

RESOLUTION NO. 2005 - 118

A RESOLUTION OF THE BOARD OF COUNTY COMMISSIONERS OF ST. JOHNS COUNTY, FLORIDA APPROVING AND ADOPTING THE ST. JOHNS COUNTY LOCAL MITIGATION STRATEGY PLAN

WHEREAS, the St. Johns County Local Mitigation Strategy (LMS) Taskforce was created in August 1998, with the responsibility of developing a Local Hazard Mitigation Plan; and

WHEREAS, St. Johns County initiated development of the Local Mitigation Strategy Plan by entering into a contract with the Florida State Department of Community Affairs Division of Emergency Management; and

WHEREAS, the St. Johns County LMS Taskforce has completed a Local Mitigation Strategy Plan which has been reviewed by the Florida State Department of Community Affairs as meeting the criteria for such plans; and

WHEREAS, this Local Mitigation Strategy Plan is intended to provide a strategy to mitigate dangers and costs associated with weather and man made hazards and to provide a priority for recovery of hazardous events occurring in St. Johns County; and

WHEREAS, the Local Mitigation Strategy Taskforce accepted the Plan to be complete on March 2, 2005;

NOW THEREFORE, BE IT RESOLVED by the Board of County Commissioners of St. Johns County that:

The Local Mitigation Strategy Plan attached and incorporated herein as Exhibit A is hereby approved and adopted effective immediately.

The St. Johns County Director of Emergency Management is hereby directed to timely notify the State Division of Emergency Management of the date of the County's approval and adoption of the Local Mitigation Strategy Plan.

PASSED AND ADOPTED by the Board of County Commissioners of St. Johns County, State of Florida, this 20th day of April, 2005.

BOARD OF COUNTY COMMISSIONERS
OF ST. JOHNS COUNTY, FLORIDA

By: _____

Chairman

ATTEST: CHERYL STRICKLAND, CLERK

By: _____

RENDITION DATE 4-21-05

Local Mitigation Strategy



St. Johns County



DRAFT
2003 - 2004

**ST. JOHNS COUNTY
LOCAL MITIGATION STRATEGY**

DRAFT DOCUMENT

2003 - 2004

PREPARED BY:

***THE ST. JOHNS COUNTY LMS TASK FORCE AND
THE NORTHEAST FLORIDA REGIONAL COUNCIL***

PARTICIPATING AGENCIES

ST. JOHNS CO. BOARD OF COUNTY COMMISSIONERS
ST. JOHNS CO. EMERGENCY MANAGEMENT DEPT.
ST. JOHNS COUNTY EMERGENCY MEDICAL SERVICES
ST. JOHNS COUNTY SHERIFFS OFFICE
ANASTASIA MOSQUITO CONTROL DISTRICT
ST. JOHNS COUNTY HEALTH DEPT.
ST. JOHNS COUNTY PROPERTY APPRAISERS OFFICE
ST. JOHNS COUNTY AIRPORT AUTHORITY
ST. JOHNS COUNTY FIRE SERVICE
ST. JOHNS COUNTY UTILITIES DEPARTMENT
ST. JOHNS COUNTY BUILDING DEPARTMENT
ST. JOHNS COUNTY PLANNING DEPARTMENT
CITY OF ST. AUGUSTINE
CITY OF ST. AUGUSTINE BEACH
TOWN OF HASTINGS

PRIVATE SECTOR PARTICIPATION

FLAGLER COLLEGE

St. Johns County Local Mitigation Strategy

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Section I - Introduction

A. Local Mitigation Strategy

In the spring of 1998, the Florida Department of Community Affairs (DCA) initiated a program to assist local governments in developing plans to reduce or eliminate risks to people and property from natural and man-made hazards. This program is known as the Local Mitigation Strategy or the LMS.

Hazard Mitigation has gained increased attention over the past few years due to the large number of natural hazards which have occurred throughout the world and the in the U.S. in particular. A main area of concern is the rapid rise in the costs associated with disaster recovery. It has become apparent that money spent prior to an event to harden the community and reduce the impacts of a disaster can result in substantial savings in life and property following the event. The benefit cost ratios are extremely advantageous. As a result, the Federal Emergency Management Association (FEMA) and the State of Florida have recently developed National and State Mitigation Strategies respectively and funding is increasingly becoming available to support hazard mitigation efforts.

The advantages of developing a local LMS program are numerous including guidance in developing pre and post disaster mitigation plans; identifying priority projects and programs for funding; and increasing the likelihood of Federal and state funding for pre and post disaster, hazard mitigation projects.

B. Planning Process

On May 14, 1998 the Northeast Florida Regional Council (NEFRC) contracted with St. Johns County to facilitate in developing the LMS. Through a Memorandum of Agreement the Strategy developed is intended to provide one unified program for the County and its incorporated municipalities. Through the process of developing a unified Mitigation Strategy, it is intended that the local governments preserve, protect, and improve the safety and durability of their communities. The primary objective of the Local Mitigation Strategy is to remove if possible, otherwise to limit the losses of life and property due to a disaster. The Regional Council role as a facilitator allowed communities to provide unrestricted input regarding local mitigation needs, without appearing biased. The resulting LMS provides the best fit for St. Johns County, and is based countywide agreement.

In August of 1998, a countywide LMS Task Force was organized with members from a broad cross section of the County including elected officials, County Department heads, County staff, representatives from the cities of St. Augustine, Hastings, St. Augustine Beach, Flagler County's Marineland, and local businesses and business people. The LMS Task Force has been meeting on a monthly basis since August 1998. The Task Force, with facilitation by the Regional Council, has been responsible for developing all work products for the LMS including the development of a set of guiding principles; identification of potential hazards affecting the community; identification of people and infrastructure which are vulnerable to hazards; identification of critical facilities which are necessary for maintaining health, safety and welfare of residents before, during, and after a catastrophic event; and the development of a prioritized list of pre and post hazard mitigation initiatives (projects) eligible for funding. The role of the

Regional Council has been to assign staff as facilitators responsible for coordinating with participating local governments and to insure that all work products are completed and delivered in a timely manner. The work of the Task Force continues; meeting schedules are created for a permanent committee responsible for reviewing new initiatives and ranking them.

The Florida Department of Community Affairs (DCA) has assisted in the effort by providing St. Johns County with computer generated data showing projected wind speeds, detailed structural damage estimates, and amount of debris generated by hazards such as hurricanes. These estimates are made using the TAOS (The Arbiter of Storms) computer model and have been used during the hazards identification process. In addition the data includes information on 100 and 500-year floodplains, critical facilities and evacuation routes for each County. Additional information has been developed using the SLOSH (Sea, Lake and Overland Surges from Hurricanes) computer model. Complete details regarding the storm surge threat are available from these two sources the TAOS model currently in use by the State of Florida through the Division of Emergency Management and the SLOSH model currently in use by the National Weather Service and the National Hurricane Center. A comparison of data from the two sources does not show resoundingly different results for the minor storm events, differences are greater for data on major storm events, but both models are respected in the response community. However, the SLOSH model has a longer proven record and is used in this analysis for storm surge vulnerability levels. The DCA recently funded a project by the Northeast Florida Regional Council (1998) to update the Storm Surge Atlas for St. Johns County (Volume 3) utilizing the SLOSH data.

Since the creation of the first LMS document, St. Johns County has continued to work with the Northeast Florida Regional Planning Council to continuously maintain and update the LMS as needed and to add new mitigation initiatives as projects get completed and new projects are initiated. Through this planning process, St. Johns County has been able to get many projects initiated, funded, and completed through the guidance of the LMS. The Task Force continues this process in addition to working to bring the LMS into compliance with Federal Emergency Management Agency regulations for County LMS documents. Regular maintenance of the LMS is coupled with updates to reach FEMA compliance. The Task Force continues to meet on a regular basis to discuss the LMS.

The Northeast Florida Regional Council staff in conjunction with the St. Johns County Emergency Management representatives served to facilitate the meetings during the 2002-2005 planning and updating of the Local Mitigation Strategy. These planning efforts include expanding the list of people and organizations invited to participate, expanding the list of participants actively encouraged to participate, revising portions of the local mitigation strategy that currently do not meet requirements set by the Disaster Mitigation Act of 2000, performing a more detailed risk assessment and damage loss estimate analysis, holding meetings approximately every 90 days, and setting up public information workshops and meetings among other planning activities.

The Regional Council staff perform the data collection, analysis and revisions to the Local Mitigation Strategy with the assistance of the Task Force members. Revisions are made to the document and brought forth to the Task Force for review, discussion and approval. Final copies

of revisions are sent to the State for review once the Task Force has viewed them. Once a draft of the document was completed, it was made available on the Regional Council website to obtain comments from the general public. This was used in conjunction with planning and informational workshops and meetings to get participation from the public. Outcomes of those meetings and workshops were added to the Local Mitigation Strategy document once they were held.

A final copy of the document was presented to the St. Johns County Commission St. Augustine, St. Augustine Beach, and Hastings City and Town Councils for their approval and adoption once the revisions were made to meet the newly set requirements. Once the Local Mitigation Strategy was updated and approved by the State of Florida and the Federal Emergency Management Agency, the role of the County and the Regional Council Staff is reviewed and adjusted accordingly.

C. Community Participation

Recent federal mandates regarding Local Mitigation Strategies require increased public participation and documentation of solicitation for public involvement. All LMS Task Force Meetings are advertised in a newspaper of general circulation at least 10 days prior to the date of the meeting. This is to assure that the public is informed of meetings and given a chance to participate if interested. Increased efforts are made to solicit ideas, comments, and information from the general public. These efforts include providing access to the LMS document on the World Wide Web, specifically the County and municipal websites, and allowing the public an opportunity to comment at regular Task Force meetings, public information workshops, presentations at County Commission Meetings, and access to the LMS document at public libraries. As specific outreach activities are conducted, more details of such meetings or efforts are added to the information provided in the Local Mitigation Strategy.

At least one public meeting/workshop was held once the draft of the updated Local Mitigation Strategy was complete. This workshop was held in order to solicit ideas and comments from the general public to incorporate into the final copy of the plan before it is submitted for review to State and Federal reviewers. People invited to any public information meetings or workshops are the general public, task force members, County, City, and State representatives and all others that may be interested.

A copy of the Local Mitigation Strategy document is made available at the Northeast Florida Regional Council offices, the St. Johns County Emergency Management office and on the Regional Council website. An announcement of the meeting or workshop and where to obtain more information and copies of the Local Mitigation Strategy are made in the local and county newspapers, and also on any available bulletin boards within the County.

Other public outreach activities include a presentation to the appropriate County and municipal Commissions/Councils that is open to the public, in order to obtain comments and receive approval of the updated Local Mitigation Strategy by the appropriate Commission/Council. The informative presentation was not given until the Draft document was ready for approval by the appropriate Commission/Council.

D. Private Sector Participation

Since the beginning of the Local Mitigation Strategy program in St. Johns County, efforts have been made to insure participation by the private sector. Included on the mailing list for the St. Johns County LMS Task Force are representatives from the Insurance Industry, Hospital Administrators, and representatives from the County's largest employers, local businessmen, Local private school representatives, local farmers, and others.

Prior to each LMS meeting these individuals were sent a meeting packet with information from the last meeting as well as materials pertaining to the upcoming meeting. By sending out mailings to notify members of all upcoming meetings, the representatives from the private sector are being actively encouraged to participate in the Local Mitigation Strategy planning process. In numerous cases, all LMS members were also phoned to remind them of the upcoming meetings. The meetings were attended sporadically by the private sector due to conflicts and busy schedules. However, at least one representative sometimes more from the private sector were in attendance at each of the LMS meetings and valuable input was obtained from these individuals.

The St. Johns County LMS Task Force continues to hold periodic LMS meetings and continues to coordinate and encourage private and public sector interest and involvement. Efforts are being made to expand the list of participating agencies and organizations to include a broader spectrum of representation from the community. An informational workshop is held in order to provide new members and interested parties with information regarding the Local Mitigation Strategy planning process and why their participation is important. These efforts continue throughout the planning process for updating and maintaining the Local Mitigation Strategy. New participants are continuously sought for inclusion on the mailing list. In addition the Chamber of Commerce is used as an information source to obtain up-to-date information on businesses and organizations so that it is certain that all have been given the opportunity to participate in the planning process.

E. Use and Incorporation of Existing Documents

As part of the planning process for the creation of the LMS document, other existing documents were used as references and incorporated into the LMS document. These existing documents include County and municipal Comprehensive Plans, Regional Strategic Plans, Land Development Regulations, City Codes, State Statutes, and Emergency Management Plans. These documents were used to obtain goals, objectives and policies that were incorporated into the LMS document as guiding principles, which are discussed in detail in Section II. These documents are listed in Appendix B.

Efforts are made in current and future planning activities to review new documents and documents previously not reviewed in order to cover the wide spectrum of plans within the County and State. FMA and CRS documents have not previously been reviewed, but will be in future updates to this portion of the Local Mitigation Strategy, if applicable and available. Currently, St. Johns County, the Town of Hastings, and the Cities of St. Augustine and St.

Augustine Beach are active participants on the National Flood Program. There are also recently adopted plans and studies that have not yet been reviewed and incorporated into the LMS, but will be in the current planning cycle and future reviews of the LMS.

F. Incorporation of LMS into other Documents

Part of the LMS document contains Guiding Principles, which as explained above were obtained by reviewing other pertinent county and municipal documents. Through this process of information incorporation into the LMS, new goals, objectives and policies can be created to fill in the gaps in the existing documents in order to increase the county's ability to effectively mitigate against hazards. In this way the goals and principles of the LMS will be incorporated into other planning documents in the county that deal with hazard mitigation.

G. Reevaluation Criteria

The LMS document has to be updated over time to change with the growing and changing community. Strategies, and mitigation initiatives change, Comprehensive Plans updated, and projects completed. These changes need to be reflected in the LMS document. In order to ensure that the document remains updated and current, the LMS Task Force meets and the LMS is reviewed a minimum of once every year or following a disaster (mandatory) to determine if any updates or corrections are necessary. Updates may include new issues, new projects, changes to existing projects, consideration of new funding sources, changes to timeframes of existing projects, or changes to the mitigation strategy program itself.

As a result, the LMS is maintained on a regular basis by the St. Johns County Task Force in order to meet the needs of St. Johns County and its citizens. It is essential that all facets of the community be represented at the Task Force meetings including the public, to ensure that the plan is staying up to date with all aspects of the community. Details on how the public continues to be included and encouraged to participate throughout the reevaluation, maintenance, and review process are outlined in Section I, C. Through these meetings, currently facilitated by the Regional Council staff, the LMS document is reevaluated and updated.

H. Submission of Plan to SHMO

Within five years of the plan's update approval by the Federal Emergency Management Agency (FEMA), the plan must be resubmitted to the State Hazard Mitigation Officer for initial review and coordination.

I. Conflict Resolution

Recognizing that disputes between jurisdictions, interest groups, units of government and the private sector sometimes occur in a decision making process, the St. Johns County LMS Task Force agreed to resolve all conflicts in policy, procedures and issues based on the Regional Dispute Resolution Process.

The Northeast Florida Regional Council currently uses this process, established by the Florida

Legislature as part of the 1993 Environmental Land Management Study (ELMS) legislation to facilitate intergovernmental problem solving. The process offers a reasonable approach to solving public problems. It provides a forum to cooperatively resolve issues and differences between local governments and private interests in a timely, informal, and a cost-effective manner.

The process should take no longer than two weeks. The core of the process is a settlement meeting at which disagreeing parties explain their interests, explore options, and seek a mutually acceptable agreement. Many times it ends at this point. However, if a solution is not reached, other options available include additional settlement meetings. Disputes and conflicts that cannot be resolved at this level can be escalated to mediation.

The process essentially saves time and money by seeking mutually beneficial solutions. Within this process, direct communication encourages improved control of outcomes and the quality of the agreement itself.

The St. Johns County LMS Task Force recognized that all conflicts might not be resolved by consensus agreement. This was not the case. The conflict resolution process was not required during the development. However the Task Force resolves all conflicts by democratic rule.

Section II - Guiding Goals and Principles

A. Goals

The purpose for developing a set of Goals and Guiding Principles is to clearly state what the community's overall vision for hazards mitigation is and to ensure that the community adequately addresses its mitigation needs before and after a disaster. Before beginning the process of developing the Guiding Principles for the St. Johns County Local Mitigation Strategy (LMS) the Task Force identified the goals they believed should be foremost in overall development of this document. The following goals are intended to be the leading concepts of this Strategy. In short, the purpose of the Local Mitigation Strategy is to provide guidance to the County in building a safer and more resilient community. The declaration of these ultimate goals provides the overall guidance for the Strategy. The goals are provided in a ranked order, where the first goal is paramount. The activities recommended as mitigation efforts by this Strategy must first meet or further these goals.

- 1. Protect the lives of the residents of St. Johns County and its Municipalities.**
- 2. Protect property to ensure that its intrinsic value is preserved.**
- 3. Protect infrastructure so that it is available during and after a disaster.**
- 4. Protect business activities so that they continue to provide economic strength to the community.**
- 5. Protect the environment to ensure that quality of life and economic wellbeing are preserved.**

These goals are used as part of the project prioritization methodology. Projects recommend by this Strategy must first meet one of the goals to be considered, then will receive points based on which Goals they will routinely further.

B. Guiding Principles

The Guiding Principles for St. Johns County outlined in the following document, which was developed and approved by the Task Force as part of the LMS process. It was compiled from existing adopted Goals, Objectives, Policies, and Ordinances, which address hazard mitigation and long-term recovery.

The Guiding Principles were compiled by reviewing existing requirements in the adopted Comprehensive Plan of each local government as well as Stat, Regional and Local planning documents. These documents have already adopted requirements which address hazard mitigation and long-term recovery and which are already serving as the County's Adopted Guiding Principles. They are shown in the text summary and in the following matrix format

which identifies in a narrative description how they contribute to a comprehensive mitigation strategy as well as the source of the requirement and if and how it has been implemented. Sources include State Statutes, the County and Municipal Comprehensive Plans; the Strategic Regional Policy Plan developed by the NEFRC; the County Emergency Management Plan as well as local ordinances.

A review of these Guiding Principles will quickly reveal several mitigation approaches commonly used in the County and municipal plans. Among these are the policies which, direct growth away from or restrict growth in the hazardous areas. The restriction of growth in the Coastal High Hazard Areas (CHHA) for example is common to each, the County and coastal municipal plans. Other policies restrict development when consideration is not adequate to address drainage. Prohibitions on development, which increases off site flooding or does not provide for proper transportation drainage, are common in St. Johns County. These examples are given to introduce the concept that St. Johns County and its municipal governments have available to them the regulatory authority and public support for development of a unified mitigation strategy, and that the initial steps to developing it have already been adopted.

It is not intended that the inclusion of these policies as Guiding Principles in the Local Mitigation Strategy will provide a fixed master plan for the future development or revision of policies, but that they when viewed as a whole represent a community policy statement relating to the future development in St. Johns County. As such they are intended to provide the guidelines for revision of development regulations and to focus future policy development on the goals stated above. The LMS also relates to the intent and mandates of the State and Federal governments to encourage local jurisdictions to undertake a coordinated and effective program that will reduce the vulnerability of its population and infrastructure to the effects of disasters. When use of these Guiding Principles for future policy development is combined with the direct implementation of mitigation projects identified in this Strategy the County will in function have a unified mitigation approach.

**ST. JOHNS COUNTY LMS
GUIDING PRINCIPLES TABLE**

MITIGATION CATEGORY	Objective/Policy	SOURCE	NOTES (Design; Implementation; or Enforcement)
Flood	Reduce the quantity and improve the quality of storm water runoff to surface water bodies by increasing the amount of green permeable open space and the use of more permeable surfaces through the following policy program.	City of St. Augustine Comprehensive Plan - Future Land Use Element - Objective 4	Implementation ongoing
Flood	Require subdivisions to be platted and recorded and include road and drainage maintenance plans as outlined in the City of St. Augustine's subdivision ordinance (Ordinance 83-9) prior to a building permit being issued.	City of St. Augustine Comprehensive Plan - Future Land Use Element	On-Going Enforcement
Flood	Continue to operate the drainage system based upon the existing master planning process as established by the City (city of St. Augustine) staff and under the aegis of the Director of Public Works and will provide for maintenance of its existing drainage system data base; continue to establish a list of prioritized renewal/replacement projects; and will facilitate periodic updates of the master plan.	City of St. Augustine Comprehensive Plan -Infrastructure Element - Drainage Sub Element - Objective 1.2	Implemented
Flood	Investigate the feasibility of establishing a storm drainage utility and a system of storm drainage user fees and charges which follow a cost of service approach to rate structuring, and produce revenues adequate to fund ongoing maintenance efforts and ongoing renewal and replacement improvements.	City of St. Augustine Comprehensive Plan -Infrastructure Element - Drainage Sub Element - Objective1.3	Implemented
Flood	The storm drainage system will adhere to stringent regulatory requirements as necessary to promote the conservation and protection of natural resources.	City of St. Augustine Comprehensive Plan -Infrastructure Element - Drainage Sub Element - Objective1.4	On-Going Enforcement
Flood	Establish development guidelines for the remaining undisturbed areas of the 100 year flood plain so that the flood-carrying and flood-storage capacity of those lands is maintained.	City of St. Augustine Comprehensive Plan	Implemented

**ST. JOHNS COUNTY LMS
GUIDING PRINCIPLES TABLE**

MITIGATION CATEGORY	Objective/Policy	SOURCE	NOTES (Design; Implementation; or Enforcement)
		- Conservation Element Objective 9	
Flood	<p>Protect human life and health.</p> <p>Minimize expenditure of public money for costly flood control projects.</p> <p>Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public</p> <p>Minimize prolonged business interruptions.</p> <p>Minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets and bridges located in floodplains.</p> <p>Maintain a stable tax base by providing for the sound use and development of floodprone areas in such a manner as to minimize future flood blight areas.</p> <p>Ensure that potential home buyers are notified that property is in a flood area.</p>	City of St. Augustine -- Chapter 13 Flood Control of the St. Augustine Code.	On-Going Enforcement
Flood	Standards for Flood Hazard Reduction. Provisions for development in flood hazard areas in order to minimize damages.	City of St. Augustine -- Chapter 13 Flood Control of the St. Augustine Code. Sec 13-61 through 13-65	On-Going Enforcement
Flood	All subdivisions require a drainage design plan show existing and proposed features. The plan shall equal or exceed design standards set forth hereinafter and the policies and procedures established in the Drainage Manual of the FDOT.	City of St. Augustine Subdivision Regulations Division 3 Section 23-96.	On-Going Enforcement
Flood	Roadway ditches standards and requirements.	City of St. Augustine Subdivision Regulations Sec. 23-98 through 23-103	On-Going Enforcement
Flood			

**ST. JOHNS COUNTY LMS
GUIDING PRINCIPLES TABLE**

MITIGATION CATEGORY	Objective/Policy	SOURCE	NOTES (Design; Implementation; or Enforcement)
	Encourage St. Johns County, the SJRWMD and/or the State of Florida to purchase areas subject to seasonal or periodic flooding including flood-prone areas adjacent to the Atlantic Ocean to be used for public and beach-access parking.	City of St. Augustine Beach Comprehensive Plan Future Land Use Element Policy L.1.5.7	Ongoing
Flood	Enforce requirements of the Federal Flood Insurance Program by continuing to participate in the program, specifically designating coastal high hazard areas and limiting development in such areas along with relocating any infrastructure.	City of St. Augustine Beach Comprehensive Plan Conservation/Coastal Element Policy CC.1.2.7	On-Going Enforcement
Flood	Transportation drainage systems including sales and ditches shall be maintained to ensure hydraulic capability.	City of St. Augustine Beach Comprehensive Plan Conservation/Coastal Element Policy CC.1.5.3	Implementation ongoing
Flood	Reduce the potential for flood-related adverse impacts in St. Augustine Beach by five percent in 3 years.	City of St. Augustine Beach Comprehensive Plan Conservation/Coastal Element Objective 2.5	Implemented through revised building code.
Flood	Review existing development in low-lying areas subject to flooding and modify drainage systems by five percent in these areas in 3 years to minimize potential damage to property and natural systems.	City of St. Augustine Beach Comprehensive Plan Conservation/Coastal Element Policy CC.2.5.1	Implemented through revised building code.
Flood	Protect human life and health. Minimize expenditure of public money for costly flood control projects.	City of St. Augustine Beach Flood Damage Prevention	On-Going Enforcement

**ST. JOHNS COUNTY LMS
GUIDING PRINCIPLES TABLE**

MITIGATION CATEGORY	Objective/Policy	SOURCE	NOTES (Design; Implementation; or Enforcement)
	<p>Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public</p> <p>Minimize prolonged business interruptions.</p> <p>Minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets and bridges located in floodplains.</p> <p>Maintain a stable tax base by providing for the sound use and development of floodprone areas in such a manner as to minimize future flood blight areas.</p> <p>Ensure that potential home buyers are notified that property is in a flood area.</p>	Regulations - Objectives.	
Flood	Standards for Flood Hazard Reduction. Provisions for development in flood hazard areas in order to minimize damages.	City of St. Augustine Beach Land Development Regulations Sec. 5.03.05	On-Going Enforcement
Flood	Performance of all stormwater management systems shall comply with this section of the city's code as well as all state regulations.	City of St. Augustine Beach Land Development Regulations Sec. 6.05.00	On-Going Enforcement
Flood	The Town requires a 35-foot natural buffer around all wetlands and prohibits the location of residential, commercial and industrial land uses within the buffer areas, but allows resource-based recreational activities within buffer areas subject to best management practices.	Town of Hastings Comprehensive Plan - Conservation Element Policy V.2.4	On-Going Enforcement
Flood	Town regulates development within the 100-year flood plain in order to maintain the flood-carrying and flood storage capacities of the floodplains and to reduce the risk of property damage and loss of life by establishing minimum floor elevations and by limiting impervious development on residential lots to a maximum of 20%. Commercial property development is also limited to 20% unless retention or detention areas are approved on a case-by-case basis.	Town of Hastings Comprehensive Plan - Conservation Element Policy V.2.7	On-Going Enforcement
Flood	Prohibits development or dredging and filling of wetlands which would significantly alter their functions and by only allowing non-intensive agriculture, aquaculture and silviculture type practices.	Town of Hastings Comprehensive Plan - Conservation	On-Going Enforcement

**ST. JOHNS COUNTY LMS
GUIDING PRINCIPLES TABLE**

MITIGATION CATEGORY	Objective/Policy	SOURCE	NOTES (Design; Implementation; or Enforcement)
		Element Policy V.2.8	
Flood	Require the maintenance of the quantity and quality of surface water runoff by prohibiting any development which may diminish or degrade the quality and quantity of surface water runoff within the Town.	Town of Hastings Comprehensive Plan - Conservation Element Policy V.2.12	On-Going Enforcement
Flood	Requirements for Stormwater management, including minimum design standards and finished floor elevations and lot grading plans.	St. Johns County Paving and Drainage Standards Ordinance 96-40	On-Going Enforcement
Flood	Requirements for roadway design, including pavement design and roadway drainage.	St. Johns County Paving and Drainage Standards Ordinance 96-40	On-Going Enforcement.
Flood	The County shall complete a County-wide master drainage study by, which shall include inventories of existing drainage facilities and address their deficiencies. Upon completion of the drainage study for each sub-basin, the County shall review and amend the Plan to include or implement the sub-basin study=s findings.	St. Johns County Comprehensive Plan Coastal Element - Objective F.1.3	Implemented
Flood	The County shall coordinate with DEP and St. Johns River Water Management District in the identification of all drainage basins in the County to assure uniformity of basin designation.	St. Johns County Comprehensive Plan Coastal Element - Policy F.1.3.1	Ongoing
Flood	As the drainage studies for each sub-basin are completed, the County shall establish drainage facility priorities in the sub-basin based on the potential damage created by flooding, the water quality in the area, and the impacts to areas of special concern (e.g., OFW, Class II).	St. Johns County Comprehensive Plan Coastal Element - Policy F.1.3.2	Ongoing
Flood	Upon identification of deficiencies by the master drainage study, the County shall take action to address such deficiencies through the establishment of stormwater utilities for the affected areas, or other appropriate implementation mechanism.	St. Johns County Comprehensive Plan Coastal Element - Policy F.1.3.3	Ongoing
Flood	Pending completion of the master drainage study, the following standards shall be considered for addition to the Paving and Drainage Ordinance (86-4) by April 1991:	St. Johns County Comprehensive Plan	Ongoing

**ST. JOHNS COUNTY LMS
GUIDING PRINCIPLES TABLE**

MITIGATION CATEGORY	Objective/Policy	SOURCE	NOTES (Design; Implementation; or Enforcement)
	<p><u>Water Quality</u></p> <ol style="list-style-type: none"> 1. Drawdown of the required retention volume within 72 hours following a storm event. 2. Special criteria for Class II, OFW, and recharge areas, which shall, at a minimum, be consistent with standards contained in Chapter 17-3, 17-25 and 40C-42 F.A.C. <p><u>Water Quantity</u></p> <ol style="list-style-type: none"> 1. The 10-year return period shall be used to design minor internal drainage facilities. 2. The 25-year/24-hour storm event shall be used to design storage basins for peak flow attenuation in addition to the current 10-year/24-hour storm event. 3. The 25-year return period storm shall be used for the design of major drainage facilities such as: canals, drainage ditches and culverts external to the development. 4. Antecedent Moisture Condition shall be the average wet season (AMC II). 	Coastal Element - Policy F.1.3.4	
Flood	The County shall manage and regulate development within the 100-year flood plain through enforcement of the Flood Plain Management Ordinance (90-24) and the procedures recommended by FEMA as incorporated within the County's development permit review process.	St. Johns County Comprehensive Plan Coastal Element - Policy F.1.3.6	On-Going Enforcement
Flood	Vegetative buffers of at least 25 feet shall be required and maintained between natural drainage courses and developed areas to protect the water quality of the drainage course.	St. Johns County Comprehensive Plan Coastal Element - Policy F.1.3.7	On-Going Enforcement
Flood	County shall develop coordination mechanisms between the planning and engineering departments to ensure that plans developed for drainage facilities are consistent with, and support, the Future Land Use Element.	St. Johns County Comprehensive Plan Coastal Element - Objective F.1.4	Implemented
Flood	The County shall protect flood plains, wetlands, forests, and surface waters within the County from development impacts to provide for maintenance of environmental quality and wildlife habitats.	St. Johns County Comprehensive Plan Coastal/Conservation Management Element - Objective	On-Going Enforcement

**ST. JOHNS COUNTY LMS
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MITIGATION CATEGORY	Objective/Policy	SOURCE	NOTES (Design; Implementation; or Enforcement)
		G.2.2	
General	Protect valuable functions of wetlands, estuaries, tidal marshes and submerged lands, including the territorial sea by maintaining native vegetative communities and hydrologic systems, through continued enforcement of Ordinance 88-39, AConservation Overlay zone Development, for all development proposals in the conservation zones....	City of St. Augustine Comprehensive Plan -Conservation Element - Objective7	On-Going Enforcement
General	Control erosion and sedimentation in development areas both during and after construction.	City of St. Augustine Comprehensive Plan - Conservation Element - Objective 6	Enforced through Development Code
General	Research strategies in post-disaster redevelopment planning that eliminate exposure to natural hazards.	City of St. Augustine Comprehensive Plan - Conservation Element Goal 3 Objective 4	Ongoing
General	Conservation Overlay Zone Development. Establishes criteria for the review of development proposals and to manage and regulate and direct development within the Conservation Overlay Zones 1, 2, and 3.	City of St. Augustine -- Chapter 11 Environmental Protection of the St. Augustine Code.	Implemented
General	Coastal Construction Requirements generally. All structures shall be designed so as to minimize damage to life, property and the natural environment.	City of St. Augustine Building Code Sec. 8-134	On-Going Enforcement
General	Land Development Regulations should include revised regulations of building practices and land uses that reduce the vulnerability of human life and property to natural hazards, specifically hurricanes, in high hazard areas.	City of St. Augustine Beach Comprehensive Plan Conservation/Coastal Element Policy CC.1.2.8	Implemented
General	Participate with all applicable State and Federal Agencies to insure public safety by keeping Disaster	City of St. Augustine	

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MITIGATION CATEGORY	Objective/Policy	SOURCE	NOTES (Design; Implementation; or Enforcement)
	Preparedness plans current incorporating the hazard mitigation annex of the peacetime emergency plan as well as updates by the Regional Planning county and St. Johns County.	Beach Comprehensive Plan Conservation/Coastal Element Objective CC.1.3	Ongoing
General	City's disaster preparedness plans shall give priority to accommodations for the handicapped and indigent, including transportation and appropriate sheltering by May, 1992.	City of St. Augustine Beach Comprehensive Plan Conservation/Coastal Element Policy CC.1.3.5	Implementation ongoing
General	St. Augustine Beach will annually coordinate disaster preparedness plans with St. Johns county and the City of St. Augustine.	City of St. Augustine Beach Comprehensive Plan Conservation/Coastal Element Policy CC.1.3.6	Implementation ongoing
General	All private and public infrastructure, utilities and drainage improvements must be constructed concurrently, or in accordance with a phased plan approved by St. Augustine Beach	City of St. Augustine Beach Comprehensive Plan Conservation/Coastal Element Policy CC.1.4.2	On-Going Enforcement
General	City shall include in its post-disaster redevelopment plan a delineation of activities that give priority to immediate repair and cleanup actions over long term redevelopment activities.	City of St. Augustine Beach Comprehensive Plan Conservation/Coastal Element Policy CC.4.1.1	Ongoing
General	City will amend its building code to specify standards for the removal, relocation or structural modification of damaged infrastructure and structures.	City of St. Augustine Beach Comprehensive Plan Conservation/Coastal Element Policy CC.4.1.2	Implemented
General	City shall establish as its standard for inclusion in the Land Development Regulations that any	City of St.	LDR development ongoing

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MITIGATION CATEGORY	Objective/Policy	SOURCE	NOTES (Design; Implementation; or Enforcement)
	structure damaged beyond fifty percent of value more than once during storms, hurricanes or northeasters will be determined to be a non-conforming use if located in a coastal high hazard area.	Augustine Beach Comprehensive Plan Conservation/Coastal Element Policy CC.4.1.3	
General	City shall include in the post-disaster redevelopment plan, recommendations of interagency hazard mitigation reports.	City of St. Augustine Beach Comprehensive Plan Conservation/Coastal Element Policy CC.4.1.4	Ongoing
General	Resource Protection Standards for the Town of Hastings are detailed in the Land Development Regulations	Town of Hastings - Land Development Regulations, Article V Resource Protection Standards	On-Going Enforcement
General	<p>Local governments should sign statewide mutual aid agreements.</p> <p>Local governments are encouraged to consider the impact and compatibility of emergency preparedness and recovery plans on adjacent areas.</p> <p>Local governments should participate in region and state wide disaster exercises.</p> <p>Establish a work group to coordinate compatibility among communications systems within the region.</p> <p>Review and update the Regional Hurricane Evacuation Study every five years.</p> <p>Local governments shall consider utilizing the Northeast Florida Regional Planning Council = Regional Dispute Resolution Process as the first means of settling disputes concerning emergency preparedness.</p>	Strategic Regional Policy Plan- Emergency Preparedness Element Policies 3.1.1 through 3.1.6	Northeast Florida Regional Planning Council is responsible for the implementation of its Strategic Regional Policy Plan. The Council is developing ways to implements these policies.
General	Educate citizens and businesses about the impacts of natural disasters, including economic disruption, personal safety and property loss.	Strategic Regional Policy Plan- Emergency Preparedness	

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MITIGATION CATEGORY	Objective/Policy	SOURCE	NOTES (Design; Implementation; or Enforcement)
		Element Policy 3.2.5	
General	Public and private members of the community shall be encouraged to support and participate in Local Emergency Planning Committee activities.	Strategic Regional Policy Plan- Emergency Preparedness Element Policy 3.3.1	
General	<p>Local governments shall address post-disaster redevelopment planning within their comprehensive plans in accordance with Rule 9J-5, F.A.C.</p> <p>Replacement development should be consistent with local, regional and state programs designed to ensure safe and timely evacuation.</p> <p>Increase attention given to building code regulations and enforcement that may not be sufficient to protect the life and safety of the occupants.</p> <p>Communities should maintain emergency recovery funding and staffing plans to enable quick restoration of services lost to disasters.</p> <p>Recovery plans should include the identification of potential disaster field offices and disaster assistance centers.</p> <p>Identify areas for potential acquisition in areas of existing vulnerable development.</p>	Strategic Regional Policy Plan- Emergency Preparedness Element Policies 3.7.1 through 3.7.6	Northeast Florida Regional Planning Council is responsible for the implementation of its Strategic Regional Policy Plan. The Council is developing ways to implements these policies.
General	<p>Local governments should encourage their elected and appointed officials to attend the Public Officials Conference and other state wide training sessions and conferences.</p> <p>Local governments shall conduct training exercises which include roles for their elected and appointed officials.</p> <p>Educate citizens on the need for personal disaster plans including provisions for their pets.</p> <p>Encourage media personnel to attend educational conferences on disasters so they can better inform and educate the public.</p>	Strategic Regional Policy Plan- Emergency Preparedness Element Policies 3.8.1 through 3.8.4	Northeast Florida Regional Planning Council is responsible for the implementation of its Strategic Regional Policy Plan. The Council is developing ways to implements these policies.
General	The County shall prepare post-disaster redevelopment plans which will reduce or eliminate the exposure of human life and public and private property to natural hazards.	St. Johns County Comprehensive Plan Coastal/Conservatio	County has recently prepared the emergency management plan. The Regional Planning

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MITIGATION CATEGORY	Objective/Policy	SOURCE	NOTES (Design; Implementation; or Enforcement)
		n Management Element - Objective G.1.3	Council recently completed the updated Evacuation Study. Local review and coordination are in progress.
General	<p>Disaster preparedness plans shall include accommodations for the handicapped and indigent, including transportation and sheltering.</p> <p>The County shall coordinate disaster preparedness plans with adjacent counties and municipalities.</p> <p>The County shall reduce the risks to human life, and to public and private property from natural disasters through the following post-disaster redevelopment planning and implementation of hazard mitigation measures:</p> <p>The County shall consider, and as necessary implement where appropriate, the recommendations of the hazard mitigation annex of the local peacetime emergency plan.</p>	St. Johns County Comprehensive Plan Coastal/Conservation Management Element - Policies G.1.3.3, G.1.3.5, G.1.3.7, & G.1.3.8.	Implementation ongoing
Hazardous Materials	Protect natural resources of the City from contamination by any hazardous substances.	City of St. Augustine Beach Comprehensive Plan Conservation/Coastal Element Objective CC.2.7	None in City
Hazardous Materials	In conformance with State and Federal regulations, commercial establishments which use, create, store, generate or transport toxic or hazardous substance shall prepare a plan which identifies the materials and how these materials will be handled and disposed.	City of St. Augustine Beach Comprehensive Plan Conservation/Coastal Element Policy CC.2.7.1	Implemented by County
Hazardous Materials	St. Augustine Beach will work with other State agencies to develop sites for households, small businesses and other low volume generators of hazardous waste to deliver hazardous waste for later disposal at an approved hazardous waste disposal site.	City of St. Augustine Beach Comprehensive Plan Conservation/Coastal Element Policy CC.2.7.2	Two gas stations in City. No problems reported.
Hazardous Materials	Sites polluted from underground petroleum storage tanks shall be promptly cleaned up and the tank	City of St.	On-Going Enforcement

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MITIGATION CATEGORY	Objective/Policy	SOURCE	NOTES (Design; Implementation; or Enforcement)
	replaced, repaired or removed as presented in an approved plan within six months of discovering the petroleum.	Augustine Beach Comprehensive Plan Conservation/Coastal Element Policy CC.2.7.3	
Hazardous Materials	The Town requires that post-development runoff rates and pollutant loads not exceed redevelopment conditions.	Town of Hastings Comprehensive Plan - Conservation Element Policy V.2.5	On-Going Enforcement
Hazardous Materials	Require all hazardous waste generators properly manage their own wastes and require that new hazardous waste generators comply with all applicable federal and state permitting requirements before approving any development plans.	Town of Hastings Comprehensive Plan - Conservation Element Policy V.2.13	On-Going Enforcement
Hazardous Materials	The location of solid waste and commercial hazardous waste management facilities and/or regional hazardous waste storage, transfer or treatment facilities in the coastal high hazard area are assumed to have adverse regional impacts which shall be prevented.	Strategic Regional Policy Plan- Emergency Preparedness Element Policy 3.2.1	
Hazardous Materials	<p>The risks of hazardous materials to the public and the environment should be determined through the Local Emergency Planning Committee, local emergency management agencies and facilities.</p> <p>Train emergency responders to appropriate levels for responding to hazardous materials incidents in accordance with the SERC Training Task Force Training Guidelines.</p> <p>A hazardous waste disposal day program should be supported by communities throughout the region.</p>	Strategic Regional Policy Plan- Emergency Preparedness Element Policies 3.3.2 through 3.3.4	Northeast Florida Regional Planning Council is responsible for the implementation of its Strategic Regional Policy Plan. The Council is developing ways to implements these policies.
Hurricane	Ensure that coastal area populations densities are coordinated with the St. Johns County and Northeast Regional Planning Council's Hurricane Evacuation Plans,	City of St. Augustine Comprehensive Plan - Future Land Use Element - Objective 10	The Regional Planning Council recently completed the updated Evacuation Study. Local review and coordination are in progress.
Hurricane			

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MITIGATION CATEGORY	Objective/Policy	SOURCE	NOTES (Design; Implementation; or Enforcement)
	Reduce or prevent storm damage by protecting natural systems which serve as buffers against those storms.	City of St. Augustine Comprehensive Plan - Conservation Element Goal 3 Objective 1	Implemented
Hurricane	Ensure that a total evacuation of the City during a Category 3 storm can be accomplished in less than 12 hours, or in a time period determined to be safe from the recommendations of a new hurricane evacuation study and plan in 1991, by providing adequate evacuation routes and shelters.	City of St. Augustine Comprehensive Plan - Conservation Element Goal 3 Objective 2	The Regional Planning Council recently completed the updated Evacuation Study. Local review and coordination are in progress.
Hurricane	Regulate development within coastal high-hazard areas by enforcing coastal construction standards.	City of St. Augustine Comprehensive Plan - Conservation Element Goal 3 Objective 3	On-Going Enforcement
Hurricane	The City of St. Augustine will implement the Future Land Use Map illustrated in the Future Land Use Element through the year 2000 to limit population concentrations in the coastal high hazard areas.	City of St. Augustine Comprehensive Plan - Conservation Element Goal 3 Objective 6	Ongoing
Hurricane	The City of St. Augustine will limit capital expenditures that subsidize development in coastal high hazard areas, but will place no limitation on expenditures in those areas that enhance or restore natural resources.	City of St. Augustine Comprehensive Plan - Capital Improvements Element Objective 2	On-Going Enforcement
Hurricane	Base future land use decisions on the carrying capacity and the ability to evacuate in a major hurricane event as defined by the Northeast Florida Region Hurricane Evacuation Plan.	City of St. Augustine Beach Comprehensive Plan Future Land Use Element Objective	The Regional Planning Council recently completed the updated Evacuation Study. Local review and coordination are pending.

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MITIGATION CATEGORY	Objective/Policy	SOURCE	NOTES (Design; Implementation; or Enforcement)
		L.1.5	
Hurricane	Coordinate with the St. Johns County and the NEFRPC in establishing the carrying capacity of the coastal areas.	City of St. Augustine Beach Comprehensive Plan Future Land Use Element Policy L.1.5.1	The Regional Planning Council recently completed the updated Evacuation Study. Local review and coordination are pending.
Hurricane	Amendments to the Future Land Use Plan shall reflect densities and intensities that do not exceed the carrying capacity of the designated evacuation routes.	City of St. Augustine Beach Comprehensive Plan Future Land Use Element Policy L.1.5.2	The Regional Planning Council recently completed the updated Evacuation Study. Local review and coordination are pending.
Hurricane	Exiting evacuation routes shall be so marked and should be given special consideration for improvement over other roads and highways in the City.	City of St. Augustine Beach Comprehensive Plan Future Land Use Element Policy L.1.5.3	On-Going Enforcement
Hurricane	Update the hurricane evacuation and disaster preparedness plan every five years in conjunction with St. Johns County, and re-evaluate its effectiveness immediately after a major disaster event, to recommend appropriate improvements.	City of St. Augustine Beach Comprehensive Plan Future Land Use Element Policy L.1.5.4	The Regional Planning Council recently completed the updated Evacuation Study. Local review and coordination are pending.
Hurricane	Update hurricane guide, showing evacuation routes, hurricane hazards, safety procedures, shelters, and other pertinent information.	City of St. Augustine Beach Comprehensive Plan Future Land Use Element Policy L.1.5.5	The Regional Planning Council recently completed the updated Evacuation Study. Local review and coordination are pending.
Hurricane	Adhere to the DEP's Coastal Setback Requirements and their permitted variances regardless of the size of the developable parcel.	City of St. Augustine Beach Comprehensive Plan	On-Going Enforcement

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MITIGATION CATEGORY	Objective/Policy	SOURCE	NOTES (Design; Implementation; or Enforcement)
		Future Land Use Element Policy L.1.5.6	
Hurricane	Identify at least two methods to improve approaches of evacuation routes which are subject to flooding.	City of St. Augustine Beach Comprehensive Plan Transportation Element Objective T.2.2	The Regional Planning Council recently completed the updated Evacuation Study. Local review and coordination are pending.
Hurricane	Continue to coordinate with FDOT and St. Johns County on the study of and necessity for improved evacuation with elevation standards.	City of St. Augustine Beach Comprehensive Plan Transportation Element Policy T.2.2.1	Ongoing
Hurricane	Assist in protecting, conserving, and enhancing remaining coastal dunes and beach by requesting assistance from the Department of Environmental Protection.	City of St. Augustine Beach Comprehensive Plan Conservation/Coastal Element Objective CC.1.2	Ongoing
Hurricane	Promote hazard mitigation by enforcement of the coastal construction setback line.	City of St. Augustine Beach Comprehensive Plan Conservation/Coastal Element Policies CC.1.2.6	On-Going Enforcement
Hurricane	Assessment of the impact of new development on emergency evacuation routes will be incorporated into the City land development ordinance.	City of St. Augustine Beach Comprehensive Plan Conservation/Coastal Element Policy CC.1.3.1	Ongoing
Hurricane	Existing evacuation routes will be given priority for improvement over other transportation facilities	City of St. Augustine	

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MITIGATION CATEGORY	Objective/Policy	SOURCE	NOTES (Design; Implementation; or Enforcement)
	in the Annual Capital Improvements Program.	Beach Comprehensive Plan Conservation/Coastal Element Policy CC.1.3.2	Ongoing
Hurricane	St. Augustine Beach shall prepare and update its hurricane evacuation plan and disaster preparedness plan every five years and also reevaluate its effectiveness immediately after a major disaster event to recommend appropriate improvements and post-disaster redevelopment activities both immediate and long term.	City of St. Augustine Beach Comprehensive Plan Conservation/Coastal Element Policy CC.1.3.3	The Regional Planning Council recently completed the updated Evacuation Study. Local review and coordination are pending.
Hurricane	City shall update its hurricane guide showing evacuation routes, hurricane hazards, safety procedures, shelters, and other pertinent information for its citizens every year by the anniversary date of the adoption of the Comprehensive Plan.	City of St. Augustine Beach Comprehensive Plan Conservation/Coastal Element Policy CC.1.3.4	The Regional Planning Council recently completed the updated Evacuation Study. Local review and coordination are pending.
Hurricane	Limit public expenditures to that which supports recreation, expenditures to the City-owned City Hall/Fire Department square, conservation of natural resources, and/or the extension of sewer facilities for public health within the coastal high hazard area.	City of St. Augustine Beach Comprehensive Plan Conservation/Coastal Element Objective CC.1.4	Enforced. City has moved both the Public Works Department and Police Department as well as city hall off the ocean front.
Hurricane	Infrastructure shall be planned and required to be installed currently with future development in areas outside of coastal high hazard areas.	City of St. Augustine Beach Comprehensive Plan Conservation/Coastal Element Policy CC.1.4.1	Implementation Ongoing
Hurricane	City shall reduce hurricane evacuation times by establishing for reviewing new development in relation to evacuation.	City of St. Augustine Beach Comprehensive Plan Conservation/Coastal Element Objective CC.1.5	The Regional Planning Council recently completed the updated Evacuation Study. Local review and coordination are pending.
Hurricane	Transportation systems shall be designed and built to handle traffic generated during emergency	City of St.	Implementation ongoing

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MITIGATION CATEGORY	Objective/Policy	SOURCE	NOTES (Design; Implementation; or Enforcement)
	evacuations as defined in the City=s evacuation plan.	Augustine Beach Comprehensive Plan Conservation/Coastal Element Policy CC.1.5.1	
Hurricane	All roadways in the coastal zone shall be constructed to City specifications using salinity tolerant construction techniques and materials.	City of St. Augustine Beach Comprehensive Plan Conservation/Coastal Element Policy CC.1.5.2	Implementation ongoing
Hurricane	City will coordinate with St. Johns County in lobbying FDOT for the improvements of the bridge on SR 312 or an additional bridge, which crosses the Intracoastal as well as other key evacuation routes.	City of St. Augustine Beach Comprehensive Plan Conservation/Coastal Element Policy CC.1.5.4	Additional 2 lanes currently being constructed on Completed
Hurricane	City shall make every reasonable effort to ensure public safety health and welfare of people and property from the effects of coastal storms by limiting public expenditures in areas subject to repeated damage by wind and water thereby reducing the exposure of humans and property to natural hazards, i.e., hurricanes.	City of St. Augustine Beach Comprehensive Plan Conservation/Coastal Element Goal CC.4	Ongoing
Hurricane	Prepare a post-disaster redevelopment plan by 1993 to reduce the exposure of human life and property to the destruction of hurricanes.	City of St. Augustine Beach Comprehensive Plan Conservation/Coastal Element Policy CC.4.1	Implemented through revised building code and through the City's participation in FEMA's Community Rating Service. City has a rating of 8, which saves the City's property owners 10% on their flood insurance premium.
Hurricane	City shall include in the post-disaster redevelopment plan, measures for eliminating unsafe conditions and inappropriate uses in coastal high hazard areas.	City of St. Augustine Beach Comprehensive Plan Conservation/Coastal Element Policy	Ongoing

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MITIGATION CATEGORY	Objective/Policy	SOURCE	NOTES (Design; Implementation; or Enforcement)
		CC.4.1.5	
Hurricane	City shall restrict the intensity of development within coastal high hazard areas consistent with public safety needs through the adoption of the Land Development Regulations.	City of St. Augustine Beach Comprehensive Plan Conservation/Coastal Element Objective 4.2	LDR development ongoing
Hurricane	City shall designate the Coastal High Hazard Area as those areas which are within the FEMA V (Velocity) Zones and areas seaward of the Coastal Construction Control Line and within those areas which may be repeatedly damaged, redevelopment will be limited to conservation and recreational land uses.	City of St. Augustine Beach Comprehensive Plan Conservation/Coastal Element Policy CC.4.2.1	On-Going Enforcement
Hurricane	By 1992, the City shall identify any areas within the coastal high hazard area needing redevelopment and develop a plan for eliminating unsafe conditions and inappropriate conditions.	City of St. Augustine Beach Comprehensive Plan Conservation/Coastal Element Policy CC.4.2.2	Implemented
Hurricane	St. Augustine Beach shall not allow public expenditures that subsidize future development in the high-hazard coastal area, except for expenditures which support recreation, expenditures to the City-owned City Hall/Fire Department square, conservation of natural resources, and/or the extension of sewer facilities for public health.	City of St. Augustine Beach Comprehensive Plan Conservation/Coastal Element Objective C.1.5	On-Going Enforcement
Hurricane	<p>Development within hurricane evacuation areas should be responsible and permitted only when evacuation route capacity and shelter space capacity is available. Responsible development includes but is not limited to: structures elevated in storm surge and flooding areas; adequate drainage in flooding areas; and sufficient access for emergency response vehicles to all development.</p> <p>Assist in the development of funding for public acquisition of coastal property that has been destroyed or damaged as the result of a hurricane, storm or flooding.</p> <p>Reduce public expenditures that subsidize increased densities in the coastal high hazard area except for restoration, enhancement of natural resources, or development of recreational facilities.</p>	Strategic Regional Policy Plan-Emergency Preparedness Element Policies 3.2.2 through 3.2.4, & 3.2.6 through 3.2.8	Northeast Florida Regional Planning Council is responsible for the implementation of its Strategic Regional Policy Plan. The Council is developing ways to implements these policies.

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MITIGATION CATEGORY	Objective/Policy	SOURCE	NOTES (Design; Implementation; or Enforcement)
	<p>The siting of new critical facilities or institutions, such as hospitals, nursing homes, adult congregate living facilities and correctional facilities in coastal high hazard areas are assumed to have adverse regional impacts and shall be prevented.</p> <p>Coastal high-hazard areas, for uniformity and planning purposes, are defined as category 1 evacuation zones or as designated by the local government.</p> <p>Protect the primary dune systems of the region. Provide technical assistance to local governments in the development and implementation of dune protection plans.</p>		
Hurricane	<p>Assess the numbers and requirements of special needs populations.</p> <p>Local governments should be encouraged to require new, reconstructed and expanded health care facilities outside the hurricane evacuation areas to be built to shelter specifications.</p> <p>Local governments should develop incentives to encourage existing health care facilities outside the storm surge areas to retrofit buildings to shelter specifications.</p> <p>Health care facilities outside the hurricane evacuation areas shall be encouraged to establish aid agreements with similar facilities within the hurricane evacuation areas.</p>	Strategic Regional Policy Plan- Emergency Preparedness Element Policies 3.4.1 through 3.4.4	Northeast Florida Regional Planning Council is responsible for the implementation of its Strategic Regional Policy Plan. The Council is developing ways to implements these policies.
Hurricane	<p>An adverse regional impact is assumed when a proposed development in a hurricane evacuation zone is anticipated to utilize twenty-five percent (25%) or more of an identified hurricane evacuation route=s level of service E hourly directional maximum service volume based on the Florida Department of Transportation=s Generalized Peak Hour/ Peak Direction Level of Service Maximum Volumes as presented in the Florida Highway Systems Manual which shall be mitigated.</p> <p>Roads which function as evacuation routes with high clearance times, particularly intercommunity routes, should receive high priority in FDOT or local capital improvement programs.</p> <p>Suspend road construction projects on evacuation routes during hurricane watches and move construction barriers to maximize capacity.</p> <p>Develop a system of emergency communication on highways including electronically controlled message signs and a radio station to broadcast highway conditions.</p>	Strategic Regional Policy Plan- Emergency Preparedness Element Policies 3.5.1 through 3.5.4	Northeast Florida Regional Planning Council is responsible for the implementation of its Strategic Regional Policy Plan. The Council is developing ways to implements these policies.

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MITIGATION CATEGORY	Objective/Policy	SOURCE	NOTES (Design; Implementation; or Enforcement)
Hurricane	<p>Establish a procedure for prioritizing and retrofitting existing public facilities located outside of the coastal high hazard area to shelter specifications.</p> <p>Adopt construction standards and techniques, and siting decisions for public buildings that would make these structures suitable for public shelters.</p> <p>Where shelter deficits exist, an adverse regional impact is a proposed development with anticipated public shelter space demand that will require 200 spaces or five percent (5%) of the shelter space capacity; or where shelter deficits do not exist, an adverse regional impact is a proposed development with anticipated public shelter space demand that will cause a deficit of 200 spaces or more which shall be mitigated.</p> <p>Educate residential home builders about the benefits of constructing new residences outside of the hurricane evacuation areas with a safe room to serve as home shelters. Insurance agencies shall be encouraged to provide incentives to prepare existing residences as home shelters.</p> <p>Require new and existing mobile home and RV parks to have on-site shelter facilities for their residents or plans for alternative off-site shelters.</p> <p>Require new apartment complexes and condominiums located outside of hurricane evacuation areas to provide on-site shelter space.</p> <p>Innovative programs for financing shelter space should be examined including special assessment districts.</p> <p>Encourage the Humane Society and local animal control departments to develop their role in animal evacuation during disasters.</p>	Strategic Regional Policy Plan- Emergency Preparedness Element Policies 3.6.1 through 3.6.8	Northeast Florida Regional Planning Council is responsible for the implementation of its Strategic Regional Policy Plan. The Council is developing ways to implement these policies.
Hurricane	Through the future land use plan, the County shall ensure safe evacuation of coastal areas and shall coordinate coastal area population densities with appropriate regional hurricane plans.	St. Johns County Comprehensive Plan Coastal Element - Objective A.1.5	Implemented
Hurricane	Existing evacuation routes shall be mapped and physically posted and should be given special consideration for improvement over other transportation facilities.	St. Johns County Comprehensive Plan Coastal Element - Policy A.1.5.1	The Regional Planning Council recently completed the updated Evacuation Study. Local review and coordination are in progress.
Hurricane	The County shall update its hurricane evacuation plan and disaster preparedness plan every three	St. Johns County	County has recently prepared

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MITIGATION CATEGORY	Objective/Policy	SOURCE	NOTES (Design; Implementation; or Enforcement)
	years and also shall re-evaluate its effectiveness immediately after a major disaster event to recommend appropriate improvements.	Comprehensive Plan Coastal Element - Policy A.1.5.2	the emergency management plan. The Regional Planning Council recently completed the updated Evacuation Study. Local review and coordination are in progress.
Hurricane	The County shall update its hurricane guide annually if needed, showing: evacuation routes, hurricane hazards, safety procedures, shelters and other pertinent information for its citizens.	St. Johns County Comprehensive Plan Coastal Element - Policy A.1.5.3	County has recently prepared the emergency management plan. The Regional Planning Council recently completed the updated
Hurricane	The County shall manage, use, conserve, protect, and enhance coastal resources, along with protecting human life from natural disasters.	St. Johns County Comprehensive Plan Coastal/Conservation Management Element - Goal G.1	On-Going Enforcement
Hurricane	The County shall assure the protection, conservation and enhancement of the County=s coastal barrier areas, dunes, and beaches through: (a) coordination of County permitting activities with the activities of other regulating state and federal agencies; (b) establishment or continued enforcement of construction standards for the coastal building zones; and 8 the establishment of procedures and land development regulations to protect the County=s dune systems.	St. Johns County Comprehensive Plan Coastal/Conservation Management Element - Objective G.1.2	On-Going Enforcement
Hurricane	The County shall provide technical support and assistance to applicable state and federal agencies in identifying and inventorying all beaches and dune systems, so that they may be protected, enhanced and renourished.	St. Johns County Comprehensive Plan Coastal/Conservation Management Element - Policy G.1.2.1	Ongoing
Hurricane	By April 1991, the County shall develop procedures and, through adoption of land development regulations shall develop and adopt standards and procedures, to ensure the protection, enhancement or restoration of the County=s dune systems. At a minimum, these procedures or regulations shall provide for: -- Coordination with DEP as to applications to develop seaward of the established Coastal	St. Johns County Comprehensive Plan Coastal/Conservation Management Element - Policy G.1.2.2	Ongoing

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MITIGATION CATEGORY	Objective/Policy	SOURCE	NOTES (Design; Implementation; or Enforcement)
	<p>Construction Control Line, in order to monitor and comment on DEP applications for variances to the CCCL requirements, and to favor variances to County setback requirements where possible or appropriate to avoid or minimize development seaward of the CCCL; and</p> <p>-- The County=s use of beach ramp fees/tolls, consistently with applicable law, for dune restorations and enhancement programs (such as, without limitations, the construction of dune walkovers, the establishment of a salt-tolerant vegetation/revegetation program, and public education programs in cooperation with the Marine Extension Service), and to further control beach access in order to prevent dune damage; and</p> <p>-- Establishment of standards and enforcement mechanisms to prevent destruction of dune vegetation; and</p> <p>-- Continued enforcement of the County=s requirements and prohibitions against uncontrolled vehicular beach access pursuant to Ordinance No. 73-2, and related ordinances; and</p> <p>-- Continued enforcement, through the development permit review process, of applicable state, federal or local coastal construction zone requirements;</p> <p>-- Improvements to beach access and parking facilities as provided in Policy H.1.1.1.</p>		
Hurricane	Seawall and other shoreline modifications shall be set at, or landward of, the mean high water line, except as provided by law. The County and other agencies having jurisdiction shall coordinate in establishing appropriate setbacks.	St. Johns County Comprehensive Plan Coastal/Conservation Management Element - Policy G.1.2.3	On-Going Enforcement
Hurricane	<p>The County shall update its hurricane evacuation plan and Peacetime Emergency Plan every three years, and shall re-evaluate their effectiveness immediately after a major disaster event to recommend and adopt appropriate modifications.</p> <p>The County shall update its hurricane guide showing evacuation routes, hurricane hazards, safety procedures, shelters, and other pertinent information for its citizens.</p> <p>County shall add three additional public buildings as hurricane evacuation shelters to its inventory of evacuation centers.</p> <p>Emergency vehicles and personnel shall be stationed on the barrier islands during an emergency situation at the discretion of the Chairman of the Board of County Commissioners or other</p>	St. Johns County Comprehensive Plan Coastal/Conservation Management Element - Policies G.1.3.1, G.1.3.2, G.1.3.4, G.1.3.6, G.1.3.9, & G.1.3.10	

**ST. JOHNS COUNTY LMS
GUIDING PRINCIPLES TABLE**

MITIGATION CATEGORY	Objective/Policy	SOURCE	NOTES (Design; Implementation; or Enforcement)
	<p>appropriate official.</p> <p>Concurrently with the investigation provided for in Policy G.2.5.4, the County shall investigate development credits or transfer of development rights for use as incentives to reduce rebuilding damaged structures in the CHHA.</p> <p>St. Johns County shall direct population concentrations away from the CHHA by limiting residential densities as shown on the Future Land Use Map.</p>		
Hurricane	<p>The County shall cooperate with, and provide technical support and assistance to, the appropriate State and Federal regulatory agencies, and shall implement the requirements of Policy of G.1.5.3 (and other applicable Policies in other Plan Elements), in order to protect, enhance, and restore the environmental quality of the County=s Coastal Area and waterways.</p>	<p>St. Johns County Comprehensive Plan Coastal/Conservation Management Element - Objective G.1.5</p>	<p>Ongoing</p>
Hurricane	<p>Routing of new infrastructure and public services within the Coastal Area shall be designed to direct growth away from environmentally sensitive areas and the coastal high hazard area, and to limit public expenditures within the coastal high hazard area.</p>	<p>St. Johns County Comprehensive Plan Coastal/Conservation Management Element - Objective G.1.7</p>	<p>Ongoing</p>
Hurricane	<p>The County shall maintain hurricane evacuation times.</p>	<p>St. Johns County Comprehensive Plan Coastal/Conservation Management Element - Objective G.1.79</p>	<p>County has recently prepared the emergency management plan. The Regional Planning Council recently completed the updated Evacuation Study. Local review and coordination are in progress.</p>

C. Government Coordination

Every governmental agency plays a role in hazard mitigation at some level. Future funding guidelines, from the State and Federal government, will include mandated active involvement by recipient agencies. In order to be effective, the St. Johns County Mitigation Strategy must be a redefining process, evaluating developing as well as addressing existing hazard vulnerabilities. The following table will grow as and evolve as agencies begin to redefine roles and adopt activities that will further the mitigation process.

GOVERNMENT COORDINATION TABLE

AGENCY/ENTITIES	MITIGATION FUNCTIONS
Florida Division of Emergency Management	Technical Assistance, Advice and Funding
Northeast Florida Regional Council	Technical Assistance for Comprehensive Planning and Emergency Management Planning. Strategic Regional Policy Plan
St. Johns County Board of County Commissioners	Policy Guidance and Regulatory authority
St. Johns County Administrator	Supervision and Guidance
St. Johns County Emergency Management Department	Management of Plan/Strategy Development/ Implementation, and Mitigation Task Force Member
St. Johns County School District	Provide shelters for evacuees.
Municipalities within St. Johns County	Input and Assistance in the Development and Implementation of Plans and Strategy. Members of the Mitigation Task Force.
St. Johns County Mitigation Task Force	Develop a recommended Local Mitigation Strategy for St. Johns County for approval by the St. Johns County Board of County Commissioners. Conduct periodic reviews of the mitigation strategy to ensure that goals are accomplished according to the established milestones
St. Johns County Engineering Department	Follow and implement the County's Engineering Standards and ensure compliance.
St. Johns County Building Department	Follow and implement the County's Building Code and ensure compliance.
St. Johns County Road Department	Follow and implement the County's requirements for roadways and maintain roadways, ditches and drainage basins within its

AGENCY/ENTITIES	MITIGATION FUNCTIONS
	jurisdictions.
City of St. Augustine Utility Department	Member of Mitigation Task Force. Responsible for the provision of water and sewer service within the City limits and beyond.
City of St. Augustine Beach Building Department	Follows and implements the City's Building Codes.
Florida Department of Transportation	Maintain roadways, ditches and drainage basins within its jurisdiction

Section III - Hazards Identification and Vulnerability Assessment

A. County Description

St. Johns County is situated in the northeast Florida region. Bounded by the Atlantic Ocean with approximately 45 miles of Atlantic Ocean shoreline on the east and the St. Johns River on the west, St. Johns County is the seventh fastest growing county in Florida and has a land area of 609.0 square miles. The County has the longest shoreline in northeast Florida. Its population in 1990 was 83,829 yielding a density of 137.7 persons per square mile and the population increased to 123,135 in 2000 with a density of 202.2 persons per square mile. According to the U.S. Census, there was a population increase of nearly 17% from 2000 to 2003. This is a suburban county partially within the Jacksonville Urban Area with several urban places. Anticipated growth will continue the induction of St. Johns County as an urbanized area within northeast Florida. However, the southern half of the county is classified as rural. The expansion of the urban area is expected to proceed southward from the County line. Like every other coastal county of the State, a large portion of the population is concentrated along the counties main bodies of water: the Atlantic coast, inter-coastal waterway, and along the St. Johns River. These are areas most vulnerable to the effects of hurricane storm surge, wind, and freshwater flooding.

Its county seat, St. Augustine, is the oldest permanent settlement in the United States. The U.S. Census 2000 says that the population aged 65 and over in St. Johns County increased to 19,579 residents; that will account for 15.9 percent of the total population. In 1990, 22.1 percent of the elderly households were defined as below poverty level. In 2000, this number increased to nearly 40 percent.

B. Population and Housing

Development along the ocean and the resulting vulnerability of that population to natural hazards is a major concern of emergency management planners. Most population growth in the last few decades has occurred closest to water bodies and this trend is expected to continue. Increasing coastal development is accompanied by certain social and economic costs due to imperiled public safety and property damage, as well as potential losses from hurricanes, flooding, or high winds.

Along with the growing population is the decrease in household size leading a requirement for more houses to accommodate the population. While the St. Johns County is still mostly rural, the overall household size has decreased since 1980 from 2.65 to 2.44 in 2000.

**Number of Households
Persons Per Household, 1980 -2000- 2010**

County	1980		2000		Projected 2010	
	Households	PPH	Households	PPH	Households	PPH
St. Johns	18,623	2.65	49,614	2.44	59,500	2.38

A major concern is the proliferation of mobile home communities and scattered mobile homes located in low-lying areas and unmarked or water-surge-affected roadways. During the 1970s the region experienced a 158 percent increase in the number of mobile homes with only a 44 percent increase in total year-round dwelling units. During the 1990s, St. Johns County experienced an increase of over 13,100 dwelling units, over 2,600 of which were mobile homes. These figures amount to an increase in total units of 24 percent and over 27 percent in mobile homes.

In 1990, mobile homes numbered 7,187 and accounted for 17.45 percent of dwelling units. By 2000, the number of mobile homes jumped to 7,688 and accounted for 13.3 percent of all dwelling units. Occupants of mobile home units account for approximately 24,000 persons that would potentially be affected by hazardous weather.

In the St. Johns County as of 1996 there are approximately 9,744 persons aged 16 and over with mobility or self-care limitation as shown below. Of that number, 4,299 are aged 65 and over.

Regional Persons With Mobility or Self-Care Limitation

County	Persons Aged 16-64		Persons Aged 65+	
	Total	With Mobility Limit	Total	With Mobility Limit
St. Johns	52,577	5,455	13,164	4,299

According to the 1990 Census, at least 644 persons in the County that did not speak or understand English. This number more than tripled to 1,973 by year 2000; this is attributed to the increase in Asian population.

The population of St. Johns County has been aging. Median age rose from 36.9 in 1990 to 41.6 in 2000 and the age group distribution for the county is changing as a result. While increasing in actual numbers due to overall population growth, the age groups 0-17, 18-24 and 25-44 have declined as a share of population between 1990 and 1999. The age groups that have shown an increase are especially 45-64 and those 65 and over.

C. Income and Earnings

Per capita personal income in St. Johns County was estimated at \$28,674 in 2000. This is 121 percent of the state average and the county ranks 6th in the state. In 1986, the per capita personal income was \$16,210 and the rank was 8th in the state. This yields an annual growth rate of 6.1 percent over the last ten years as compared to a state average of

4.7 percent. However, in 2000, 23 percent of all County households earned less than \$25,000, and 6.3 percent earned less than \$10,000.

D. Land Uses and Development Trends

St. Johns County exhibits a pattern of rural, suburban and urban land uses. In the northwest part of the County there are suburban subdivisions in the Julington Creek/ Fruit Cove area. More intense single family, multi-family, and commercial urban land uses are found in the northeast part of the County, mainly Ponte Vedra Beach. Both Urban and suburban land uses dominate the east central portion of the County in and around the City of St. Augustine. Residential and Commercial development exists both north and south of St. Augustine along U.S. 1. Recreation land uses also exist along the barrier islands in the County.

In the 1980's the highest growth areas were in the northeast portion of the County, specifically the Ponte Vedra Beach/Palm Valley area. In the last two decades, development has occurred in the northwest portion of the County including Fruit Cove, Julington Creek, Switzerland, and areas around 210 West. Several large subdivisions are also emerging along I-95. These areas are growing fast due to several factors including low land prices, good schools, and accessibility to major roads and employment centers. This growth includes Developments of Regional Impact planned or currently being developed within the County that will bring a mix of residential, commercial, and retail to the County.

ST. JOHNS COUNTY 2015 FUTURE LAND USE MAP

DUVAL COUNTY



AMENDMENT DATE	DESCRIPTION
1995	...
1996	...
1997	...
1998	...
1999	...
2000	...
2001	...
2002	...
2003	...
2004	...
2005	...
2006	...
2007	...
2008	...
2009	...
2010	...
2011	...
2012	...
2013	...
2014	...
2015	...

LEGEND

- Residential**
 - Single-Family Residential
 - Medium-Density Residential
 - High-Density Residential
 - Community Residential
 - Office
 - Industrial
 - Transportation
 - Public
 - Parks and Open Space
 - Development of Regional Impact
 - City and Town
 - Rural
 - Water
 - Conservation
 - Arts and Culture
 - Special Use District
 - Water
 - Religious
 - Recreation
 - Business
 - Manufacturing
 - Energy
 - Transportation
 - Public
 - Parks and Open Space
 - Development of Regional Impact
 - City and Town
 - Rural
 - Water
 - Conservation
 - Arts and Culture
 - Special Use District
 - Water
 - Religious
 - Recreation
 - Business
 - Manufacturing
 - Energy
- Commercial**
 - Community Commercial
 - Government Commercial
 - State Commercial
 - Office Commercial
 - Special Use District
 - Industrial
 - Transportation
 - Public
 - Parks and Open Space
 - Development of Regional Impact
 - City and Town
 - Rural
 - Water
 - Conservation
 - Arts and Culture
 - Special Use District
 - Water
 - Religious
 - Recreation
 - Business
 - Manufacturing
 - Energy
- Industrial**
 - Community Industrial
 - Government Industrial
 - State Industrial
 - Office Industrial
 - Special Use District
 - Industrial
 - Transportation
 - Public
 - Parks and Open Space
 - Development of Regional Impact
 - City and Town
 - Rural
 - Water
 - Conservation
 - Arts and Culture
 - Special Use District
 - Water
 - Religious
 - Recreation
 - Business
 - Manufacturing
 - Energy
- Public**
 - Parks and Open Space
 - Development of Regional Impact
 - City and Town
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 - Conservation
 - Arts and Culture
 - Special Use District
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 - Religious
 - Recreation
 - Business
 - Manufacturing
 - Energy
- Parks and Open Space**
 - Parks and Open Space
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 - Water
 - Conservation
 - Arts and Culture
 - Special Use District
 - Water
 - Religious
 - Recreation
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 - Manufacturing
 - Energy
- Development of Regional Impact**
 - Development of Regional Impact
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 - Arts and Culture
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LAND USE NOTES

Conservation
 1. Areas designated for conservation are subject to the local land use and zoning ordinance, the environmental review and approval process, and applicable regulatory requirements.
Development of Regional Impact
 1. Areas designated for development of regional impact are subject to the local land use and zoning ordinance, the environmental review and approval process, and applicable regulatory requirements.

2015 COMPREHENSIVE PLAN
 ST. JOHNS COUNTY
 FUTURE LAND USE MAP

St. Johns County Planning Department
 2015 Comprehensive Plan
 St. Johns County, Florida
 2015

1. This map is a representation of the future land use plan for St. Johns County, Florida. It is not a guarantee of any future land use or zoning. The actual land use and zoning will be determined by the local land use and zoning ordinance and the environmental review and approval process.



E. Hazards Identification and Vulnerability

The following sections identify potential hazards that could affect the County and its residents. Each hazard's characteristic is described and past occurrences have been identified. Table A-1, the Hazards Quick Reference Table, in the appendices outlines the specifics of the hazards identification section in greater detail. Also included at the end of Section III are the multi hazard maps.

1. Hurricanes

Hurricanes have the greatest potential for causing disaster than any other single natural threat to St. Johns County. The first step in the formulation of a hurricane disaster mitigation strategy is to identify and analyze the expected hurricane hazards such as storm surge and winds. The effects of an impacting hurricane will depend upon the strength, direction and, location of impact of the storm. Hurricanes are categorized on the Saffir-Simpson Hurricane Scale from one through five. (See below) Categories one and two storms are considered "minor" hurricanes, although they can cause significant damage. Categories 3, 4 and 5 hurricanes are "major" hurricanes and can cause massive destruction and potential loss of life.

SAFFIR/SIMPSON HURRICANE INTENSITY CATEGORIES

Category	Central Pressure		Wind Speed		Damage
	Millibars	Inches (Hg)	Miles per Hour	Knots	
1 (Minor)	980	28.9	74 - 95	64 - 83	Minimal
2 (Minor)	965 - 979	28.5 - 28.9	96 - 110	84 - 96	Moderate
3 (Major)	945 - 964	27.9 - 28.5	111 - 130	97 - 113	Extensive
4 (Major)	920 - 944	27.2 - 27.9	131 - 155	114 - 135	Extreme
5 (Major)	< 920	< 27.2	> 155	> 135	Catastrophic

The three major hazards produced by a hurricane are the storm surge, high winds and rainfall. The storm surge is 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. Of the hurricane hazards, the storm surge is considered to be the most dangerous as ninety percent of hurricane-related deaths have been caused by drowning.

St. Johns County is coastal and may have storm surge associated with hurricanes as well as surge effects associated with the St. Johns River which functions less as a river and more like a tidally influenced lagoon along its lower portions from Palatka to Jacksonville which make up the western boundary of the county. The St. Johns River is shallow and strongly influenced by tides from the Atlantic Ocean 50 miles downstream. As a result, within St. Johns County, areas adjacent to the St. Johns River and its tributaries are subject to storm surge. Areas of particular vulnerability include the entire shoreline of the St. Johns River, the southern portions of Julington Creek, shorelines

adjacent to Cunningham Creek, Six Mile Creek and Deep Creek, which leads into and may cause the Town of Hastings to flood.

A review of records from the National Weather Service between 1979 and 1999 shows that St. Johns County and Northeast Florida have had brushes with hurricanes but no direct hits. The last hurricane to directly impact Northeast Florida was hurricane Dora in 1964, which came ashore in northern St. Johns County. The following storms have come the closest to Northeast Florida and St. Johns County in the past twenty years

Hurricane David	September 4, 1979
Hurricane Dennis	August, 1989
Tropical Storm Isadore.....	September/October, 1984
Hurricane Bob.....	July 24, 1985
Tropical Storm Chris	August, 1988
Tropical Storm Josephine	October, 1996
Tropical Depression Georges	September/October, 1998
Hurricane Floyd.....	September 15, 1999
Tropical Storm Gabrielle.....	September, 2001

2. Storm Surge

Complete details regarding the storm surge threat are available from two sources the TAOS (The Arbiter of Storms) model currently in use by the State of Florida through the Division of Emergency Management and the SLOSH (Sea, Lake and Overland Surges from Hurricanes) model currently in use by the National Weather Service and the National Hurricane Center. A comparison of data from the two sources does not show resoundingly different results for the minor storm events, differences are greater for data on major storm events both models are respected in the response community. However, the SLOSH model has a longer proven record and will be used in this analysis for storm surge vulnerability levels. The Northeast Florida Regional Council has recently (1998) updated the Storm Surge Atlas for St. Johns County (Volume 3) utilizing the SLOSH data. The following maps represent surge threat identified in the models as shown in the Storm Surge Atlas.

3. Areas Subject to High Winds

If a severe storm or hurricane were to occur in the County there are certain areas where winds would be higher due to topography (higher elevations) and/or land use patterns such as large clear-cut within the forest. These areas have been determined by the TAOS models and are mapped as part of the Multi-Hazard Map Series.

The following areas appear to be more susceptible to high winds from a hurricane due to their higher elevations:

- All shoreline;
- Areas adjacent to the Intracoastal Waterway;

- Development located adjacent to the St. Johns River;
- Areas in and around the Town of Hastings.

The high winds also can be devastating to persons outside, in mobile homes or substandard structures, or in structures with unprotected exposures. A 140-mile per hour wind can produce as much as 60 pounds of pressure per square foot. With this kind of pressure a structure, once compromised during a windstorm, will experience increasing internal pressure to the roof and walls. This could actually cause: the roof to blow off the structure, the structure to completely fail, or the inside to be devastated by a wind tunnel effect.

The following maps are from the TAOS (The Arbiter of Storms) model currently in use by the State of Florida through the Division of Emergency Management. They represent the hazard from hurricane storm levels 1, 3 and, 5. Tropical storm and categories 2 and 4 are available on the map CD associated with this Strategy. They were not included as they provide little additional information. The maps clearly show that the County is vulnerable to winds from even a category 1 hurricane.

4. Tornadoes

Although tornadoes in Florida are not as prevalent as they are in the Midwest within the area known as "Tornado Alley", nevertheless they do occur from time to time. However, during the period between 1956 and 1983, Florida had a total of 1,370 reported tornadoes, an average of 44 per year. This ranks Florida third among the States in the number of tornados, behind Texas and Oklahoma. Further, while not considered one of the main hazards of a hurricane, tornadoes are spawned by hurricanes and can cause major damage and loss of life. Tornados are most prevalent in west central Florida and portions of the panhandle.

A review of records from the National Weather Service shows that between 1882 and 1998 St. Johns County has had one death associated with a tornado that occurred on September 10, 1882. From the period 1950-1995 St. Johns County had 25 tornadoes. Information on the tracks of tornadoes is available through the State Department of Emergency Management database and a map is included with the hazards maps.

5. Freshwater Flooding

Generally associated with small natural streams or other drainage systems that are overwhelmed by large amounts of runoff generated by short episodes of extremely heavy rainfall freshwater flooding of evacuation routes just prior to evacuation orders or during the late evacuations can trap evacuees. Detailed below are some of the roads and areas of concern within the county.

Freshwater Flooding occurs in several areas in St. Johns County. Those areas that become flooded in heavy rains occurring in short periods of time are described below.

The largest area of note is the downtown area in the city of St. Augustine these roads are frequently flooded after rains. Other notable roadways include:

- Solana Road west of Sunset Drive
- Several sections of Roscoe Road which runs along the Intracoastal Waterway
- The Intersection at Race Track Road and Russell Sampson
- Greenbriar Road east of Roberts Road
- International Golf Parkway just west of the World Golf Village and a large section just west of US-1.

Every known local road flooding problem has been included on the following map. A database is associated with the map to provide additional information regarding each problem roadway. Freshwater flooding, although it usually does not result in death, may inundate potential evacuation routes and prevent persons evacuating late from vulnerable areas. Flooded roads and storms can also contribute to fatal accidents. Freshwater flooding as well as coastal flooding is modeled by the Federal Emergency Management Agency (FEMA) as part of the National Flood Insurance Program (NFIP). Vulnerability to flooding is documented in the Flood Insurance Rate Maps delineating the "100-year storm" (or A Zones) and the Velocity (or V) Zones. Maps later in this section display the FEMA 100 year flood plain for the County.

6. Floodplains

The following maps show those areas of St. Johns County that are within the 100 year and 500 year floodplain as delineated by the Federal Emergency Management Agency (FEMA) as part of the National Flood Insurance Program (NFIP). These are areas which experience flooding associated with heavy rainfall events which cause localized flooding from overflowing streams or ponds in low lying areas. In St. Johns County floodplains are associated with the St. Johns River and Intracoastal Waterway and their tributaries.

Flooding within these areas accounts for the principle flooding problems within the County. As shown on the following map the largest portion of the county vulnerable to freshwater flooding is that area east of US 1 and areas along the St. Johns River. These are also the areas with the highest population concentrations within the County. As a result a significant portion of the Counties population is vulnerable to the effects of a 100 or 500-year flooding event. This could mean either that the dwelling units are directly impacted as in flooded, or that the property or accesses to the property are flooded resulting in health and safety hazards. Based on analysis completed for the Northeast Florida Hurricane evacuation Study, between 30,000 and 40,000 of the County's 130,000 estimated year 2000 population are vulnerable. This is between 20 and 30 percent of the population.

7. Wildfires

The County is subjected to some form of wild fire each year. In recent history 1997 through 1999 the fires have been larger and have threatened urbanized areas more

frequently. St. Johns County is transforming from a rural county, to one which is much more urban in nature, but a large percentage of its land area is still covered in forest. As a result many areas of the County are susceptible to wildfire. The most vulnerable areas those generally located at the urban/wildland interface, primarily located in the western portions of the County. These are areas where subdivisions occur adjacent to large undeveloped areas of forestland. Much of this land is in large ownerships including lands owned by large timber companies and which is actively managed for silviculture.

When subdivisions are developed without clearing the wooded areas surrounding them the interface becomes extremely hazardous. Florida has a history of naturally occurring wildfires. The hot dry summers following long periods of uninterrupted growth cause the buildup of underbrush, which is prime fuel for wildfires. Large amounts of dry underbrush require only an ignition source; this can be from a home fireplace, trash burn, carelessly tossed away cigarette, or a natural source such as lightning. Once ignited the underbrush can burn thousands of acres. Housing developments adjacent to areas with large amounts of underbrush are vulnerable to the fires.

The following maps shows the areas of the County dominated by large tracts of land still covered primarily with trees and where the related underbrush grows rapidly. These areas represent the primary places wildfire may occur. The interface between these areas and the urban areas indicated the areas most vulnerable to wildfires.

8. Hazardous Materials

Hazardous materials are used to maintain the modern lifestyles of both urban and rural communities; in fact, as many as 50,000 new chemicals are created annually. Agricultural uses for chemicals range from fertilizers, insecticides and disease control for crops to ammonia refrigeration units for dairy products. These chemicals increase crop yields and ensure the delivery of fresh products to markets. Similarly in urbanized areas of northeast Florida communities often use extremely hazardous chemicals, such as chlorine or sulfuric acid for treating drinking and wastewater. Safe drinking water and reduced levels of pollution in surface waters are the result. Industrial chemicals such as potassium cyanide (used in manufacturing medicines) and fluorine (used in rocket fuels) are essential to maintain modern lifestyles in the northeast Florida area. New industrial chemicals improved product durability and create alternatives to high cost organic products, making products affordable to a wider range within the general population. However, these conveniences have the increased vulnerability of the general population to exposure from an accidental release of hazardous materials.

Since 1988, there has been a fifteen percent increase in the number of registered facilities using extremely hazardous materials in Northeast Florida. Supplying these facilities require routinely transporting hazardous materials the County by rail, truck, air and/or, barge. The County is significantly rural with rapidly urbanizing areas developing around the economic centers of St. Augustine and the World Golf Village. As the population and number of facilities that handle hazardous materials grow, greater numbers of people are vulnerable to an accidental release. This would include vulnerability from a release

of hazardous materials during or following a major natural or man-made disaster. Facilities releasing materials during a major event can cause residual contamination. If a facility is damaged during a major event only to release a hazardous material once the event has past a much greater hazard to community is created.

As part of the *Comprehensive Emergency Management Plan*, facilities subject to the 1986 Emergency Planning and Community Right-To-Know Act are identified and the following information is obtained:

- The types of chemicals
- The type and design of the container
- Quantity of materials
- The nature of the hazard (vapors, mists, fire explosion etc.)

In addition a Vulnerability Analysis is completed and includes the following information:

- A vulnerability zone (radius) around the facility that could be affected by a release.
- Population within this zone.
- Property in the zone subject to damage.
- Potential environmental impacts within the zone.

And finally a Risk Analysis is completed which includes the following information:

- Probability of occurrence
- Estimates of injuries and deaths
- Impacts to critical facilities
- Impacts to property
- Impacts to environment

9. Terrorism

Terrorism incidents can come in many forms including cyber-terrorism, biological weapons, chemical weapons, nuclear weapons, explosive weapons, and incendiary weapons. Biological, nuclear, incendiary, chemical, and explosive materials (B-NICE) are considered hazardous by nature. All counties in Florida are vulnerable to a terrorist attack, whether it physical destruction from bombs or contamination from chemical or biological weapons or radiological materials. There is also the risk of cyber-terrorism attacks that could disrupt or destroy vital computer networks. The county and local emergency service departments will be the first to respond to an actual or suspected terrorism attack. There are 7 potential targets that are vulnerable to a terrorist attack in St. Johns County as identified in the Terrorism Annex:

- Northrup Grumman Aircraft installation,
- Flagler Hospital, the Florida National Guard Headquarters,
- Florida National Guard Armory,
- Elementary and High Schools,
- Special Events,
- County Government Complex

A Terrorism Response Annex has been created as an appendix to the St. Johns County Comprehensive Emergency Management Plan (CEMP) to provide St. Johns County with a continuing assessment of the community's vulnerability, and capability to respond to a terrorism incident. The annex provides an assessment of the County's critical facilities and vulnerable populations, specialized response capabilities of the emergency response team, definitions of operational aspects used in response management, and federal, state, and local command structure roles and responsibilities. The Terrorism Annex also provides information on each type of weapon of mass destruction that may be used in a terrorism attack.

The following are descriptions of each type of potential hazardous threat by terrorism acts:

- Biological weapons; microorganisms and/or toxins from living organisms that have infectious or non-infectious properties that produce lethal or serious effects in plants and animals, including small pox, anthrax, ebola, and bubonic plague.
- Nuclear weapons; high-energy particles or gamma rays that are emitted by an atom that represent a hazard to humans both internally and externally.
- Incendiary weapons; intentional arson or explosions used to spread fire or chemical and biological weapons.
- Chemical weapons; gas, liquid, or aerosol agents used to affect the transmission of nerve impulses in the human nervous system, including blister/mustard agents, choking agents and blood agents,
- Explosive weapons; used to damage property and cause loss of human life by resulting secondary hazards such as unstable structures, debris and fire.

10. Earthquakes

Earthquakes are rapid movements of the earth causing movement and shifting of rock beneath the surface. The event of an earthquake occurring in St. Johns County is rare although past events have been recorded in the State of Florida. The most recent earthquake was recorded in Daytona in 1975. Florida is very geologically stable and the geology does not contain any fault lines or volcanoes, which are generally associated with earthquakes. Earthquakes were recorded in Florida in 1879, 1880, 1886, 1893, 1948, and 1952, but only one caused very minimal damage. Earthquakes can, however

cause severe damage and loss of life. Earthquakes are not a major hazard concern in the State of Florida.

11. Tsunamis

Tsunamis are giant waves generated in a body of water that can be caused as a result of an earthquake, volcano, landslide, or explosions. Tsunamis have been recorded in various places around the globe, but none in Florida. These giant waves can greatly affect low-lying coastal areas by inundating mass areas of land. St. Johns County is not in immediate danger of a tsunami, however scientists in England have been studying the affects of a potential tsunami in the Atlantic Ocean caused by the possible eruption of a volcano in the Canary Islands that would lead to part of the mountain falling into the ocean. These natural hazards are not common in the Atlantic Ocean but have happened in the Pacific Ocean in the past decades.

12. Landslides / Sinkholes

Sinkholes are a common feature of Florida's landscape due to the state's karst topography. This karst topography can include caves, disappearing streams, springs, and underground drainage systems, all of which occur in Florida. A sinkhole, technically not a landslide, is formed when carbonate layers that lie beneath the ground's surface dissolve and the ground above the void collapses from its weight over the open space underneath. Sinkholes can cause damage to roads, homes, and other buildings that lie on the surface above the underground void. According to the Florida Geologic Survey, St. Johns County has not experienced any recently recorded sinkholes.

13. Dam / Levee Failure

Dam or levee failure can be caused by a flooding event and can cause damage to property downstream from the dam or levee when the water starts moving. St. Johns County has no dams or lock. Therefore St. Johns County is at a low risk for this type of hazard.

14. Drought / Heat Wave

Drought is a normal climatic occurrence that happens almost everywhere on the planet, although its characteristics vary throughout different regions. Drought is recognized as a deficiency of precipitation over an extended period of time, which could be an entire season or more. Drought not only has its physical effects on the environment, but also has social effects as well, and can often be exacerbated by human demand on water supply. There are different perspectives on drought, which include those from meteorological, agricultural, societal, and hydrologic perspectives. Periods of drought can affect crops, water supply, and can lead to increased hazard of wildfires. All of St. Johns County is susceptible to drought conditions and the hazards associated with them.

A heat wave is when temperatures are abnormally and uncomfortable hot for an extended period of time. This event could continue from one day to several weeks. Heat waves

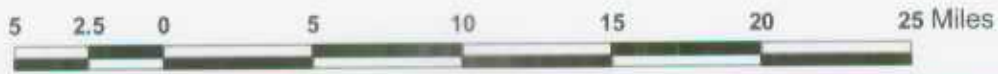
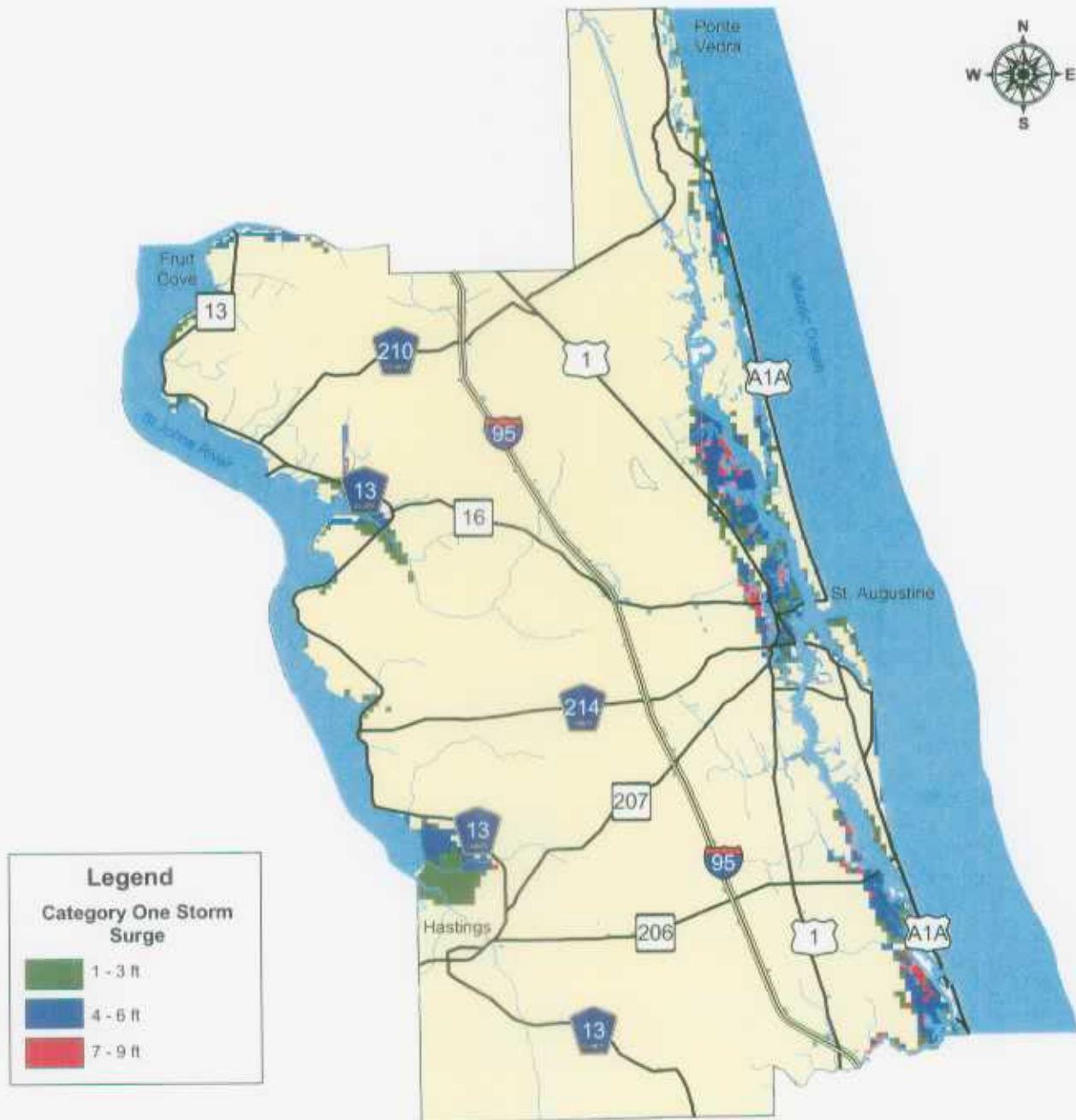
are often accompanied by high humidity and can have a great impact on lives, including heat strokes, heat exhaustion, and even death. People in urban areas are more susceptible to the effects of a heat wave due to the Urban Heat Island effect. All of St. Johns County is susceptible to heat wave conditions.

15. Winter Storm / Freeze

A winter storm is defined as a storm that can range from a few hours of moderate snow to blizzard like conditions with wind-driven snow that can last for days. Winter storms can impede visibility, affecting driving conditions, and can have an impact on communications, electricity or other services. Winter storms can range from several states to one county. St. Johns County is not generally susceptible to winter storms, because temperatures rarely reach snow-producing levels. The climactic conditions for winter storms are also not favorable. But temperatures can reach levels low enough to cause damage to crops and water lines.

Freezing occurs when temperatures are below freezing over a wide spread area for a significant period of time. Freezing temperatures can damage agricultural crops and burst water pipes in homes and buildings. Frost, often associated with freezes can increase damaging effects. Frost is a layer of ice crystals that is produced by the deposition of water from the air onto a surface that is at or below freezing.

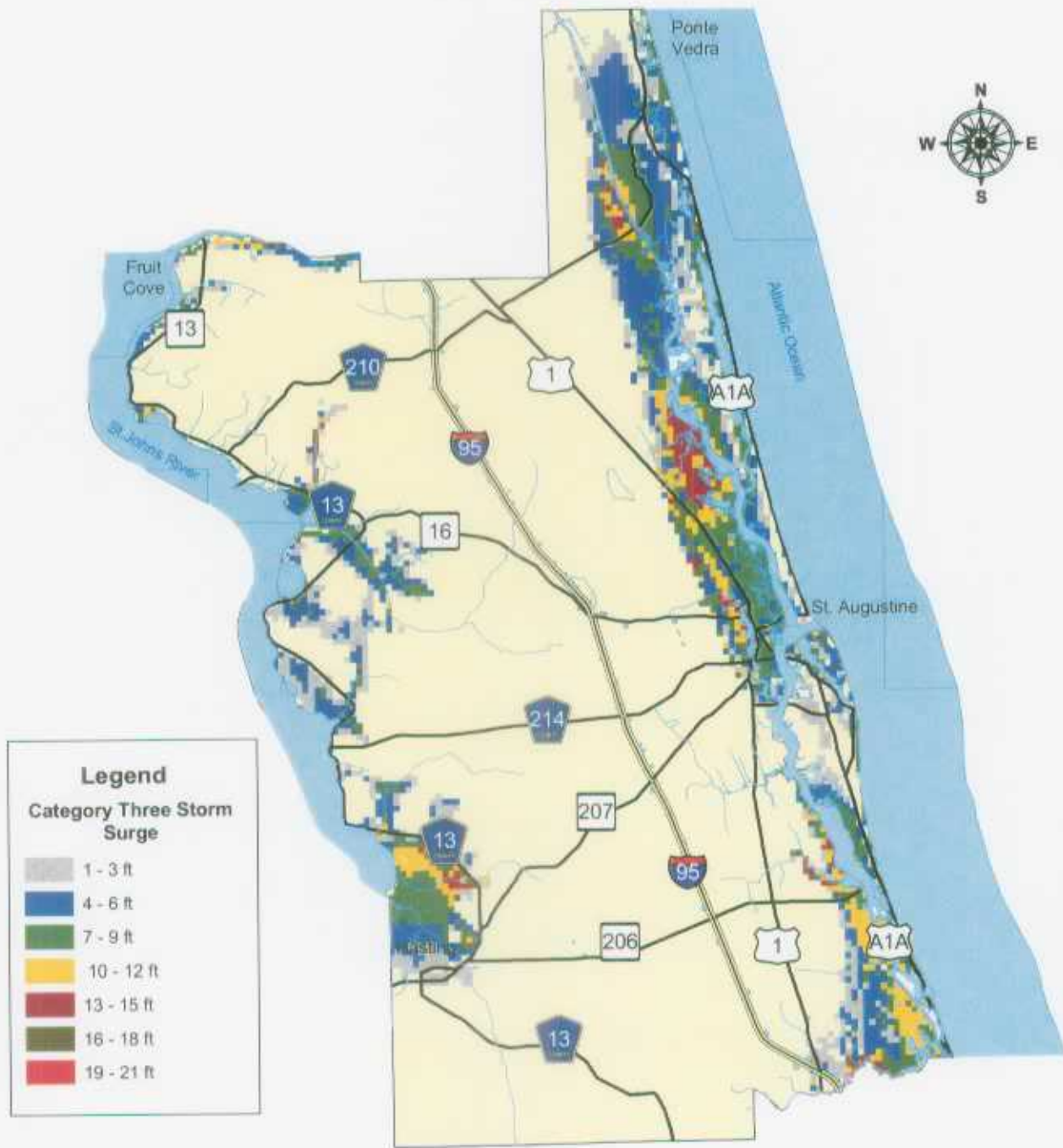
Cat 1 Storm Surge - ST. JOHNS COUNTY



ST. JOHNS COUNTY LOCAL MITIGATION STRATEGY 2004

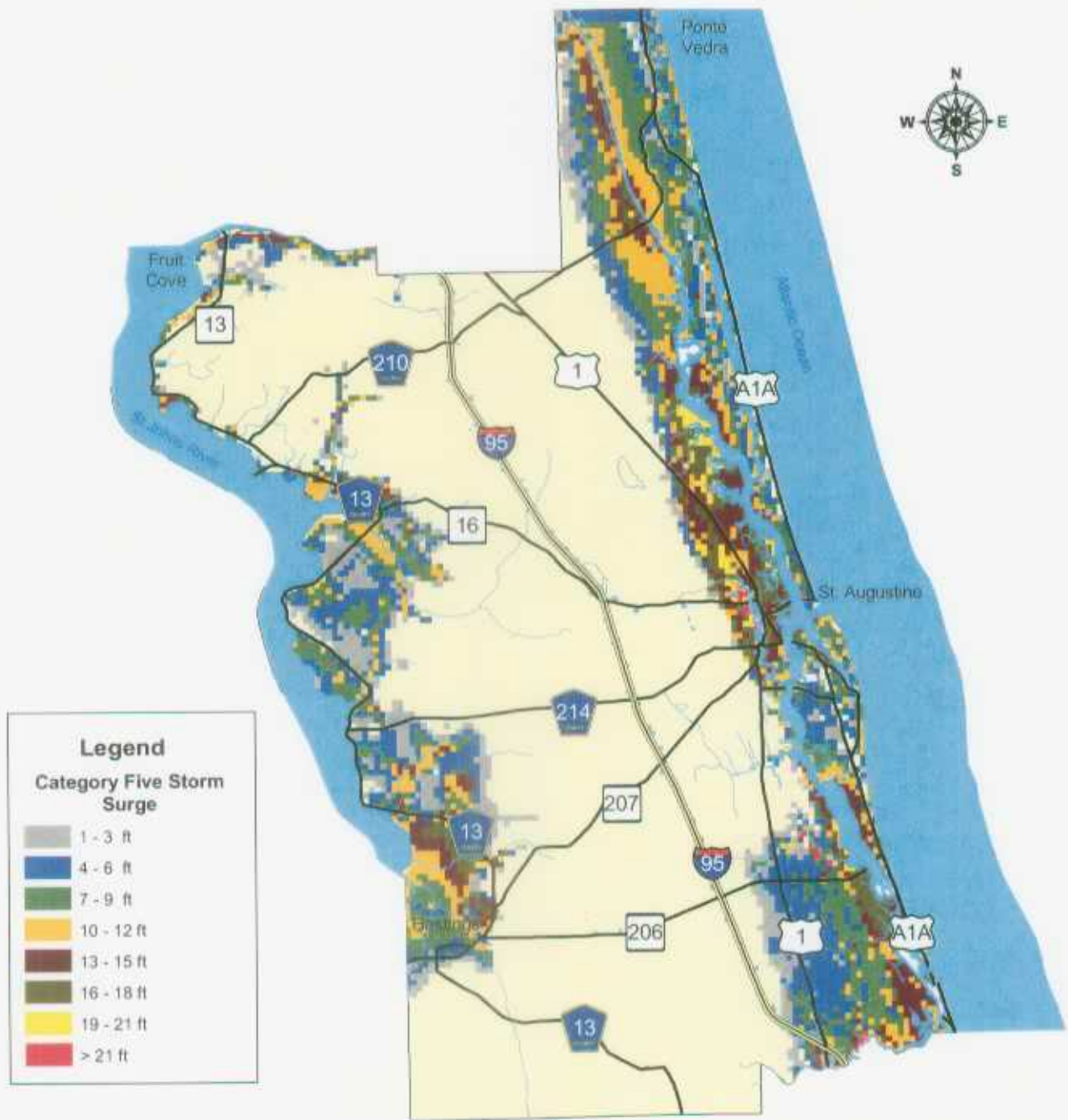
Maps produced by the Northeast Florida Regional Council using GIS. Source: TAOS data. Larger prints available.

Cat 3 Storm Surge - ST. JOHNS COUNTY



ST. JOHNS COUNTY LOCAL MITIGATION STRATEGY 2004
Maps produced by the Northeast Florida Regional Council using GIS. Source: TAOS data. Larger prints available.

Cat 5 Storm Surge - ST. JOHNS COUNTY

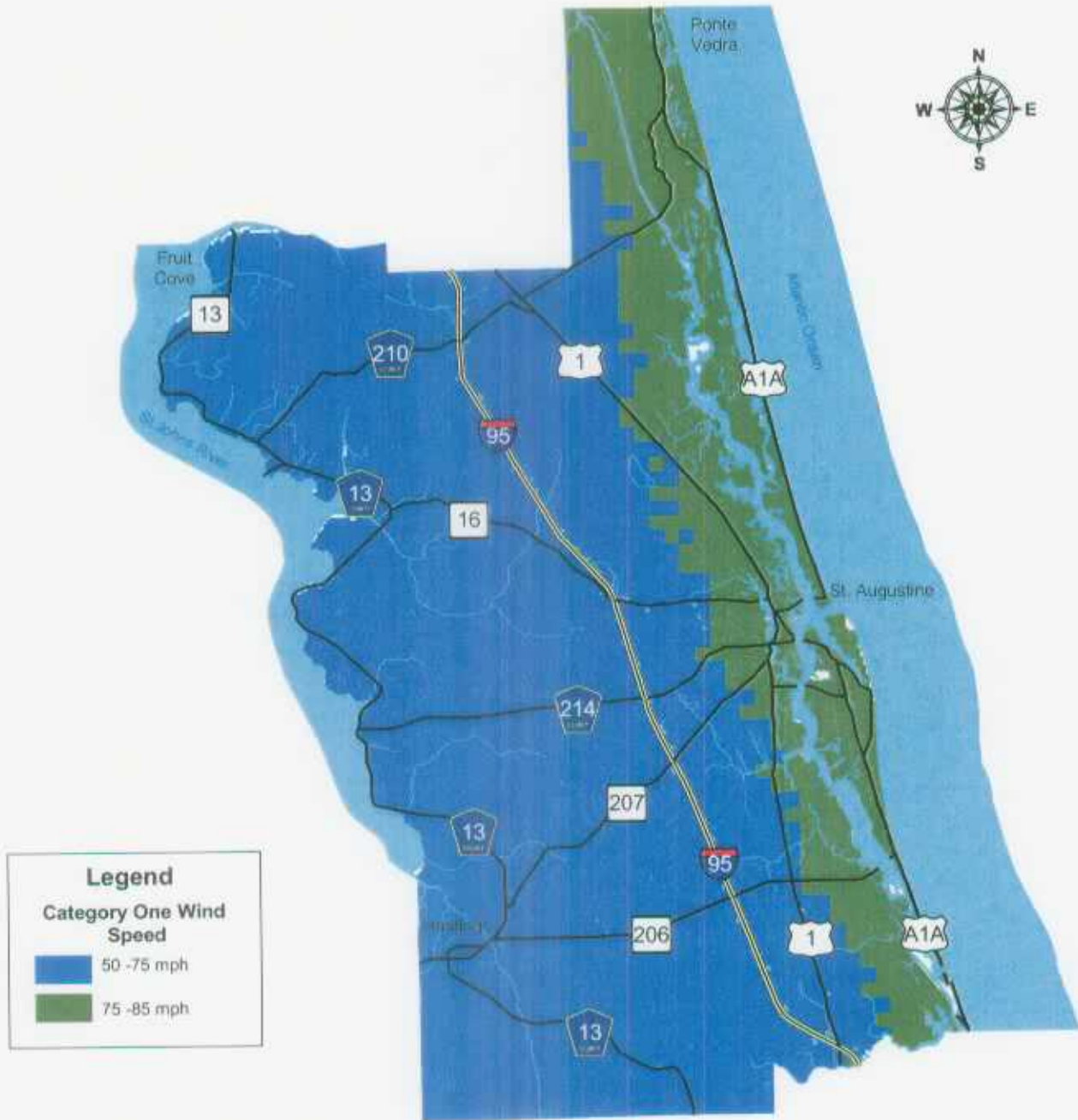


ST. JOHNS COUNTY LOCAL MITIGATION STRATEGY 2004

Maps produced by the Northeast Florida Regional Council using GIS. Source: TAOS data. Larger prints available.

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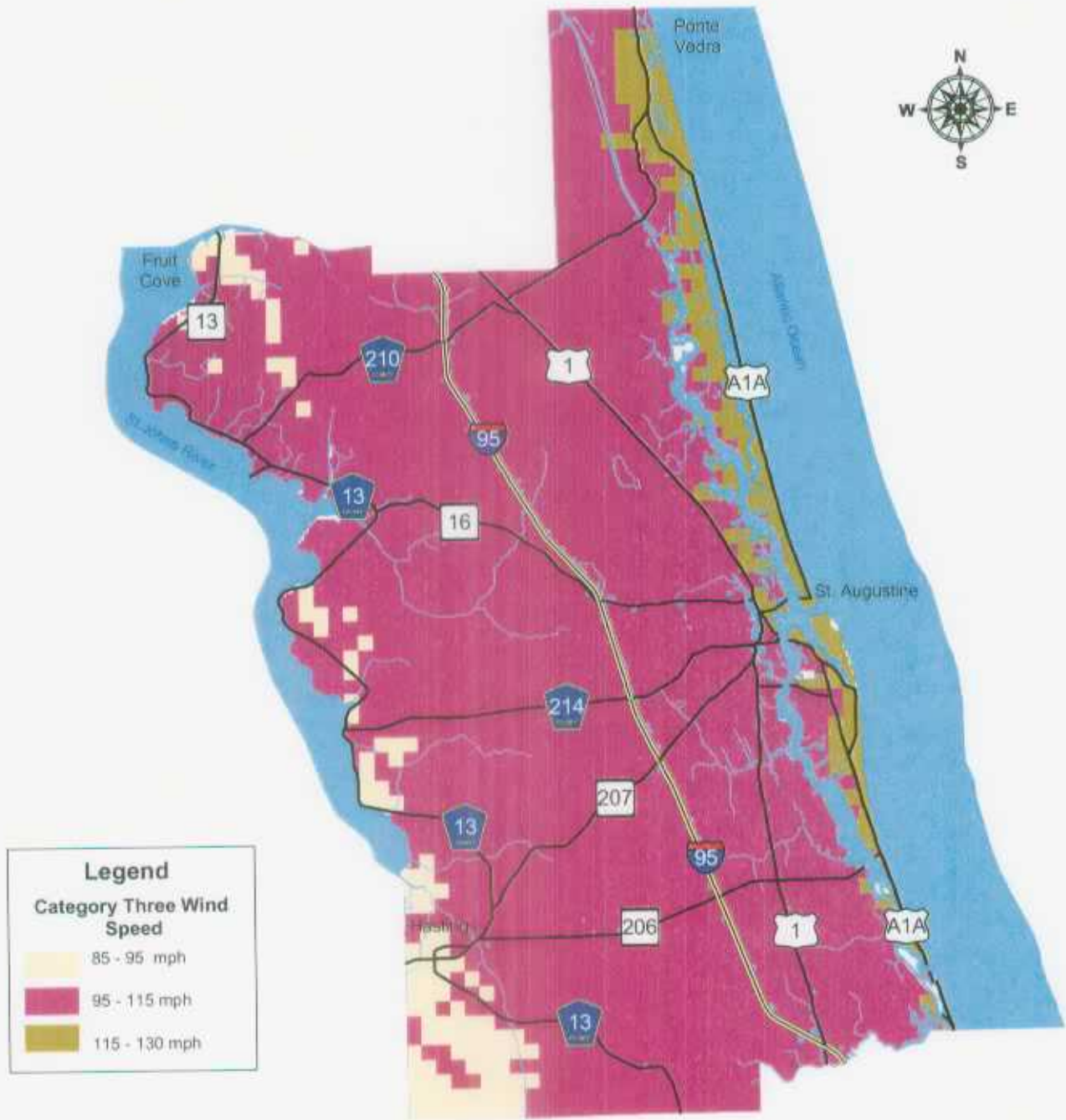
Cat 1 Wind Speed - ST. JOHNS COUNTY



ST. JOHNS COUNTY LOCAL MITIGATION STRATEGY 2004

Maps produced by the Northeast Florida Regional Council using GIS . Source: TAOS data. Larger prints available.

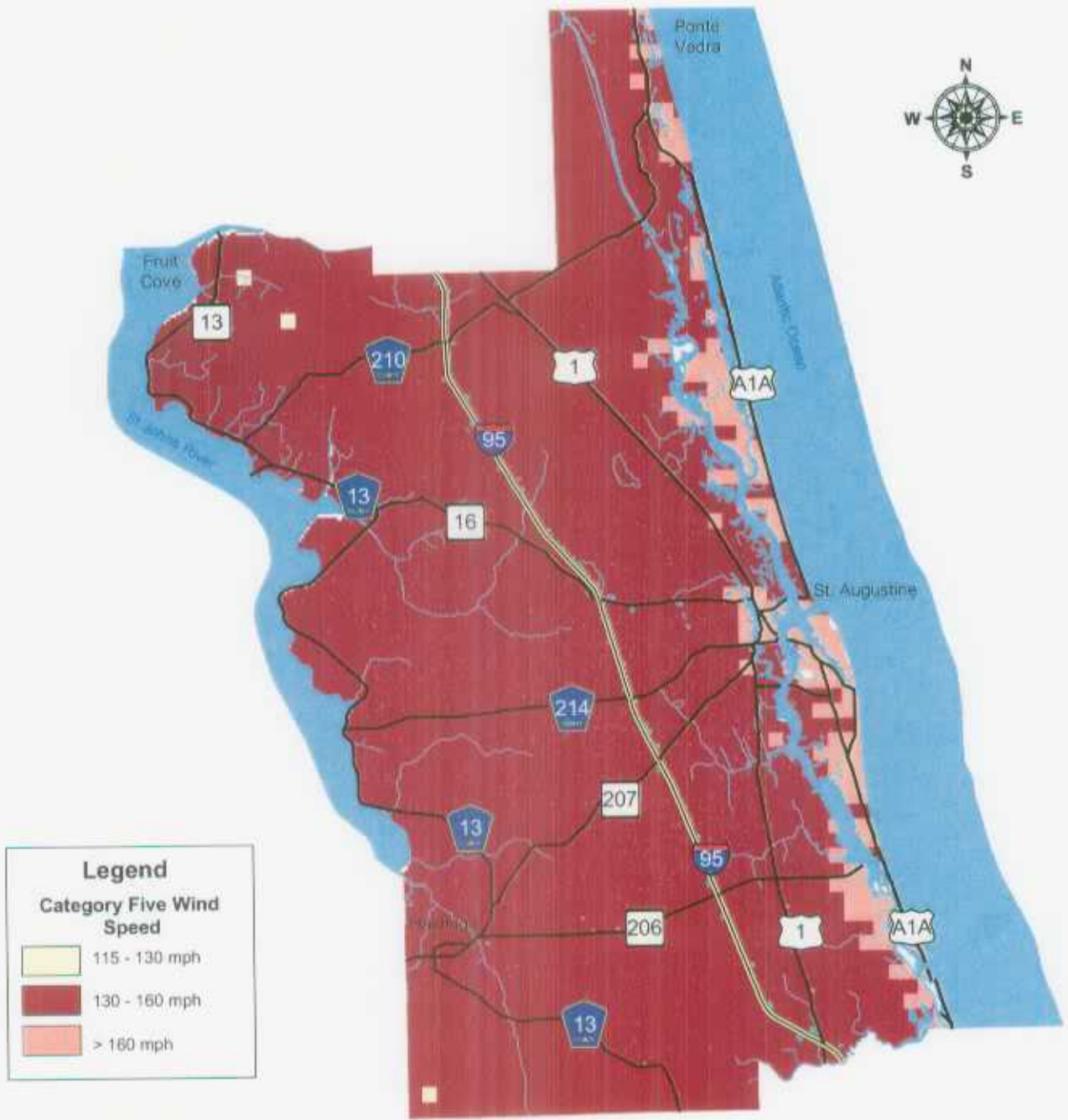
Cat 3 Wind Speed - ST. JOHNS COUNTY



ST. JOHNS COUNTY LOCAL MITIGATION STRATEGY 2004

Maps produced by Northeast Florida Regional Council using GIS. Source: TAOS data. Larger prints available.

Cat 5 Wind Speed - ST. JOHNS COUNTY

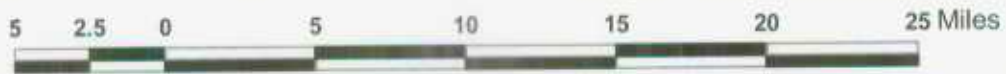
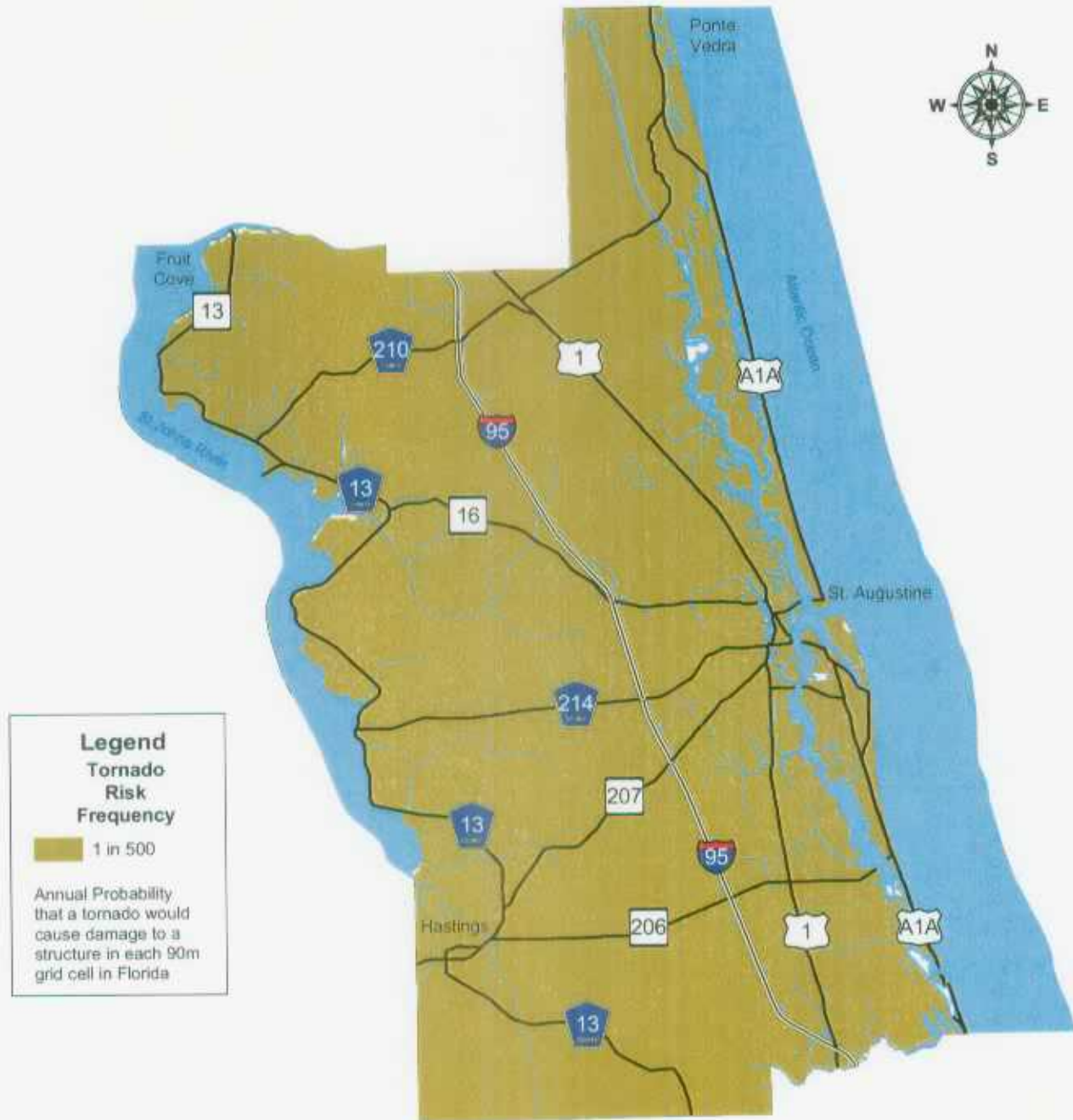


ST. JOHNS COUNTY LOCAL MITIGATION STRATEGY 2004

Maps produced by the Northeast Florida Regional Council using GIS. Source: TAOS data. Larger prints available.

lms_stjohns_final 2004.mxd

Tornado Risk - ST. JOHNS COUNTY



ST. JOHNS COUNTY LOCAL MITIGATION STRATEGY 2004

Maps produced by the Northeast Florida Regional Council using GIS. Source: TAOS data. Larger prints available.

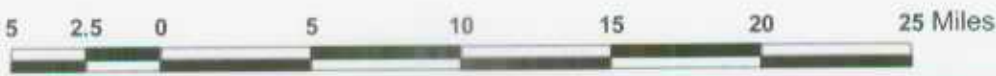
FEMA FIRM Zones - ST. JOHNS COUNTY



Legend
FEMA FIRM
Flood Hazard Zones

- A, ANI, AO or AH
- AE
- VE
- X or X500

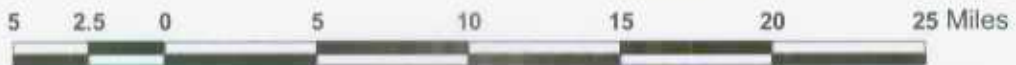
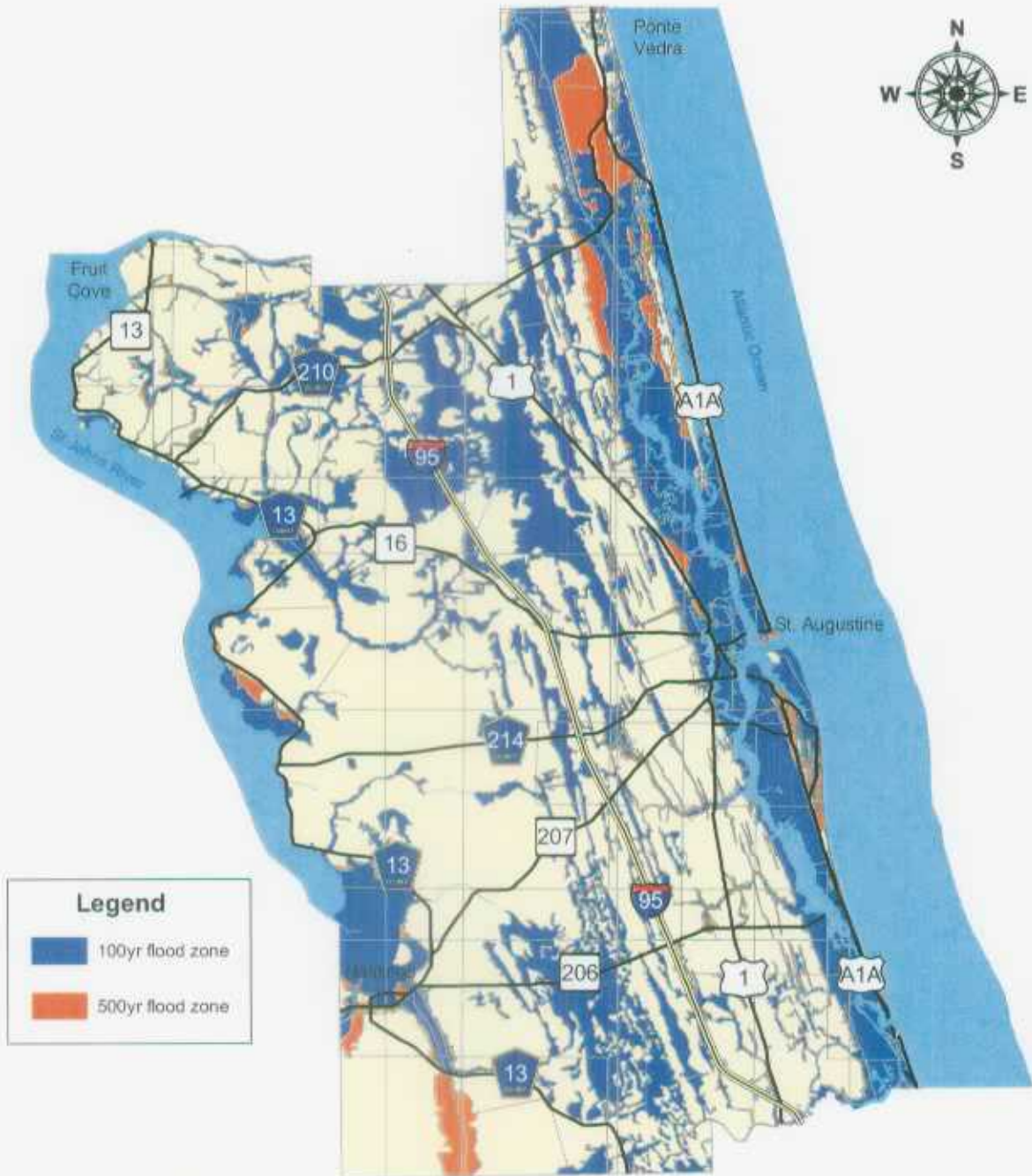
A, AH, AO refer to the 100 year floodplains calculated using approximate methods.
 AE refers to the 100 year floodplains calculated using detailed methods.
 VE refers to the 100 year floodplains that have hazards related to storm waves.
 X, X500 refer to zones outside the 100 year floodplain.



ST. JOHNS COUNTY LOCAL MITIGATION STRATEGY 2004

Maps produced by the Northeast Florida Regional Council using GIS . Source: TAOS data. Larger prints available.

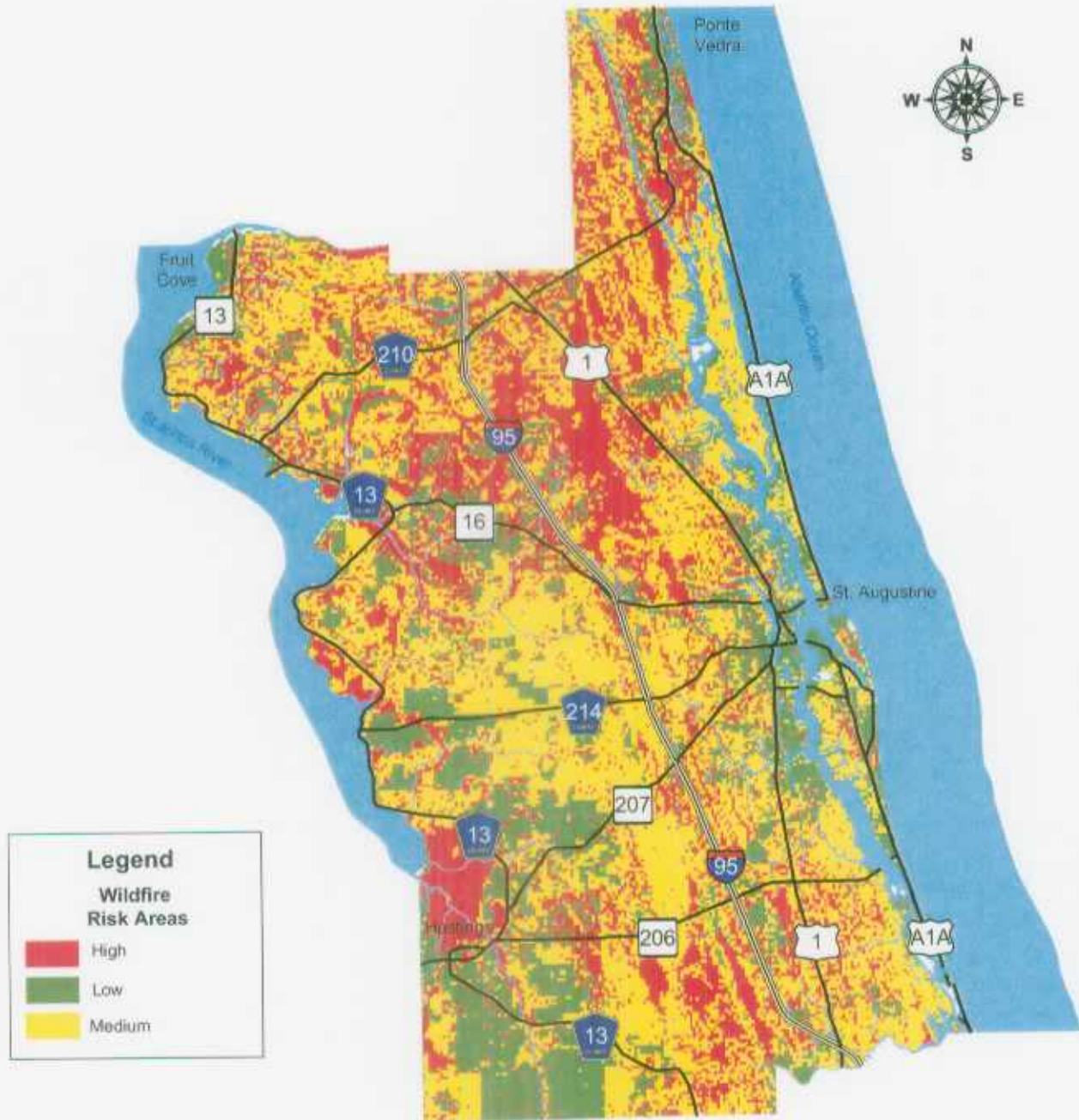
100yr/500yr Flood Zones - ST. JOHNS COUNTY



ST. JOHNS COUNTY LOCAL MITIGATION STRATEGY 2004

Maps produced by the Northeast Florida Regional Council using GIS . Source: TAOS data. Larger prints available.

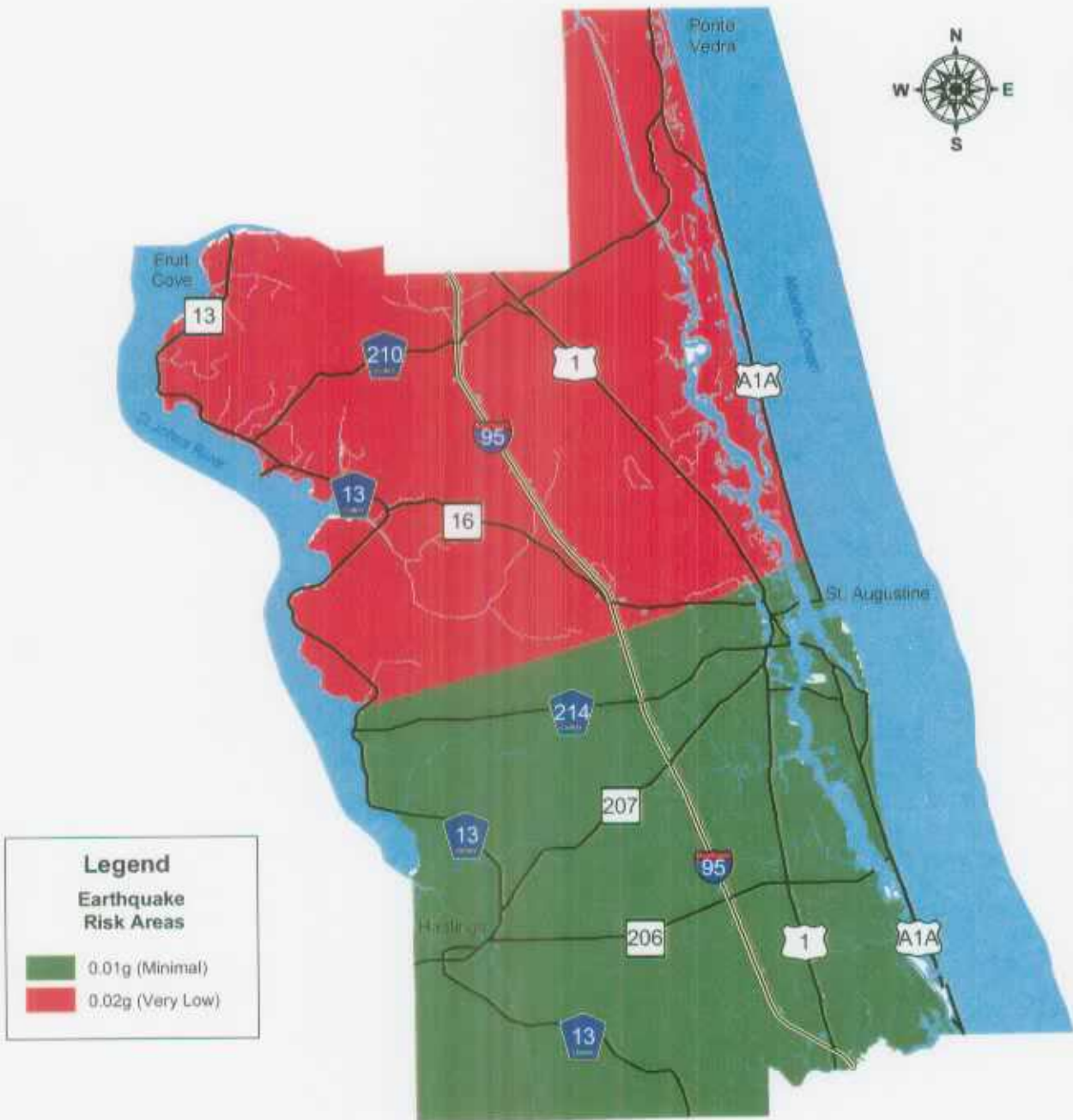
Wildfire Risk Areas - ST. JOHNS COUNTY



ST. JOHNS COUNTY LOCAL MITIGATION STRATEGY 2004

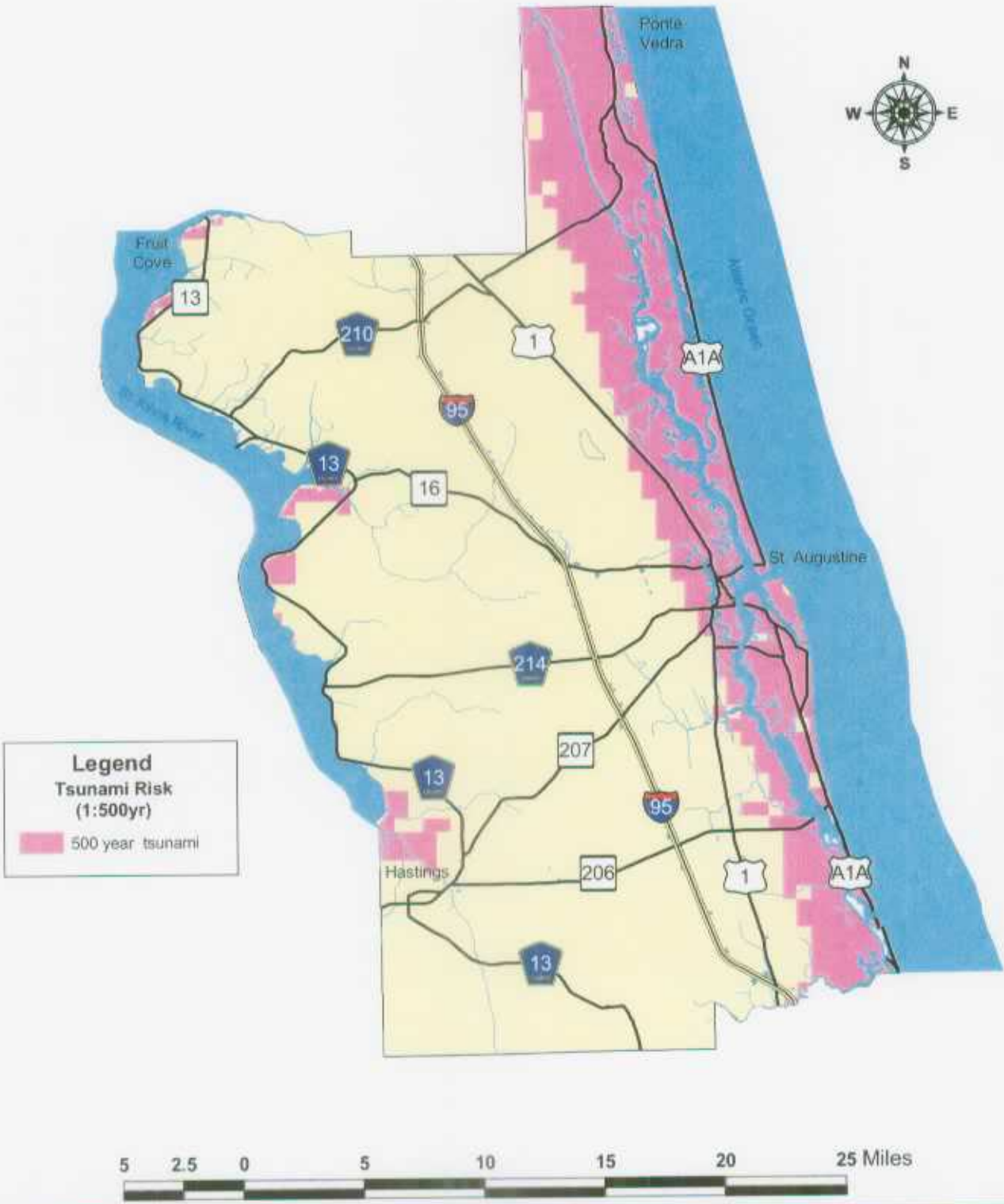
Maps produced by the Northeast Florida Regional Council using GIS. Source: TAOS data. Larger prints available.

Earthquake Risk Areas - ST. JOHNS COUNTY



ST. JOHNS COUNTY LOCAL MITIGATION STRATEGY 2004
Maps produced by the Northeast Florida Regional Council using GIS. Source: TAOS data. Larger prints available.

Tsunami Risk - ST. JOHNS COUNTY



ST. JOHNS COUNTY LOCAL MITIGATION STRATEGY 2004

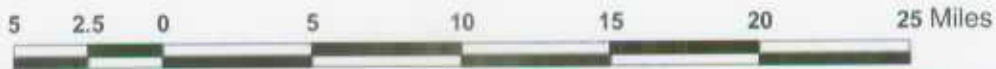
Maps produced by the Northeast Florida Regional Council using GIS. Source: TAOS data. Larger prints available.

Sinkhole Potential - ST. JOHNS COUNTY



Legend
Sinkhole Potential

 Very Low



ST. JOHNS COUNTY LOCAL MITIGATION STRATEGY 2004
Maps produced by the Northeast Florida Regional Council using GIS . Source: TAOS data. Larger prints available.

F. Summary

Much development has been occurring along the County's coastline, particularly residential construction. All such dwelling and other structures are subject to the hazards of hurricane and, accordingly, need to be constructed in conformance with stringent building codes. This is particularly true of structures in the hurricane surge zone. The storm surge has by far the most destructive power associated with a hurricane. The benefits of the preserving the natural dune system have been shown to be enormous in mitigating storm surge hazard. Other actions such as elevating houses above the anticipated surge levels, building back from the shoreline, and using breakaway walls on lower levels all mitigate the effects of this hazard.

Second to the storm surge in power but yielding the potential for far-reaching and expensive damage are the heavy winds associated with a hurricane. Hurricane force winds from even a level 1 hurricane directly striking the County will be felt throughout the County. Structures not built to withstand high winds are particularly vulnerable. Older, substandard, mobile homes, and manufactured homes are dispersed throughout the County, all of which will be at risk in the event of a hurricane or tornado.

In addition, to threats from hurricanes many dwelling units and other structures are located in FEMA designated 100-year flood plain areas. Enforcing minimum floor elevations, relocating the extremely vulnerable, or elevating structures minimizes the vulnerability to this threat.

Outside the floodplains the hazards are centered on wildfires and hazardous materials. Homes built in the urban/wildland interface are vulnerable wildfires which area both naturally occurring and the result for not buffering homes from the heavy underbrush areas in the woodlands. Control burns and buffering will greatly reduce the treat of wildfires to the urbanized areas of the County. However, the entire County is vulnerable to the effects of a release of hazardous materials.

The vulnerable zones for each hazardous materials facility are mapped by facility for two reasons. First, unless the result of a catastrophic event or the intentional actions of an individual, a simultaneous release of hazardous materials by multiple sites is unlikely. Second, the amount of overlap and complete coverage of the County by the hazards quickly renders the map useless. Preparedness and prevention are the key mitigation factors for hazardous materials. Educating the population to the risk, and a rapid response to a release begins to mitigate the hazard. Unfortunately, some people are unable to respond to protective actions unassisted, or are not able to read literature intended to educate them to the risk. Many people at-risk throughout the County are transportation disadvantaged, who are handicapped, elderly, or economically disadvantaged.

The following matrix provides an overview of the impacts associated with various hazards.

Section IV – Vulnerability and Loss Estimates

A. Repetitive Loss Data

Some areas of the County experience repetitive flooding from heavy rainfall and damage includes flooded roadways and homes.

The most well known area with repetitive flooding is the waterfront area of downtown St. Augustine which is very low and which sometimes can flood from the combination of a full moon, a high tide and a northeastern wind. Flooding also occurs throughout the County within low-lying areas and within the 100-year floodplain.

According to records kept by FEMA, between January 1978 and December 1998, within the unincorporated area of St. Johns County 259 flood loss claims, totaling \$777,988 were paid by FEMA. A majority of these claims were most likely the result of flooding of residences along the coastal areas of the County (see map).

During this same time period within the City of St. Augustine 119 flood loss claims totaling \$455,462 and within the City of St. Augustine Beach 69 flood loss claims totaling \$590,603 were paid respectively by FEMA.

Several areas of St. Johns County have experienced repetitive flooding. According to records from FEMA between 1979 and 1998 twenty-seven (27) structures experienced repetitive flooding. Of this total, eighteen (18) were single-family units, four (4) were non-residential structures, four (4) were multi-family units, one (1) was a condominium unit.

Nineteen (19) of the losses were in the St. Augustine area, four (4) were in the Ponte Vedra Beach area, two (2) were in the St. Augustine Beach area, and one (1) was in the Vilano Beach area.

A detailed description of these repetitive losses is provided on the following tables. The tables do not include structures that have had a one-time flood loss. Together a total of \$687,073.39 was paid for structural damage and replacement of contents. The average amount of money paid per loss was approximately \$25,447.16. The following maps indicate the location of the repetitive loss units the first showing the relationship to the 100-year flood plain and the second to the hurricane evacuation zones.

**ST. JOHNS COUNTY LOCAL MITIGATION STRATEGY
REPETITIVE FLOOD LOSSES RANKED BY
TOTAL LOSSES PAID (1979 THRU 1998)**

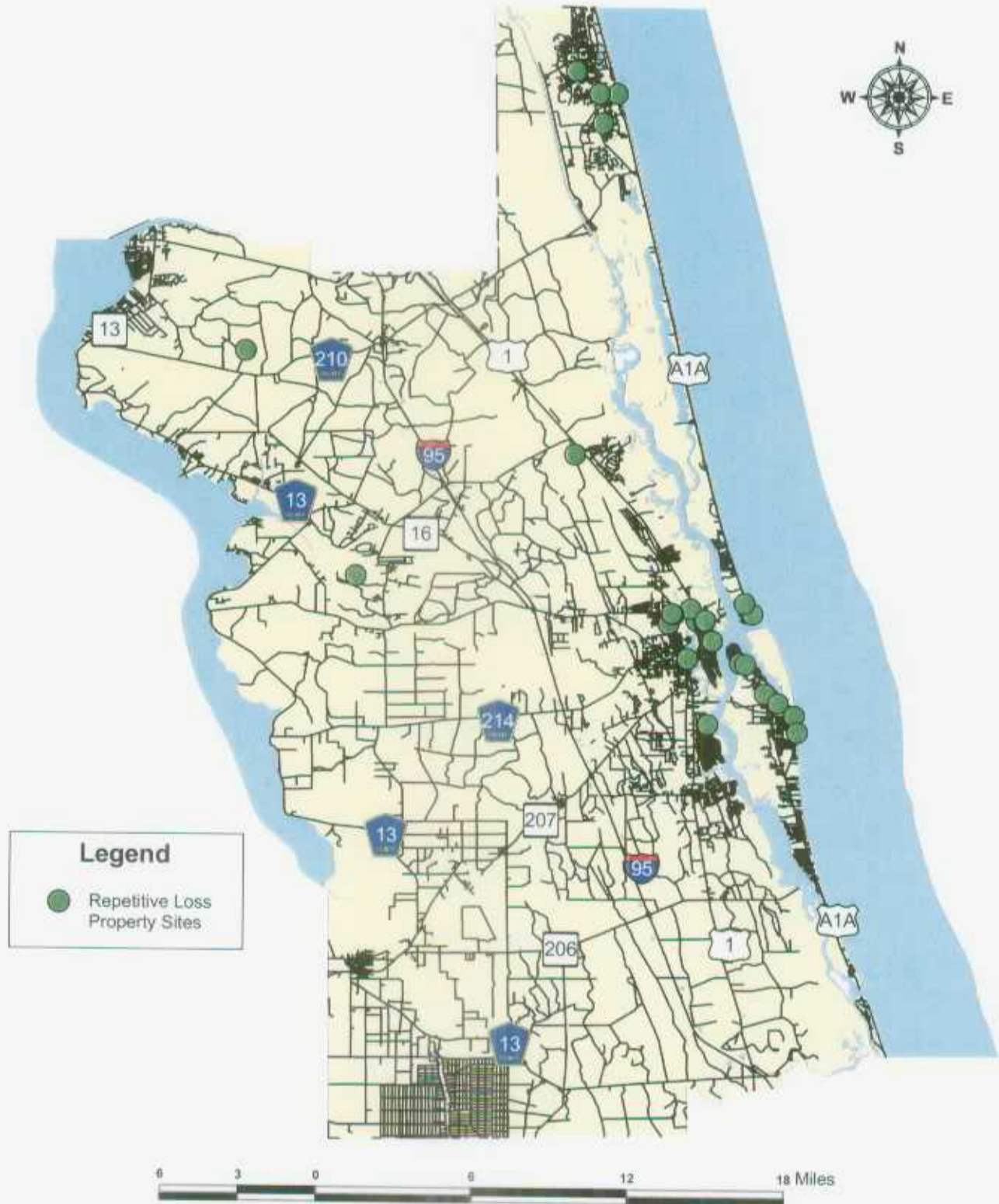
ID. #	ADDRESS	LOCATION	BLDG. TYPE	ZONE	INSURED	# LOSS CLAIMS	TOTAL PAID	BUILDING (\$ PAID)	CONTENTS (\$ PAID)	AVERAGE PER LOSS	LATITUDE	LONGITUDE	
1	31 MCMILLAN ST	ST AUGUSTINE	NON RESIDENT	A05	YES	4	\$105,940.96	\$34,428.49	\$71,512.47	\$26,485.24	295506	811934	
2	269 W KING ST	ST AUGUSTINE	SINGLE FMLY	A05	YES	5	\$74,554.33	\$62,371.54	\$12,182.79	\$14,910.87	295326	811954	
3	300 A1A BEACH BLVD BLDG 3	ST AUGUSTINE	NON RESIDENT	C	YES	2	\$61,544.97	\$52,975.67	\$8,569.30	\$30,772.49	295132	811601	
4	300 A1A BEACH BLVD BLDG 4	ST AUGUSTINE BCH.	NON RESIDENT	C	YES	2	\$52,009.63	\$44,808.68	\$7,200.95	\$26,004.82	295132	811601	
5	305 3RD ST N BEACH	ST AUGUSTINE	SINGLE FMLY	AE	YES	2	\$44,711.58	\$33,622.30	\$11,089.28	\$22,355.79	295719	811833	
6	7 CONTERA DR	ST AUGUSTINE	SINGLE FMLY	C	YES	2	\$44,546.46	\$44,546.46	\$0.00	\$22,273.23	295216	811856	
7	300 A1A BEACH BLVD BLDG 2	ST AUGUSTINE	NON RESIDENT	C	YES	2	\$40,532.99	\$33,113.07	\$7,419.92	\$20,266.50	295132	811601	
8	11 8TH ST	ST AUGUSTINE BCH.	SINGLE FMLY	B	YES	6	\$38,758.86	\$36,772.56	\$1,986.30	\$6,459.81	295100	811800	
9	300 A1A BEACH BLVD BLDG 1	ST AUGUSTINE	NON RESIDENT	C	YES	2	\$37,369.20	\$31,312.08	\$6,077.12	\$16,894.60	295132	811601	
10	35 MULBERRY STREET	ST AUGUSTINE	SINGLE FMLY	AE	YES	2	\$27,373.78	\$27,373.78	\$0.00	\$13,686.89	295404	811844	
11	57 MENENDEZ RD	ST AUGUSTINE	SINGLE FMLY	A05	YES	3	\$23,053.55	\$10,520.42	\$12,533.13	\$7,684.52	295311	811738	
12	9 CORONA ST	VILANO BCH.	SINGLE FMLY	VE	YES	2	\$16,863.58	\$14,866.58	\$1,997.00	\$8,431.79	295456	811726	
13	1318 PONTE VEDRA BLVD	PONTE VEDRA BCH.	SINGLE FMLY	AHB	NO	2	\$15,630.43	\$12,392.01	\$3,238.42	\$7,815.22			
14	8 DOUGLAS AVENUE	ST AUGUSTINE	2-4 FAMILY	AE	NO	2	\$14,679.95	\$14,679.95	\$0.00	\$7,339.98	295438	811900	
15	3001 FIRST ST	ST AUGUSTINE	SINGLE FMLY	AE	YES	2	\$12,995.47	\$11,058.00	\$1,937.39	\$6,497.74	295619	811743	
16	2518 ST MICHAELS CT	PONTE VEDRA BCH.	SINGLE FMLY	X	YES	4	\$11,438.39	\$11,438.39	\$0.00	\$2,859.60			
17	206 MURILLO	ST AUGUSTINE	2-4 FAMILY	X	NO	2	\$9,260.45	\$7,683.93	\$1,576.56	\$4,630.25	295455	812004	
18	1834 SHORE DR	ST AUGUSTINE	SINGLE FMLY	A07	YES	3	\$7,757.51	\$7,702.51	\$55.00	\$2,585.64	295114	811852	
19	1452 SAN JUAN ST	ST AUGUSTINE	SINGLE FMLY	AE	YES	2	\$7,077.03	\$7,077.03	\$0.00	\$3,538.52	295158	811640	
20	99 COQUINA AVE	ST AUGUSTINE	SINGLE FMLY	X	YES	3	\$6,743.80	\$5,462.40	\$1,281.40	\$2,247.93	295258	811742	
21	11 GRANT ST	ST AUGUSTINE	2-4 FAMILY	AE	YES	2	\$6,218.99	\$6,218.99	\$0.00	\$3,109.50	295448	811920	
22	10 MILTON ST	ST AUGUSTINE	2-4 FAMILY	AE	YES	2	\$5,798.34	\$5,798.34	\$0.00	\$2,899.17	295442	811910	
23	11 NELMAR AVE	ST AUGUSTINE	SINGLE FMLY	A05	YES	2	\$5,564.64	\$3,450.15	\$2,108.49	\$2,782.32	295440	811907	
24	183 BERMUDA CT	PONTE VEDRA BCH.	SINGLE FMLY	B	NO	2	\$4,955.64	\$4,955.64	\$0.00	\$2,477.82	301300	812332	
25	265 MONTEREY AVE	ST AUGUSTINE	SINGLE FMLY	X	NO	2	\$4,575.01	\$4,575.01	\$0.00	\$2,287.51	295438	812015	
26	31 LK JULIA DR	PONTE VEDRA BCH.	SINGLE FMLY	X	NO	2	\$4,366.44	\$4,366.44	\$0.00	\$2,183.22	301120	812226	
27	220 ESTRADA	ST AUGUSTINE	SINGLE FMLY	AE	YES	2	\$2,731.37	\$2,731.37	\$0.00	\$1,365.69	295458	812004	
						TOTALS	68	\$687,073.39	\$536,307.87	\$150,765.52	\$10,104.02		

SOURCE: FEMA and NEF/IPC 1999

**ST. JOHNS COUNTY LOCAL MITIGATION STRATEGY
 REPETITIVE FLOOD LOSSES RANKED BY
 NUMBER OF LOSSES & TOTAL PAID (1979 THRU 1998)**

I.D. #	ADDRESS	LOCATION	INSURED	# LOSS CLAIMS	TOTAL PAID	BUILDING (\$ PAID)	CONTENTS (\$ PAID)	AVERAGE PER LOSS	LATITUDE	LONGITUDE	
8	11 8TH ST	ST AUGUSTINE BCH.	YES	6	\$38,758.86	\$36,772.56	\$1,986.30	\$6,459.81	295100	811600	
2	269 W KING ST	ST AUGUSTINE	YES	5	\$74,554.33	\$62,371.54	\$12,182.79	\$14,910.87	295326	811954	
1	31 MCMILLAN ST	ST AUGUSTINE	YES	4	\$105,940.96	\$34,428.49	\$71,512.47	\$26,485.24	295506	811934	
16	2518 ST MICHAELS CT	PONTE VEDRA BCH.	YES	4	\$11,438.39	\$11,438.39	\$0.00	\$2,859.60			
11	57 MENENDEZ RD	ST AUGUSTINE	YES	3	\$23,053.55	\$10,520.42	\$12,533.13	\$7,084.52	295311	811738	
18	1834 SHORE DR	ST AUGUSTINE	YES	3	\$7,757.51	\$7,702.51	\$55.00	\$2,585.84	295114	811852	
20	99 COQUINA AVE	ST AUGUSTINE	YES	3	\$6,743.80	\$5,462.40	\$1,281.40	\$2,247.93	295258	811742	
3	300 A1A BEACH BLVD BLDG 3	ST AUGUSTINE	YES	2	\$61,544.97	\$52,975.67	\$8,569.30	\$30,772.49	295132	811601	
4	300 A1A BEACH BLVD BLDG 4	ST AUGUSTINE BCH.	YES	2	\$52,009.83	\$44,808.68	\$7,200.95	\$26,004.82	295132	811601	
5	305 3RD ST N BEACH	ST AUGUSTINE	YES	2	\$44,711.58	\$33,622.30	\$11,089.28	\$22,355.79	295719	811833	
6	7 CONTERA DR	ST AUGUSTINE	YES	2	\$44,546.46	\$44,546.46	\$0.00	\$22,273.23	295210	811656	
7	300 A1A BEACH BLVD BLDG 2	ST AUGUSTINE	YES	2	\$40,532.90	\$33,113.07	\$7,419.92	\$20,266.50	295132	811601	
9	300 A1A BEACH BLVD BLDG 1	ST AUGUSTINE	YES	2	\$37,389.20	\$31,312.08	\$6,077.12	\$18,694.60	295132	811601	
10	35 MULBERRY STREET	ST AUGUSTINE	YES	2	\$27,373.78	\$27,373.78	\$0.00	\$13,686.89	295404	811844	
12	9 CORONA ST	VILANO BCH.	YES	2	\$16,863.58	\$14,866.58	\$1,997.00	\$8,431.79	295456	811726	
13	1318 PONTE VEDRA BLVD	PONTE VEDRA BCH.	NO	2	\$15,630.43	\$12,392.01	\$3,238.42	\$7,815.22			
14	8 DOUGLAS AVENUE	ST AUGUSTINE	NO	2	\$14,679.95	\$14,679.95	\$0.00	\$7,339.98	295438	811909	
15	3001 FIRST ST	ST AUGUSTINE	YES	2	\$12,995.47	\$11,058.08	\$1,937.39	\$6,497.74	295519	811743	
17	206 MURILLO	ST AUGUSTINE	NO	2	\$9,260.49	\$7,683.93	\$1,576.56	\$4,630.25	295455	812004	
19	1452 SAN JUAN ST	ST AUGUSTINE	YES	2	\$7,077.03	\$7,077.03	\$0.00	\$3,538.52	295158	811640	
21	11 GRANT ST	ST AUGUSTINE	YES	2	\$6,218.99	\$6,218.99	\$0.00	\$3,109.50	295445	811920	
22	10 MILTON ST	ST AUGUSTINE	YES	2	\$5,798.34	\$5,798.34	\$0.00	\$2,899.17	295442	811910	
23	11 NELMAR AVE	ST AUGUSTINE	YES	2	\$5,564.64	\$3,456.15	\$2,108.49	\$2,782.32	295440	811907	
24	183 BERMUDA CT	PONTE VEDRA BCH.	NO	2	\$4,955.64	\$4,955.64	\$0.00	\$2,477.82	301300	812332	
25	265 MONTEREY AVE	ST AUGUSTINE	NO	2	\$4,575.01	\$4,575.01	\$0.00	\$2,287.51	295438	812015	
26	31 LK JULIA DR	PONTE VEDRA BCH.	NO	2	\$4,366.44	\$4,366.44	\$0.00	\$2,183.22	301120	812226	
27	220 ESTRADA	ST. AUGUSTINE	YES	2	\$2,731.37	\$2,731.37	\$0.00	\$1,365.69	295458	812004	
				TOTALS	68	\$687,073.39	\$536,307.87	\$150,765.52	\$10,104.02		

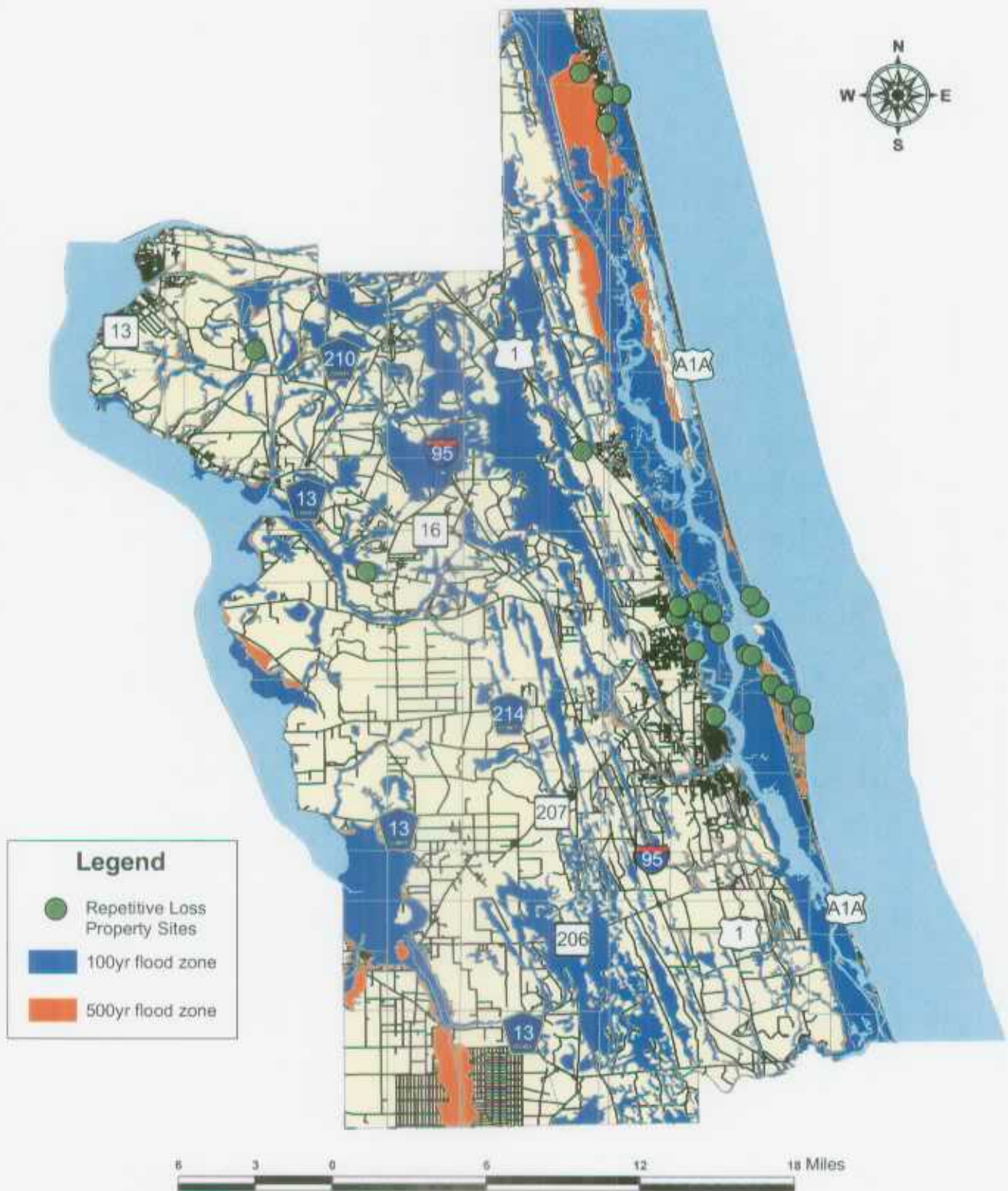
Repetitive Loss Properties - ST. JOHNS COUNTY



ST. JOHNS COUNTY LOCAL MITIGATION STRATEGY 2004

Maps produced by the Northeast Florida Regional Council using GIS. Source: TAOS data. Larger prints available.

Repetitive Loss Properties within the 100 yr Flood Zone ST. JOHNS COUNTY



ST. JOHNS COUNTY LOCAL MITIGATION STRATEGY 2004

Maps produced by the Northeast Florida Regional Council using GIS. Source: TAOS data. Larger prints available.

B. Critical Facilities Inventory

According to information from the Florida Department of Community Affairs, critical facilities are defined as: "those structures from which essential services and functions for victim survival, continuation of public safety actions, and disaster recovery are performed or provided. Supporting life-line infrastructure essential to the mission of critical facilities must also be included in the inventory when appropriate."

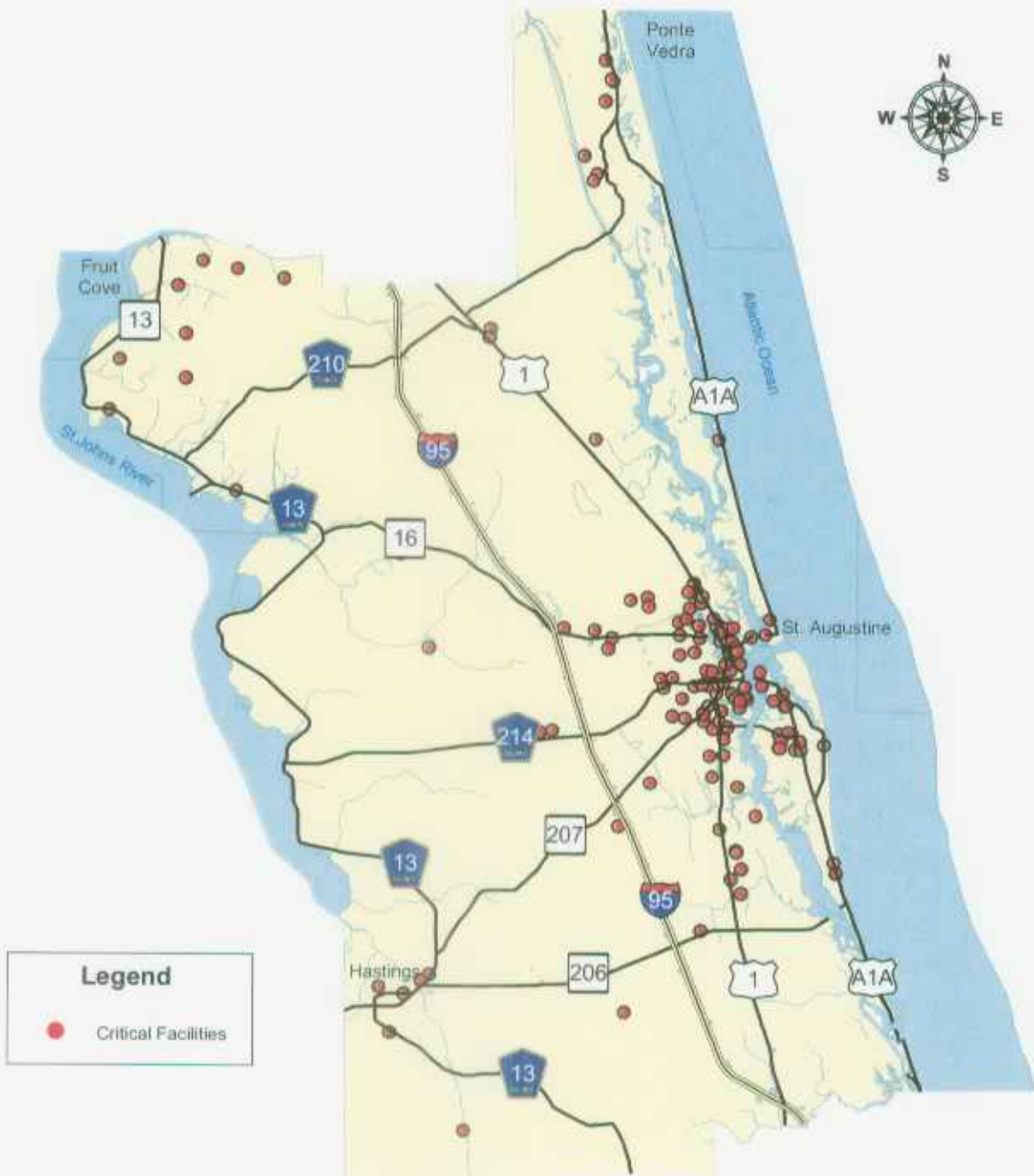
Each local government must decide which of its facilities is critical. In light of this, St. Johns County has completed an inventory of critical facilities, which it deems are necessary to provide with extra protection in the event of a natural or man-made disaster. This inventory includes the following types of facilities:

Airport	Group Quarters	Nursing Homes
Boat ramps	Medical Services	Parks
Correctional Facility	Fire Stations	Schools
Churches	Government Buildings	Shelters
Clinics	Hazard Material Sites	Sheriff Department
Communication stations	Hospitals	Transportation Facilities
Communication towers	Industrial Parks	Water and Sewer
Electrical Substations	Landfills	Facilities
Emergency Operation	Landing Zones	Sewer Lift Stations
Center	Mobile Home Parks	

Following the map of critical facilities is a detailed description of each of these facilities, which will be amended from time to time as needed.

Critical Facilities Table on file with St. Johns County Emergency Management

Critical Facilities - ST. JOHNS COUNTY



ST. JOHNS COUNTY LOCAL MITIGATION STRATEGY 2004

Maps produced by the Northeast Florida Regional Council using GIS. Source: TAOS data. Larger prints available.

lms_stjohns_final_2004.mxd

C. Other Vulnerable Facilities

In addition to the repetitive loss properties and critical facilities identified by the County and municipalities there are other vulnerable properties that also need to be identified and examined for potential losses and future mitigation actions. These properties include those non-repetitive loss properties that are located in a flood zone, properties located in the urban/wildland interface, properties located within the zone of vulnerability of a facility containing hazardous materials, and others that may be determined vulnerable throughout the identification process. Through the identification process, the value of the properties identified as vulnerable will be determined therefore ultimately allowing for a damage loss estimate for each hazard.

To identify additional vulnerable properties two devices will be utilized. First, data provided from an effort between the State of Florida Department of Community Affairs and Kinetic Analysis Corporation that provides information on vulnerable properties will be evaluated. The data available through this source includes the total number of structures for a number of categories, arranged by DOR code, and their values. To supplement the information gained through the state provided source, the Federal Emergency Management Agency provided HAZUS-MH software (Hazards U.S. / Multi-Hazards) that has been developed specifically to complete risk assessments for earthquake, flood, and hurricanes, will be used to identify vulnerable properties from a pre-provided database within the software. This information includes housing stock and property values, in addition to numerous other data.

As of the current draft of the St. Johns County Local Mitigation Strategy, the State provided information is mostly available to the County and ready for review. Additionally the HAZUS-MH software has been provided to the Northeast Florida Regional Council who is facilitating the current (2003-2004) update of the plan. It is expected that the process of identifying any and all vulnerable structures will be one that is time consuming. A full analysis will be conducted using the new data source and software products and this analysis will be part of the next draft of the Plan.

D. Loss Estimates

Once a thorough identification and analysis of vulnerable properties within the County and its municipalities is completed, a damage loss estimate analysis will be conducted. The loss estimate will be conducted via the State provided data source and supplemented by the HAZUS-MH software provided by FEMA. The State provided data includes values for different types of properties and loss estimates for vulnerable structures for a number of different hazards. The HAZUS-MH software includes a regional inventory of assets, supports advanced analysis functions and provides mapping capabilities. The HAZUS-MH provided data has a polygon feature, which includes census tracts/blocks that show features such as demographics and general building stock, line data features which includes utility pipelines, and road segments, and point data features, which includes essential and lifeline facilities, high potential loss facilities, and bridges. The provided demographic and economic data is from the most recent U.S. Census.

The State provided analysis includes property values and a source for mapping vulnerable areas of each County. To conduct this analysis access to either the internet site or the State provided

data CD will be needed. For the HAZUS-MH software, the damage loss estimate is comprised of a series of activities. The first step is to define the study region. This includes defining jurisdictional and geographical boundaries. The second step is to create a base map of the study region using HAZUS/MH provided data. This is the step where additional local data can be added. The base map will include features such as defined boundaries, key features, demographic data, and other important point locations. After a base map is created and any additional data is added, the next step is to identify the hazards of interest. After the hazards are chosen, the next step is to develop and run the hazard scenario. The outcome from the analysis will provide the necessary data to complete a damage loss estimate.

The next draft of the Local Mitigation Strategy will contain a much more detailed description of which steps were taken in the loss estimate analysis. The analysis will include, in addition to a description of the methodology used, maps designating hazard areas and data tables that will provide information on the outcome of each analysis.

To supplement the information that will be extracted from the outcome of the two damage loss estimate alternative methods, information from the Florida Statistical Abstract 2003 was reviewed and is provided in order to show property values for the County. The Florida Statistical Abstract 2003 provides data on assessed property values and proportion of land by use in each County, using 2002 data. The following table provides information on the property values in St. Johns County.

St. Johns County Property Values

St. Johns COUNTY	Residential	Commercial	Industrial	Agricultural	Institutional	Government	Total
Value (in millions of dollars)	9,409.07	1,348.04	130.44	98.73	375.05	866.11	12227.44
Percentage (of total value)	77.0	11.0	1.1	0.8	3.1	7.1	100.0

Section V – Initiative Development

A. Project Selection and Submission Criteria

In St. Johns County there are numerous areas and locations that suffer or are vulnerable to disasters such as floods, accidental chemical releases and other natural and man made disasters. The mitigation initiatives that St. Johns County developed began with evaluating the guiding principles that were completed during the initial phases of the LMS process. The initiatives revolved around these principles regarding the reduction of County's vulnerability to natural and man made hazards that exist. The Taskforce, comprised of a variety of people in the public and private sector, created the initiatives, which reflected the needs of the community. The Taskforce reviewed a number of documents including: Future Land Use policies, Land Development Regulations and data collected from the Department of Public Safety.

The Taskforce over the process of several meetings discussed and listed potential projects in St. Johns County, which are discussed in detail in the following section. The projects were both structural and non-structural mitigation projects. These projects were then discussed in the context of cost, responsible entity, implementation time, funding and areas affected. After all the data was compiled, the taskforce ranked the projects. Each of the projects were evaluated against 14 criteria ranging from cost of the initiative compared with the number of people to benefit to consistency to other plans and programs. Part C below explains in more detail the scoring and prioritizing process and table 7 shows the criteria that the projects were ranked against. As maintenance of the document continues, these criteria will continue to be used to rank new projects that are supported by the Task Force for inclusion into the LMS. A standard form has been developed for submission of new projects for consideration by the Task Force to determine if it should be included in the LMS. The standard form will cover all the criteria that the projects are scored upon.

B. Scoring and Prioritizing Projects

Each mitigation project chosen for inclusion in the Strategy by the Taskforce will benefit the community and preserve and protect life and property. However, each mitigation project represents a large investment of financial resources and/or personnel resources. Due to these facts a method to prioritize each project was adopted. This prioritization method will be a guide for those using the strategy. It will tell which projects have priority to be implemented when resources do become available for that type of project.

The Taskforce adopted a prioritization method early in the LMS process. The methodology has been reviewed and revised several times to produce a fair and easy to use system. The method considered and evaluated such factors as: consistency with the comprehensive plans, who would benefit by the project, availability of funding, and the time frame of implementing the project. The Task Force assigned a numerical figure ranking the project on the criteria mentioned earlier. The final ranking was drawn from the numerical figures assigned by the Taskforce.

The Task Force believes that project prioritization and reprioritization will be an ongoing responsibility. The completion of a project alone may be cause to reprioritize the remaining projects. However, the likelihood is that as additional projects are defined and presented the list of prioritized initiative will grow and become refined. In a process that will evolve with the change prioritize of time and an evolving community.

C. Project Prioritization Methodology

Hazard Mitigation Project Prioritization Method:

1. Feasibility Assessment

All potential mitigation efforts, whether educational, legislative, or structural, must meet certain standards to be considered as viable project or initiatives. Viability standards include the following:

- (1) Is the proposed project or initiative consistent with the Guiding Principles of St. Johns County Local Mitigation Strategy?
- (2) Does the project or initiative have clearly defined mitigation goals and objectives?
- (3) Does the project or initiative address a hazard to which the local community is clearly vulnerable?
- (4) Is the project or initiative technically feasible?
- (5) Is the project or initiative acceptable to, or does it have a reasonable expectation of gaining acceptance by the general public?
- (6) Can the project or initiative be accomplished without generating any major or prohibitive environmental impacts?

2. Prioritization Criteria

There are 12 categories which individual mitigation projects or initiatives are evaluated. Up to ten points may be awarded in categories one through four and categories six through nine; up to 15 points in category five, and up to five points each in the final three categories for a total possible point score of 110 points. Five point categories receive lower possible point scores because, while they are important considerations in terms of implementing mitigation projects or initiatives, they are not felt to be as critical as the preceding 10 categories. Detailed suggestions for scoring individual categories are presented below.

- (1) Containment within the Existing Comprehensive Growth Management Plans - Is the project or initiative consistent with or incorporated in an existing City or County Comprehensive Growth Management Plan.

If not incorporated into an existing Comprehensive Plan, is the project or initiative proposed for incorporation through submittal of an Application for a Comprehensive Plan Amendment?

If not incorporated into an existing Comprehensive Plan, is the project or initiative consistent with the applicable City or County Comprehensive Plan?

Projects or initiatives incorporated into an applicable Comprehensive Plan or proposed for incorporation through submittal of an amendment application will receive 10 points. Projects consistent with but not incorporated into a Comprehensive Plan will receive 5 points.

- (2) Consistent with Existing Regulatory Framework – Is the project or initiative consistent with existing legal and regulatory framework of the governing jurisdiction?

Does a proposed project require any changes or waivers in existing building, zoning, or environmental statutes or ordinances? Projects which fit within the existing legal and regulatory framework will receive 10 points. Projects which are in conflict with the existing regulatory framework will receive lower point scores depending upon the seriousness and numbers of regulatory barriers to be overcome in implementing the proposed project.

- (3) Community Rating System (CRS) Credit - Does the proposed project or initiative provide credit points toward improving the St. Johns County CRS Classification and reducing flood insurance rates in the County?

The National Flood Insurance Program determines the rate communities pay for flood insurance based on a 10-Class system. Class 1 communities receive the most premium credit and class 10 communities receive the least. Communities can improve their classification by conducting activities to reduce flood losses. Communities are awarded “Activity Credit Points” for a variety of flood mitigation activities including public information activities, mapping and regulatory activities, and structural projects to reduce flood losses. Projects and initiatives yielding the maximum number of CRS “Activity Credit Points” will be awarded 10 points under this criterion. Those receiving lower CRS ratings will receive lesser scores.

- (4) Community Benefit – Does the project further one of the principle five goals of the LMS as described below select the best fit:

- I. Protect the lives of the residents of St. Johns County and its Municipalities (15 points).
- II. Protect property to ensure that its intrinsic value is preserved (14 points).
- III. Protect infrastructure so that it is available during and after a disaster (13 points).
- IV. Protect business activities so that they continue to provide economic strength to the community (12 points).

V. Protect the environment to ensure that quality of life and economic well being are preserved (11 points).

(5) Community Exposure – Does the project mitigate a frequently occurring, high risk, or specific problem to which a community is particularly vulnerable?

How frequently does the problem the project is designed to mitigate actually occur? A maximum of 10 points may be awarded in this category based on the amount of funding required balanced against the relative and repetitive exposure of the community as determined under the vulnerability assessment.

(6) Effectiveness – What is the benefit/cost ratio of the project when applying the Federal Emergency Management Act (FEMA) “Cost-effectiveness of Hazard Mitigation Projects” guidelines?

FEMA has produced detailed guidelines for evaluation for evaluating the cost effectiveness of mitigation projects. All mitigation projects using FEMA funding must have a benefit/cost ratio greater than 1. The higher the benefit/cost ratio, the bigger the “bang for the buck.” A total of 10 points will be awarded in this category based on the following:

Benefit/cost ratio = 4.0 or greater	= 10 points
Benefit/cost ratio = 3.0 to 3.9	= 8 points
Benefit/cost ratio = 2.0 to 2.9	= 6 points
Benefit/cost ratio = 1.0 to 1.9	= 4 points
Benefit/cost ratio = < 1.0	= 0 points

(7) Effective Life Expectancy – How long will the community continue to receive the benefits of a particular mitigation project or initiative?

All mitigation projects and initiatives have an effective life span. Conditions change, new technology becomes available, and physical structures wear out. All these factors determine how long a community will receive benefits from money invested in a mitigation measure. 2 points will be awarded for every five years of effective benefit, with a maximum benefit of 25 years or 10 points.

Effective Life Span = Up to 25 or more	= 10 points
Effective Life Span = Up to 20 years	= 8 points
Effective Life Span = Up to 15 years	= 6 points
Effective Life Span = Up to 10 years	= 4 points
Effective Life Span = Up to 5 years	= 2 points

(8) Public Support – Does the project have demonstrated public support and a demonstrated need? A maximum of 10 points will be awarded to proposed projects based on their level of need and support as follows:

Very High = 10 points
 High = 8 points
 Moderate = 6 points
 Low = 2 points

- (9) Funding Availability – Is funding currently available for this particular project?

If funding is anticipated but currently not available, points will be awarded as follows:

Available in 1 year = 8 points
 Available in 3 years = 4 points
 Available in 4 years = 2 points

- (10) Sponsorship – Does the project have an active sponsor that will take responsibility for its management and implementation?

Up to 5 points will be awarded if a local government agency (City or County), or other entity identified by the funding source, will sponsor the project. An additional five points will be awarded to a project with a local sponsor willing to match funds with a funding entity.

- (11) Funding Source – Is there an identified funding source or entity for this project or initiative?

Five points will be awarded to all projects and initiatives for which funding source or entity already exists with the express purpose to fund projects of this type, even if funds for this specific project or initiative have not been made available to date.

- (12) Time Frame for Accomplishing Objectives – How long will it take for the proposed mitigation project to accomplish its stated goal?

Projects which can be accomplished quickly or have an inherent advantage over long term projects, although long term projects may ultimately be more beneficial to the community. The following weighted scale assigns points to proposed projects based on their duration.

1 year = 5 points
 2 year = 4 points
 3 year = 3 points
 4 year = 2 points
 5 year = 1 points

**Table 9
ST. JOHNS COUNTY LMS
POINT SYSTEM METHODOLOGY**

CRITERIA CATEGORY	10 Points	8 Points	6 Points	5 points	4 Points	3 Points	2 Points	1 Point	0 Points
Contained Within the Comprehensive Plan	Incorporated into plan	NA	NA	Consistent with plan but not incorporated	NA	NA	NA	NA	Inconsistent with plan
Consistent with Existing Regulatory Framework	Consistent	NA	NA	Partially Consistent	NA	NA	NA	NA	Inconsistent, many regulatory barriers
Provide Community Rating System Credits	Provides maximum number of CRS credits	NA	NA	Provides some CRS credits	NA	NA	NA	NA	Provides no CRS credits
Community Benefit	Protects lives of St. Johns Co. residents (15 points)	Protects Property (14 points)	Protects Infrastructure (13 points)	Protects business activities (12 points)	Protects environment (11 points)	NA	NA	NA	NA
Community Exposure	Mitigates a hazard of high frequency and risk	NA	NA	Mitigates a hazard of moderate freq. & risk	NA	NA	NA	Mitigates a hazard of low frequency and risk	Mitigates a hazard of negligible risk
Effectiveness	Benefit/cost ratio = 4.0 or greater	Benefit/cost ratio = 3.0 to 3.9	Benefit/cost ratio = 2.0 to 2.9	NA	Benefit/cost ratio = 1.0 to 1.9	NA	NA	NA	Benefit/cost ratio = <1.0
Effective Life Expectancy	Up to 25 or More Years	Up to 20 Years	Up to 15 Years	NA	Up to 10 Years	NA	Up to 5 Years	NA	NA
Public Support	Very High Public support	High Public support	Moderate Public support	NA	NA	NA	Low Public support	NA	NA
Funding Availability	NA	Available in 1 year	Available in 2 years	NA	Available in 3 years	NA	Available in 4 years	Available in 5 years	NA
Sponsorship	Identified sponsor willing to match funds	NA	NA	Project has identified sponsor	NA	NA	NA	NA	No identified sponsor
Identified Funding Source	NA	NA	NA	A funding source has been identified	NA	NA	NA	NA	A funding source has not been identified
Time Frame For Accomplishing Objectives	NA	NA	NA	1 year	2 years	3 years	4 years	5 years	NA

Created: 8-03-99

D. Project Implementation

In the project descriptions it provides information on who initiated the mitigation project and who will be responsible for overseeing the projects implementation. Individual agencies will be responsible for implementation the mitigation initiatives that they have had approved for funding.

Section VI – Mitigation Initiatives

A. Mitigation Initiatives

The following mitigation initiatives were selected by the St. Johns County LMS Task Force and were voted on and prioritized. The table shows each project's score and rank on the list, as well, as how the projects were scored. A more detailed description of each project on the list is also included following the table.

**ST. JOHNS COUNTY LOCAL MITIGATION STRATEGY
INVENTORY OF RANKED PROJECTS**

PROJECT #	PROJECT RANK	PROJECT DESCRIPTION	Evaluation Criteria										Total Points Awarded		
			Contained Within Comprehensive Plan	Consistent With Regulatory Framework	Provides Community Rating System Credits	Community Benefit	Community Exposure	Effectiveness	Public Support	Funding Availability	Sponsorship	Identified Funding Source		Time Frame For Accomplishing Objectives	
1	1	Renourish Beaches Along Eroded Sections of County Coastline	10	10	10	14	5		10	8	8	10	5	5	95
		A. Surfside Area													
		B. Summer Haven													
		C. St. Augustine Beach (State Park to F St.)													
		D. Walk-over @ Mariners Watch													
		E. Marineland - Area from north end of revetment to northern Town limits (Underground sand barrier)													
18	2	Flagler Estates Drainage Improvement	10	10	10	15	5		8	10	4	10	5	3	90
		A. Ashley Outfall													
		B. 16 Mile Creek Surface Water Improvement Facility													
3	3	Develop a Master Drainage Plan For St. Johns Co. and Its Municipalities	10	10	10	15	10		6	10	4	5	5	4	89
		A. Set up pre-contracts for temporary flood pumps													
		B. Master plan for St. Augustine including incorporation of Maria Sanchez Lake													
		C. Deep Creek Master Drainage Study													
		D. Dam at Lake Belouthahatchee													
		E. West King Street Corridor Improvement Concept Plan													
22	3	Improve Critical Response Systems	5	10	10	15	5		8	10	8	10	5	3	89
16	4	Improve the Conditions of Existing Drainage Systems Countywide Through Improved Maintenance.	10	10	5	15	10		4	8	8	10	5	3	88
17	5	Resurface and Pave the Shoulders of A1A North Between Vilano Beach and Micklers Cutoff.	10	10	0	15	5		6	10	8	10	5	4	83
9	6	Amend LDR's To Include Mitigation Related Ordinances	10	10	5	15	5		2	6	8	10	5	5	81
20	6	County Acquisition	5	10	0	13	5		10	10	8	10	5	5	81
		A. Petty Branch Ravine Park (FCT Project)													
		B. London Tract (Repetitive Loss Project)													
21	7	Purchase Excavation Equipment (backhoes, etc.) for Flood Mitigation	5	10	5	15	5		4	8	8	10	5	4	79
6	8	Provide Metal Window Shutters For Police & Fire Stations & Other Govt. Bldgs.	5	10	10	14	5		10	10	4	5	0	5	78
		A. Shutters for new Fire Administration Building													
14	9	Construct non-corrosive aluminum shelters over 2 Control Panels of Emergency Pumps in St. Augustine Beach	10	10	5	13	10		4	8	4	5	5	3	77

19	9	Vilano Beach Utility Poles (Straighten or replace)	10	10	0	15	5	6	8	8	5	5	5	5	77
2	10	Hastings Potable Water System Improvement	5	10	0	13	5	10	10	4	5	5	5	5	72
8	11	Expand Waste Water Collection Systems	10	10	0	11	5	8	8	4	5	5	4	4	70
		A. Replace Septic Tanks													
		B. Retrofit Collection Systems													
4	12	Improve County Evacuation Capacity	10	10	0	15	5	10	10	1	5	0	1	1	67
		A. Improve Signage													
		B. A1A from Owens Avenue to SR 206 (Perform a safety study)													
		C. SR 206 evacuation improvements study from AIA to end of 206													
		D. May Street @ Douglas (flooding) and at San Marco (constriction)													
		E. Mickler Road (from 210 to A1A) Improvements													
7	13	Improve Countywide Shelters	5	10	0	15	5	10	10	0	5	0	5	5	65
		A. Pet Friendly Evacuation Shelter													
		B. Intermediate Care Evacuation Shelter													
		C. Retrofit Schools													
5	14	Provide Generators For essential government buildings & Critical Facilities	5	10	0	15	5	4	10	4	5	0	5	5	63
		A. Pigtail buildings to accept temporary generators													
		C. Provide portable generators for St. Augustine Beach													
		D. Generator for the new Hastings Fire Station													
		E. Generator for new Fire Administration Building													
10	15	Develop Post-Disaster Redevelopment Standards For Infrastructure And Structures	10	10	0	15	5	2	10	0	0	0	5	5	57
15	16	Install System of Dry Fire Hydrants Countywide Including Priming Pumps Where Necessary	5	5	0	15	10	8	10	1	0	0	1	1	55
		A. Flagler Estates Area Dry Fire Hydrants													
11	17	Educate Prospective Home Buyers & Real Estate Professionals About Floodplains & Base Floor Elevations	5	10	10	11	0	2	2	0	0	0	5	5	45
13	18	Consider Feasibility of Relocating Utilities Underground	0	5	0	13	5	8	8	0	5	0	1	1	45
		A. St. Augustine Beach (2 miles along A1A)													
		B. South Anastasia Island													
		C. Summer Haven Water Utilities													
12	19	Educate Residents Of Financial/Insurance Benefits Of Preparing Their Homes For Natural Disasters	5	5	0	14	5	2	6	0	0	0	5	5	42
23		Wildfire Mitigation Activities													
24		Improved Countywide Emergency Communications													
		A. Mobile communications/media joint information center													
		B. Interoperability/Interagency Communications													
25		Hazardous Materials Incident Response Capability													
		A. Education & Training													
26		Countywide NIMS Adoption													

Revised 7-20-2000, 2-13-02, 4-25-02, 7-18-02, 11-5-02, 7-23-03, 12-17-03, 4-04, 6-29-04, 11-23-04

Section VI - Funding

A. Funding Sources

The following Table, Table 11, provides current information on sources of available funding that is used for hazard mitigation projects. The table includes the name of the grant, the sponsoring agency, type of assistance available and who is eligible. As additional or updated information becomes available the list will be amended accordingly.

Table 11
Funding Sources for Mitigation Projects

HAZARD	GRANT NAME	AGENCY	OBJECTIVES	ASSISTANCE PROVIDED	ELIGIBILITY
All	Development of technologies for Assurance of the U.S. Energy Infrastructure	DOE	Ensure the reliability and security of the nation's energy infrastructure, including understanding vulnerabilities, and developing protection, detection, mitigation, and response strategies for all hazards	Project Grant	Unrestricted
All	Hazard Mitigation Grant Program	FEMA	Implementation of long-term hazard mitigation after a major disaster declaration	Project Funding	State/local governments, Indian tribes, some non-profit organizations
All	Pre-Disaster Mitigation Program	FEMA	Cost-effective pre-disaster hazard mitigation activities that reduce injuries, loss of life and damaged and destroyed property	Technical and financial assistance	Local Governments, tribal governments
All	Emergency Management Performance Grants	FEMA	Develop comprehensive emergency management and to improve emergency planning, preparedness, mitigation, response, and recovery capabilities.	Project Grants	States
All	Project Impact - Building Disaster Resistant Communities	FEMA	Encourage the implementation of a sustained pre-disaster mitigation program with activities that reduce the existing risk of natural hazard losses within the geographic location of the designated communities	Project Grants	Any community or jurisdiction which a State has recommended as a Project Impact community
Dams	Safety of Dams on Indian Lands	DOI	To improve the structural integrity of dams on Indian lands	Direct Payments for Specified Use	Federally-recognized Indian Tribal governments

HAZARD	GRANT NAME	AGENCY	OBJECTIVES	ASSISTANCE PROVIDED	ELIGIBILITY
Dams	National Dam Safety Program	DHS	To encourage the establishment and maintenance of effective State programs intended to ensure dam safety, to protect human life and property, and to improve State dam safety programs.	Project Grants	All States
Fire	Wildland Urban Interface Community and Rural Fire Assistance	DOI	Implement the National Fire Plan and assist communities at risk from catastrophic wildland fires through a variety of activities	Project Grants; Use of Property, facilities, and equipment; provision of specialized services; Advisory services and counseling; Dissemination of technical information; Training	State and local governments, Indian tribes, public and private education institutions, non-profit organizations, and rural fire departments serving a population of 10,000 or less
Fire	Indian Community Fire Protection	DOI	To provide funds to perform fire protection services for Indian Tribal Governments that do not receive fire protection support from State and local government	Direct Payments for Specified Use	Federally-recognized Indian Tribal governments
Fire	Fire Suppression Assistance	FEMA	Suppression of any fire on public or privately owned forest or grassland that threatens to become a major disaster.	Project Grants; use of property, facilities, and equipment; Provision of specialized services	States
Fire	Assistance to Firefighters	ODP; USFA	Assist fire departments in improving their capacities to prevent and suppress fires and respond to chemical, biological, radiological, nuclear and explosive incidents	Program Grants	Fire departments

HAZARD	GRANT NAME	AGENCY	OBJECTIVES	ASSISTANCE PROVIDED	ELIGIBILITY
Flood	Watershed Protection and Flood Prevention	DOA	Technical and Financial assistance in carrying out works of improvement to protect, develop, and utilize the land and water resources in small watersheds	Project Grants, Advisory services and counseling	State agency, county or groups of counties, municipalities, town or township, soil and water conservation district, flood prevention of flood control district, Indian tribe, or any other non-profit agency.
Flood	Flood Mitigation Assistance Program	FEMA	Reduce or eliminate the long-term risk of flood damage to buildings, manufactured homes, or other structures insurable under the NFIP.	Technical, planning, or project assistance grants.	NFIP-participating states and communities
Flood	Protection of Essential Highways, Highway Bridge Approaches, and Public Works	DoD	To provide bank protection of highways, highway bridges, essential public works, churches, hospitals, schools, and other non-profit public services endangered by flood-caused erosion	Provision of Specialized Services	States, political subdivisions of States or other responsible local agencies.
Flood	Flood Control Projects	DoD	To reduce flood damage through projects not specifically authorized by congress	Provision of Specialized Services	States, political subdivisions of States or other responsible local agencies.
Flood	Snagging and clearing for Flood Control	DoD	To reduce flood damages	Provision of Specialized Services	States, political subdivisions of States or other responsible local agencies.
Flood	Emergency Advance Measures for Flood Prevention	DoD	To perform activities prior to flooding that would assist in protecting against loss of life and damages to property due to flooding	Provision of Specialized Services	Governor must request assistance

HAZARD	GRANT NAME	AGENCY	OBJECTIVES	ASSISTANCE PROVIDED	ELIGIBILITY
Haz Mat	NIEHS Hazardous Waste Worker Health and Safety Training	DHHS	Provide cooperative agreements and project grant support for the development and administration of model worker health and safety training programs for workers and their supervisors who are engaged in activities related to hazardous materials, hazardous waste generation, treatment, storage, disposal, removal, containment, transportation, or emergency response.	Project Grants	A public or private nonprofit entity providing education and training
Haz Mat	Surveillance of Hazardous Substances Emergency Events	DHHS	Develop and maintain a state-based surveillance system for monitoring hazardous substances emergency events, and conducting appropriate prevention activities	Program Grants	Native American Tribal Governments; State Health Departments
Haz Mat	Grants-in-Aid for Railroad Safety - State participation	DOT	Promote Safety in all areas of railroad operations reduce railroad related accidents and casualties, reduce damage to property caused by accidents involving any carrier of hazardous materials	Project Grants	States
Haz Mat	Interagency Hazardous Materials Public Sector Training and Planning Grants	DOT	Increase State, local, territorial, and Native American tribal effectiveness to safely and efficiently handle hazardous materials accidents and incidents	Project Grants	States, U.S. Territories and Federally recognized Native American Tribes
Haz Mat	Technical Assistance Grant Program	EPA	Financial assistance for chemical accident prevention activities that relate to the Risk management Program	Project Grants	State/local governments, and Indian Tribes

HAZARD	GRANT NAME	AGENCY	OBJECTIVES	ASSISTANCE PROVIDED	ELIGIBILITY
Haz Mat	Hazardous Materials Assistance Program	FEMA	Technical and financial assistance through states to support state, local and Indian tribal governments in oil and hazardous materials emergency planning and exercising.	Project Grants	State/local governments, tribes, U.S. Territories, SERC's and LEPC's
Haz Mat	Hazardous Materials Training Program for Implementation of the Superfund Amendment and Reauthorization Act	FEMA	Training and support of tribal governments emergency planning, preparedness, mitigation, response and recovery capabilities with special emphasis on emergencies associated with hazardous chemicals	Project Grants	Federally-recognized Indian Tribal governments
Hurricane	Beach Erosion Control Projects	DoD	To control beach and shore erosion to public shores through projects not specifically authorized by congress	Provision of Specialized Services	States, political subdivisions of States or other responsible local agencies.
Response/Rescue/Recovery	National Urban Search and Rescue Response System	FEMA	To develop an immediately deployable, national response capability to locate and extricate, and medically stabilize victim of structural collapse during a disaster	Project Grants	The 27 sponsoring jurisdictions designated by FEMA as members of the US&R
Terrorism	Port Security Grants	DHS	To purchase new patrol boats and surveillance equipment, construct new command and control facilities, and plan other security upgrades at U.S. seaports	Financial Assistance	Public and private companies.
Terrorism	Urban Areas Security Initiative	DHS	To enhance local government's ability to prepare for and respond to threat or incidents of terrorism	Project Grants	Selected cities chosen by DHS based on eligibility
Terrorism	Homeland Security - Agriculture	DOA	To provide funding to protect the food supply and agricultural production, protect USDA facilities and other ag infrastructure and protect staff and manage emergency preparedness	Project Grants	Eligibility listed under section 1472(c) of NARETPA

HAZARD	GRANT NAME	AGENCY	OBJECTIVES	ASSISTANCE PROVIDED	ELIGIBILITY
Terrorism	State and Local Domestic Preparedness Exercise Support	DOJ	To provide exercise planning to State and local jurisdictions and to conduct national, State, and local exercises for response to Weapons of Mass Destruction domestic terrorist incidents involving nuclear, biological, chemical, and explosive devices.	Project Grants	State and local jurisdictions, or public and private nonprofit agencies
Terrorism	State and Local Domestic Preparedness Technical Assistance	DOJ	To provide direct assistance to State and local jurisdictions in enhancing their capacity and preparedness to respond to WMD incidents.	Project Grants	Public or Private nonprofit agency or a for profit agency providing or coordinating with programs which will provide a full range of
Terrorism	First Responded Counter-Terrorism Training Assistance	FEMA	Enhance the capabilities of first responders in managing the consequences of terrorist acts	Project Grants	Provided through States
Fire	Fire Prevention and Safety Grant Program	USFA	To reduce the overall loss of life from fire; establish comprehensive multi-hazard risk reduction plans led by or including the local fire service in 2,500 communities; create the ability for communities to respond appropriately to emergency issues in a timely manner	Program Grants	National, State, Regional, and local organizations that promote fire prevention and safety

Table 1-A

ST. JOHNS County Hazards Quick Reference Table

Hazard	Description	Location & Extent	*Vulnerability	Previous Occurrences	*Probability of Future Occurrences	*Risk Level	References	Map
Hurricanes/ Coastal Storms	A Hurricane is a tropical cyclone characterized by thunderstorms and defined surface wind circulation, developing over warm waters and caused by the atmospheric instability created by the collision of warm air with cooler air with wind speeds ranging from 75 mph to up to 155 + mph. Wind damage and storm surges are associated with hurricanes. Wind damage and storm surge are also associated with Tropical Storms, which is a tropical cyclone with maximum sustained winds greater than 39mph and less than 74 mph.	St. Johns County is a coastal County and may have storm surge and high winds associated with hurricanes along coastal areas, as well as surge effects associated with the St. Johns River. Areas of particular vulnerability include the entire shoreline of the St. Johns River and its associated tributaries, the southern portions of Julington Creek, shorelines adjacent to Cunningham Creek, Six Mile Creek and Deep Creek, which leads into and may cause the Town of Hastings to flood. Coastal lands including the cities of St. Augustine, and St. Augustine Beach are more vulnerable to the high winds associated with a hurricane as are higher elevation lands.	High	Category 3 Hurricane Dora in 1964 which came ashore in Northern St. Johns County is the most recent Hurricane to make landfall in the Northeast Florida region. Hurricane Floyd in 1999 causing \$3M in damages, Hurricane Irene in 1999 causing \$300K in damages, and TS Gabrielle in 2001 brushed by the coast and caused \$900K in damages. Other Hurricanes recorded to have hit St. Johns County include Category 1 Gladys in 1968, Category 1 in 1945 and a Category 2 in 1886. Several Tropical Storms were recorded to have hit the County from 1840-2001 including TS East in 1950. Some coastal storms include the Thanksgiving storm of 1984 and the no-name storm of the winter of 1993. Dollar values for damages is not known for most storms.	High	High	Hurricane Evacuation Study, Florida Disaster website; St. Johns Co. CEMP; TAOS	Yes

Table 1-A
ST. JOHNS County Hazards Quick Reference Table

Hazard	Description	Location & Extent	*Vulnerability	Previous Occurrences	*Probability of Future Occurrences	*Risk Level	References	Map
Storm Surge	Large waves of ocean water that sweep across coastlines where a storm makes landfall and can run up into rivers that open into the ocean.	Areas of particular vulnerability include the entire coast including Ponte Vedra, PVB, Vilano Beach, St. Augustine, and St. Augustine Beach, the shoreline of the St. Johns River and its associated tributaries, Fruit Cove, the southern portions of Julington Creek, shorelines adjacent to Cunningham Creek, Six Mile Creek and Deep Creek, which leads into and may cause the Town of Hastings to flood.	High	Hurricane Dora in 1964. Dollar values associate with damages not known at this time.	High	High	Hurricane Evacuation Study; St. Johns Co. CEMP; TAOS	Yes

Table 1-A

ST. JOHNS County Hazards Quick Reference Table

Hazard	Description	Location & Extent	*Vulnerability	Previous Occurrences	*Probability of Future Occurrences	*Risk Level	References	Map
Wind	Strong damaging winds associated with powerful storms such as hurricanes, tropical storms and severe thunderstorms.	The following areas appear to be more susceptible to high winds from a hurricane due to their higher elevations: All shorelines, including St. Augustine Beach, areas adjacent to the Intracoastal Waterway, areas located along the St. Johns River, and the Town of Hastings. All areas of the county are susceptible to high winds associated with thunderstorms.	High	Hurricane Dora in 1964 caused damages from high winds. Between 1950 and 2004 there were 96 reported strong wind events associated with thunderstorms, estimating \$ 782K in damages. More specifically 8 events in Hastings caused \$63K in damages. 14 events in St. Augustine caused \$85K in damages. 1 event in Palm Coast caused \$2 in damages. 7 events in Ponte Vedra & PVB caused \$67K in damages. 6 events in Fruit Cove caused \$10K in damages. 4 events in Vitano causing \$8K in damages. 4 events in Switzerland causing \$15K in damages. 2 events in Crescent Beach caused \$2K in damages. Other events occurred in Bakersville (2), Riverdale (3) and Sampson (2). The remaining damages were recorded in the County	High	High	National Climatic Data Center; St. Johns Co. CEMP; TAOS	Yes

Table 1-A

ST. JOHNS County Hazards Quick Reference Table

Hazard	Description	Location & Extent	*Vulnerability	Previous Occurrences	*Probability of Future Occurrences	*Risk Level	References	Map
Tornado	A violently rotating column of air that extends from a thunderstorm down to the ground, and can reach wind speeds of up to 250 miles per hour or more.	The entire County is susceptible to the effects of a tornado if one touched down in the County. However, the County and all municipalities are in the low frequency zone.	High	Between 1950 and the end of 2003, 57 tornadoes, funnel clouds and water spouts were reported in St. Johns County, resulting in \$2.547M in damages (from tornadoes only). More specifically, 3 events in St. Augustine, one at the airport, caused \$58K in damages. 1 event in Palatka causing \$1.1M in damages. 2 events in Hastings causing \$12K in damages. 2 events in Crescent Beach causing \$2k in damages. 1 event in Toco causing \$4K in damages. The remaining events were recorded in the County.	Medium	High/Medium	National Climatic Data Center; National Weather Service, Storm Prediction Center; St. Johns Co. CEMP; TAOS	Yes

Table 1-A

ST. JOHNS County Hazards Quick Reference Table

Hazard	Description	Location & Extent	*Vulnerability	Previous Occurrences	*Probability of Future Occurrences	*Risk Level	References	Map
Wildfire	An uncontrollable Fire that spreads through and consumes vegetative fuels and any other flammable materials in it's path.	St. Johns County is transforming from a rural county, to one which is much more urban in nature, but a large percentage of its land area is still covered in forest. As a result many areas of the County are susceptible to wildfire. The most vulnerable areas are those generally located at the urban/wildland interface, primarily located in the western portions of the County, including Haslings. These are areas where subdivisions occur adjacent to large undeveloped areas of forestland. A large percentage of St. Johns County is covered by forest land making many areas susceptible to wildfire.	Medium - Extreme during drought conditions and high December through June when rainfall amounts typically decrease. Very active fire events in the past have commonly occurred in May-July	1,276 wildfires have burned 23,118 acres in St. Johns County from January of 1989 to December of 2003. Significant wildfire events have been recorded in St. Johns County in 1985, 1990, 1993, 1998 and 1999. These wildfire events correlate with drought periods and the typical Florida dry season (March – July). Significant St. Johns County Fire Occurrence: 1985: 138 fires burned 5,547 acres 1990: 175 fires burned 1,046 acres 1993: 111 fires burned 1,031 acres 1998: 114 fires burned 12,116 acres 1999: 154 fires burned 1,315 acres	High	Medium/High	Florida Division of Forestry; St. Johns Co. CEMP;	Yes

Medium/High

Table 1-A

ST. JOHNS County Hazards Quick Reference Table

Hazard	Description	Location & Extent	*Vulnerability	Previous Occurrences	*Probability of Future Occurrences	*Risk Level	References	Map
Floods	A natural event for rivers and streams where natural rainfall, snowmelt, or storm surge accumulates and overflows onto river banks and adjacent floodplains.	Several local roads that experience flooding in the County include Solana Road west of Sunset Drive, sections of Roscoe Road, intersection of Race Track Road and Russell Sampson, Greenbriar Road, and International Golf Parkway. Areas where local roads experience flooding include downtown St. Augustine, Hastings, and Flagler Estates. Large portions of Hastings are in the 100 year flood plain.	Medium	15 flood events reported in St. Johns County from 1950 to 2004 resulted in \$27.8M in damages. More specifically, a Countywide event in 1995 caused \$300K in damages. Ponte Vedra, 1996, \$20K in damages. Countywide, 1997, \$10K in damages. St. Augustine, 1998, \$10K in damages. Countywide, 1999, \$35K in damages. Countywide, 2001, TS Gabrielle, \$900K in damages.	High	Medium/High	Hurricane Evacuation Study, 1998; St. Johns Co. CEMP; TAOS	Yes
Hazardous Materials Accident	The accidental release or spill of hazardous chemicals into the environment where human and plant and animal life would be endangered.	Areas in the vulnerability zone around facilities that contain hazardous materials are susceptible to hazards associated with accidents and/or spill. Areas adjacent to main transportation routes that transport hazardous materials are also susceptible to the hazards associated with accidents or spills.	Medium	Not known at this time.	Medium	Medium	St. Johns Co. CEMP	No

Table 1-A

ST. JOHNS County Hazards Quick Reference Table

Hazard	Description	Location & Extent	*Vulnerability	Previous Occurrences	*Probability of Future Occurrences	*Risk Level	References	Map
Terrorism	Terrorism is a violent act, economically destructive act, or any act dangerous to human life, including the unlawful use of force or violence against person or property to intimidate or coerce government, civilians, or any segment thereof.	St. Johns County is not generally susceptible to acts of terrorism, however acts of terrorism can potentially occur anywhere in the county, although there are few targets.	Low	None known for the County or municipalities.	Low	Low	Terrorism Annex; St. Johns Co. CEMP	No
Earthquake	A sudden motion or trembling of the Earth that is caused by a release of tension that has accumulated within or along the edge of the Earth's tectonic plates.	St. Johns County does not have favorable geology for the occurrence of Earthquakes. North of St. Augustine the County earthquake risk area is very low, and south of St. Augustine the potential is minimal.	Low	One reported in 1975 off of St. Augustine. Damage to bridge noted. Damage in \$ values is not known.	Low	Low	U.S. Geological Survey, St. Johns Co. CEMP; TAOS	Yes
Tsunami	A tsunami is a series of long waves on the ocean generated by sudden displacement of a large volume of water, usually due to an underwater earthquake, landslides, or volcanic eruptions.	Tsunamis are not common in the Atlantic Ocean, therefore St. Johns County is not generally susceptible. However, if a tsunami were to occur, the coastal areas of the County would be the most susceptible to the hazard. St. Augustine, St. Augustine Beach, and Hastings would be vulnerable to the surge created by a tsunami.	Low	None known for the County or municipalities.	Low	Low	TAOS	No

Table 1-A

ST. JOHNS County Hazards Quick Reference Table

Hazard	Description	Location & Extent	*Vulnerability	Previous Occurrences	*Probability of Future Occurrences	*Risk Level	References	Map
Drought / Heat Wave	Drought is a normal climatic occurrence that happens almost everywhere on the planet and is recognized as a deficiency of precipitation over an extended period of time. Drought is measured with the Keetch-Byram Drought Index. The index measures moisture in the soil. The scale ranges from 0(saturated)-800(void of moisture). Typically May-June have highest drought numbers. A heat wave is when temperatures are abnormally and uncomfortable hot for an extended period of time.	All of St. Johns County is susceptible to the effects of drought caused by low precipitation levels. Agricultural lands and forest lands are the most at risk during drought due to the loss of crops and the increased potential for wildfires.	Low - Extended periods of drought are common in north east Florida as rainfall patterns fluctuate due to wet El Nino years and dry La Nina events	The NWS has recorded a rainfall deficit 1997-2002 coinciding with a La Nina event. The Palmer Drought Severity Index is a long term drought indication index that measures trends in rainfall and soil moisture amounts. From 1989 to 2003 the Palmer index shows that the years 1990 and 1999-2001 were severe drought years for St. Johns County.	Low - Moderate	Low	Florida Division of Forestry; St. Johns Co. CEMP	No

Table 1-A

ST. JOHNS County Hazards Quick Reference Table

Hazard	Description	Location & Extent	*Vulnerability	Previous Occurrences	*Probability of Future Occurrences	*Risk Level	References	Map
Freeze / Winter Storm	A storm that can range from a few hours of moderate snow to blizzard like conditions with wind-driven snow that can last for days. Freezing occurs when temperatures are below freezing over a wide spread area for a significant period of time.	All of St. Johns County is susceptible to the effects of a freeze, which could damage agricultural crops, but winter storms are not common to this part of the country.	Medium	"No Name" Storm of March 1993. Damages in \$ values is not known at this time. A Nor'easter in 1996 caused \$200K in damages mostly in St. Augustine. Another event in NE Florida in 1997 caused \$175K in damages throughout the region.	Medium	Medium	St. Johns Co. CEMP	No
Sinkholes / Landslides	A downward movement of earth materials under the force of gravity, either down a slope in the case of a landslide, or into a void beneath the surface.	St. Johns County is not generally susceptible to sinkholes due to unfavorable topography for sinkholes, and landslides are not common due to the lack of large slopes of land that cause them. The County and all municipalities have a very low sinkhole potential.	Low	None for the County or municipalities.	Low	Low	U.S. Geological Survey; St. Johns Co. CEMP; TAOS	No
Dam / Levee Failure	Failure of a dam or levee causing flooding downstream of the damaged structure.	There are no public dams or levees in St. Johns County recorded with the U.S. Army Corps of Engineers, however there is a dam on Guana River in the State Park.	Low	None known for the County or municipalities.	Low	Low	U.S. Army Corps of Engineers	Yes

* Probability and Vulnerability from the St. Johns County Comprehensive Emergency Management Plan and apply to County and Municipalities.
 Risk=Vulnerability / Probability of Future Occurrences

Appendix B

Plans, Studies, Reports, and Other Documents Reviewed

- St. Johns County Comprehensive Plan
- City of St. Augustine Comprehensive Plan
- City of St. Augustine Beach Comprehensive Plan
- Town of Hastings Comprehensive Plan
- Strategic Regional Policy Plan
- St. Johns County Comprehensive Emergency Management Plan

Appendix C

CHAPTER 29D-6 NORTHEAST FLORIDA REGIONAL PLANNING COUNCIL REGIONAL DISPUTE RESOLUTION

29D-6.001 Purpose.

(1) In recognition of the Northeast Florida Regional Planning Council's (NEFRPC) role in facilitating intergovernmental problem solving, a voluntary regional dispute resolution process (RDRP) is hereby established to reconcile differences on planning, growth management, disputes arising from the intergovernmental review required by local government intergovernmental coordination element, or inconsistencies between port master plans and local government comprehensive plan, and other issues among local governments, regional agencies and private interests. Components of the RDRP consist of: process initiation; situation assessment; settlement meetings, mediation or advisory decision making; and settlement agreements.

(2) Use of this process shall not alter a jurisdiction's, organization's, group's or individual's right to judicial or administrative determination of any issue if that entity is entitled to such a determination under statutory or common law.

(3) Participation in the RDRP as a named party or in any other way does not convey or limit intervenor status or standing in any judicial or administrative proceedings.

Specific Authority 186.509 FS.

Law Implemented 186.509 FS.

History--New 7-5-94.

29D-6.002 Definitions.

(1) Situation Assessment -- is a procedure of information collection that may involve review of documents, interviews and/or assessment meetings leading to a written and/or verbal report(s) identifying: the issues in the dispute; the stakeholders; information needed before a decision can be made; and a recommendation on the best dispute resolution procedures.

(2) Pre-initiation meetings -- are opportunities for a party to discuss the suitability of the RDRP with the RPC staff for resolving their dispute before formally initiating the RDRP.

(3) Facilitation -- is a procedure in which a facilitator helps the parties design and follow a meeting agenda and assists parties to communicate more effectively throughout the process. The facilitator has no authority to make or recommend a decision.

(4) Mediation -- is a procedure in which a neutral third party assists disputing parties in a negotiation process to explore their interests, develop and evaluate options, and reach a mutually acceptable agreement without prescribing a resolution. A mediator may take more control of the process than a facilitator and usually works in more complex cases where a dispute is more clearly defined.

(5) Advisory Decision Making -- is a procedure aimed at enhancing the effectiveness of negotiations and helping parties more realistically evaluate their negotiation positions. This procedure may include fact finding, neutral evaluation, and/or advisory arbitration in

which a neutral party or panel listens to the facts and arguments presented by the parties and renders a non-binding advisory decision.

(6) Jurisdiction -- is any local government or regional agency.

(7) Named Party(ies) -- shall be any jurisdiction, public or private organization, group or individual who is named in an initiation letter, including the initiating jurisdiction, or is admitted by the named parties to participate in settlement of a dispute pursuant to paragraphs 29D-6.003(1), (2) and (3). Being a named party in the RDRP does not convey or limit standing in any judicial or administrative proceeding.

(8) Representative -- is an individual who is given guidance and authority to act, to the extent possible, by a named party in a RDRP case. This individual shall be designated by the process set forth pursuant to 29D-6.003.

(9) Initiation Letter -- is a letter from a jurisdiction formally identifying a dispute and asking named parties to engage in this process to resolve the dispute, and, at a minimum, attend the initial settlement meeting. Section 29D-6.010 specifies what is required in an initiation letter.

(10) Response Letter -- is a letter which formally notifies the initiator, the Northeast Florida Regional Planning Council, and other named parties that a party is willing to participate in the RDRP and, at a minimum, attend at least one settlement meeting. Section 29D-6.010(3) specifies what must be included in a response letter.

(11) Settlement Agreement -- may be voluntarily approved by the individual or governing body authorized to bind the named party. Agreements may take the form of memorandums of understanding, contracts, interlocal agreements or other form mutually agreed to by the signatory parties or as required by law. A settlement may be agreed to by some or all of the named parties.

Specific Authority 186.509 FS.

Law Implemented 186.509 FS.

History--New 7-5-94.

29D-6.003 Participation.

(1) Named parties shall automatically be allowed to participate in the RDRP. Other jurisdictions, public or private organizations, groups, or individuals suggested by a named party in response letters or during RDRP meetings or submitting a petition to participate, may become named parties if agreed to by a two-thirds majority of the named parties, except as provided in section 29D-6.003(2).

(2) All initiation and response letters made in accordance with intergovernmental coordination elements (ICE) of local government comprehensive plans; or involving consistency between port master plans and local comprehensive plans shall only list affected jurisdictions as named parties. The named parties may at the initial settlement or subsequent RDRP meetings add public or private named parties by mutual agreement of all the current named parties.

(3) Other jurisdictions, public or private organizations, groups or individuals seeking to become a named party shall submit to the Northeast Florida Regional Planning Council staff a written petition to participate, including reasons for the request and information required in section 29D-6.010(2). Such jurisdictions, public or private organizations, groups, or individuals shall become named parties if agreed to by a two-thirds majority of

the named parties, prior to or during RDRP meetings; except as pursuant to 29D-6.003(2). Named parties who do not respond within 10 calendar days of the initiation letter may not participate in the RDRP unless they submit a petition to participate.

(4) Each named party shall designate a representative in writing, or be represented by the chief executive officer. Jurisdictions are encouraged to designate a representative to participate in the RDRP in advance of initiating or receiving a request.

(5) Any named party may invite individuals or organizations to attend meetings under this process who can provide information and technical assistance useful in the resolution of the dispute. The parties, by agreement, or the presiding neutral shall determine when and under what circumstances such invited parties may provide input.

(6) All communications by a named party called for in this process shall be submitted to all other named parties and the NEFRPC staff in writing.

(7) All named parties who agree to participate in this process commit to a good faith effort to resolve problems or disputes.

(8) Any named party may withdraw from participation in the RDRP upon written notice to all other parties and the Northeast Florida Regional Planning Council staff.

Specific Authority 186.509 FS.

Law Implemented 186.509 FS.

History--New 7-5-94.

29D-6.004 Cost.

(1) The Northeast Florida Regional Planning Council shall be reimbursed for actual costs, both direct and indirect, associated with the implementation of this process.

(2) The costs of administration, situation assessment, settlement meetings, mediation or advisory arbitration shall be split equally between the parties or according to other agreed upon allocation.

Specific Authority 186.509 FS.

Law Implemented 186.509 FS.

History--New 7-5-94.

29D-6.005 Timeframes.

(1) The initial settlement meeting shall be scheduled and held within 30 days of the date of the initiation letter at a time and place convenient to the named parties.

(2) Additional settlement meetings, mediation or advisory decision-making shall be completed within forty-five (45) days of the date of conclusion of the initial settlement meeting.

(3) Where necessary to allow this process to be effectively carried out, named parties should address deferring or seeking stays of judicial or administrative proceedings.

(4) All timeframes specified in this rule may be shortened or extended by mutual agreement of the named parties.

Specific Authority 186.509 FS.

Law Implemented 186.509 FS.

History--New 7-5-94.

29D-6.006 Administrative Protocols.

(1) The Council is responsible for implementation of RDRP. Council staff shall serve as facilitator, if agreeable to the named parties, and shall perform the administrative procedures necessary to implement the processes set forth in this rule. A Council member(s) or Council staff may serve as mediator or arbitrator if agreeable to the named parties.

(2) Administrative duties provided by the Council staff may include: conducting pre-initiation meetings; administering procedures related to process initiation; conducting situation assessments; maintaining a list of qualified mediators; securing the services of mediators; arranging meetings; and invoicing.

Specific Authority 186.509 FS.

Law Implemented 186.509 FS.

History--New 7-5-94.

29D-6.007 Public Notice Records and Confidentiality.

(1) Applicable public notice and public records requirements shall be observed as required by Chapters 119, 120, 286 or other Florida statutes.

(2) Participants in this process agree by their participation that no comments, meeting records, or written or verbal offers of settlement shall be entered by them as evidence in subsequent judicial or administrative action.

(3) To the extent permitted by law, mediation under this process will be governed by the confidentiality provisions of Section 44.302(2), Florida Statutes.

Specific Authority 186.509 FS.

Law Implemented 186.509 FS.

History--New 7-5-94.

29D-6.008 Pre-initiation Meeting.

A jurisdiction, organization, group, or individual contemplating initiation of this process may request an informal pre-initiation meeting with Council staff in order to ascertain whether the potential dispute would be appropriate for this process.

Specific Authority 186.509 FS.

Law Implemented 186.509 FS.

History--New 7-5-94.

29D-6.009 Situation Assessment.

(1) A jurisdiction, organization, group, or individual may request that the RPC staff or other neutral party perform a situation assessment at any time, before or after initiation of the process.

(2) The situation assessment may involve examination of documents, interviews and/or assessment meetings, and shall recommend issues to be addressed, parties that may participate, appropriate resolution procedures and a proposed schedule.

(3) The situation assessment is intended to examine the nature of the dispute; identify affected and potential parties; and assist the parties to evaluate appropriate dispute resolution procedures.

(4) The situation assessment shall be performed by Council staff, unless the Council is a named party. In those cases where the Council is a named party, the situation assessment will be performed by a neutral agreeable to all the named parties.

Specific Authority 186.509 FS.

Law Implemented 186.509 FS.

History--New 7-5-94.

29D-6.010 Initiation of the Procedure.

(1) This process is initiated by an initiation letter from the representative of the governing body of a jurisdiction to the named parties involved in the dispute and to the NEFRPC staff. The initiation letter must be accompanied by a resolution of the governing body authorizing initiation or by a copy of a written authorization of a representative to initiate requests to use the RDRP.

(2) Such an initiation letter shall identify: the issue to be discussed; named parties to be involved in the dispute resolution process; the initiating party's representatives and others who will attend, and a brief history of the dispute indicating why it is appropriate for this process.

(3) Private interests may ask any jurisdiction to initiate the process.

(4) Named parties shall send a response letter to the NEFRPC staff, and all other parties confirming their willingness to participate in a settlement meeting within ten (10) calendar days of receipt of the initiation letter. This response shall include any additional issues and potential named parties the respondent wishes considered, as well as, a brief history of the dispute and description of the situation from the respondent's point of view.

(5) Upon receipt of a request the NEFRPC shall assess its interest in the case. If the NEFRPC is a named party or sees itself as a potential party, it shall notify the named parties of the nature of its interest and ascertain whether the parties desire an outside facilitator for the initial settlement meeting.

(6) The NEFRPC may not initiate the RDRP but may recommend that a potential dispute is suitable for this process and transmit its recommendation to potential parties, who may, at their discretion, initiate the RDRP.

(7) The NEFRPC staff shall schedule a meeting at the most convenient time within thirty (30) days of the date of the initiation request.

(8) Any dispute which arises from the intergovernmental review required by local government intergovernmental coordination element, or from inconsistencies between port master plans and local government comprehensive plan shall automatically be accepted for dispute resolution by the NEFRPC.

(9) In the event that a dispute involves jurisdictions under two or more regional planning councils, the process adopted by the region of the initiating jurisdiction shall govern, unless the named parties agree otherwise.

Specific Authority 186.509 FS.

Law Implemented 186.509 FS.

History--New 7-5-94.

29D-6.011 Settlement Meetings.

- (1) Settlement meetings shall, at a minimum, be attended by the named parties' representatives designated pursuant to Section 29D-6.003(3).
 - (2) Settlement meetings may be facilitated by a NEFRPC staff member or other neutral facilitator acceptable to the parties and shall be held at a time and place acceptable to the parties.
 - (3) At the settlement meeting, the parties shall consider adding named parties, consider guidelines for participation, identify the issues to be addressed, present their concerns and constraints, explore options for a solution, and seek agreement.
 - (4) The parties shall submit a settlement meeting report in accordance with 29D-6.015(4) of this process.
 - (5) If an agreed upon settlement meeting is not held or a settlement meeting produces no agreement to proceed to additional settlement meetings, mediation or advisory decision making, any party who has agreed to participate in this procedure may proceed to: a joint meeting of governing bodies pursuant to Ch. 164, F.S., litigation, administrative hearing or arbitration, as appropriate.
- Specific Authority 186.509 FS.
Law Implemented 186.509 FS.
History--New 7-5-94.

29D-6.012 Mediation.

- (1) If two or more of the named parties submit a request for mediation to the NEFRPC staff, the NEFRPC shall assist them to select and retain a mediator or the named parties may request that the NEFRPC select a mediator.
 - (2) All disputes shall be mediated by a mediator who understands Florida growth management issues, has mediation experience and is acceptable to the parties. Parties shall consider but not be limited to mediators who are on the Florida Growth Management Conflict Resolution Consortium rosters or any other mutually acceptable mediator. Mediators shall be guided by the Standards of Professional Conduct, Florida Rules of Civil Procedure, Rule 10, Part II, Section 020-150.
 - (3) The parties shall submit a mediation report in accordance with section 29D-6.015(4) of this process.
- Specific Authority 186.509 FS.
Law Implemented 186.509 FS.
History--New 7-5-94.

29D-6.013 Advisory Decision-making.

- (1) If two or more named parties submit a request for advisory decision making to the NEFRPC the NEFRPC shall assist the parties to select and retain an appropriate neutral or the parties may request the NEFRPC make the selection.
 - (2) All disputes shall be handled by a neutral who understands Florida growth management issues, has appropriate experience and is acceptable to the parties.
 - (3) The parties shall submit an advisory decision-making report in accordance with 29D-6.015(4) of this process at the conclusion.
- Specific Authority 186.509 FS.

Law Implemented 186.509 FS.
History--New 7-5-94.

29D-6.014 Settlement Agreements and Reports.

- (1) The form of all settlements reached through this process shall be determined by the named parties, and may include interlocal agreements, concurrent resolutions, memoranda of understanding, plan amendments, deed restrictions or other forms as appropriate.
- (2) Agreements signed by designated representatives shall be in the form of recommendations to formal bodies and subject to their formal approval.
- (3) Agreements may be reached by two or more named parties even if all of the named parties do not agree or do not sign a formal agreement if the agreement does not affect the rights of the other named parties that do not sign the agreement.
- (4) After settlement meetings, mediation, or advisory decision-making under this process, the named parties shall submit a joint report to the NEFRPC staff which shall, at a minimum, include:
 - (a) identification of the issues discussed and indicating which were resolved;
 - (b) a list of potentially affected or involved jurisdictions, organizations, groups, or individuals (including those which may not be named parties);
 - (c) a description of agreed upon next steps, if any, including measures for implementing agreements reached;
 - (d) a time frame for starting and ending informal negotiations, additional settlement meetings, mediation, advisory decision-making, joint meetings of elected bodies, administrative hearings or litigation; and
 - (e) any additional NEFRPC assistance requested.

Specific Authority 186.509 FS.
Law Implemented 186.509 FS.
History--New 7-5-94.

29D-6.015 Other Dispute Resolution Processes.

- (1) In addition to the RDRP under 186.509, Florida Statutes, parties may consider the applicability of other resolution processes within Florida Statutes, including: Intergovernmental Coordination Element, Section 163.3177(6)(h)1. & 2., F.S., Port Master Plans, Section 163.3178, F.S.; Community Residential Homes, Section 419.001(5), F.S.; Cross Acceptance Negotiation Process, Section 186.505(22), F.S.; Location of Spoil Sites, Section 380.27, F.S.; Administrative Procedures Act, Chapter 120, F.S.; Florida Governmental Cooperation Act, Chapter 164, F.S.; Mediation Alternatives to Judicial Action, Chapter 44, F.S.
- (2) When appropriate, parties may obtain a stay of judicial or administrative proceedings to provide time for RDRP negotiations.

Specific Authority 186.509 FS.
Law Implemented 186.509 FS.
History--New 7-5-94.