) for City wells for temporary fresh water supply		
Initiative: Grapple truck for clearing use	\$85,000	
Initiative: Front end loader for debris removal	\$125,000	
Initiative: Six portable generators to be used to supply power to critical lift stations until power is restored	\$180,000	
Initiative: Utilities attached to the two bridges which cross the Anclote River to have isolation valves installed-install "temporary hook-ups" for utilities at the same bridges	\$250,000	

Project	Cost	Funding
Treasure Island		
Initiative: Hardening Police, Fire, Public Works Departments facilities by installation of storm shutters and hurricane rated garage doors to reduce damage from storm force winds (to coincide with planned renovations to facilities).	\$75,000	
Pinellas County		
Initiative: Window protection on Fairmont Park ES to increase shelter space.	\$94,000	HMGP
Initiative: Window protection on Elementary School C to increase shelter space.	\$94,000	HMGP
Initiative: Window protection on Elementary School D to increase shelter space.	\$94,000	HMGP
Initiative: Window protection on Eisenhower ES to increase shelter space.	\$68,800	HMGP
	\$4,053,680	

Local Mitigation Strategy Initiatives \$ 301,000 +		
Project	Cost	Funding
Belleair Beach		
Initiative: Complete a barrier island hurricane (flood and wind) proof model building by completely retrofitting the existing public building housing City government activities which are essential to continuing the government services and administration in the event of a hurricane; the protection and maintenance of all public records and files; and the direction and coordination of all police department and public works activities during and following a hurricane. The building can subsequently serve as an open model of the applicability of retrofitting techniques to any and all public, commercial and residential buildings. Existing City Hall building.	\$440,000	
Clearwater		
Initiative: Construction of a new emergency operations center able to withstand a Category Five Storm and to provide a command and control center for recovery operations at the 1700 N. Belcher Rd. Complex	\$1,100,000	
Dunedin		
Initiative: Hardening & upgrading 12 lift stations for waster water. All lift stations w/in A & B Level flood zones. Estimated Cost \$300,000 (Benefit/Cost = 1.0)	\$300,000	
Gulfport		
Initiative: Enlarge drainage pipes and construct retention ponds citywide; construct backflow prevention devices at storm water outlets at Boca Ciega Bay; install sewer backflow prevention devices in residential areas north of the Marina. Estimated Cost \$500,000	\$500,000	
Indian Rocks Beach		
Initiative: Non-Compliant Structure Demolition Grant Program. Under this program the City would provide a grant of up to \$15,000 per structure for the removal of noncompliant Pre-Firm structures. The purpose of the program would be to serve as an incentive for property owners to demolish non-conforming Pre-FIRM structures and promote the construction of fully compliant structures. Eligible costs would include environmental reports (e.g., asbestos abatement, Class 1 and 2 environmental reports), debris removal and disposal, and lot grading. Criteria for awarding funds would include repetitive loss history, risk exposure to future events and potential for displacing residents. Funds would be available to both substantially and non-substantially damaged structures in a post disaster situation, as well as Pre-FIRM structures which have not been subjected to damage	\$150,000	
Indian Shores		
Initiative: Elevate Town Hall/EOC/Police Department above 100 year flood plain.	\$360,000	
Kenneth City		
Initiative: Repair/rework/replace components in the Kenneth City storm drain system.	\$500,000	

Project	Cost	Funding
Largo		
Initiative Hardening the Largo City Hall, Police, and EOC buildings by adding storm shutters, removing abandoned air conditioning equipment from the roof, and installing emergency generators. In addition to housing the administrations of more than half of the City's departments, this facility contains the City's centralized telephone, computer, and broadcasting systems.	\$321,285	
Initiative: Installing an emergency generator at the new administration building for the Wastewater Treatment Plant. The generator will insure the Plant's ability to provide continuous service during power failures	\$859,072	
Madeira Beach		
Initiative: Flood-proof existing City Hall complex at 300 Municipal Drive, flood-proof the Public Works Department and harden the building against Hurricane Force Winds.	\$300,000	
North Redington Beach		
Initiative: UNDERGROUND UTILITIES - begin partial funding of placing barrier island utilities underground. Phase I - Florida Power (\$1,000,000) and Telephone/Cable (\$750,000). Gulf Blvd. and town streets.	\$1,750,000	
Pinellas Park		
Initiative: To design, engineer, and construct drainage improvements along Park Blvd. as well as make as recommendations by the 1998 Park Blvd. Master Drainage Plan. These improvements are necessary because Park Blvd. is an evacuation route that has a history of flooding.	\$16,000,000	
Redington Shores		
Initiative: Storm proofing and retrofitting of the existing sanitary sewer lift stations (4) located throughout the Town. This includes the installation of removable control panels and water-tight covers on dry wells. Acquisition of one trailer mounted emergency generator with switchgear and retrofitting of existing panels to accept generator and switchgear. The Town's lift stations are located at the intersections of 176th Avenue and 1st Street East, 180th Avenue and 5th Street East, 178th Avenue West and Gulf Blvd. and 181st Avenue West and Gulf Blvd., Town of Redington Shores.	\$350,000	
Redington Shores		
Initiative: Re-design and construct the Stormwater drainage system in the Town of Redington Shores in five (5) phases. The Town will apply for SWFWMD Grants to fund 50% of this project. The primary function of this project is to improve water quality to Boca Ciega Bay by re-direction of Stormwater by re-paving streets, the installation of Miami type drainage gutters, and the installation of "constant deflection system" (CDS) units to remove solids before they reach the bay. As subsequent although less important benefit will be the reduction of flooding on Town streets on lesser storm frequencies than the 100 Year Storm. (Ongoing)	\$2,500,000	

Project	Cost	Funding
Redington Shores (cont.)		
Initiative: To underground all above ground aerial utilities (Electrical, telephone and cable) except 177 th Terrace West, 178 th Ave., Atoll Ave., Beach Ave., Coral Ave., and Lee Avenue between 177 th Terrace West and Coral Ave. This will result in more rapid recovery during the Post Disaster Recovery Phase and provide a significant increase to the safety of our residents from downed power lines and poles.	\$3,500,000	
Safety Harbor		
Initiative: Replace existing storm system and add drainage inlets/retention pond to eliminate yard and street flooding in the downtown. Second and Third Avenues North of main Street on Mullet Creek Downtown.	\$550,000	
Initiative: North Bayshore Drive, Eliminate Structure and Street Flooding..	\$300,000	
Initiative: East Gate, Eliminate Structure and Street Flooding.	\$870,000	
Initiative: Storm Water Master Plan Update to eliminate street and structure flooding, and for erosion control.	\$700,000	
St. Petersburg		
Initiative: Municipal Services Center Window Storm Protection. This project will retrofit the Municipal Services Center's windows to protect against storm impacts, Municipal Services Center One 4th Street N., Mirror Lake Library 280 5th St. N., North Branch Library 861 70th Ave. N., South Branch Library/Nature Center 1101 Country Club Way S., Sunshine Center 330 5th St. N.	\$310,000	
St. Pete Beach		
Initiative: Flood Proof Recreation Building. The Recreation Building, located at 7701 Boca Ciega Drive, may be used for a temporary shelter for localized emergencies. The Recreation Building may be used for a variety of uses including a staging area, office space, shelter, and other hazard response functions	\$350,000	
Initiative: Storm Protection for Fire Station, Merry Pier and the Old City Hall Complex's Underground Storage Tanks. The continued access to fuel stored in these underground storage tanks is an essential resource for emergency operations. Risk reduction in respect to environmental contamination, meeting the current standards regulating underground storage tanks will all be benefits derived by the flood proofing of these three facilities.	\$370,000	
Initiative: Flood Proof Police Building. The Police Building, located at 7701 Boca Ciega Drive, is designated as the City's Emergency Operations Center.	\$370,000	
Initiative: Seawall Improvements in Don CeSar Area. The Don CeSar area is a low lying area, which presents flood hazards regularly. Retrofitting outfalls, repairs to the seawalls, and curb work will all present benefits. Presently, in storm events, employees are often needed to clog drainage structures. By making these improvements, employees will be freed up to perform other emergency functions as they arise.	\$400,000	

Project	Cost	Funding
Initiative: Sanitary Sewer Force Main Replacement from Pump Station #1 to St. Petersburg Pipeline	\$1,400,000	
Initiative: Riprap enhancements at Blind Pass, Southernmost Jetty in Pass-a-Grille and Pass-a-Grille Channel located adjacent to Pass-a-Grille Way. This project will result in additional flood protection, seawall protection, and coastal erosion protection.	\$2,000,000	
Initiative: Vina Del Mar Underground Utilities. Under grounding utilities will allow emergency vehicles to enter the Vina Del Mar area with reduced obstacles improving speed of recovery. Underground utilities will also improve speed of recovery as utilities area better protected underground.	\$4,200,000	
Initiative: Flood proof first floor of existing City Hall complex. Location: 7701 Boca Ciega Drive, Bldg A	\$3,500,000	
South Pasadena		
Initiative: Underground Utilities on all streets. Phase I - main roads, Pasadena Ave., Gulfport Blvd., Sunset Dr. S. (\$1,500,000). Phase II - all other city streets including Pasadena Island (\$2,000,000).	\$3,500,000	
Tarpon Springs		
Initiative: Implementation of storm water improvement plan. Construction of improvements identified in engineering study (Dames & Moore), comprehensive plan and capital improvement program	\$1,200,000	
Initiative: Pre-staged "supply-cache" to be distributed by Tarpon Springs EOC to appropriate locations within the community prior to the storm. Items such as chain saws, tires and repair kits. This project is to include a storage building to be constructed to withstand winds of 125 mph and located at 325 Pine St. E at the Public Services complex.	\$350,000	
Treasure Island		
Appendix 9 Initiative: Reconstruction of Treasure Island Causeway bascule bridges to replace bridges built in 1939. Causeway is designated evacuation route for 7,400 permanent and 8,000 seasonal residents, existing bridges and equipment are subject to storm tide flooding due to low elevation. Cost \$5,000,000 (Total project estimate is \$50M)	\$5,000,000	
Pinellas County		
Initiative: Window protection on all school buildings on the "Best Ten" mitigation list to increase shelter space	\$500,000	
	\$31,216,000	

Note: Currently, all the identified initiatives exceed a cost/benefit ratio of one (1). More in-depth cost/benefit analyses will be conducted as necessary.

Appendix 10

Local Mitigation Strategy Accomplishments

Project	Status	Cost	Funding
Clearwater			
Purchase Friendly Village of Kapok Mobile Home Park to eliminate repetitive flood losses. A nature park will be created on the site along with storm water development for the area to prevent flooding.	Under way	\$17,000,000	Local and State
Develop a CERT that is trained on How to Educate Homeowners on Mitigation Techniques.	Complete	\$37,000	Local and State
Dunedin			
Lake Earl to Skyeloch Piping.	Complete	\$35,000	State
Lake Sperry pipe lining.	Complete	\$150,000	State
Elevated five (5) repetitive loss structures.	Complete	\$307,268	State
Retrofit 2 structures to reduce flood damage potential.	Underway	\$174,872	State
Rebuild 1 Structure.	Complete	\$119,746	State
Indian Rocks Beach			
Demolished ten (10) pre-FIRM non-conforming structures and replaced them with conforming structures.	Complete	\$2,432,000	Private
27th Ave. and 1st St. drainage project to mitigate local flooding and provide treatment of local storm water run off.	Complete	\$260,000	Local and State
Design 11th Ave. through 13th Ave. drainage project to mitigate local flooding.	Complete	\$290,000	Local
Reclamation of 1.2 acres of wetlands to act as a flood buffer.	Complete	\$100,000	Local
Indian Shores			
Storm water management in redevelopment area to control and mitigate flooding. FY 97/98	Complete	\$60,000	Local and State
FMAP elevation of existing repetitive loss structure. FY 97/98	Complete	\$22,500	Private and State
FMAP acquisition and demolition of repetitive loss structure. FY 97/98	Complete	\$26,797	Local and State
Installed new seawall to mitigate flooding. FY 97/98	Complete	\$16,770	Local and State
Installed new seawall and replaced seawall cap. FY 97/98	Complete	\$5,080	Local
Storm water management at 19305 Gulf Blvd. (Town Hall complex) FY 97/98	Complete	\$80,000	Local and State
FMAP elevation of repetitive loss existing structure. FY 00/01	Complete	\$41,683	Local and State
Development of Town master drainage plan FY01/02	Complete	\$80,000	Local and State
Purchase property in redevelopment area for potential site of future retention pond. FY01/02	Complete	\$40,000	Local

Implement Town-wide storm water master plan. FY 02/03	Under way	\$300,000	Local and State
Largo			
Initiative: Hardening the new Public Works administration building by adding storm shutters and installing emergency generators. This facility contains the Public Works Emergency Operations Center. Benefit: Averting wind damage would minimize or eliminate post-disaster disruption of municipal services. The Public Works administration structure is valued at \$1.1 million.	Completed	\$89,151	
Initiative: Hardening the new Environmental Services (sewer) administration building by adding storm shutters and installing emergency generators. This facility contains the Environmental Services Emergency Operations Center. Benefit: Averting wind damage would minimize or eliminate post-disaster disruption of municipal services. The Environmental Services administration structure is valued at \$1.8 million.	Completed	\$89,151	
Initiative: Installing an emergency generator at the new administration building for the Wastewater Treatments Plant. The generator will insure the Plant's ability to provide continuous service during power failures. Benefit: Keeping the WWTP fully operational would help avoid sanitary sewer conveyance system backup that could cause significant damage to private properties in the event of a power failure caused by a natural or man-made disaster event.	Completed	\$859,072	
Initiative: Hardening the Largo City Hall, Police, and Emergency Operations Center buildings by adding storm shutters, removing abandoned air conditioning equipment from the roof, and installing emergency generators. In addition to housing the administrations of more than half of the City's departments, this facility contains the City's centralized telephone, computer, and broadcasting systems. Benefit: Averting wind damage would minimize or eliminate post-disaster disruption of municipal services, including the EOC, police, fire, permitting, and planning operations. The Largo Municipal Complex structures are valued at \$10.9 million.	Completed	\$321,285	
Oldsmar			
Relocate fire station/EOC outside the special flood hazard area (100 year floodplain), increase the BFE to a non evacuation level, structure and glazing elements to withstand Category 4 wind load; other construction/site activities to keep station action as EOC during emergency events.	Complete	\$965,000	Local
Pinellas County			
Shelter Retrofit at Hopkins MS to add 3400 spaces.	Complete	\$185,526	Local

Shelter Retrofit at Safety Harbor MS add 1400 spaces.	Complete	\$35,558	Local
Shelter Retrofit at Kennedy MS to add 1700 spaces.	Complete	\$40,286	Local
Shelter Retrofit at Seminole MS to add 1100 spaces.	Complete	\$25,888	Local
Shelter Retrofit at Bauder ES to add 950 spaces.	Complete	\$35,340	Local
Shelter Retrofit at Largo HS to add 1400 spaces.	Complete	\$35,626	Local
Shelter Retrofit at Sexton ES to add 1350 spaces.	Complete	\$81,888	Local
Shelter Retrofit at East Lake HS to add 2850 spaces.	Complete	\$271,000	State
Shelter Retrofit at Largo MS to add 1850 spaces.	Complete	\$40,000	Federal
Shelter Retrofit at Countryside HS to add 400 spaces.	Complete	\$32,000	State
Shelter Retrofit at Palm Harbor UHS to add 2300 spaces.	Complete	\$44,000	State
Shelter Retrofit at St. Petersburg HS to add 2950 spaces.	Complete	\$257,500	State
Shelter Retrofit at Pinellas Park HS to add 1400 spaces.	Complete	\$30,000	State
Shelter Retrofit at McMullen Booth ES to add 1350 spaces.	Complete	\$92,760	State
Shelter Retrofit at Tarpon Springs MS to add 1250 spaces.	Complete	\$43,000	Local
Shelter Retrofit at Palm Harbor MS to add 1800 spaces.	Complete	\$44,000	State
Shelter Retrofit at Bardmoor ES to add 1100 spaces.	Complete	\$25,000	Local
Shelter Retrofit at Kennedy MS to add 1000 spaces.	Complete	\$40,000	Local
Shelter Retrofit at Carwise MS to add 3400 spaces.	Complete	\$225,000	State
Add back up generator to Ambulance Dispatch Center/Back up 911 Center.	Complete	\$175,000	State
Install hurricane roll-up doors on 18 EMS Garage Doors.	Complete	\$65,000	Local
Pinellas Park			
Mobile Hazard Mitigation House - This project adapted a mobile home to illustrate means to better protect homes and MH's from various natural hazards as well as fire. The unit is also equipped to make multimedia presentations and be used to demonstrate home escape measures. FY 00/01	Complete	\$31,747	State
Home Disaster Mitigation Handbook – This document is currently being produced. It is an easy to read and understand booklet that explains the basic means to protect homes and can help homeowner's mitigate for those storm events common to central Florida. This document will be produced in a CD-ROM format for other communities to replicate.	Complete	\$50,000	State
Purchase of Land for Drainage Retention. The City has entered into a contract to purchase property near Park Blvd and 40th St. N. The property will be used for storm water retention at Park Blvd and 43rd St. N.	Complete	\$796,000	Local
94th Avenue N. widening: This is a roadway project with a drainage component. A collector road is to be widened to a two lane divided facility between 58th St. N. and 49th St. N. It has been designed to address local drainage issues and those of the surrounding neighborhoods. Completion is anticipated in FY 03/04.	Under way	\$2,200,000	Local

60th St. N. ditch mitigation project is to install a major box culvert system along 60th St N. between 70th Avenue N. and the Pinellas Park Water Management District Channel 4. This project will promote a greater flow of storm water from the secondary drainage system into the primary drainage facility and reduce localized street and structure flooding and eliminate a dangerous open ditch situation that currently exists.	Under way	\$1,067,000	Local
Park Blvd./66th St. N. intersection improvement. Florida Department of Transportation has recently completed this project which included a drainage component to address flooding up to a 25 year storm event.	Complete	\$1,600,000	State and Federal
Redington Beach			
Improvement of storm drainage to have the remainder of the Town's storm sewer system upgraded and add on to serve growth in the community.	Complete	\$250,000	Local
Redington Shores			
Construct elevated Town Hall.	Complete	\$600,000	Local
Storm water retrofit project for areas east of Gulf Blvd.	Complete	\$600,000	Local and State
Safety Harbor			
Harden Fire Station #53 and upgrade EOC.	Complete	\$250,000	Local
South Green Springs - improvements to minimize street flooding.	Complete	\$1,500,000	Local
Street and Yard Flooding - 2nd Ave N	Complete	\$1,300,000	Local
Street Flooding improvement - Bailey Street.	Complete	\$430,000	Local
Fire Station #53, Replace Ladder Truck and Special Equipment.	Complete	\$510,000	Local
Bishop Creek Erosion and Storm Water Control.	Complete	\$1,300,000	Local and State
St. Petersburg			
Mitigated 3 waterfront properties on Bayou Grande Blvd. NE to prevent damage from flooding.	Complete	\$289,237	Federal and Local
1st St. N. storm water project.	Complete	\$5,788,000	Local
Highland St. storm water project.	Complete	\$844,000	Local
Nebraska Ave. NE storm water project.	Complete	\$200,000	Local
3rd St. Bayboro storm water project.	Complete	\$3,668,000	Local
4th St. S Bayboro storm water project.	Complete	\$2,369,000	Local
Floral Lake storm water project.	Complete	\$308,000	Local
Mirror Lake alum injection system.	Complete	\$553,000	Local
Booker Creek Maintenance at Tropicana Dome.	Complete	\$203,000	Local
8th St. drain storm water project.	Complete	\$2,558,000	Local
67th St. drain storm water project.	Complete	\$681,000	Local
Lake Winston storm water project.	Complete	\$2,261,000	Local
31st St. S storm water project.	Complete	\$576,000	Local
Tinney Creek Rehab. Project.	Complete	\$194,000	Local
Ponds Ditch Rehab. Project	Complete	\$30,000	Local
Clam Bayou retrofit project.	Complete	\$286,000	Local

Ditch piping project – 4 locations throughout the city.	Complete	\$3,578,000	Local
Bayou Grande Blvd. NE project.	Complete	\$398,000	Local
Roser Park Creek project.	Complete	\$1,000,000	Local
King St. N. drainage improvements.	Complete	\$2,966,000	Local
Oak St. NE drainage improvements.	Complete	\$344,000	Local
Tarpon Springs			
Design and develop a new EOC, 444 S. Huey.	Complete	\$50,000	Local
Harden city building for emergency operations and public shelter, 444 Huey and 400 S. Walton.	Complete	\$225,000	Local
Treasure Island			
Elevated three structures above the base floor elevation.	Complete	\$100,000	Private
Demolished three structures and replaced with conforming structures.	Complete	\$1,500,000	Private
Demolished one structure in flood area.	Complete	\$800,000	Local and State
Applications pending to elevate two structures above the base floor elevation.	Under way	\$210,000	Private and State
Drainage improvements in the Sunset Beach neighborhood to reduce flooding.	Complete	\$300,000	Local and State
TOTAL AS OF September 30, 2002		\$69,228,390	

Appendix 11

Potential Funding Sources

Pre-Disaster

Pre-Disaster Mitigation (PDM) competitive grants

The PDM program was authorized by Section §203 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act), as amended by Section §102 of the Disaster Mitigation Act of 2000, to assist communities to implement hazard mitigation programs designed to reduce overall risk to the population and structures before the next disaster occurs. Eligible projects include:

- Property acquisition or relocation;
- Structural and non-structural retrofitting (e.g. elevation, storm shutters and hurricane clips);
- Minor structural hazard control on protection (e.g. culverts, floodgates, retention basins); and
- Localized flood control projects that are designed to protect critical facilities and are not part of a larger flood control system.

Ineligible activities include:

- Major flood control projects;
- Engineering designs not integral to a proposed project;
- Feasibility and drainage studies that are not integral to a proposed project;
- Flood studies that are not and mapping; and
- Response and communication equipment (e.g. warning systems, generators that are not integral to a proposed project).

Florida Department of Community Affairs
Division of Emergency Management
2555 Shumard Oak Blvd.,
Tallahassee, FL 32399-2100
(850) 413-9966

Community Assistance Program State Support Services Element (CAP-SSSE)

To ensure that communities participating in the National Flood Insurance Program (NFIP) are achieving flood loss reduction measures consistent with program direction. The CAP-SSEE is intended to identify, prevent and resolve floodplain management issues in participating communities before they develop into problems requiring enforcement action.

Federal Emergency Management Agency
Mitigation Directorate
Program Implementation Division
500 C Street SW
Washington, DC 20472
(202) 646-2719

Community Development Block Grant (also see post-disaster funding)

The Community Development Block Grants (CDBG) provide for long-term needs, such as acquisition, rehabilitation or reconstruction of damaged properties and facilities and redevelopment of disaster-affected areas. Funds may also be used for emergency response activities, such as debris clearance and demolition, extraordinary increases in the level of necessary public services. Eligible projects include the following:

- Voluntary acquisition or if appropriate, elevation of storm damaged structures (can be used as match for FMA projects in low income areas);

- Relocation payments for displaced people and businesses;
- Rehabilitation or reconstruction of residential and commercial buildings;
- Assistance to help people buy homes, including down payment assistance and interest rate subsidies; and
- Improvement to public sewer and water facilities

Department of Housing and Urban Development
 Community Planning and Development
 451 7th Street, SW
 Washington, D.C. 20410
 (202) 708-3587
www.hud.gov

Community Facilities Loan Program (10.423)

To construct, enlarge, extend, or otherwise improve community facilities providing essential services to rural residents.

Rural Economic and Community Development
 4440 NW 25th Place
 PO Box 147010
 Gainesville, FL 32614-7010
 (904) 334-3440

Conservation and Recreation Lands (CARL)

This grant program is intended to conserve environmentally endangered lands and provide resource conservation measures for other types of lands.

Florida Department of Environmental Protection
 Division of State Lands
 Marjory Stoneman Douglas Bldg.
 3900 commonwealth Blvd., MS 100
 Tallahassee, FL 32399-3000
 (850) 245-2555
www.dep.state.fl.us/lands/

Emergency Advance Measures For Flood Prevention

To perform activities prior of flooding or flood fight that would assist in protecting against loss of life and damages to property due to flooding.

US Army Corps of Engineers
 Attn: CECW - OE
 Washington, DC 20314
 (202) 272-0251

Emergency Management Program Assistance (EMPA)

Purpose of program is to administer the Emergency Management Preparedness and Assistant Trust Fund, count base grants, and incoming federal, state, or private funding. Within this program is the Municipal grant Program. Cities can apply for up to \$50,000 worth of grant money. Also included, is the Open Competitive Grant Program in which cities, counties, not for profits, etc. can apply for up to \$300,000 in grant money.

Emergency Management Program Assistance (EMPA) Dept. Of Community Affairs
 2555 Shumard Oaks Blvd..
 Tallahassee, FL 32399-2100
 (850) 413-9966

Expanded Local Management Hazardous Waste Program

The primary purpose of this fund is to cover costs incurred to establish the expanded local hazardous waste management program as stated in FS403.7238 including training for county personnel, materials & equipment for educational activities.

Florida Dept. Of Environmental Protection
2600 Blair Stone Rd.
Tallahassee, FL 32399-2400
(850) 488-0300

The Federal Assistance for Beach Renourishment Program

Provides up to 65% of the costs to renourish beaches and for up to 50 years of periodic maintenance.

Southeast Atlantic Division
US Army Corps of Engineers
Jacksonville District
(904) 232-1697

Flood Control Projects

To reduce flood damages through projects not specifically authorized by Congress.

Commander
US Army Corps of Engineers
Attn: CECW - OE
Washington, DC 20314
(202) 272-1975

Flood Mitigation Assistance

To fund cost effective measures to States and communities that reduce or eliminate the long term risk of flood damage to buildings, manufactured homes, and other insurable structures.

Program Implementation Division
Federal Emergency Management Agency
500 C Street SW
Washington, DC 20472
(202) 646-3619

note: We did not include FMAP Projects on the mitigation list due to the owner of the property has to agree and apply.

Flood Plain Management Services

To promote appropriate recognition of flood hazards in land and water use planning and development through the provision of flood and flood plain related data, technical services, and guidance.

US Army Corps of Engineers
Attn: CECW - PF
Washington, DC 20314-1000
(202) 272-0169

Flood Prevention, Emergency Advance Measures

To mitigate, before an event, the potential loss of life and damages to property due to floods.

USACE
CECW-OE
DoD
Washington, DC 20314
(202) 761-0251

Florida Communities Trust (FCT)

This grant program facilitates the purchase of lands for conservation and/or recreation purposes by local governments. This land acquisition program helps to implement conservation, recreation, open space, and coastal elements of local comprehensive plans. The Board of Florida Communities Trust has latitude to consider innovative financing arrangement, loans, and land swaps. However, most of the Trust's funding is for land acquisition. Land acquisition projects in which matching funds are available will receive more favorable consideration, although a portion of available funds may be awarded on outright grants.

Florida Department of Community Affairs
Florida Communities Trust
2555 Shumard Oaks Blvd.
Tallahassee, FL 32399
(850) 922-2207
www.dca.state.fl.us/ffct/florida_forever.htm

Grants & Loans for Public Works & Development Facilities

To provide financial assistance for the construction of public facilities needed to initiate and encourage the creation or retention of permanent jobs in the private sector in designated areas where economic growth is lagging.

Economic Development Administration
The Federal Building
Room 423
80 N. Hughey Ave.
Orlando, FL 32801 (407) 648-6572

Hazardous Materials Training Program for Implementation of the Superfund Amendment and Reauthorization Act (SARA) of 1986

The goal of the SARA Title III Training Program is to make funding available to support programs of State, local, and Tribal governments, and university sponsored programs designed to improve emergency planning, preparedness, mitigation, response, and recovery capabilities. These programs must provide special emphasis on emergencies associated with hazardous chemicals.

Federal Emergency Management Agency
Support Systems Branch, Training Division
16825 S. Seton Ave.
Emmitsburg, MD 21727
(301) 447-1142

Hurricane Program

To reduce the loss of life, property, economic disruption, and disaster assistance costs resulting from hurricanes.

Director
Program Implementation Division
Mitigation Directorate

FEMA
500 C Street SW
Washington, DC 20472
(202) 646-4621

Insurance Program, National Flood (NFIP)

To enable individuals to purchase insurance against losses from physical damage to or loss of buildings and or contents therein caused by floods, mudflow, or flood-related erosion, and to promote wise floodplain management practices in the nation=s flood prone areas.

Claims and Underwriting Division
FIA
FEMA
500 C Street SW
Washington, DC 20472
(202) 646-3422

Payments to States in Lieu of Real Estate Taxes

To compensate local taxing units for the loss of taxes from federally acquired lands, 75 percent of all monies received or deposited in the Treasury during any fiscal year for the account of leasing of lands acquired by the United States for flood control, navigation and allied purposes, including the development of hydroelectric power, are paid at the end of each year to the States in which such property is situated.

Headquarters
US Army Corps of Engineers
Attn: CERM - FC
20 Massachusetts Ave. NW
Washington, DC 20314-1000
(202) 272-1931

Protection, Clearing and Straightening Channels

To restore channels for purposes of navigation or flood control.

Commander
US Army Corps of Engineers
Attn: CECW - OD
Washington, DC 20314-1000
(202) 272-8835

Protection of Essential Highways, Highway Bridge Approaches, and Public Works

To provide bank protection of highways, highway bridges, essential public works, churches, hospitals, schools, and other nonprofit public services endangered by flood caused erosion.

US Army Corps of Engineers
Attn: CECW - PM
Washington, DC 20314-1000
(202) 272-1975

Public Works Impact Projects Program (PWIP) (11.304)

To provide financial assistance in the construction of public facilities for the purpose of providing immediate useful work to unemployed and underemployed persons in designated project areas.

Economic Development Administration
The Federal Building, Room 423
80 N. Hughey Ave.

Orlando, FL 32801
(407) 648-6572

Snagging and Clearing for Flood Control

To reduce flood damage.

US Army Corps of Engineers
Attn: CECW - PM
Washington, DC 20314-1000
(202) 272-1975

Post - Disaster

Community Development Block Grants (CDBG)/Entitlement Grants

To develop viable urban communities by providing decent housing and a suitable living environment, and by expanding economic opportunities, principally for low to moderate income individuals.

Entitlement Communities Division
Office of Block Grant Assistance
CPD, HUD
451 7th Street SW
Washington, DC 20410-7000
(202) 708-3587

Community Development Block Grants (CDBG)/State's Program

To develop viable urban communities by providing decent housing and a suitable living environment, and by expanding economic opportunities, principally for low to moderate income individuals.

State and Small Cities Division
Office of Block Grant Assistance
CPD, HUD
451 7th Street SW
Washington, DC 20410-7000
(202) 708-3587

Cora C. Brown Fund

To assist disaster victims for unmet disaster related needs. When Cora C. Brown of Kansas City, Missouri, died in 1977, she left a portion of her estate to the Federal Government as a special fund to be used solely for the relief of human suffering caused by disasters.

Human Services Division
Response and Recovery Directorate
FEMA
500 C Street SW
Washington, DC 20472
(202) 646-3642

Disaster Emergency Loans - Farmer Programs

To provide financial assistance to eligible applicants to help them overcome the adverse effects of a natural disaster to their farm operation.

Rural Economic and Community Development
4440 NW 25th Place
PO Box 147010
Gainesville, FL 32614-7010
(904) 334-3440

Disaster Reserve Assistance

To provide emergency feed assistance to eligible livestock owners, in a State, county, or area approved by the Secretary or designee, where because of disease, insect infestation, flood, drought, fire, hurricane, earthquake, hail storm, hot weather, cold weather, freeze, snow, ice, and winterkill, or other natural disaster, a livestock emergency has been determined to exist. The program provides assistance to eligible livestock producers for losses of feed grain crops, forage, and grazing.

Dept of Agriculture
Farm Service Agency
Emergency and Noninsured Assistance Program Division
STOP 0526
1400 Independence Ave. SW
Washington, DC 20250-0526
(202) 720-3168

Economic Injury Disaster Loans (EIDL)

To assist business concerns suffering economic injury as a result of certain presidential, Secretary of Agriculture, and/or SBA declared disasters.

Office of Disaster Assistance
SBA
409 3rd Street SW
Washington, DC 20416
(202) 205-6734

Emergency Conservation Program

To enable farmers to perform emergency conservation measures to control wind erosion on farmlands, or to rehabilitate farmlands damaged by wind erosion, floods, hurricanes, or other natural disasters and to carry out emergency water conservation or water enhancing measures during periods of severe drought.

Consolidated Farm Service Agency
Dept. Of Agriculture
PO Box 2415
Washington, DC 20013
(202) 720-6221

Emergency Operations Flood Response and Post Flood Response

To provide emergency flood response and post flood response assistance as required to

supplement State and local efforts and capabilities in time of flood coastal storm.

Commander
US Army Corps of Engineers
Attn: CECW - OE
Washington, DC 20314-1000
(202) 272-0251

Emergency Rehabilitation of Flood Control Works or Federally Authorized Coastal Protection Works

To assist in the repair and restoration of flood control works damaged by flood, or federally authorized hurricanes flood and shore protection works damaged by extraordinary wind, wave, or water action.

Commander
US Army Corps of Engineers
Attn: CECW - OE
Washington, DC 20314
(202) 272-0251

Emergency Shelter Grants Program (ESG)

To provide financial assistance to renovate or convert buildings for use as emergency shelters for the homeless. Grant funds may also be used to operate the shelter (excluding staff) and pay for certain support services.

Community Planning & Development
Dept. Of Housing & urban Development
325 West Adams Street
Jacksonville, FL 32202-4303
(904) 232-2626

Federal Emergency Shelter Grants Program For the Homeless

Grants for the provision of emergency shelter and essential support services to the homeless. Funds may be used for structural improvements to shelters, shelter operating expenses, furnishings and equipment, and other services.

Benefit Recovery & Special Program
Economic Services Program
1317 Winewood Blvd.
Tallahassee, FL 32399-0700
(850) 487-2966

Hazard Mitigation Grant Program (HMGP)

To prevent future losses of lives and property due to disasters; to implement State or local hazard mitigation plans; to enable mitigation measures to be implemented during immediate recovery from a disaster; and to provide funding for previously identified mitigation measures to benefit the disaster area.

Director
Program Implementation Division
Mitigation Directorate
FEMA

500 C Street SW
Washington, DC 20472
(202) 646-4621

Physical Disaster Loans (Business)

To provide loans to businesses affected by declared physical type disasters for uninsured losses.

Office of Disaster Assistance
SBA
409 3rd Street SW
Washington, DC 20416
(202) 205-6734

Public Assistance Program

To provide supplemental assistance to States, local governments, and certain private nonprofit organizations to alleviate suffering and hardship resulting from major disasters or emergencies declared by the President.

Infrastructure Support Division
Response and Recovery Directorate
FEMA
500 C Street SW
Washington, DC 20472
(202) 646-3026

Other Federal Domestic Assistance Available:

Beach Erosion Control Projects
CFDA # 12.101

Business and Industrial Loans
CFDA # 10.768

Coastal Zone Management Administration Awards
CFDA # 11.419

Watershed Protection and Flood Prevention
CFDA # 10.904

Appendix 12

**Pinellas County
Critical Facilities Inventory**

**Database Listing is not available for public review
For Public Safety**

Critical Infrastructures Working Definitions

Pinellas County in coordination with the State Division of Emergency Management maintains a detailed inventory of critical facilities. These facilities, organized in the eight categories described below, are essential for Continuity of Government and Continuity of Operations. They represent public and private resources necessary to ensure public safety, emergency response and continuation of mission essential functions.

The list of critical facilities is exempt from public record under Florida Statute 119.07(1) for security purposes. The list and corresponding maps will be provided to federal and state agencies with emergency management responsibilities but will not be provided in documents intended for public review.



Telecommunications

The networks and systems that support the transmission and exchange of electronic communications among and between end-users (such as networked computers).



Electrical Power Systems

The generation stations, transmission and distribution networks that create and supply electricity to end-users so that end-users achieve and maintain nominal functionality, including the transportation and storage of fuel essential to that system.



Gas and Oil Production, Storage and Transportation

The holding facilities for natural gas, crude and refined petroleum, and petroleum-derived fuels, the refining and processing facilities for these fuels and the pipelines, ships, trucks, and rail systems that transport these commodities from their source to systems that are dependent upon gas and oil in one of their useful forms.



Transportation

The aviation, rail, highway, and aquatic vehicles, conduits, and support systems by which people and goods are moved from a point-of-origin to a

destination point in order to support and complete matters of commerce, government operations, and personal affairs.



Water Supply Systems

The sources of water, reservoirs and holding facilities, aqueducts and other transport systems, the filtration and cleaning systems, the pipelines, the cooling systems and other delivery mechanisms that provide for domestic and industrial applications, including systems for dealing with waste water and fire fighting.



Emergency Services

The medical, police, fire and rescue systems and personnel that are called upon when an individual or community is responding to a public health or safety incident where speed and efficiency are necessary.



Continuity of Government Services

Those operations and services of governments at federal, state, and local levels critical to the functioning of the nation's systems, i.e., public health, safety, and welfare.

Appendix 13

**Pinellas County
Repetitive Loss Property
Inventory**

**Repetitive Loss Property Inventory
Is not available for public review
For privacy reasons**

Appendix 14

**Pinellas County
Extremely Hazardous Substances
(Section 302)
Facility List**