2021

UNIFIED LOCAL MITIGATION STRATEGY

Updated: May 2021

St. Lucie County

Department of Public Safety

Division of Emergency Management

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PROMULGATION STATEMENT

Submitted herein is the St. Lucie County Unified Local Mitigation Strategy (LMS), which serves as a roadmap for St. Lucie County partners to mitigate all hazards that may impact the county. The LMS supports the St. Lucie County Comprehensive Emergency Management Plan (CEMP) and supersedes any previous plan promulgated for this purpose. This plan establishes the framework defining the implementation and coordination of mitigation goals, objectives, and projects that will reduce the impact of hazards to the public, property, and the environment.

The LMS has been developed in support of the CEMP, following the guidance of the State of Florida Comprehensive Emergency Management Plan, the National Response Framework, the National Incident Management System, and FEMA's Comprehensive Preparedness Guide (CPG) 101 (v. 2.0) – Developing and Maintaining Emergency Operations Plans. The efficient and effective implementation of this plan is the responsibility of the Emergency Management Division, which is under the direction of the Public Safety Department. The Emergency Operations Manager and/or their designee reviews and revises the LMS per guidance from the LMS Working Group. A program of review and evaluation of this plan is essential to its overall effectiveness.

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

Ron Parrish

8-30-2021

Ron Parrish, MPA, EFO, Director,
Department of Public Safety

Date

EXECUTIVE SUMMARY

St. Lucie County is susceptible to a number of hazards including flooding, hurricanes, tornados, wildland fire, and severe thunderstorms – these being an abbreviated list. Florida is one of the most hazard prone states in the nation. In Florida, the goals of the Mitigation program are being achieved through the Unified Local Mitigation Strategy (LMS) and a comprehensive planning process that is the same across the board for all jurisdictions, special districts, and agencies from the private and public sectors that are members of the LMS Working Group. The LMS is a pre-disaster mitigation planning initiative of the Florida Division of Emergency Management (FDEM) and is intended to reduce disruption effects of natural, human caused, and technological disasters on the economic and social fabric of the community. As part of FEMA's National Mitigation Framework, pre-disaster mitigation is defined as "sustained action that reduces or eliminates long-term risk to people and property from hazards and their effects". This definition generally distinguishes between actions that have long-term and sustainable effects from those that are more closely associated with preparedness for, immediate response to, and short-term recovery from a specific hazard event.

The intent of the LMS is to focus on practices that have cumulative benefits over time and ensure that fewer of the state's citizens and communities are victims of disasters. One of the most important elements is the idea that the resulting mitigation practices are instituted prior to the disaster occurring.

The purpose of a unified comprehensive mitigation planning process is to update the St. Lucie County LMS to develop and continue an engaged approach and mitigate hazard risk to better protect the residents, visitors and businesses within St. Lucie County Whole Community from the effects of natural, technological, and human caused hazards. This plan serves as an ongoing process of existing LMS efforts, updates the previous plan to reflect current conditions, identifies and outlines strategies the County and participating jurisdictions will use to decrease vulnerability to all types of hazards.

As such, the Unified Local LMS is defined as a document with a comprehensive description of mitigation planning strategies, programs and projects that institute an engaged multi-jurisdictional multi-agency approach across horizontal and vertical levels of government, as well as other Public and Private sectors to hazard mitigation planning.

The LMS clearly defines mitigation strategies and implementation of mitigation projects identified by way of a Prioritized Project List (PPL), hazards and vulnerabilities risk assessment and outreach and education for the public. The planning effort has been conducted through coordinated, cooperative efforts of the local governments within St. Lucie County. Participation is defined by jurisdictional adoption and Working Group agency membership:

Status of Jurisdictions in St. Lucie County LMS	
Jurisdiction	**Status**
St. Lucie County	Adoption 2005, 2010, 2016
City of Port St. Lucie	Adoption 2005, 2010, 2016
City of Fort Pierce	Adoption 2005, 2010, 2016
Town of St. Lucie Village	Adoption 2010, 2016

This plan will be distributed to the jurisdictions and special districts within the County and all agency members of the LMS Working Group for consideration of adoption. Jurisdictions have one (1) year to adopt the LMS, as this occurs, copies of the adopted resolutions will be entered into Appendix F.
Jurisdictions and Special Districts includes the following:

1. City of Fort Pierce,
2. City of Port St. Lucie,
3. Fort Pierce Farms Water Control District,
4. Ft. Pierce Utility Authority,
5. North St. Lucie Water Control District,
6. Office of Congressman Brian Mast,
7. School Board of St. Lucie County,
8. SLC Property Appraiser,
9. SLC Sheriff's Office,
10. South Florida Water Management District,
11. St. Lucie County,
12. St. Lucie County Chamber of Commerce,
13. St. Lucie County Fire District,
14. St. Lucie Transportation Organization,
15. St. Lucie West Services District,
16. Town of St. Lucie Village,
17. Treasure Coast Regional Planning Council,

Adoption of this strategy will provide the following benefits to both County and municipal governmental entities:

- Compliance with Florida Administrative Code (F.A.C.), Administrative Rules Chapter 27P-6, requirements for the local Comprehensive Emergency Management Plans (CEMP) to identify problem areas and planning deficiencies relative to severe and repetitive weather hazards, and to identify pre- and post-disaster strategies for correcting and/or managing problems;
- Compliance with - FEMA's Disaster Mitigation Act of 2000 (DMA2K) and all updated planning guidance thus, sustaining eligibility for pre- and post-disaster State and federal funding programs such as the Pre-Disaster Mitigation (PDM) grant and the Hazard Mitigation Grant Program (HMGP);
- Credit from the National Flood Insurance Program's Community Rating System (CRS) Program for developing a Floodplain Management Program, which will help further reduce flood insurance premium rates for property owners;
- Access to FEMA's Flood Mitigation Assistance (FMA) Grant Program, which provides funding

for pre-disaster mitigation projects and activities;
- Identification and prioritization of projects for funding under the State of Florida's Residential Construction Mitigation Program (RCMP) to help reduce losses under from properties subject to repetitive flooding damages; and
- Eligibility for local government public safety offices to receive funding from the Emergency Management Preparedness and Assistance (EMPA) Grant Program.

Mitigation practices can be applied to strengthen homes so people and their belongings are better protected from hurricanes, tropical storms, and inland floods promoting faster return to normalcy after a disaster. Pre-disaster mitigation planning is used to identify and protect at-risk critical facilities such as hospitals, fire and police stations, water and wastewater treatment facilities, and other essential services facilities increasing operational recovery in the wake of a disaster. Mitigation planning allows communities to consider current and future land use and vulnerabilities of developed and undeveloped land as well as the risk to people and property with existing developments. The ultimate goal is consideration of potential damage to property in vulnerable areas and implementation of actions to reduce impacts thereby eliminating disruptions that disaster occurrences create in communities.

In the year 2000, the Federal Emergency Management Agency's (FEMA's) recognition of growing costs of response and recovery from disasters materialized in the DMA2K. DMA2K created a new Pre-Disaster Mitigation (PDM) program aimed at reducing the cost of disasters as well as risk through comprehensive planning before disasters occur.

DMA2K requires that all communities, tribes, and states have a FEMA approved hazard mitigation plan consistent with the DMA2K requirements in place to retain eligibility for PDM project funds and post-disaster Hazard Mitigation Grant Program (HMGP) funds.

The planning process for preparing the St. Lucie County LMS was based on DMA planning requirements and FEMA's associated guidance. The LMS describes an in-depth process in the following chapters, annexes and appendices:

1. Planning Process
2. Risk Assessment
3. Mitigation Strategy
4. Plan Maintenance

1.0 COMMUNITY OVERVIEW

St. Lucie County, the municipalities within it, districts, and public and private entities have engaged in mitigation planning since 1998 to make the population, neighborhoods, businesses and institutions of the community more resilient to the impacts of future disasters. The Working Group and LMS Coordinator have conducted a comprehensive and detailed evaluation of hazards and vulnerabilities that may impact the community. This is an all hazards approach from natural events to technological and human caused hazards to identify ways to make the communities of the planning area more resilient to their impacts.

St. Lucie County is located on Florida's east coast in south central Florida bordered by 21 miles of Atlantic coastline with two inhabited barrier islands. St. Lucie County's population in 2020 was estimated at 322,265, an increase of 12% from 287,749 in 2015.[1] Population is estimated to increase to 367,500 in 2030.[2] Respectively, the Bureau of Economic Business and Regulation reported 2020 population estimates for the City of Fort Pierce as 44,476 persons (2015; 42,119), the City of Port St. Lucie as 202,914 persons (2015; 174,132), and the Town of St. Lucie Village at 661 persons (2015; 597).

Table 1.1 illustrates municipal population growth from 2000 to 2020 with projections for the year-2030. The 2020 population estimates show a 12% increase from 2015 to 2020 countywide.

Table 1.1

St. Lucie County Population					
	2000	**2010**	**2015**	**2020**	**2030 projection**
Fort Pierce	37,516	41,590	42,119	44,476	N/A
Port St. Lucie	88,769	164,603	174,132	202,914	N/A
St. Lucie Village	647	590	597	661	N/A
Unincorporated (County	71,596	71,006	70,901	72,194	N/A
Total County Populatio	**198,528**	**277,789**	**287,749**	**320,245**	**367,500**

Source: Bureau of Economic Business and Regulation, April 1, 2020

St. Lucie County is located on the Atlantic along the south-central coast of Florida in the upper reaches of the South Florida geographic region. It is nearly rectangular in shape. At its widest points, the County measures 24 miles, north/south and 29 miles east/west. The County occupies a total of 572 square miles (358,460 acres) of which approximately 60 square miles (38,400 acres) are water and 515 square miles (330,020 acres) are land. The County comprises approximately 572 square miles, 480 square miles of which are unincorporated, the balance of the land area is located within the three (3) incorporated municipalities; Fort Pierce (14.7 square miles), Port St. Lucie (120 square miles), and St. Lucie Village (approximately 1 square mile).

St. Lucie County has an ocean access inlet, Fort Pierce Inlet. The Inlet is a manmade federal inlet that is St. Lucie County's only point of access to the Atlantic Ocean-- it separates the barrier islands of North and South Hutchinson Island. The inlet connects the Atlantic Ocean to the Indian River Lagoon.

Table 1.2: Community Characteristics - St. Lucie County.

City	Location	Urban/Rural	Community Character (Residential/Working/ Retirement)	Economic Base (Industrial/Agricultural/ Retirement/Business)
St. Lucie Village	Coastal	Semi-Urban	Residential/Retirement	Residential/Retirement
Fort Pierce	Coastal	Urban	Residential/Working	Residential/Industrial/ Business
Port St. Lucie	Inland	Urban	Residential/Working/ Retirement	Residential/Business
Unincorporated St. Lucie County	Coastal/Island	Urban/Rural	Residential/Working/ Retirement	Industrial/Agricultural/ Business

Source: St. Lucie County Grants / Disaster Recovery

Other significant population characteristics include age, race, income, and special needs. The median age of St. Lucie County residents is 45.1. Twenty-five percent of the County is over the age of 65. This is important to know as the senior populations may require additional or special assistance during a hazard event.

Cultural differences can influence an individual's response to an event, it is important to define the County's population in terms of ethnicity. Twenty percent of St. Lucie County's residents are Hispanic or Latino, while 21.4% are Black or African American.

Languages

Nearly 23.4% of residents speak a language other than English at home, a 3% increase from the 2015 census data of 20.3%. Language is an important consideration when developing preparedness materials and communicating evacuation and safety information for residents.

Income

The median household income in St. Lucie County is $52,322 with per capita income at $27,121 in 2019, which is below the State of Florida average of $31,619. In the County, 10.5% of all ages reported are considered to live below the poverty level.

Employment

The Chambers of Commerce serves businesses in St. Lucie County from a central location in St. Lucie West. In 2018, the top three industries in St. Lucie County were the following:

- Education and health services
- Trade, transportation and utilities
- Government

Table 1.3

Major Industry Areas of Employment in St. Lucie County								
	2016		2017		2018			
Industry	Labor Force	Percent	Labor Force	Percent	Labor Force	Percent	Change	Percent
Agriculture, natural resources & mining	3,002	2.7	3,038	2.6	2,910	2.4	-92	-3.1
Construction	6,936	6.2	7,572	6.5	8,241	6.7	1,305	18.8
Education and health services	16,771	14.9	17,266	14.9	17,892	14.5	1,121	6.7
Financial activities	10,555	9.4	11,279	9.7	10,010	9.7	1,455	13.8
Government	13,802	12.3	14,169	12.2	14,428	11.7	626	4.5
Information	942	0.8	913	0.8	1,019	0.8	77	8.2
Leisure and hospitality	10,584	9.4	11,172	9.6	12,163	9.9	1,579	14.9
Maufacturing	3,777	3.4	4,008	3.5	4,217	3.4	440	11.7
Other Services	9,633	8.6	9,489	8.2	10,121	8.2	488	5.1
Professional and business services	6,825	6.1	6,990	6.0	7,145	5.8	320	5
Retail Trade	13,686	12.2	13,740	11.8	14,216	11.5	530	3.9
Trade, transportation, and utilities	12,269	10.9	13,037	11.2	15,645	12.7	3,376	27.5
Whole Sale	3,716	3.3	3,392	2.9	3,395	2.8	-321	-8.64

Source: US Department of Commerce- Bureau of Economic Analysis

2.0 PLANNING PROCESS

In 1998, St. Lucie County, along with all the municipalities, the local business community, and non-profit organizations such as the American Red Cross, joined together to develop a Unified Local Mitigation Strategy (LMS) that would benefit the St. Lucie County Whole Community through a consistent planning process across the board for jurisdictions, special districts, and private and public sector agencies. The St. Lucie County LMS Working Group, the policy body for this program, and the St. Lucie County Emergency Operations Manager have had the responsibility for developing the LMS. This group focused on achieving two key results:

- creation of a long-term LMS planning process; and
- development of the LMS document to coincide with a prioritized mitigation projects list (PPL).

The original St. Lucie County LMS was developed, approved and adopted in 1998 through stakeholder group engagement and community participation. The 2004 comprehensive update also utilized the stakeholders groups to build on Hazards and Vulnerability sections of the Plan and was approved and adopted. The 2010 update was completed and distributed for public comment to jurisdictional city halls, then reviewed and approved by the St. Lucie County LMS Working Group. The St. Lucie County Department of Public Safety, Division of Emergency Management, completed the comprehensive 2016 update in partnership with the Treasure Coast Regional Planning Council, Emergency Management staff. The updated draft plan will be distributed to jurisdictional city halls, libraries and County Administration offices to ensure access for a public review and comment period.

From 2016 through 2021, the LMS Working Group developed its membership and programs to align the planning process for efficient and effective management of flood awareness programs, project evaluation and prioritization, and alignment of hazard assessment and strategies to reduce risk to the St. Lucie Whole Community. In 2016, the LMS Working Group through its Steering Committee drafted a set of By-Laws to govern the Working Group's directions in setting up meeting dates, what constitutes a member agency's good standing, and how member agencies could vote for project prioritization during times of updating the Project Prioritized List (PPL). In 2017, the Working Group decided to leave the concept of a Steering Committee, as the Working Group realized that it did not have a large enough body to have a standing Steering Committee. The By-Laws were modified to reflect that the LMS Working Group would govern itself through a set of By-Laws, a Chair, a Vice-Chair, and the LMS Coordinator. No Steering Committee was needed to guide the LMS Working Group in developing its programs and plans.

In 2018 through 2019, the By-Laws were developed during Working Group meetings to better define what constitutes a member agency's good standing to vote for project evaluation, scoring, and ranking in the PPL. Membership of the LMS Working Group also increased from 25 to 44 member agencies from 2016 through 2021. In conformance with FEMA's Comprehensive Planning Guide (CPG) 101 and Florida Administrative Code (FAC) 27P-22, the LMS Working Group's By-Laws reflected directions for Working Group meetings to conduct the following:

1. Elect a Chair and Vice Chair at least once a year
2. Set up meetings at least on a quarterly basis
3. All meetings are properly announced to the public via a Press Release

4. Public Comments are listed in every meeting agenda and the Public is invited to attend meetings
5. The Working Group evaluates new and existing projects at least once a year

With a simple majority establishing quorum in Working Group meetings, the LMS Working Group created flexibility in setting up directions and guidance in the development of the PPL, support of projects submitted to State and FEMA for Hazard Mitigation Grant Program (HMGP) through letters of support, and setting up priority of projects to be considered for funding.

The LMS Working Group enhanced its membership and working components with the inclusion of several flooding awareness programs. In 2018, under the auspices of the St. Lucie County Emergency Management Division, St. Lucie County Community Rating System (CRS) program updates were included in Working Group meetings to inform members of development and progress made by the CRS program, as well as include Working Group members in these programs, if needed. An outcome of the endeavor was the formation of the St. Lucie CRS User Group, an independent group from the LMS Working Group composed of the St. Lucie County CRS Coordinator and CRS coordinators from the cities of Port St. Lucie and Fort Pierce. All three (3) coordinators are members of the LMS Working Group but decided to not become a sub-committee of the LMS Working Group. The setup was intentional to allow the CRS User Group to form new ideas and strategies that would benefit all three (3) jurisdictions under the CRS guidelines, align flood awareness strategies with that of the LMS, and reduce duplication of efforts in bringing flood awareness to the Whole Community. The CRS Coordinator would liaise with the LMS Working Group to report new developments and strategies established by the three (3) jurisdictions and request further support from the LMS Working Group, if needed.

In 2019, the Chair of the LMS Working Group requested the formation of the Program for Public Information (PPI) Sub-Committee to work on a PPI Plan that would align the marketing strategies of the CRS programs for St. Lucie County, Fort Pierce and Port St. Lucie. The PPI plan would assist the three (3) jurisdictions in avoiding the duplication of efforts and plans, as well as resources. The PPI Sub-Committee is chaired by the CRS Coordinator from Fort Pierce. Other members of the Sub-Committee include representatives from private insurance companies, as well as real estate agencies. The Sub-Committee met several times to develop and review the DRAFT PPI plan. The plan was completed and submitted to the LMS Working Group for adoption in the 2021 Local Mitigation Strategy.

In addition to the PPI Plan, the Floods Hazard Specific plan and the Tsunami plan were incorporated to the 2021 LMS. The unity of these plans would gain points for the three (3) jurisdictions in the CRS program, as well as show a unified planning effort in Mitigation for all member agencies of the LMS Working Group. According to the CRS Coordinators Manual (2017), the components listed previously along with the LMS would constitute as a Floodplain Management Plan for the jurisdictions.

In 2018 through 2019, the Chair of the LMS Working Group requested the formation of the Scoring Review Sub-Committee to review and revise the scoring process of new projects that would be ranked in the Project Priority List (PPL). The Sub-Committee reviewed the scoring sheet and discussed the merits of adding weight points to areas in projects to best reflect the intent and logic behind the prioritization of projects for the St. Lucie Whole Community. The Sub-Committee was headed by the representative from the St. Lucie School District, who is also a member of the LMS Working Group. The Sub-Committee completed its work and a new scoring sheet was adopted by the LMS Working Group. The application of

the projects was also reviewed and adjustments were made that reflect a consistent intent of project to goals and objectives of the LMS, strategies and plans, and how the plans are incorporated in the jurisdiction's capital improvement plans.

In its development and preparation for the 5-year State review, the Chair of the LMS Working Group requested the formation of sub-committees to review and revise the 2016 LMS. As such, the formation of the Hazard-Vulnerability and Review Sub-Committees were made in 2020. In addition, the Emergency Management Division hired a planning consultant to assist in the development of the new edition of the LMS. Members of the Division coordinated access of the DRAFT LMS to members of the LMS Working Group for review through the Emergency Operations Center's File Transfer Protocol (FTP) site. The Hazard Vulnerability Sub-Committee reviewed the Chapter of the LMS on Hazard Identification, Vulnerability, and Risk, and the Review Sub-Committee reviewed the rest of the LMS, specifically areas on planning process, community profile, and scoring process. Hazard Vulnerability Sub-Committee also reviewed and developed a Threat Assessment, showing the outcomes of the hazards that impact St. Lucie and which ones are considered the highest threats due to risk and historical basis.

Through the enhanced measures aforementioned, the St. Lucie Whole Community is expected to have reduced impacts to the identified hazards presented in the LMS and greatly minimize its community vulnerabilities.

Due to the COVID-19 pandemic in 2020, the planning process of the review and revision of the LMS was stalled. The process was immediately picked up in 2021 and review timelines were shortened to obtain a comprehensive process that included the public. The DRAFT LMS was made available on the www.stlucieco.org/eoc site for public comment. The 2021 DRAFT LMS was presented to the LMS Working Group, and a Public Comment meeting segment was included in every meeting made by the Working Group and Sub-Committees. Modifications of the LMS were made as well as updates of information relevant to the St. Lucie Whole Community.

The planning process used to develop and update the St. Lucie County LMS has been consistent across jurisdictions, special districts, and private and public sector agencies, since the promulgation and adoption of the 2016 LMS. The cities of Fort Pierce and Port St. Lucie, as well as all other member agencies of the Working Group have implemented the goals, objectives, and strategies developed in the LMS and Working Group meetings within their internal program and planning processes to obtain results. The following is a description of such process:

- The 2016 LMS has been presented in the St. Lucie County website to obtain public comment: https://www.stlucieco.gov/departments-services/a-z/public-safety/disaster-preparedness/local-mitigation-strategy
- The LMS Coordinator has convened members of the LMS Working Group to oversee the LMS update process and update the PPL.
- The Working Group has met at least on a Quarterly basis to discuss mitigation initiatives, modifications to the Working Group composition, update on projects in the PPL that received funding, announcements of new funding, and developments in mitigation measures (e.g., CRS updates, resiliency program initiatives, and changes in development of project and program implementation).

- The LMS Working Group included a *Public Comment* section in the agenda of every Working Group meeting since 2017 to include the public in all discussions. This is a consistent process with meetings of the St. Lucie County Board of County Commission (BOCC).
- All LMS Working Group meetings have been publicly announced. The public has been invited to all LMS Working Group general meetings and Sub-Committee meetings to insure engagement of new developments and changes to the LMS and mitigation strategies, projects, and updates.
- The LMS Working Group Chair under recommendation from the LMS Coordinator has convened the following subcommittees from the Working Group to oversee the review and update of the LMS :
  1. Scoring Review Sub-Committee
  2. Hazards Vulnerability Review Sub-Committee
  3. Review Sub-Committee
  4. Program for Public Information (PPI) Sub-Committee

- Working Group members have implemented projects from the PPL in their jurisdictions' and agencies' planning and project processes; thus, ensuring that LMS goals, objectives, plans and program strategies are incorporated in plans, programs, project management within their jurisdictions, special districts and private and public sector agencies. This process has guaranteed that the St. Lucie Whole Community benefits from the mitigation efforts to reduce risks against all hazards and threats.
- The Working Group has reviewed the PPL at least annually and updated the status of all projects.
- The Emergency Operations Manager through the Division of Emergency Management and the Public Safety Department has maintained the PPL and created a historical "completed and deleted" list separate from the active 2020 PPL to keep track of progress made to the St. Lucie County Whole Community through the implementation or completion of projects. Projects that no longer apply to the mission of the LMS or that no longer can benefit communities have been removed or incorporated into other projects.
- A period to join the LMS Working Group has been implemented every year and solicitations to agencies, jurisdictions, special districts, and private and public sector agencies have been made. A major result has been the increase of Working Group membership since 2016.
- A development of the Working Group By-Laws was made to ensure efficiency and effectiveness in the Working Group's process of updating the LMS and to ensure flexibility in being able to meet during emergencies and as needed to include new projects should funding become available.
- Working Group members have submitted new and existing projects for evaluation, scoring and ranking in the PPL.
- Working Group members have evaluated projects at least once a year. Projects can be submitted at any time but within a 30-day period, the Working Group's Scoring Sub-Committee has met as needed to complete the evaluation of all projects. As such the Working Group has adopted a new PPL at least once a year.
- To reduce duplication of efforts, funding, and time, Working Group members have met

independent from Working Group meetings to work on goals, objectives, and strategies, such as the creation of CRS User Group, which has worked on developing the CRS programs through joint efforts in tasks for the jurisdictions of St. Lucie County, City of Port St. Lucie, City of Fort Pierce who participate in such program.

- The following documents were reviewed as the comprehensive updated is conducted:

- St. Lucie County Comprehensive Plan (Future Land Use, Transportation, Infrastructure, Conservation, Coastal Management, Intergovernmental Coordination, Housing, Historical and Cultural, and Capital Improvements);
- Fort Pierce Comprehensive Growth Management Plan (Coastal Management, Conservation, Capital Improvements, Future Land Use, Housing, Infrastructure, Intergovernmental Coordination, Port, and Recreation and Open Space);
- Port St. Lucie Comprehensive Plan (Coastal Management, Conservation, Capital Improvements, Future Land Use, Housing, Infrastructure, Intergovernmental Coordination, Port, and Recreation and Open Space);
- St. Lucie County Land Development Code;
- St. Lucie County CEMP;
- St. Lucie County CRS current jurisdictional ratings;
- St. Lucie County Continuity of Operations Plan (COOP);
- 2020 LMS Project Prioritized List.
  - The DRAFT 2021 LMS was presented at the June, 2021 LMS Working Group meeting and once the Florida Division of Emergency Management (FDEM) provides a Letter of Compliance, all Working Group members who represent jurisdictions, special districts, as well as private and public sector agencies, will be requested to adopt the LMS as their Plan for mitigation goals, objectives, strategies and projects.

For further information on the unified planning process of the LMS see Chapter 4 – Mitigation Strategy, Appendix D – Stakeholder Participation and Appendix G – Tables and Figures.

2.1 OVERVIEW OF THE LMS WORKING GROUP

The LMS Working Group must have broad representation to be effective. It embraces all stakeholder groups in the County from both the public and private sectors. When the St. Lucie County LMS Working Group was created, representatives were chosen so that all affected groups would have representation in the St. Lucie Whole Community planning process and in the ongoing implementation of the LMS strategies within their jurisdiction's project and program processes. The Working Group interacts directly with the Board of County Commissioners, other respective Boards and Councils from other jurisdictions, private and public sectors, and the public.

Members of the LMS Working Group serve as liaisons to their respective divisions, departments, and organizations that implement and promote mitigation programs and projects. The LMS serves as the unified mitigation document that sets strategies, goals, and objectives for all jurisdictions, agencies, and organizations who adopt the LMS in resolutions, letters of support, and other organizational systems used to adopt the LMS as an authoritative document. As such, the LMS is cited as a supportive document in major plans and policies used for the growth and planning development of the St. Lucie Whole Community, which include but are not limited to:

1. Comprehensive Plans
2. Capital Improvement Plans
3. Growth Management Plans
4. Comprehensive Emergency Management Plans (CEMP)
5. Continuity of Operations Plans (COOP)
6. Floods Hazards Specific Plans

Each of the representatives in the LMS Working Group serves an important position within their jurisdictions or private sector organization they serve. Many are department directors and administrators understand how to implement the LMS strategies, goals and objectives within their organization's plans and program administration. Working Group members use the LMS to support and enhance mitigation programs like the Community Rating System (CRS), project works, and resiliency projects. Jurisdictions like the City of Port St. Lucie and Fort Pierce often partner with St. Lucie County departments and divisions to work on mitigation projects that benefit the entire community. Using similar planning processes within jurisdictions, Working Group members reference the LMS as the unified mitigation strategy for the St. Lucie Whole Community, as it meets local, State, and Federal criteria in funding sources and project management.

The St. Lucie County Department of Public Safety, Director provides direct staff support from the Division of Emergency Management to the working group and its Chairperson. The Emergency Operations Manager serves as the designated LMS Coordinator and is the liaison to the Florida Division of Emergency Management (FDEM), and the Federal Emergency Management Agency (FEMA).

For resolutions and policies on the LMS see Appendix F – Resolutions. Page six of the Resolutions attachment offers more information relating to the County's jurisdictions.

2.2 ADMINISTRATIVE - LEAD RESPONSIBILITY

The Department of Public Safety, Division of Emergency Management is the lead agency responsible for ensuring the implementation of the LMS program. The individual having lead responsibility is the Emergency Operations Coordinator who serves as the LMS Coordinator to the Chair of the LMS Working Group, Stakeholder Groups, communities and the local governments this LMS serves.

Responsibilities of the LMS Coordinator will:

- Serve as the hazard mitigation advocate at staff level;
- Keep current with all changes in LMS/DMA2K programs and communicates those changes to the LMS Working Group;
- Interact frequently with the Florida Division of Emergency Management;
- Serve as the LMS County Liaison;
- Work closely with the LMS Chairperson;
- Organize meetings of the LMS Working Group;
- Coordinate with and contact all members of the Working Group on a regular basis;
- Maintain avenues of communication with the general public;
- Set up and maintain files documenting progress of LMS program;

- Update the PPL as needed; and
- Conduct the comprehensive 5-year LMS update.

2.3 ADMINISTRATIVE - SUPPORT RESPONSIBILITY

Successfully implementing the LMS is not the sole responsibility of the Department of Public Safety, Division of Emergency Management; it is the responsibility of all participating organizations from both the public and private sectors to fulfill the administrative responsibilities in a number of ways including:

- Promote and educate others about the significance of local hazard mitigation;
- Interact and coordinate frequently with the LMS Coordinator;
- Manage mitigation projects or activities;
- Provide assistance to other organizations so they can implement their mitigation projects or activities;
- Disseminate hazard mitigation-related information to constituents;
- Document the progress of one's organization's hazard mitigation activities; and
- Make available to LMS Coordinator new data and information relevant to the LMS process.

An example of providing support to other organizations could involve assisting in an all-hazard public awareness/education program. Other participating public organizations and even homeowner associations should serve in a support role to publicize and disseminate the program information generated to improve public awareness and program education and attend educational workshops, seminars and Working Group meetings.

2.4 LMS COMPOSITION

The St. Lucie County LMS Working Group oversees the development and implementation of the St. Lucie LMS process. This group is comprised of county and municipal partners that prepare and promote local mitigation strategies and projects to reduce long-term risk to like and property from natural, technological and human caused disasters. The Working Group is broad to more equitably represent the stakeholder groups present in St. Lucie County. Occasionally a seat will become vacant. In this case, the LMS Coordinator shall coordinate with the organization to invite representation.

The Working Group serves as the policy development body for the LMS program. The role of the Working Group is to advise and assist in the formulation, implementation, and administration. The Working Group shall represent the diverse interests found in St. Lucie County. Below is the list of current working group members.

Table 2.1: LMS Working Group Roster

Agency	Department/Division	Work Title	Primary, Secondary or Tertiary
LMS Officers:			
St. Lucie County	**Public Works**	**Chair / Assistant Director**	**Primary**

Agency	Department/Division	Work Title	Primary, Secondary or Tertiary
School Board of St. Lucie County		**Vice Chair / Executive Director of Growth Management**	**Primary**
St. Lucie County	**Public Safety Department**	**LMS Coordinator / Emergency Operations Manager**	**Primary**
American Red Cross		Disaster Program Manager	Primary
Cleveland Clinic-Martin Health (CCMH)		Senior Manager, Emergency Management	Primary
		Director, Protective Services	Secondary
City of Fort Pierce			
	Stormwater Division	Stormwater Engineer Manager	Primary
		Stormwater Assistant	Secondary
	Building Department	CRS Coordinator	Primary
		Deputy Building Official	Secondary
	Engineering Department	City Engineer	Secondary
		Assistant City Engineer	Primary
	Planning Department	Planner	Primary
		Planning Director	Secondary
City of Port St. Lucie			
	Public Works Department	Deputy Director	Primary
	Utilities Systems	Professional Engineer-Capital Improvement	Primary
		Safety and Training Coordinator	Secondary
		Manager-Electrical-Maintenance & Safety	Primary
	Emergency Management	Emergency Management Administrator	Primary
		Emergency Operations and Project Assistant	Secondary
Council on Aging of St. Lucie Inc. Community Transit		Transit Vehicle Mnt. and Security Director	Primary
Florida Atlantic University		Director of Emergency Management	Primary
		Emergency Management Coordinator	Secondary
		Emergency Management Technical Paraprofessional	Tertiary
Florida Department of Health-St. Lucie County		Emergency Preparedness Coordinator	Primary
		Environmental Health Manager	Secondary
Florida Forest Service		Mitigation Specialist	Primary
		Supervisor	Secondary

Agency	Department/Division	Work Title	Primary, Secondary or Tertiary
		District Manager	Tertiary
Florida Highway Patrol		District Commander Troop L-Fort Pierce	Primary
		FHP Patrol Operations Lieutenant	Secondary
Florida Power and Light		Environmental Services Director	Primary
Fort Pierce Farms Water Control District		Assistant District Engineer	Primary
Fort Pierce Housing Authority		Interim Executive Director	Primary
Fort Pierce Police Department		Acting Deputy Chief	Primary
		Deputy Chief	Secondary
		Grant Coordinator	Tertiary
Fort Pierce Utilities Authority		Director of Electric and Gas Systems	Primary
		EOC Liaison	Secondary
Indian River State College		Assistant Dean of Facilities & Sustainability	Primary
		Physical Plant Supervisor	Secondary
North St. Lucie County Water Control District		Assistant District Engineer	Primary
Office of Congressman Brian Mast		Constituent Service Representative	Primary
		Outreach Coordinator	Secondary
Port St. Lucie Public Works Department		Manager – Surveying and Mapping	Primary
SAFER St. Lucie		CEO/President	Primary
School Board of St. Lucie County		Sr. Project Manager	Secondary
South Florida Water Management District		Regional Representative	Primary
St. Lucie County	Administration	Deputy County Administrator	Primary
		Deputy County Administrator	Secondary
		County Administrator	Tertiary
	Community Services Department	Housing Manager	Primary
	Environmental Resources Department	Environmental Resources Director	Primary
		Environmental Resources Assistant Director	Secondary
	Legislative Affairs	Grants Coordinator - Legislative Affairs	Primary
		Legislative Affairs Director	Secondary
		Executive Aide to the County Administrator	Tertiary

Agency	Department/Division	Work Title	Primary, Secondary or Tertiary
	Mosquito Control	Impoundment Supervisor	Primary
		Mosquito Control Manager	Secondary
		Interim Director	Tertiary
	Parks and Recreation Department	Parks & Special Facilities Manager	Primary
	Planning and Development Services	Planning And Dev. Svcs. Dir.	Primary
		Senior Planner	Secondary
	Public Safety Department	Emergency Management Safety Planner	Secondary
		Public Safety Assistant Director	Tertiary
	Public Works	Public Works Director	Primary
		County Engineer	Secondary
	Transportation Planning Organization	Executive Director	Primary
		Transportation Systems Manager	Secondary
		Transit Program Manager	Tertiary
	Utilities Department	Director	Primary
	Water Quality Division	Division Director	Primary
		Stormwater Water Program Coordinator	Secondary
		Engineer Intern	Tertiary
St. Lucie County Fire District		Chief	Primary
St. Lucie County Sheriff's Office		Fleet and Maintenance Facilitator	Primary
		Captain-Patrol Operations Division	Secondary
St. Lucie West Services District		District Manager	Primary
		Public Works Director/Assistant District Manager	Secondary
The Inner Truth Project		Executive Director	Primary
Town of St. Lucie Village		Mayor	Primary
Treasure Coast Food Bank		Chief Operations Officer	Primary
		Community/Disaster Coordinator	Secondary
Treasure Coast Regional Planning Council		Emergency Programs Director	Primary
		Executive Director	Secondary

One primary representative and one alternate or secondary point of contact, along with an optional tertiary point of contact, are represented by the stakeholder groups above. The representative

membership will be re-affirmed annually during a designated Working Group meeting through a self-selection/voluntary basis. The annual re-affirmation of the membership is submitted to the FDEM with the January annual LMS report. The Working Group follows its approved By-Laws which is provided in Appendix D. Participating municipalities, agencies, and districts Working Group members are required to attend Working Group meetings, provide input and technical information to the planning process (if available), and disseminate information to others within the represented sector.

The Working Group Chair is authorized to establish ad-hoc subcommittees as needed to further the goals and objectives of the LMS. These subcommittees can be formed to address special issues and can be disbanded once an issue has been properly addressed. Subcommittee members may not be Working Group members but may be any individual able to provide special expertise and knowledge about specific concerns addressed in the LMS.

The LMS has two standing sub-committees, but has convened sub-committees for the purposes of assessing the LMS, scoring project process, and to review the 2021 LMS:

- Hazard Vulnerability Review Sub-Committee
- Review Sub-Committee

In the event of restructuring that duly adds, deletes, or merges jurisdictions within the County, the LMS will appropriately adjust its voting member rolls and other pertinent data in reference to the altered jurisdiction(s).

2.5 PUBLIC PARTICIPATION PROCESS

St. Lucie County seeks to involve a diverse group of individuals and organizations in planning mitigation activities within the County for natural, technological, and human caused hazards. This LMS intends to maintain a broad decision-making body (Working Group) to develop mitigation projects and update the Plan continuously. The St. Lucie County LMS employs multiple methods of involving the jurisdictions, organizations, businesses, and citizens of St. Lucie County to ensure that full participation in the decision-making process. The Working Group strongly encourages public participation in the review and comment periods when updates to the Plan are released. For each quarterly meeting press releases are issued and the information is posted on St. Lucie County website for public participation. The LMS Coordinator also aids in education and outreach to the public by information dissemination through the County calendar and website that has electronic form for submission of public comment which will be monitored by the LMS Coordinator and all comments received will be delivered to the Working Group. The Working Group seeks to enhance and expand opportunities for public involvement.

2.6 COMMUNITY ORGANIZATIONS

St. Lucie has a wide range of Community organizations including faith-based, Chambers of Commerce, the local historical society and youth organizations. These groups represent diverse interests within the community and provide vital services as well. Many services provided by St. Lucie County's community organizations can help to achieve the goals of hazard mitigation identified in this mitigation strategy. The following lists provide information on services provided by organizations that work within St. Lucie

County to reduce the risks posed by disasters.

- **University of Florida/St. Lucie County Cooperative Extension -** The St. Lucie County Cooperative Extension actively promotes hazard mitigation in St. Lucie County through more than a dozen programs.

- **Florida Power & Light Co. (FPL) -** Each year, FPL produces a booklet on the emergency plan for the St. Lucie Nuclear Power Plant on Hutchinson Island. The booklet includes evacuation maps and information for residents in St. Lucie and Martin counties. FPL mails the booklet to households who would be affected by a plant emergency.

- **United Way of St. Lucie County** - The United Way of St. Lucie County has developed and implemented volunteer reception center. Following disasters, the County can open volunteer reception centers where volunteers are registered.

2.7 COMMUNITY STAKEHOLDER GROUPS

Community stakeholder groups are any community group or organization with an interest in reducing the risks posed by natural hazards in St. Lucie County. The LMS Working Group, by reviewing 17 Emergency Support Functions identified key community stakeholder groups and invited each to attend LMS Working Group meetings. The LMS Coordinator also made a presentation regarding the LMS to the Property Homeowners Association Committee, a committee comprised of the directors of homeowner associations throughout the County. Invitations to attend LMS Working Group meetings were extended at the Homeowners Association Committee meeting. In an effort to develop a mitigation planning process that is community based and focused on creating disaster-resilient communities in St. Lucie County, community stakeholder groups are invited to participate. All meetings of the LMS Working Group are publicly noticed.

2. 8 DOCUMENTATION

Following each meeting, a summary is prepared detailing how solicitation was completed for that meeting along with any comments and suggestions made by the public and/or community stakeholder groups. As per local, state and federal records retention requirements, for each meeting, the LMS Coordinator maintains copies of meeting summaries, attendance rosters, public invitations, public comments and input, and all other documents associated with Working Group meetings and workshops at the St. Lucie County Division of Emergency Management. Public comments are located in Appendix D.

In order to invite and promote the opportunity for broad participation, meeting notices and agendas are posted through some combination of the following: newspaper ads or public service announcements, postings on County and municipal websites, announcements on the County's TV station (Channel 20), postings in County and municipal newsletters and calendars, and emails to previous participants. The procedures for invitations are documented, along with comments in the meeting summaries located in Appendix D. The various invitation notices are to ensure the continuation of public participation in the LMS update process and other activities in the future.

2.9 EXISTING PLANNING DOCUMENTS

During the planning process, the LMS Working Group examined relevant planning documents that could significantly inform the revision of the LMS. They include:

- **St. Lucie County Comprehensive Plan -** The Comprehensive Plan serves not only as a blueprint for St. Lucie County's future, but also as the County's policy document. It defines County positions as they relate to development and redevelopment. The Comprehensive Plan contains the nine required plan elements, as set out in Section 163.3161, F.S. They include Conservation, Coastal Management, Infrastructure (i.e., potable water, sanitary sewer, storm-water management, solid waste, and natural aquifer recharge), Future Land Use, Housing, Recreation and Open Space, Transportation, Intergovernmental Coordination, and Capital Improvement. The issue of hazards is dealt with in five of the nine plan elements. Natural hazards, primarily flooding, hurricanes, drought, and beach erosion, are the focus of the Comprehensive Plan. Technological-type hazards such as aquifer contamination, wellfield contamination, and hazardous materials/waste accidents are addressed in several elements.
    - St. Lucie County Land Development Code;
    - St. Lucie County CEMP;
    - St. Lucie County CRS current jurisdictional ratings;
    - St. Lucie County Continuity of Operations Plan (COOP);
    - 2016 LMS Project Prioritized List

- **St. Lucie County Comprehensive Emergency Management Plan (CEMP) -** The Board of County Commissioners has an adopted CEMP. It is an operations-oriented document that establishes the framework for effective management by the County during emergencies and disasters. The CEMP is administered by the DPS and is updated and maintained by the Emergency Operations Manager. The CEMP addresses evacuation in terms of local and regional evacuation, public shelter, post-disaster response and recovery, rapid deployment of resources, communications and warning systems, training exercises, and agency responsibilities.

- **Fort Pierce Comprehensive Plan**
  (Coastal Management, Conservation, Capital Improvements, Future Land Use, Housing, Infrastructure, Intergovernmental Coordination, Port, and Recreation and Open Space);

- **Port St. Lucie Comprehensive Plan**
  (Coastal Management, Conservation, Capital Improvements, Future Land Use, Housing, Infrastructure, Intergovernmental Coordination, Port, and Recreation and Open Space);

2.10 HISTORIC AND CULTURAL RESOURCES

According to the National Register of Historic Places, there are sixteen (16) designated places within St. Lucie County. Designated places include:

- Arcade Building, Fort Pierce
- Captain Hammond House, White City

- Casa Caprona, Fort Pierce
- Cresthaven, Fort Pierce
- Fort Pierce Old Post Office, Fort Pierce
- Fort Pierce Site, Fort Pierce,
- Immokolee, Fort Pierce
- Jules Frere House, Fort Pierce
- Moore's Creek Bridge, Fort Pierce
- Old Fort Pierce City Hall, Fort Pierce
- Old St. Anastasia Catholic School, Fort Pierce
- St. Lucie High School, Fort Pierce
- Sunrise Theater, Fort Pierce
- Urca de Lima Shipwreck, Fort Pierce
- St. Lucie Village Historic District, St. Lucie Village
- Zora Neale Hurston House, Fort Pierce

Cultural events and festivals in St. Lucie County include the Fort Pierce Friday Fest, the Rainbow Festival, Seafood and Fishing Frenzy, the St. Lucie County Fair and St. Lucie Water Fest, Fort Pierce Farmers Market and others. The City of Fort Pierce currently participates in the Main Street program through two events: Fort Pierce Main Street and Lincoln Park Main Street.

2.11 CRITICAL FACILITIES

The LMS Working Group developed and adopted a formal definition for the term "critical facility." According to the adopted definition, "critical facilities comprise all public and private facilities deemed by a community to be mission critical and essential for delivery of vital services, protection of special populations and the provision of other services of importance for that community." Critical facilities include: hospitals, Assisted Living Facilities (ALF), nursing homes and medical facilities, emergency operation centers (EOCs), key grocery stores, fuel dispensing stations, newspaper facilities, radio broadcasting facilities, Florida Division of Forestry offices, fire stations, law enforcement offices, schools, shelters, government offices, funeral homes, power generating plants, water treatment plants, waste water treatment plants, major water, storm-water, flood, and water control structures, airports, railways, port facilities, roadways classified as evacuation routes significant intersections and others as identified by the LMS Working Group.

The LMS Working Group differentiates between primary and secondary critical facilities for purposes of prioritization of proposed mitigation projects. Primary critical facilities are defined as, "facilities that are critical to the immediate support of life and public safety." Examples of primary critical facilities include EOCs, emergency shelters, fire and police facilities, hospitals, and major utilities facilities (power generation plants, water and wastewater treatment plants, etc.).

Secondary critical facilities are defined as, "facilities that will be critical for community recovery and the restoration of services." Some examples of secondary critical facilities include government offices, key grocery stores, newspaper facilities, and non-shelter schools. Appendix B – Critical Facilities open during a hazard or disaster includes a table that shows St. Lucie County public facilities and their vulnerabilities to selected hazards developed for the Treasure Coast Regional Evacuation Study.

St. Lucie County is home to three major hospitals: Lawnwood Regional Medical Center in Fort Pierce, the St. Lucie County Medical Center and Martin Health in Port St. Lucie. Other major medical facilities within St. Lucie County include Lawnwood Pavilion, Savannas Hospital and New Horizons of the Treasure Coast.

Lines of communication are critical in providing information to the public before, during and after a disaster. The FCC (Federal Communications Commission) lists three (3) AM and twelve (12) FM radio stations broadcasting in St. Lucie County AM stations include: WJNX AM 1330, WIRA AM 1400, and WPSL AM 1590. FM stations include: WQCS 88.9, WSCF 91.9, WAVW FM 92.7, WGYL 93.7, WLDI 95.5, WKGR 98.7, WEHR 100.7, WHLG 101.3, WPBZ 103.1, WQOL 103.7, WFLM 104.5 and WIRK 107.9.

Television stations locally include WPTV (NBC), WPEC (CBS), WPBF (ABC) and WFLX (FOX). Locally printed newspapers include; The St. Lucie News Tribune (TCPalm), Hometown News, the Treasure Coast Business Journal, and The Miami Herald.

3.0 HAZARD IDENTIFICATION, VULNERABILITY, AND RISK ASSESSMENT

St. Lucie County is vulnerable to a wide range of natural and human caused hazards that threaten life and property. The Disaster Mitigation Act of 2000 (DMA2K) requires, at a minimum, an assessment of a full range of natural hazards, and technological or human-caused hazards. The initial identification of hazards for inclusion in the risk assessment is based on earlier versions of the St. Lucie County LMS, a review of the State of Florida Hazard Mitigation Plan and FEMA mitigation planning guidelines and hazards identified by the LMS Working Group which the County considered to be vulnerable. St. Lucie County and County municipalities use an all-hazards approach to mitigate disaster.

The purpose of this Section is to identify and assess the hazards and risks facing St. Lucie County in terms of potential impacts and loss to assets, infrastructure and community populations that may be vulnerable. The information provided by the assessment is the foundation on which decisions about future mitigation initiatives are based. Natural Hazards refer to those elements of the physical environment, (including atmospheric, hydrologic, geologic and wildfire phenomena) that because of their location, severity, and frequency, have the potential to adversely affect humans. Human-caused Hazards are those where human alterations or activities play a large role in triggering, exacerbating, or even creating a natural hazard where none existed before. Technological & Social Hazards are the result of human intent, error, or because of failed systems. They can be caused by accidents in human built infrastructures or technologies, or intentional human actions that cause destruction or loss of life.

Natural hazards include flooding, hurricanes/tropical storms, tornadoes, severe thunderstorms, wildfires, erosion and landslides, extreme temperatures, drought, earthquakes, sinkholes, tsunamis, sea level rise, agricultural pests and diseases and dam or levee failure. Natural hazards can affect a part of the specific area's county or the whole of the entire county unless otherwise detailed in the following profiles. Technological hazards include epidemics and pandemics, radiological accidents, power failure, hazardous material release, transportation system disruption, wellfield contamination, and communication failures. Human-caused hazards include terrorism (physical and cyber) and sabotage, civil disturbances, and mass migration.

The Hazard Identification Section describes each hazard above and provides historical data on impacts where available. Maps are provided to illustrate the location and extent of hazards and disasters are classified by the magnitude of their effects.

The vulnerability assessment for each hazard describes the community assets and potential impacts for each hazard. A community's vulnerability depends on the extent of the hazard exposure and the value of potentially vulnerable assets. Higher risk areas with higher potential damage warrant mitigation practices that are more extensive. Communities in this situation may rely on land use and site design rather than on relatively simple measures such as building codes and hardening existing structures. Other factors that influence vulnerability and are important for communities to consider when selecting mitigation practices

are pre-disaster mitigation, the amount of undeveloped and underdeveloped land, and in the case of post-disaster mitigation, the amount of developed land within the community. For the purposes of the LMS, vulnerability is classified as individual, social, and biophysical. Individual vulnerability describes the susceptibility of a person or a structure to potential harm from hazards. Social vulnerability describes demographic characteristics of social groups that make them more or less susceptible to the adverse impacts of hazards. Biophysical vulnerability examines the distribution of hazardous conditions arising from a variety of initiating events such as natural hazards, chemical contaminants, or industrial accidents (MDC, 2009).

Factors influencing vulnerability include but are not necessarily limited to a community's geographic location, type of construction, demographics, and cultural characteristics. The general hazards to which St. Lucie County is vulnerable and the projected potential impacts across the community exposure and services are discussed below under the vulnerability subsections for each hazard.

The hazards identified and discussed here are organized based on the maximum projected impact potential, (i.e., hazards capable of producing the maximum community-wide impact, such as hurricanes and floods, are discussed first, followed by hazards having lower community wide impacts).

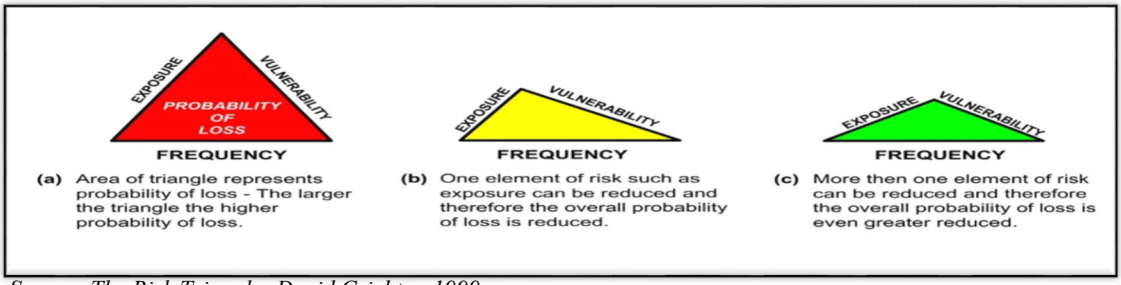
To effectively plan hazard mitigation projects and allocate scarce financial resources, a community's vulnerability to a specific hazard must be coupled with other critical factors to perform a risk assessment. Risk, or the probability of loss, depends on three elements:

- Frequency - how frequently does a known hazard produce an impact within the community?
- Vulnerability - how vulnerable is a community to the impacts produced by a known hazard?
- Exposure - what is the community's exposure in terms of life and property to the impacts produced by a specific hazard?

Once these three factors are established, the risk level faced by a community with regard to any specific hazard can be calculated using the "Risk Triangle" approach.[3]

In this approach, these three factors become the sides of a triangle, and the risk or probability of loss is represented by the triangle's area depicted below in **Figure 3.1**. The larger the triangle, the higher the community's risk with respect to a given hazard. If a community reduces any of these three factors, they reduce their risk or potential for loss.

Figure 3.1 – Risk Triangle



Source: The Risk Triangle; David Crichton 1999

[3] Crichton, 1999

In St. Lucie County, the overall exposure to tropical storms, hurricanes, floods, and earthquakes was determined by a risk assessment model software application called HAZUS-MH developed by FEMA. HAZUS-MH is a nationally applicable standardized methodology that contains models for estimating potential losses from the above hazards. HAZUS-MH uses Geographic Information Systems (GIS) technology to estimate physical, economic, and social impacts of disasters. It graphically illustrates the limits of identified high-risk locations due to earthquake, hurricane, and floods. HAZUS-MH is used for mitigation and recovery, as well as preparedness and response. Government planners, GIS specialists and emergency managers use HAZUS-MH to determine losses and the most beneficial mitigation approaches to take to minimize them. HAZUS-MH can be used in the assessment step in the mitigation planning process, which is the foundation for a community's long-term strategy to reduce disaster losses and break the cycle of disaster damage, reconstruction, and repeated damage. In terms of natural hazards, there is very little if anything that can be done to change the frequency with which they produce impacts in a community. Mitigation planning relative to those hazards must therefore focus on reducing the community's vulnerability or exposure. In terms of technological and human caused hazards, the most cost-effective type of mitigation is to limit or reduce the frequency with which such hazards occur.

The technical planning process began with hazard identification. In this process, the LMS planning team and representatives of individual jurisdictions identified the natural, technological, and human-caused hazards that could threaten St. Lucie County. The following hazards were selected by the LMS planning team for the 2021 LMS. The list of profiled hazards for St. Lucie County are contained in **Table 3.1**

Table 3.1- Hazard Identification

	POTENTIAL IMPACT POINTS																		
	WIND Excessive wind	**WATER** Excessive water	**HAIL** Damaging hail	**EROSION** Soil/beach erosion	**ENERGY** Electric power outage	**TRANSPORTATION** Surface and air transportation disruption	**WATERWAY TRANSPORTATION** Navigable waterway impairment	**POTABLE WATER** Potable water system loss or disruption, saltwater intrusion	**WASTEWATER** Sewer system outage	**COMMUNICATIONS** Telecommunications system outage	**HUMAN HEALTH** Disease/Physical & Mental health	**HUMAN SAFETY** Design/Planning, risk reduction	**ECONOMY & AGRICULTURE** Economic disruption; Agricultural/fisheries damages;	**SERVICES & SOCIAL NETWORKS** Disruption of community services & social networks	**BUILDINGS & INFRASTRUCTURE** Damage or loss of buildings or infrastructure	**ENVIRONMENT** Damage to critical environmental resources	**HISTORICAL RESOURCES** Damage	**FIRE** Fire and Wildfire	**TOXINS /HAZARDOUS** Toxic / Hazardous material releases	**STORMWATER** Stormwater drainage impairment
NATURAL HAZARDS																			
Flooding*		X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Hurricanes/Tropical Storms*	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Tornadoes*	X				X	X				X	X	X	X						
Severe Thunderstorms & Lightning*	X	X	X		X	X				X	X	X	X					X	X
Wildfire*					X	X				X	X	X	X	X	X	X		X	X
Erosion*		X		X			X						X			X			X
Extreme Temperatures*					X						X	X			X	X			
Drought													X		X	X		X	
Seismic Hazards eg: earthquakes, sinkholes						X													X
Tsunami		X		X		X	X				X		X			X			X
Sea Level Rise		X	X	X		X	X	X	X		X	X	X	X	X	X	X	X	X
Dam/Levee Failure		X				X	X				X		X		X				X
Agricultural Pests & Diseases											X	X	X		X	X			
TECHNOLOGICAL HAZARDS																			
Power Systems Failures					X	X		X	X	X	X	X	X	X					
Wellfield Contaminations								X	X		X	X	X	X					

	POTENTIAL IMPACT POINTS																			
	WIND Excessive wind	**WATER** Excessive water	**HAIL** Damaging hail	**EROSION** Soil/beach erosion	**ENERGY** Electric power outage	**TRANSPORTATION** Surface and air transportation disruption	**WATERWAY TRANSPORTATION** Navigable waterway impairment	**POTABLE WATER** Potable water system loss or disruption, saltwater intrusion	**WASTEWATER** Sewer system outage	**COMMUNICATIONS** Telecommunications system outage	**HUMAN HEALTH** Disease/Physical & Mental health	**HUMAN SAFETY** Design/Planning, risk reduction	**ECONOMY & AGRICULTURE** Economic disruption; Agricultural/fisheries damages;	**SERVICES & SOCIAL NETWORKS** Disruption of community services & social networks	**BUILDINGS & INFRASTRUCTURE** Damage or loss of buildings or infrastructure	**ENVIRONMENT** Damage to critical environmental resources	**HISTORICAL RESOURCES** Damage	**FIRE** Fire and Wildfire	**TOXINS /HAZARDOUS** Toxic / Hazardous material releases	**STORMWATER** Stormwater drainage impairment
Epidemics/Pandemics											X	X	X	X						
Radiological Accidents					X	X				X	X	X	X	X		X			X	
Hazardous Materials Accidents						X					X	X	X	X				X	X	
Transportation Systems Accidents						X	X				X		X	X				X		
Communication Systems Failures										X	X		X	X						
HUMAN CAUSED HAZARDS																				
Terrorism and Sabotage					X	X		X		X	X	X	X			X	X	X	X	
Civil Disturbances						X					X	X	X	X			X			
Mass Migration											X	X	X	X						

** Sea Level Rise & Climate Change Impacts*

3.1 NATURAL HAZARDS

St. Lucie County is susceptible to several natural hazards with the potential to cause extensive damage within the community. The cost of responding to and recovering from these disasters has proven to be significant. Hurricanes, tropical storms, and wind related disasters were responsible for the most property damaged during this time. Planning for these events before they occur can significantly reduce future costs.

3.1.1 Flooding

3.1.1.1 Hazard Identification

A flood is defined by the National Weather Service as any high flow, overflow, or inundation by water, which causes or threatens damage. Flooding can occur because of heavy precipitation, overflowing rivers, community development and hydrological alterations, or breached or broken dams or levees. Existing flood-prone areas and flooding patterns may shift because of changing climate conditions.

Flooding can affect the health, safety, security, and livelihoods of residents. It can damage buildings property, roads, and utilities, and disrupt services such as public transportation. Heavy precipitation and flooding can also exacerbate erosion and landslides.

There are several flood types, such as:

River Flood – Occurs when water levels rise over the top of riverbanks due to excessive rain from tropical systems making landfall, persistent thunderstorms over the same area for extended periods of time, combined rainfall and snowmelt, or an ice jam.

Coastal Flood – The inundation of land areas along the coast causes by higher-than-average high tide and worsened by heavy rainfall and onshore winds (i.e., wind blowing landward from the ocean).

Storm Surge – An abnormal rise in water level in coastal areas, over and above the regular astronomical tide, caused by forces generated from a severe storm's wind, waves, and low atmospheric pressure. Storm surge is extremely dangerous because it is capable of flooding large coastal areas.

Inland Flooding – Inland flooding is the partial or complete inundation of normally dry land with freshwater, that may be extensive or limited to a few properties. It occurs when moderate precipitation accumulates over several days, intense precipitation falls over a short period, or a river overflows because of an ice or debris jam, or dam or levee fails, or with additional rainfall when the water table is high, and soils are saturated.

Flash Flood – Caused by heavy or excessive rainfall in a short period of time, generally less than six hours. Flash floods are usually characterized by raging torrents after heavy rains that rip through riverbeds, urban streets, or mountain canyons sweeping everything before them.

Several variations of flood hazards occur in St. Lucie County because of severe thunderstorms, hurricanes, tropical storms, and seasonal rains. For the majority land area in the County, the primary causes of flooding are thunderstorms, tropical storms, and hurricanes. However, the County's low-lying topography,

combined with the subtropical climate, make it vulnerable to riverine and estuarine associated flooding.

Flooding in St. Lucie County results from one or a combination of both meteorological events:

1) Tidal surge associated with thunderstorms, tropical storms, and hurricanes; and
2) Overflow from streams and swamps associated with rain runoff and pooling of standing water areas that do not drain well.

For additional information, see Annex A – Flood Hazard Specific Plan.

3.1.1.2 Flood Hazard Locations

In response to mounting losses from flooding nationwide, the United States Congress initiated the National Flood Insurance Program (NFIP) in 1968. This program is administered through the St. Lucie County Water Quality Manager (WCM). Under this program, The WCM produces Flood Insurance Rate Maps (FIRMs), which show areas subject to various levels of flooding under different conditions. This Flood risk information is based on historic, meteorological, hydrologic, and hydraulic data, as well as open-space conditions, Flood control works, and development. The FIRM maps for St. Lucie County were updated in June 2014. Floodplains designated on the FIRM are based on the 1% annual Flood chance or the 100-year Flood event. The 500-year Flood event with a 0.2% annual chance of occurrence is used to designate other areas of the community, which may have some vulnerability to flooding. Any official Flood zone determination must be completed using the official paper FIRMs. **Figure 3.2** depicts the St. Lucie County Flood Zone map follows zone definitions and map legend with abbreviation definitions.

St. Lucie County participates in the Community Rating System (CRS) which is a program designed to reduce insurance costs to residential homeowners that implement flood mitigation practices. The County maintains and updates the CRS plan periodically to increase information available to real estate agencies and homeowners to encourage preparedness and reduce costs of potential flood damage.

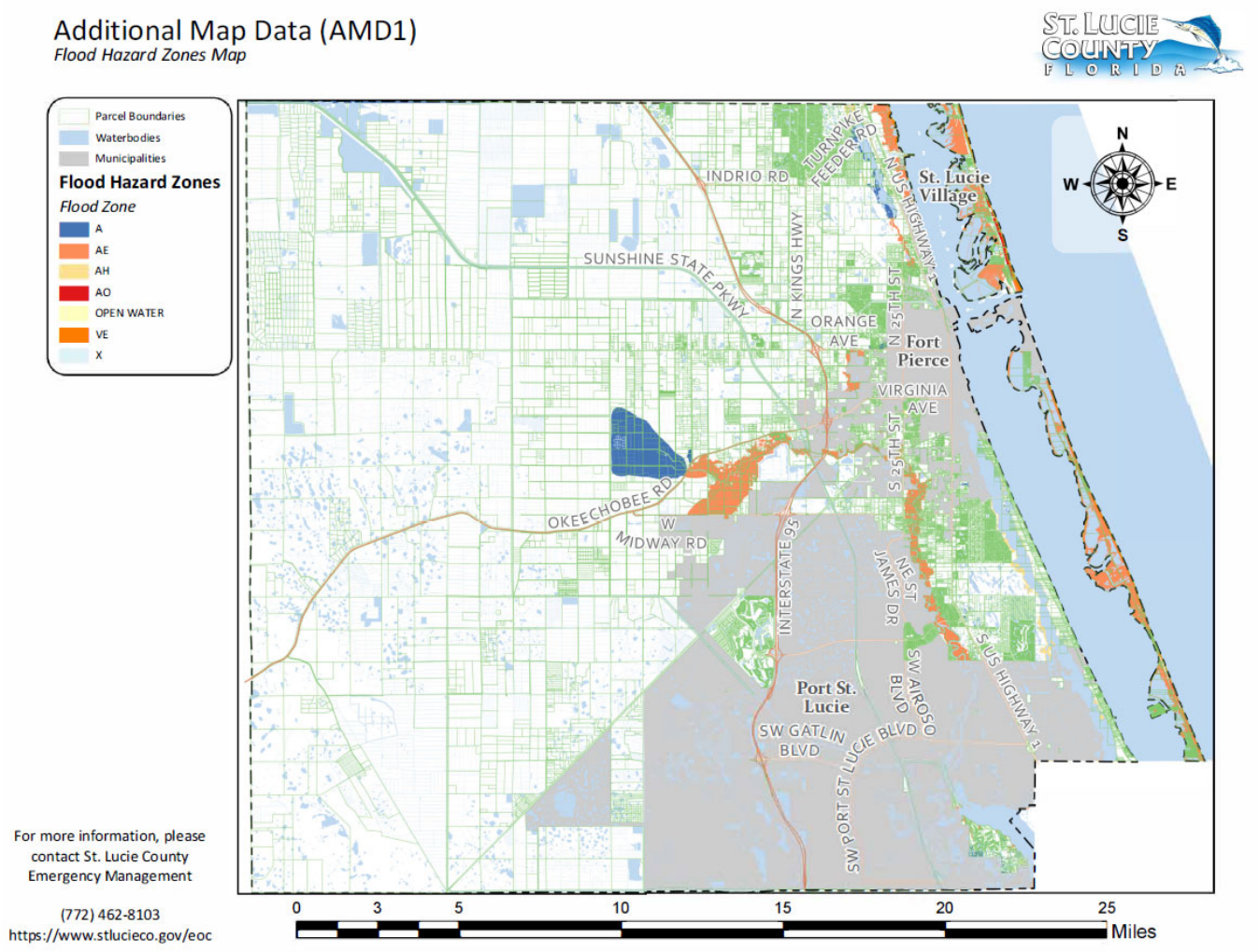
Undetermined Risk Areas: Unstudied areas where flood hazards are undetermined, but flooding is possible. No mandatory flood insurance purchase requirements apply, but coverage is available in participating communities.

ZONE	DESCRIPTION
A	Areas subject to inundation by the 1-percent-annual-chance flood event. Because detailed hydraulic analyses have not been performed, no Base Flood Elevations (BFEs) or flood depths are shown.
AE, A1-A30	Areas subject to inundation by the 1-percent-annual-chance flood event determined by detailed methods. BFEs are shown within these zones. (Zone AE is used on new and revised maps in place of Zones A1–A30.)
AH	Areas subject to inundation by 1-percent-annual-chance shallow flooding (usually areas of ponding) where average depths are 1–3 feet. BFEs derived from detailed hydraulic analyses are shown in this zone.
AO	Areas subject to inundation by 1-percent-annual-chance shallow flooding (usually sheet flow on sloping terrain) where average depths are 1–3 feet. Average flood depths derived from detailed hydraulic analyses are shown within this zone.

AR	Areas that result from the decertification of a previously accredited flood protection system that is determined to be in the process of being restored to provide base flood protection.
A99	Areas subject to inundation by the 1-percent-annual-chance flood event, but which will ultimately be protected upon completion of an under-construction Federal flood protection system. These are areas of special flood hazard where enough progress has been made on the construction of a protection system, such as dikes, dams, and levees, to consider it complete for insurance rating purposes. Zone A99 may be used only when the flood protection system has reached specified statutory progress toward completion. No BFEs or flood depths are shown.
V	Areas along coasts subject to inundation by the 1-percent-annual-chance flood event with additional hazards associated with storm-induced waves. Because detailed coastal analyses have not been performed, no BFEs or flood depths are shown.
VE, V1-V30	Areas along coasts subject to inundation by the 1-percent-annual-chance flood event with additional hazards due to storm-induced velocity wave action. BFEs derived from detailed hydraulic coastal analyses are shown within these zones. (Zone VE is used on new and revised maps in place of Zones V1–V30.)
B, X	Moderate risk areas within the 0.2-percent-annual-chance floodplain, areas of 1-percent-annual-chance flooding where average depths are less than 1 foot, areas of 1- percent-annual-chance flooding where the contributing drainage area is less than 1 square mile, and areas protected from the 1-percent-annual-chance flood by a levee. No BFEs or base flood depths are shown within these zones. (Zone X (shaded) is used on new and revised maps in place of Zone B.)
C, X	Minimal risk areas outside the 1-percent and .2 percent-annual-chance floodplains. No BFEs or base flood depths are shown within these zones. (Zone X (unshaded) is used on new and revised maps in place of Zone C.)
D	Unstudied areas where flood hazards are undetermined, but flooding is possible. No mandatory flood insurance purchase requirements apply, but coverage is available in participating communities.

Source: FEMA and NFIP

Figure 3.2– Flood Zone Map



Source: St. Lucie County, 2020

3.1.1.3 Historic Events

Hurricane of September 1928. This hurricane made Florida landfall near the City of Palm Beach as a strong Category 4 hurricane with one of the lowest barometric pressures ever recorded in this area (928.9 millibars [27.43 inches]). It reached Lake Okeechobee with very little decrease in intensity. In all, 1,836 people were killed and another 1,870 injured during this storm's passage. Nearly all the loss of life was in the Okeechobee area and was caused by overflowing of the lake along its southwestern shore.

Hurricane of September 1933. The 1933 Treasure Coast Hurricane formed east-northeast of the Leeward Islands on August 31 and attained maximum sustained winds of at least 140 miles per hour, making landfall near the border of Palm Beach and Martin Counties as a strong Category 3 hurricane. Buildings were blown off their foundations, and citrus groves were devastated. Stuart, Jupiter, and Fort Pierce were heavily damaged.

Flood of 1947. This Flood is generally considered the most severe Flood recorded in southern Florida.

Heavy rainfall, including the rains from two hurricanes, occurred over a period of 5 months. Certain areas of St. Lucie County were flooded for months, and there was extensive damage to agriculture in general. Such a flooding event would be much more significant today because of the increase in land development along the eastern side of the County.

Hurricane of August 1949. This Category 3/Category 4 hurricane made landfall in Florida between Delray and Palm Beach with winds of 130 mph and a barometric pressure of 954.0 millibars (28.17 inches). As it moved inland, its center passed over the northern part of Lake Okeechobee, but the levees in that area held. No major flooding occurred. Damages in Florida were estimated at $45 million. Tides of 11.3 feet at Fort Pierce, 8.5 feet at Stuart, and 6.9 feet at Lake Worth were reported. Stuart sustained severe damages in this storm. Statewide, over 500 people lost their homes as a result of this storm.

Flood of 1953. As occurred in 1947, this Flood was preceded by 5 months of heavier than normal rainfall, which included a tropical storm in October. June through October rainfall was approximately 48 inches. Damage was heaviest in the beef cattle industry, with extensive losses of improved pastureland, which required supplemental feeding of cattle. Vegetable growers and dairy farmers also suffered significant losses as a result of this flood.

Flood of September 20-22, 1985. This incident affected large areas of St. Lucie County. Over a four-day period, 14 inches of rain were recorded in the City of Fort Pierce, with about half falling during a seven-hour period over the night of September 20, 1985. Flooding of streets and houses was widespread, especially in the central area around Five-mile and Ten-mile Creeks, where large numbers of residents were evacuated from their homes.

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Table 3.2 - Historical Flood Events Impacting St. Lucie County

Date	Time	Location	Deaths/ Injuries	Estimated Property Damage	Brief Description
10/17/1995	1400 - 2000	Port St. Lucie	None	4,000,000	An estimated 13 inches of rain fell in the county, flooding 12 homes and most roadways in the southern part of the County.
01/09/2004	1600-2300	Port St. Lucie	None	220,000	A cluster of showers and isolated thunderstorms moved very slowly down the coast of St. Lucie and Martin counties during the afternoon and early evening. 24-hour rainfall totals reached 8-12 inches across much of the coastal portion of the counties, with the majority of the rain falling in a period of 6-hours or less. Flooding of many roadways occurred, stranding vehicles. Drainage canals and creeks overflowed. While high water surrounded many subdivisions, businesses and homes, water only entered one building, a St. Lucie County High School, causing an estimated $220,000 in damage.
08/19/2008	1400-2200	St. Lucie County	None	67,000,000	On August 19th Tropical Storm Fay came on shore in south west Florida moving north northeast toward Lake Okeechobee. By the early morning of August 20th Fay had moved to southern Brevard County producing rainfall amounts ranging from 10 to 15 inches in Martin, St. Lucie, Okeechobee, and Indian River counties.
12/17/2009	2000-0000	St. Lucie County	0	0	A large area of 5 to 13 inches of rain fell from near the Florida Turnpike, impacting western portions of Port St. Lucie, and inland to the rural portions of central and western St. Lucie County. A rainfall spotter located 4 miles west of Port St. Lucie recorded over 12 inches of rain in less than 24 hours and 6 inches in 90 minutes during the evening. Standing water levels reached up to 3-feet on some roadways and yards in and near the Traditions Community, causing many homes and schools to briefly become cut-off from surrounding areas. While temporary roadway, lowland and urban flooding was extensive, no homes or businesses were damaged.

Source: National Climatic Data Center

Table 3.2 - Historical Flood Events Impacting St. Lucie County, (continued)

Date	Time	Location	Deaths/ Injuries	Estimated Property Damage	Brief Description
08/27/12	0500-1700	St. Lucie County	None	1,130,000	Persistent heavy rain bands from Tropical Storm Isaac produced widespread urban and lowland flooding across much of the county. Rainfall from the morning of August 26 until the evening of August 27 averaged 5 to 10 inches, with isolated totals of 12 to 14 inches, most of which fell during the morning and afternoon of August 27. The most significant impacts occurred near the coast, and included Lakewood Park to Fort Pierce, White City, and Port St. Lucie As a result, several roads in the county were temporarily impassable. Significant beach erosion occurred on the south end of the county with parts of Highway A1A flooded and washed out. .
01/09/14	1400-2200	St. Lucie County	None	20,000	Radar-based rainfall estimates were between 6 and 12 inches across eastern-most St. Lucie County, with most of the rain falling in a 6-hour or less period. The 24- hour rain gage total at Ft. Pierce was 10.64 inches, but with most of the rain falling in less than 6 hours. Flooding closed many roadways, stranding vehicles. Drainage canals and creeks overflowed. While high water surrounded many subdivisions, businesses and homes, water was only reported to have entered one apartment complex in Fort Pierce (three separate buildings).
09/10/2017	2100-0200	St. Lucie County	None	0	Rain bands associated with Hurricane Irma produced rainfall totals between 8 and 12 inches, resulting in areas of urban and poor drainage flooding. Many roadways were impacted by significant levels of standing water and many retention ponds reached capacity or overflowed. More significant (flash) flooding occurred farther north across the county, including Ft. Pierce.

Source: National Climatic Data Center

3.1.1.4 Vulnerability Assessment

Flooding in St. Lucie County results from one or a combination of both of the following meteorological events:

1. Tidal surge associated with thunderstorms, tropical storms, and hurricanes; and
2. Overflow from streams and swamps associated with rain runoff and pooling of standing water areas that do not drain well.

When intense rainfall events occur, streams and drainage ditches can reach peak Flood flow

concurrently with tidal water conditions associated with coastal storm surge or high tide. This greatly increases the probability of flooding in the low-lying areas known as the Coastal High Hazard Area (CHHA). This coastal flooding will be further exacerbated due to Sea Level Rise.

Areas along the North and South Forks of the Indian River Lagoon and estuary are particularly susceptible to flooding under these conditions. The most Flood prone areas in the eastern portion of the County feature poorly drained soils, a high-water table, and relatively flat terrain, all of which contribute to their flooding problems. In some areas, the flat terrain and heavily wooded conditions intensify flood problems by preventing rapid drainage.
Riverine flooding occurs when the flow of rainwater runoff exceeds the carrying capacities of the natural drainage systems. During extended periods of heavy rainfall, certain low-lying neighborhoods within the County are subject to considerable flood damage caused by the inability of natural and mechanical drainage systems to effectively remove the water. Heavy rainfalls can cause considerable damage to County infrastructure including roadbeds, bridges, drainage systems, and the water supply. The buildup of uncontrolled sediment contributes to the problem of inadequate drainage in natural and mechanical drainage systems. When a storm produces an overwhelming amount of stormwater runoff, the accumulation of loose sediment materials (sand and soil) clogging the drainage systems impedes the flow of water, thereby increasing the risk of flooding. Natural percolation and drainage is further inhibited in these saturated areas.

In comparison to riverine flooding, coastal flooding is usually the result of a severe weather system such as a tropical storm or hurricane and is known as inundation and storm surge. The damaging effects of coastal floods are caused by a combination of storm surge, wind, rain, erosion, and battering by debris. All coastal property and inhabitants are subject to severe damage and loss of life resulting from floods caused by hurricane-associated storm surge. Some coastal property, roads, and bridge approaches are also subject to severe flooding caused by astronomical high tides such as King Tides which occur in our area during the late fall and early winter.

Frequencies of flooding associated with rain events other than tropical storms and hurricanes are more difficult to estimate. Eastern Florida shows an annual dry cycle stretching from early November through mid-May. During this part of the year, monthly rainfall rarely exceeds 3.5 to 4.0 inches per month. The wet season, beginning approximately mid-May and running through October, shows monthly rainfall levels in the area to be between 6.0 and 8.5 inches with the heaviest rainfall usually occurring in August and September. In St. Lucie County, the eastern or coastal section of the County receives more rain than the western section. This annual rainfall pattern coupled with hurricane season (June through November) makes St. Lucie County particularly vulnerable to flooding associated with tropical storms and hurricanes since they typically occur when the water table is high, and the ground is saturated.

3.1.1.5 Probability Assessment - HIGH

As for future occurrences, the probability for flooding in St. Lucie County is high. Moreover, while the probability of flooding is higher in specific areas, and all jurisdictions of the County are at risk, flooding along the coastal areas occurs in late winter and early spring due to rough seas and high surf.

Table 3.3 - St. Lucie County Average Monthly Rain Totals

Month	JAN	FEB	MARCH	APRIL	MAY	JUN	JULY	AUG	SEPT	OCT	NOV	DEC	Yearly Average
Average	2.36	3.07	3.66	2.87	3.78	5.71	6.02	7.48	7.68	5.43	3.58	2.16	53.77

Source: National Climatic Data Center

Identified Problem Areas. Flood prone areas within St. Lucie County experience some level of "nuisance" flooding anywhere from once to twice a year during the rainy season. For the purposes of this document, "nuisance" flooding is defined as several inches of standing water that remains in streets and along swales, from 3 to 8 hours after 3 to 5 inches of rainfall in less than 24 hours. While this type of flooding takes a toll on County or municipality infrastructure and services, it does not reach a level where individual citizens report property damage through claims to the NFIP.

The St. Lucie County Division Emergency Management and the Road and Bridge Department provide for community outreach and public education on flooding hazards, prevention, precautions, and mitigation. This is done through information on the website, in brochures and handouts, and in public workshops and presentations. The mass notification system, Everbridge (EVBG), is used to warn the public when flooding hazards are present. The City of Fort Pierce, City of Port St. Lucie and St. Lucie Village also provide for multiple flood prevention programs and public education.

Flooding events can have the following potential impacts within a community:

- Excessive water;
- Soil/beach erosion;
- Electric power outage;
- Surface and air transportation disruption;
- Navigable waterway impairment;
- Potable water system loss or disruption;
- Sewer system outage;
- Human health and safety;
- Psychological hardship;
- Economic disruption;
- Disruption of local government and community services;
- Agricultural/fisheries damage;
- Damage to critical environmental resources;
- Damage to identified historical resources;
- Fire;
- Toxic releases; and
- Stormwater drainage impairment.

St. Lucie County experiences nuisance flooding that causes roadways to become dangerous and impassable, road closures or damage as a result of the flooding. Damage or closures can cause delays in emergency responses. In 2008 during Tropical Storm Fay, residents were unable to get to their homes in Port St. Lucie, and police assisted with transportation.

3.1.1.6 Documented Repetitive Losses

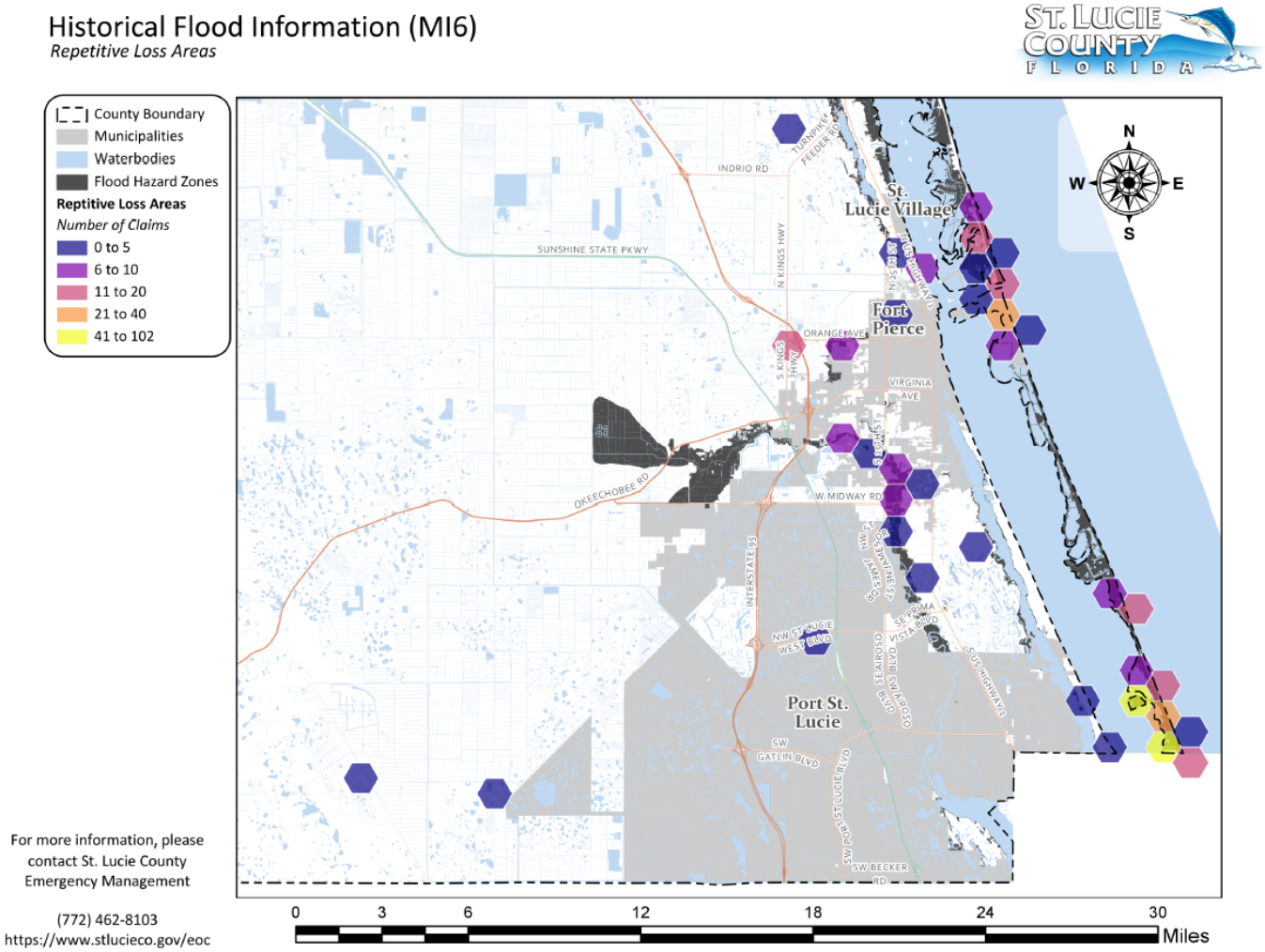
Reducing the losses associated with repetitive flood loss properties is a high priority nationally. This is reflected by the priority placed on repetitive loss properties in federal grant applications. For this analysis, documented repetitive losses are restricted to the narrow FEMA definition and represent only those properties for which two or more claims of more than $1,000 have been paid by the National Flood Insurance Program (NFIP) within any 10-year period since 1978 (e.g., two claims during the periods 1978–1987, 1979–1988, etc.). As of December 2018, the total repetitive loss properties in both unincorporated St. Lucie County and the respective jurisdictions were 345 properties. The following table documents the number of repetitive flood loss properties by jurisdiction and type. For the purposes of privacy, these addresses will not be incorporated into this document.

Table 3.4 - Repetitive Loss Properties for St. Lucie County and Associated Jurisdictions

Community	St. Lucie County	City of Fort Pierce	City of Port St. Lucie	Town of St. Lucie Village	Total
Community No.	120285	120286	120287	120288	
No. of Residential Repetitive Loss Properties	181	130	13	4	328
No. of Commercial Repetitive Loss Properties	4	12	1	0	17

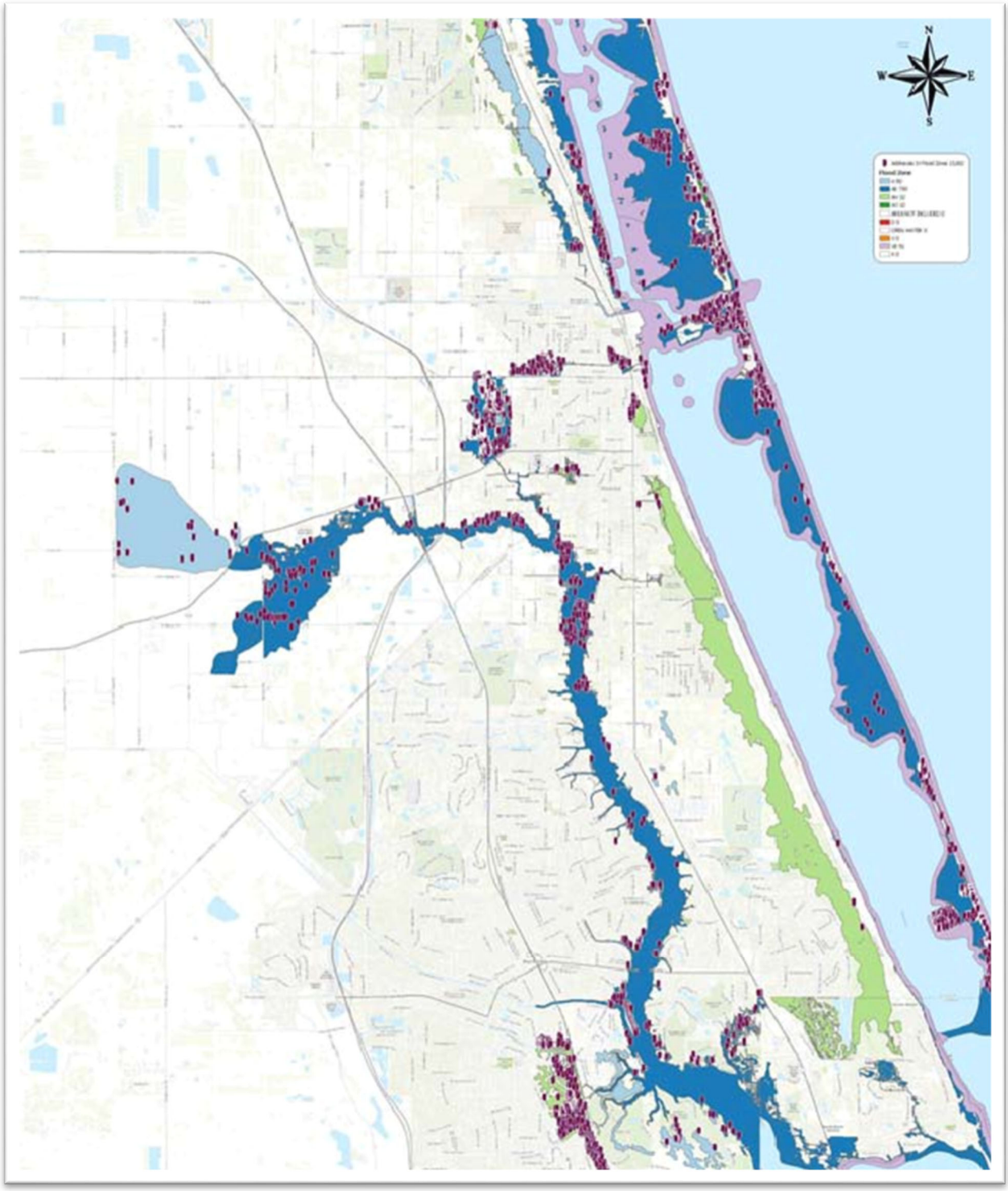
Source: FEMA NFIP, 2018

Figure 3.3 - St. Lucie County Repetitive Loss Areas



Source: St. Lucie County, 2020

Figure 3.4 – Homes Located in the Special Flood Hazard Area (SFHA)



Source: St. Lucie County PPI 2020

Figure 3.5 - Repetitive Loss Properties in St. Lucie County

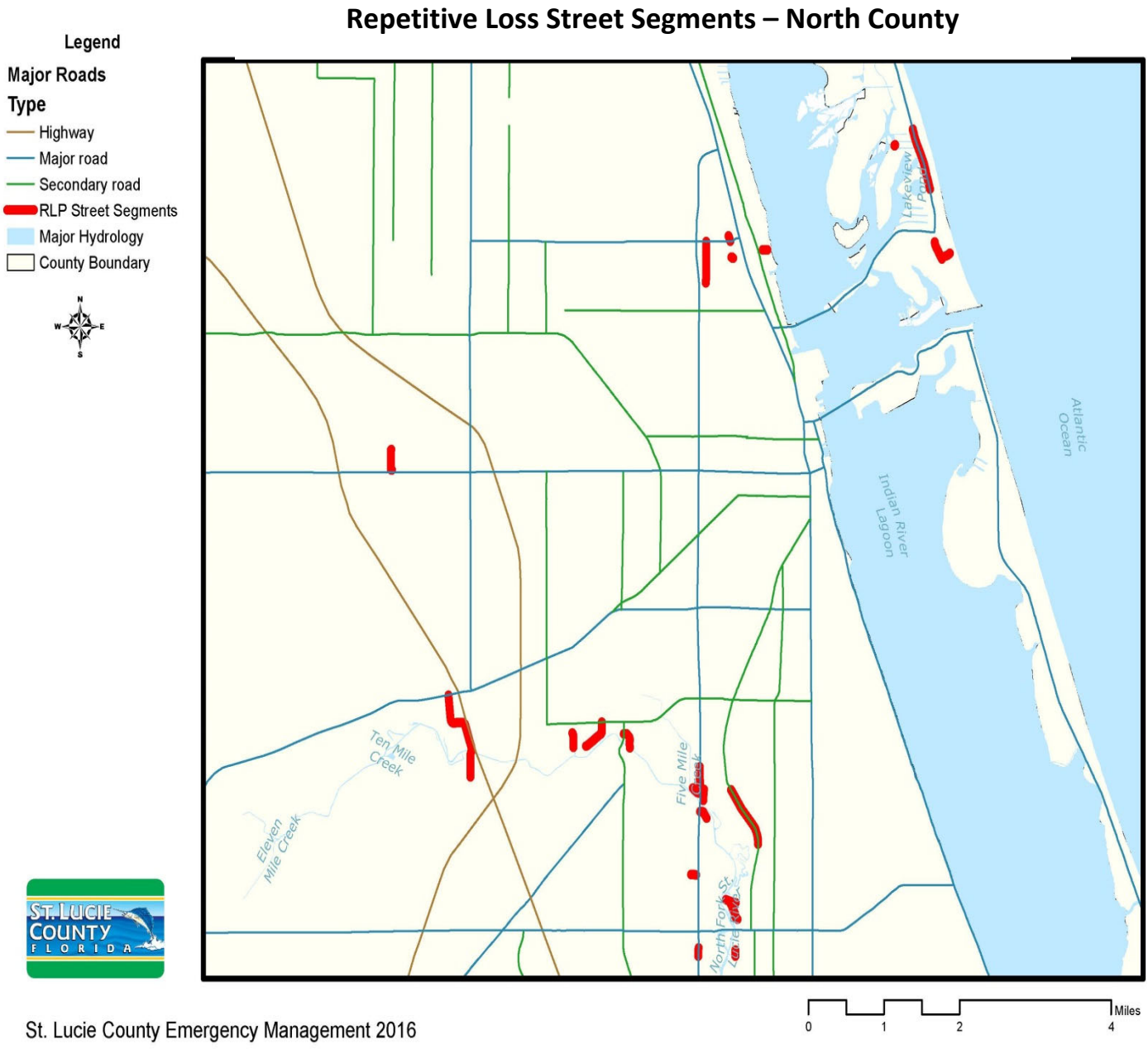
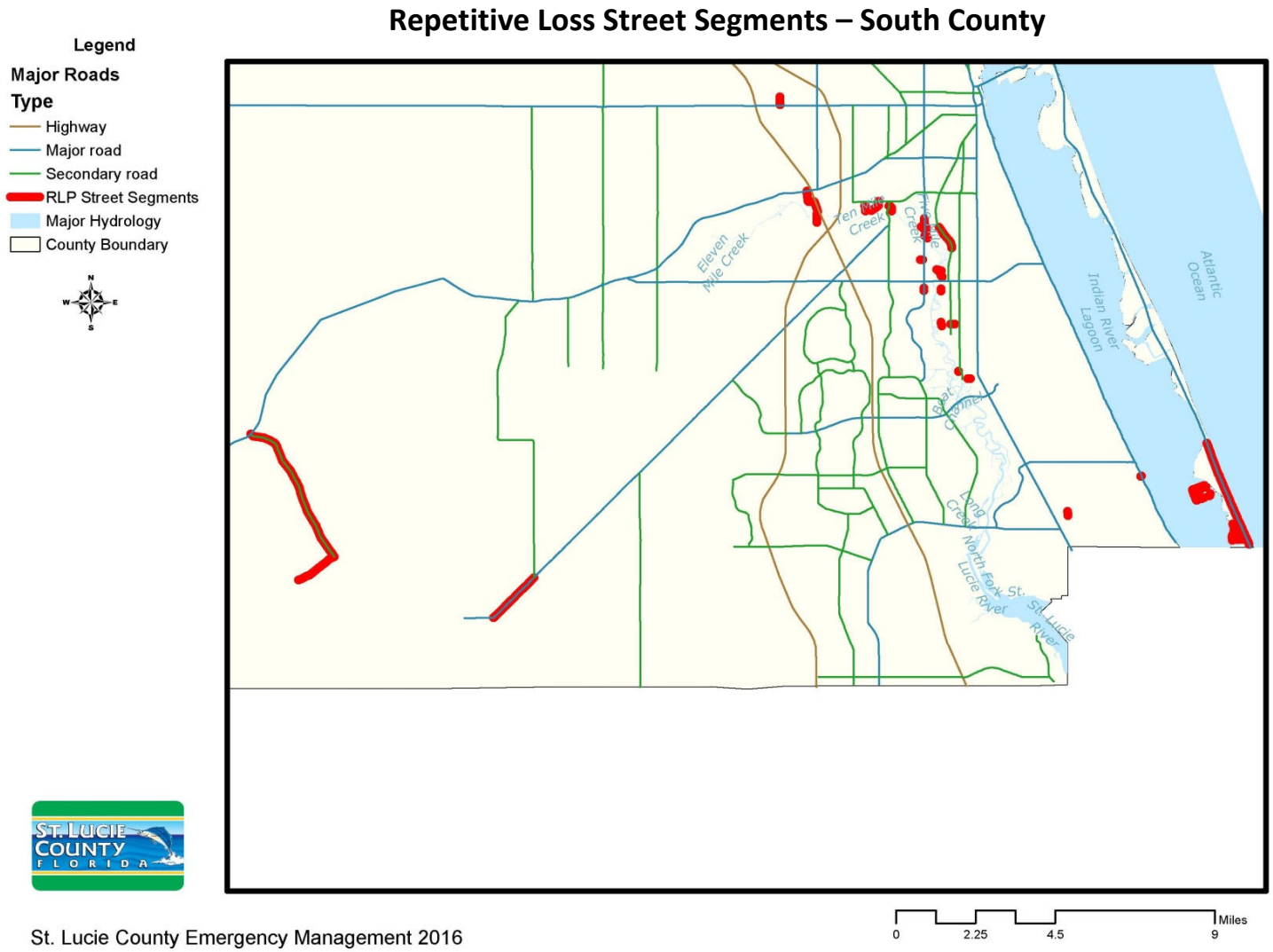
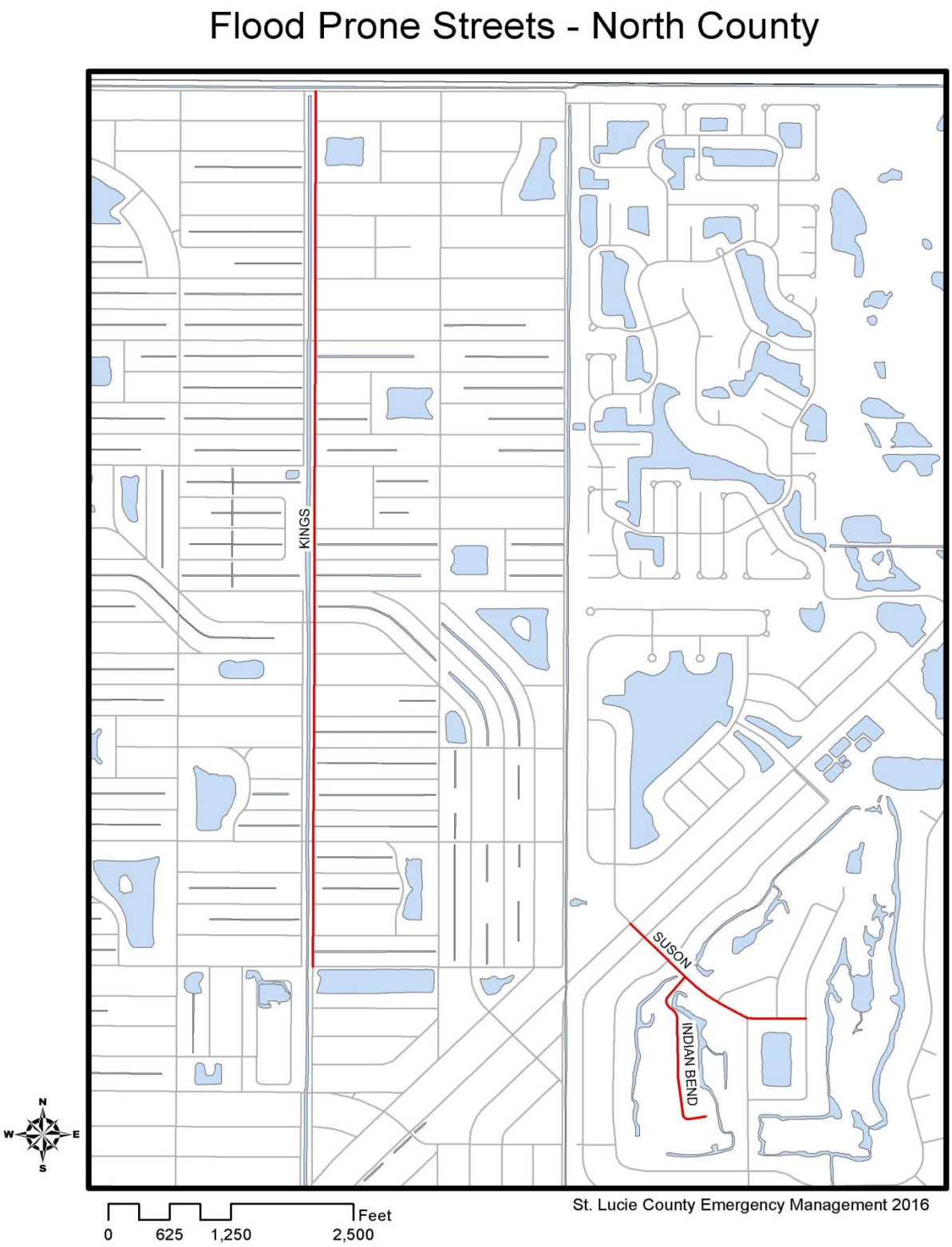


Figure 3.5 - Repetitive Loss Properties in St. Lucie County (continued)



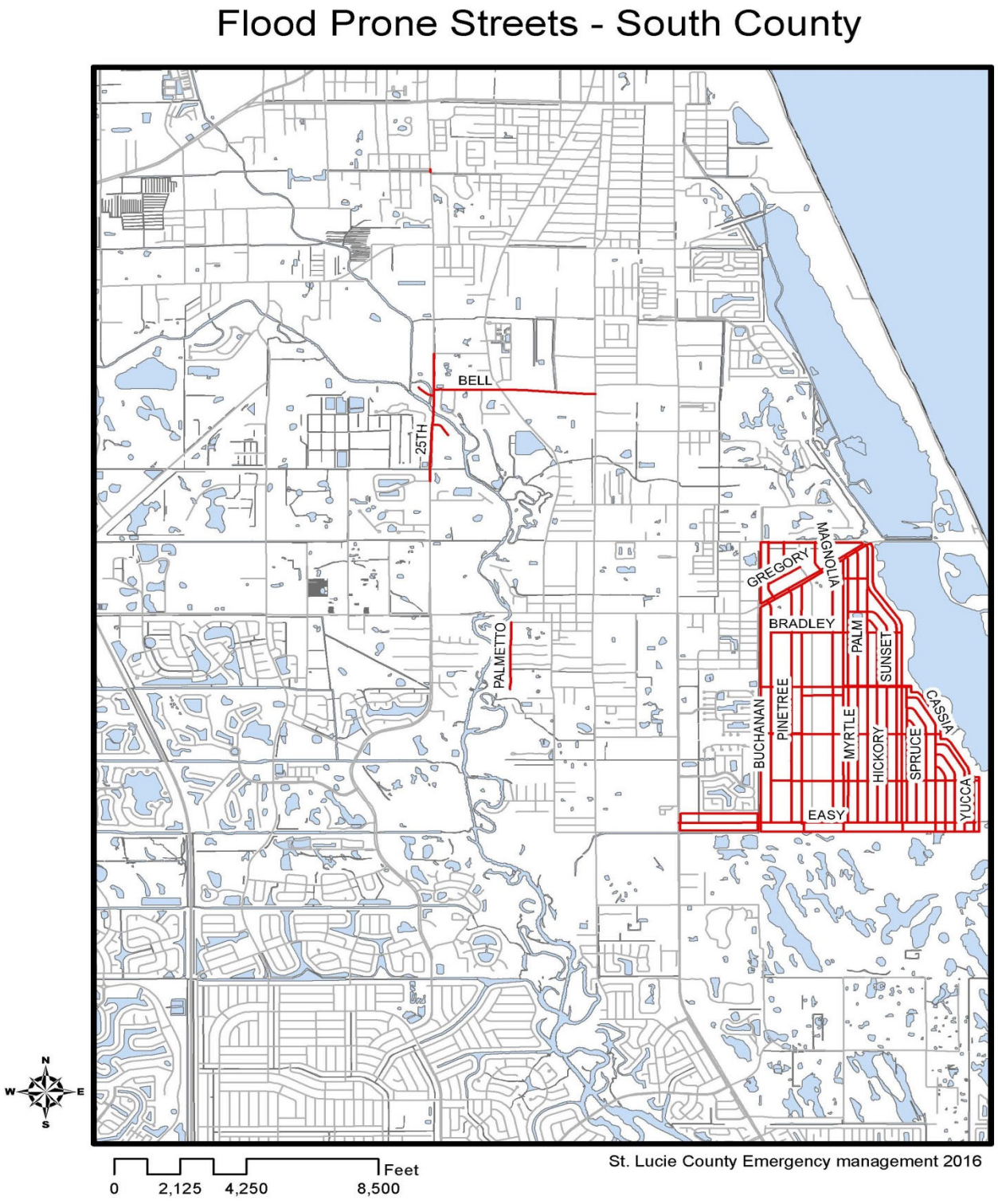
St. Lucie County Emergency Management 2016

Figure 3.6 - Flood Prone Streets in St. Lucie County



Source: St. Lucie County, 2016

Figure 3.6 - Flood Prone Streets in St. Lucie County (continued)



Source: St. Lucie County, 2016

[Refer to Appendix G for additional Tables and Figures.]

Table 3.5 - Flooding Exposure, St. Lucie County

Flood Zone	Total Number of Structures	Total Value of Structures	Total Population in Flood Zone
A	192	$23,521,300	1,503
AE	4,115	$695,487,340	16,740
AH	593	$107,500,400	10,134
AO	2,841	$796,031,800	510
X500	3,001	$1,011,851,442	10,878
X	120,318	$19,711,999,692	275,555
VE	111	$59,741,100	441
UNDES	369	$64,909,278	3,435
OFF FIRM	27	$1,778,594	1,702

Source: St. Lucie County Planning Department & GIS 2021

Property damage along the coast of St. Lucie County occurs most often in the late winter or early spring and is associated with winter storms and northeasters. Flooding in the inland portions of the County occurs most often in the fall and is often associated with tropical depressions and storms. Incidences of flooding in specific areas of St. Lucie County seem to be increasing. **Table 3.6** displays NFIP policy information for each participating jurisdiction. Jurisdiction listed are represented within the St. Lucie County LMS.

Table 3.6 - NFIP Policy Data by Jurisdiction

Community Name	Policies In-Force	Insurance In-Force	Number of Paid Losses	Total Losses Paid
St. Lucie County	4,675	$2,198,291,600	1,566	$44,301,884.00
City of Fort Pierce	4,089	$893,427,500	1,156	$32,498,572.26
City of Port St. Lucie	6,019	$1,786,644,500	486	$1,915,017.28
Town of St. Lucie Village	138	$37,244,500	68	$2,349,744.23

Source: Federal Emergency Management Agency, 2020a

NFIP and Community Rating System (CRS)

The Community Rating System (CRS) is a voluntary incentive program that recognizes and encourages community floodplain management activities that exceed minimum NFIP requirements. Communities that participate in the NFIP may elect to participate in the CRS. The goals of the CRS include reducing flood losses, facilitating accurate insurance ratings, and promoting the awareness of flood insurance (FEMA, 2009). Incentives take the form of reductions on insurance premiums in 5% increments. A community's CRS class rating ranges from 10 (0% premium reduction) to 1 (45% premium reduction). **Table 3.7** displays CRS classes and activities for St. Lucie County and the associated jurisdictions. Three of the four jurisdictions represented by

this LMS currently participate in the CRS. The Town of St. Lucie Village is currently in the process of applying for a CRS class rating.

Table 3. 7- CRS Classes and Activities for St. Lucie County and Associated Jurisdictions

Community Name	St. Lucie County	City of Fort Pierce	City of Port St. Lucie
Community ID Number	120285	120286	120287
CRS Entry Date	10/01/94	10/01/92	10/01/91
Current Effective Date	05/01/09	05/01/12	10/01/96
Current Class	6	6	8
% Discount for SFHA	20	20	10
% Discount for Non-SFHA	10	10	5
Status	C	C	C
Activities Attempted	310, 320, 330, 340, 420, 430, 440,450, 510, 540, 610, 630	310, 320, 330, 340, 350, 360, 410, 420, 430, 440, 450, 502 510, 540, 630	310, 320, 350, 420, 430, 440, 450, 540 and 630

Source: FEMA NFIP, 2020 Community Rating System Eligible Communities

To ensure continued compliance with the NFIP, each jurisdiction will:

- Continue to enforce their adopted Floodplain Management Ordinance requirements, which include regulating all new development and substantial improvements located in the Special Flood Hazard Areas (SFHA)
- Ensure that each jurisdiction has an office and staff person designated as the Floodplain Administrator
- Continue to update the floodplain ordinance upon receiving new data from FEMA
- Continue to educate the public about the importance of flood hazards and the availability of flood insurance
- Continue to maintain or enhance their CRS scores

In an additional effort to ensure continued compliance with the NFIP, the City of Port St. Lucie has included a six (6) inch freeboard above base flood elevation (BFE) for all new residential structures within their current Floodplain Ordinance. This ordinance is significant considering that a majority of recent population growth and new construction has occurred within the City of Port St. Lucie.

As part of the NFIP CRS programs, FEMA documents repetitive flood losses. For this analysis, documented repetitive losses are restricted to the narrow FEMA definition and represent those properties for which two or more claims of more than $1,000 have been paid by the National Flood Insurance Program (NFIP) within any 10-year period since 1978 (e.g., two claims during the periods 1978–1987, 1979–1988, etc.).

Based on recent rain events and potential climate change impacts, the likelihood of this threat will continue to increase. During Hurricane season from June to November, damage tropical systems and hurricanes are the largest threat. Flooding in inland areas of the county is from tropical storms and depressions in the summer and fall, during the rainy season, and in the dry season during periods when El Nino is present in the Pacific Ocean regions.

3.1.1.7 Risk Assessment - HIGH

Flooding is the hazard which produces the most recurrent impacts in St. Lucie County. All communities within St. Lucie County are vulnerable to both hurricanes and flooding, but they are not all vulnerable for the same reasons. The barrier island communities such as the Fort Pierce beach area and the unincorporated areas of Hutchinson Island obviously are highly vulnerable to both wind and storm surge damage from hurricanes. Due to the presence of the Fort Pierce Inlet, mainland Fort Pierce also is highly vulnerable to flooding associated with hurricane winds and storm surge. Central Port St. Lucie and the White City area are vulnerable to storm surge related flooding along the North Fork of the St. Lucie River and the canals in those areas. Wind driven water combined with storm surge within the Indian River Lagoon may also produce substantial flooding along low-lying river front property away from the inlet. Communities away from the water such as St. Lucie West, Lakewood Park, and the unincorporated areas north of Fort Pierce along U.S. Highway 1, are more vulnerable to wind damage from hurricanes and flooding associated with rain rather than storm surge.

Flooding other than that associated with storm surge usually results from heavy rainfall events occurring in association with stalled fronts, tropical storms, and occasionally hurricanes and may be resultant from poor drainage and pooling of rainfall in low lying areas. Not all areas within any given jurisdiction are equally vulnerable to flooding, but all jurisdictions have specific areas where flooding is a recurring problem.

Table 3.5 illustrates the total number and value of structures and population expected to be impacted by each of the FEMA-identified flood zones. The zone with the highest number of structures and structure value is the X zone, which is known as the 500-year flood zone.

3.1.2 Hurricanes/Tropical Storms

3.1.2.1 Hazard Identification

Coastal areas are sensitive to sea level rise and other impacts of climate change. This may include the frequency and intensity of tropical storms, hurricanes, high winds, storm surge, and thunderstorms.

Tropical Storms or Tropical Cyclone

A tropical cyclone is a rotating low-pressure weather system that has organized thunderstorms but no fronts (a boundary separating two air masses of different densities). Tropical cyclones with maximum sustained surface winds of less than 39 miles per hour (mph) are called tropical depressions. A tropical storm is a tropical cyclone with maximum sustained winds of at least 39

mph. Tropical storms are given official names once they reach these wind speeds. Above 74 mph, a tropical storm is categorized a hurricane, typhoon, or cyclone based on the storm's geographic location.

A ***Tropical Storm Watch*** is issued by the National Hurricane Center (NHC) when tropical-storm conditions (sustained winds of 39 to 73 mph) are possible within the specified area within 48 hours. A ***Tropical Storm Warning*** is issued by the NHC when tropical-storm conditions (sustained winds of 39 to 73 mph) are expected within your area within 36 hours.

Hurricanes

Hurricanes, known generally as tropical cyclones are low-pressure systems with organized thunderstorm activity that form over tropical or subtropical waters. They gain their energy from warm ocean waters and have winds exceeding 74 mph that rotate counterclockwise about their centers in the Northern Hemisphere. Hurricanes are formed from thunderstorms that form over tropical oceans with surface temperatures warmer than 81°F (26.5°C). The ambient heat in the sea's surface and moisture in the rising air column set up a low-pressure center and convective conditions that allow formation of self-sustaining circular wind patterns. Under the right conditions, these winds may continue to intensify until they reach hurricane strength. This heat and moisture from the warm ocean water is the energy source of a hurricane. Hurricanes weaken rapidly when deprived of their energy source by traveling over land or entering cooler waters.

When a hurricane threatens the coast, advisories are issued by the NHC. In addition to advisories, the National Hurricane Center may issue a hurricane watch or warning. A hurricane watch indicates that hurricane conditions are possible and may threaten the area within 48 hours. A hurricane warning is issued when winds of at least 74 mph are to be expected in the area within 36 hours. Advisories and hurricane watches and warnings will frequently refer to the category of the storm. Hurricanes are classified using the Saffir-Simpson scale as follows:

The Saffir-Simpson Hurricane Wind Scale is a 1 to 5 rating based on a hurricane's sustained wind speed. This scale estimates potential property damage. Hurricanes reaching Category 3 and higher are considered major hurricanes due to their potential for significant loss of life and damage. Category 1 and 2 storms are still dangerous and require preventative measures.

Table 3.8 - Saffir-Simpson Hurricane Wind Scale

Category	Sustained Winds	Types of Damage Due to Hurricane Winds
1	74-95 mph	**Very dangerous winds will produce some damage:** Well-constructed frame homes could have damage to roof, shingles, vinyl siding and gutters. Large branches of trees will snap, and shallowly rooted trees may be toppled. Extensive damage to power lines and poles likely will result in power outages that could last a few to several days.
2	96-110 mph	**Extremely dangerous winds will cause extensive damage:** Well-constructed frame homes could sustain major roof and siding damage. Many shallowly rooted trees will be snapped or uprooted and block numerous roads. Near-total power loss is expected with outages that could last from several days to weeks.
3 (major)	111-129 mph	**Devastating damage will occur:** Well-built framed homes may incur major damage or removal of roof decking and gable ends. Many trees will be snapped or uprooted, blocking numerous roads. Electricity and water will be unavailable for several days to weeks after the storm passes.
4 (major)	130-156 mph	**Catastrophic damage will occur:** Well-built framed homes can sustain severe damage with loss of most of the roof structure and/or some exterior walls. Most trees will be snapped or uprooted, and power poles downed. Fallen trees and power poles will isolate residential areas. Power outages will last weeks to possibly months. Most of the area will be uninhabitable for weeks or months.
5 (major)	157 mph or higher	**Catastrophic damage will occur:** A high percentage of framed homes will be destroyed, with total roof failure and wall collapse. Fallen trees and power poles will isolate residential areas. Power outages will last for weeks to possibly months. Most of the area will be uninhabitable for weeks or months.

Source: National Hurricane Center, 2013.

While experts sometimes disagree on the annual cost, all sources agree that Hurricane Andrew was one of the costliest hurricane events ever to affect the U.S. Insured losses from Hurricane Andrew topped $17 billion, and most sources agree that the total cost of Hurricane Andrew exceeded $25 billion. Since Hurricane Andrew, several named storms have had similar devastating and costly effects on the United States including Wilma (2005) Katrina (2005), Ike (2008), Sandy (2012), Irma (2017), Maria (2017), Harvey (2017), and Sally (2020).

An average of 1.75 hurricanes strikes the U.S. every year. Florida is the most hurricane-prone state, and St. Lucie County has a history of major storms, which have impacted the area with severe property damage. The County's rapid growth, mainly during inactive hurricane period in the 1970s, 1980s, and 1990s, has resulted in increased potential for property damage and human suffering. Most of this new development occurred along the Atlantic shoreline as well as the Indian and St.

Lucie Rivers. The proximity of so many people living so close to the Atlantic Ocean, as well as the low coastal elevations, significantly increases the County's vulnerability. The barrier island towns of Port St. Lucie and Jupiter Island are vulnerable to storm surge and high wind damage, as are the communities fronting on the estuaries and rivers, while the inland area is more vulnerable to wind damage and freshwater flooding from rainfall.

Historically, Hurricanes Floyd and Irene impacted the County striking the area in September and October 1999, respectively. More recently, Hurricanes Frances and Jeanne (2004), both directly hit St. Lucie County. Hurricane Wilma (2005) crossed the southern half of Florida and exited the State just north of the County leaving considerable damage within the County. Tropical Storm Fay (2008) and Hurricanes Isaac and Sandy (2012) impacted the area with flooding and severe beach erosion.

Florida is noted as having the most people at risk and the most coastal property exposed to hurricanes. Between 1970 and 2010, Florida's population increased by 195.7%. Since 2019 the County population has increased in the inland areas of Port St. Lucie. Hurricane impacts occur through storm surge and high winds.

Storm Surge

Though hurricanes are well known for strong and destructive winds, hurricane storm surge is the greatest threat. Storm surge is water that is pushed toward the shore by winds swirling around the storm and is a large dome of water often 50 to 100 miles wide and rising anywhere from 4 to 5 feet in a Category 1 hurricane, and up to 20 feet during a Category 5 storm. Storm surge is a large dome of water often 50 to 100 miles wide and rising anywhere from 4 to 5 feet in a Category 1 hurricane, and up to 20 feet during a Category 5 storm. Storm surge is a wave that has outrun its generating source and become a long period swell and generally arrives ahead of the storm's actual landfall. The more intense the hurricane, the sooner the surge arrives ashore. Rising waters can be very rapid posing a serious threat to those who remain in flood prone areas.

Storm surge is always highest in the right-front quadrant of the direction the hurricane is moving in. As the storm approaches shore, the greatest storm surge will be to the north of the hurricane's eye. A surge of high water topped by waves driven by hurricane force winds can be devastating to coastal regions causing coastal erosion of natural and man-made buffers that include, sand, seagrasses, coastal forests, and seawalls. Storm tide is the combination of the storm surge and the normal astronomical tide. The stronger the hurricane and the shallower the offshore water, the higher the surge will be. In addition, if storm surge arrives during high or King tides, the water height will be even greater.

The effects of storm surge from hurricanes or tropical storms pose the greatest threats to St. Lucie County, are, especially along the shoreline of Hutchinson Island the barrier island that separates the Atlantic Ocean and the interior periphery of the Indian River Lagoon. The combination of high tides and wind can create coastal, riverine, and estuarine flooding as seawater is pushed into the Lagoon. The threat of saltwater inundation may also threaten water quality for marine life as it floods the estuarine lagoon system. As reported in the Treasure Coast Regional Evacuation Study 2010, potential storm tide heights for St. Lucie County range from up to 4.5' in a Category 1 storm to up to 16.5' in a Category 5 storm. The figure below is based upon the category of storm on the

Saffir-Simpson Hurricane Wind Scale and surge heights represent the maximum values from Sea, Lake and Overland Surges from Hurricanes (SLOSH) model data (2016, Treasure Coast Statewide Regional Evacuation Study). Similar values are set for adjacent county shorelines for Indian River and Martin County.

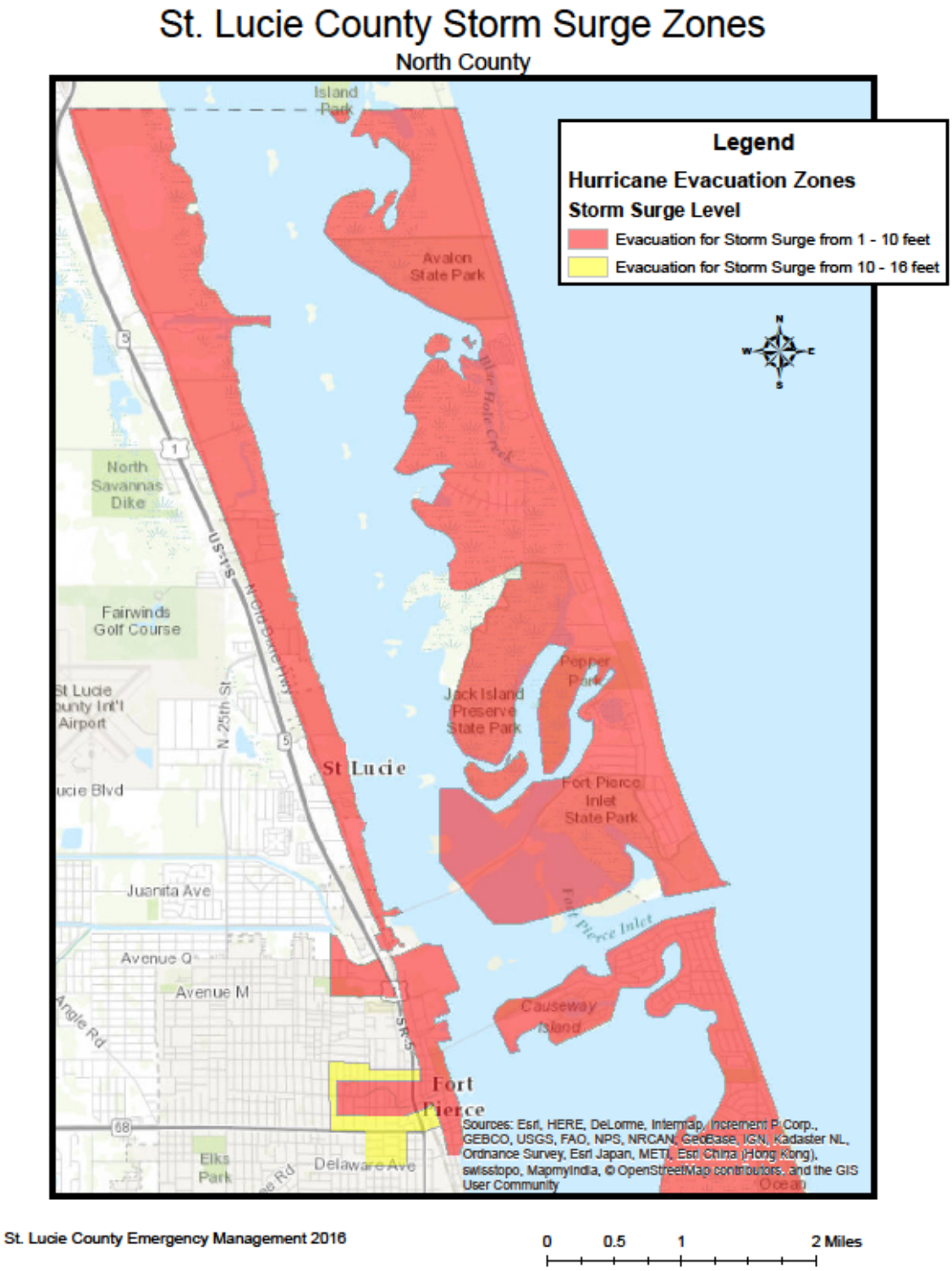
Figure 3.7 - Potential Tide Height(s) St. Lucie County

(In Feet above NAVD88)

*Storm Strength	St. Lucie
Category 1	Up to 6.8′
Category 2	Up to 12.2′
Category 3	Up to 16.7′
Category 4	Up to 21.2′
Category 5	Up to 27.7′

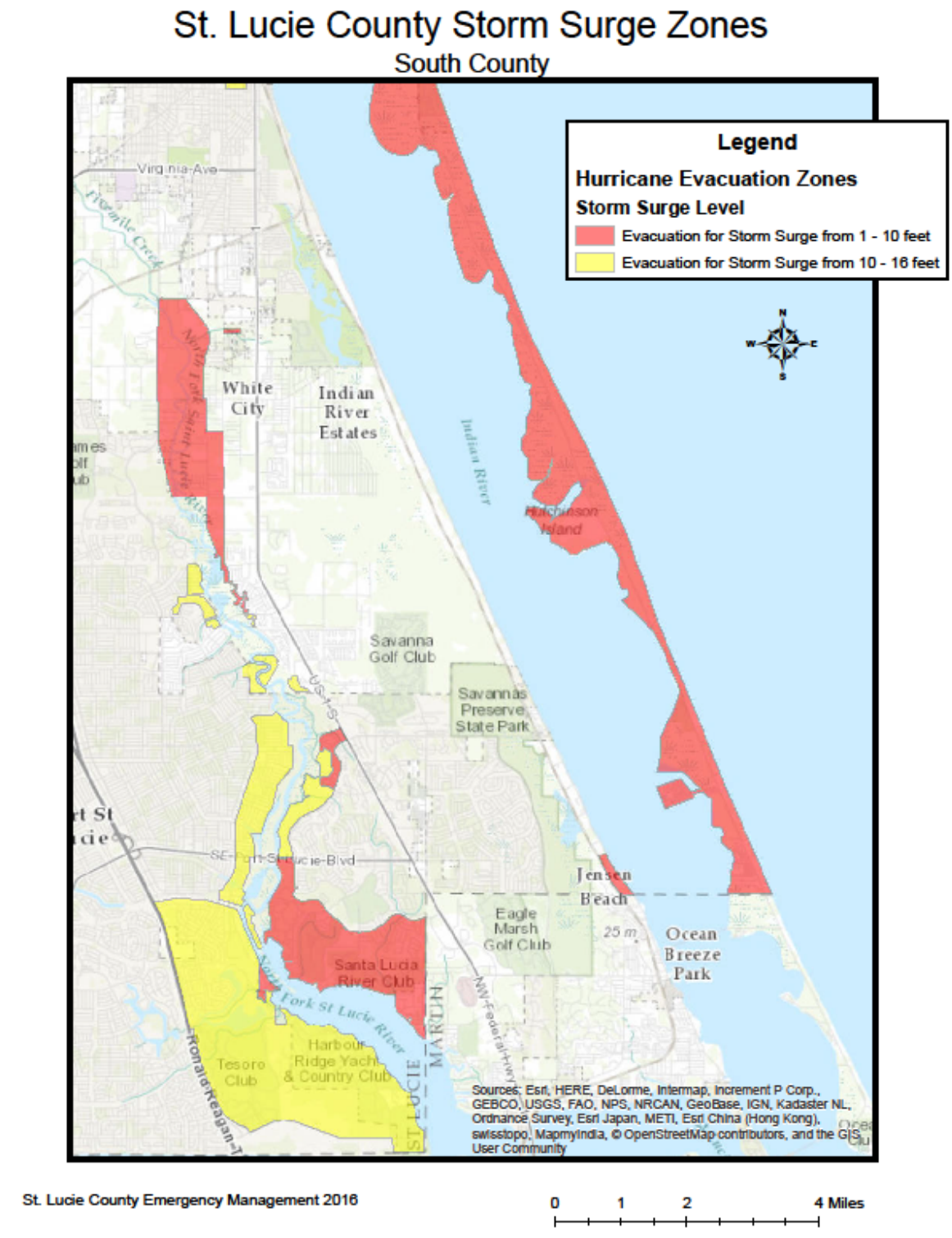
Left Blank Intentionally

Figure 3.8 - Storm Surge Maps for St. Lucie County



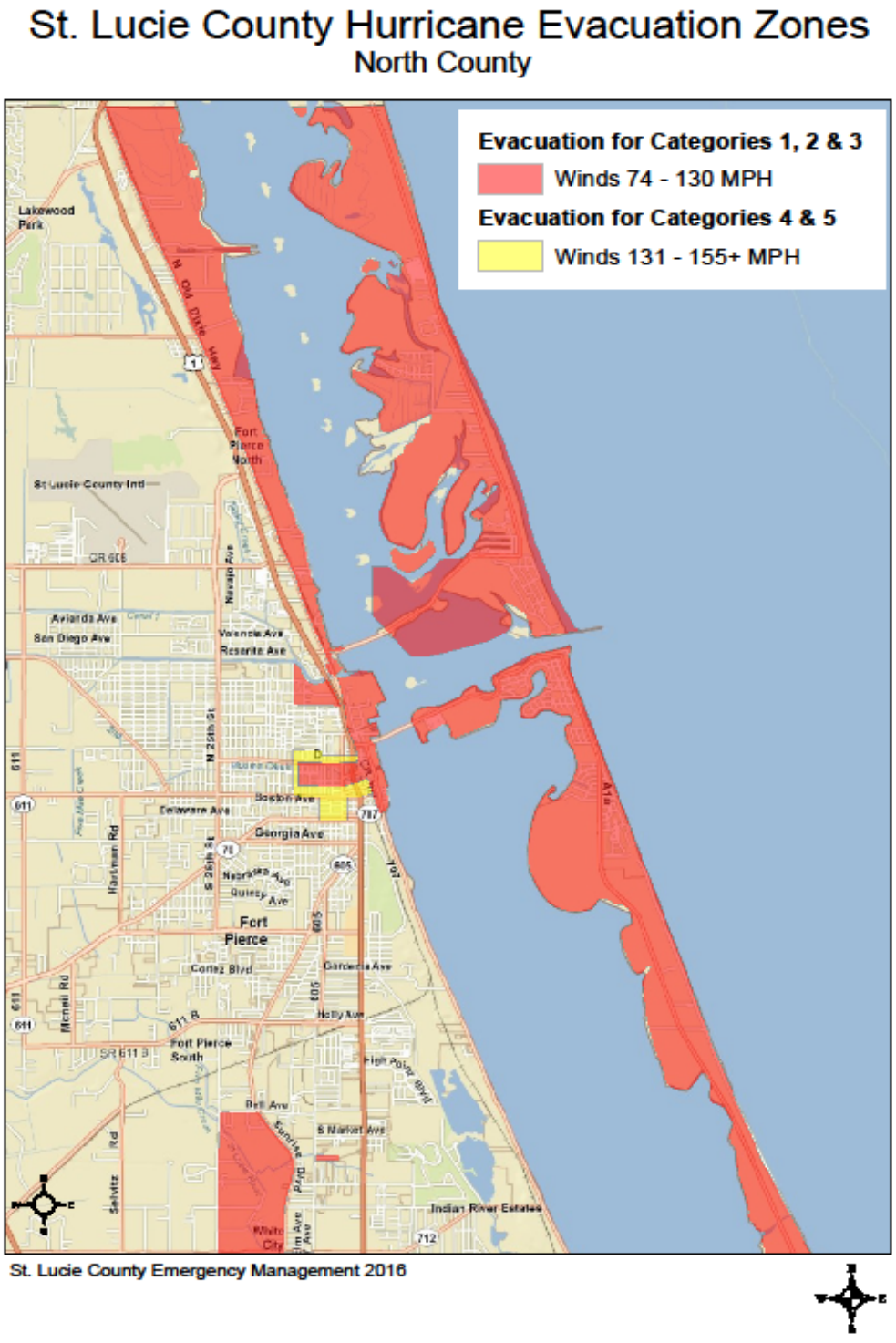
Source: St. Lucie County Division of Emergency Management

Figure 3.8 - Storm Surge Maps for St. Lucie County (continued)



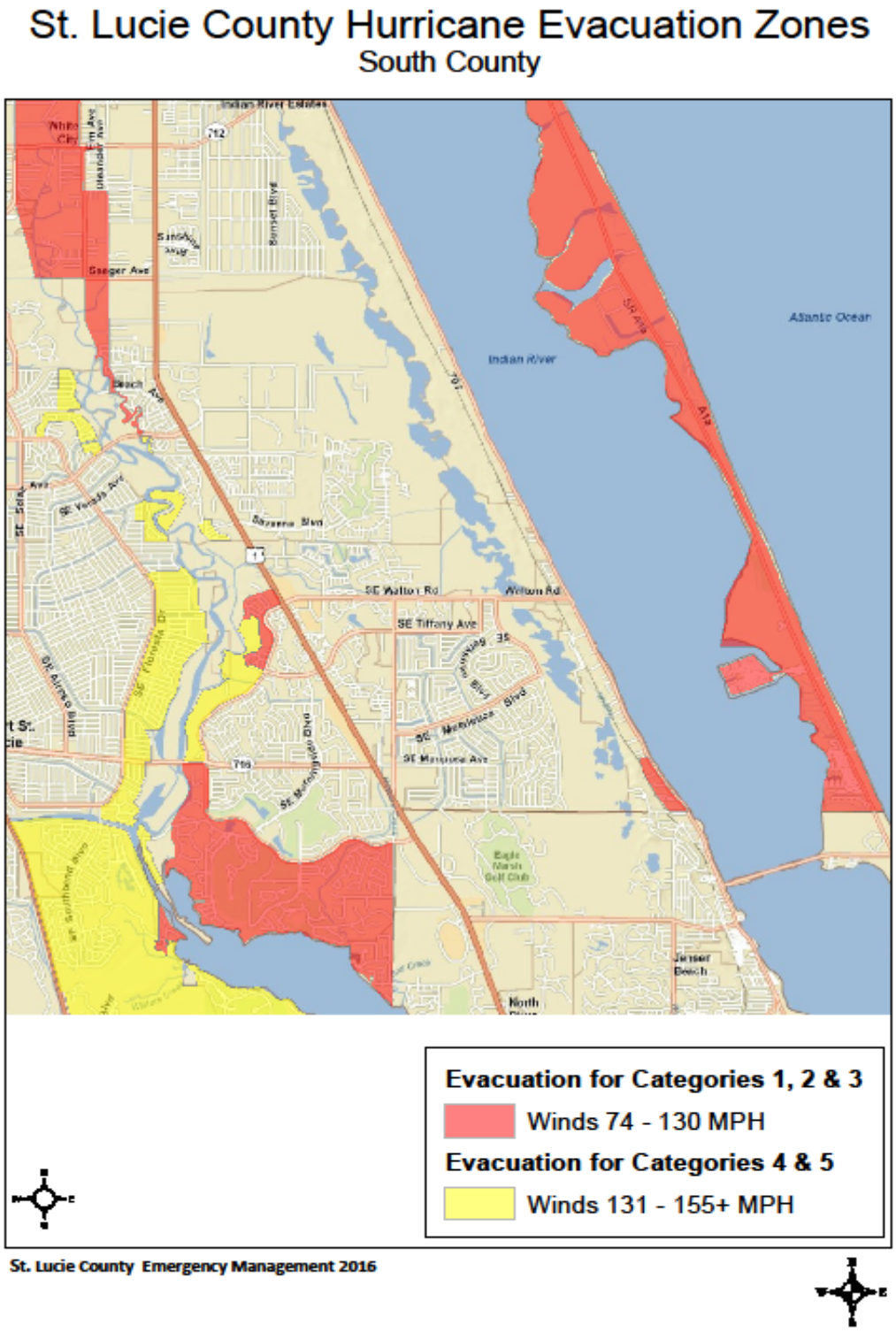
Source: St. Lucie County Division of Emergency Management

Figure 3.9 - Hurricane Evacuation Zone Maps for St. Lucie County



Source: St. Lucie County Division of Emergency Management

Figure 3.9 - Hurricane Evacuation Zone Maps for St. Lucie County, (continued)



Source: St. Lucie County Division of Emergency Management

[Refer to Appendix G for additional Tables and Figures.]

High Winds

Generally, it is the wind that produces most of the property damage associated with hurricanes, while the greatest threat to life is from flooding and storm surge. Although hurricane winds can exert tremendous pressure against a structure, a large percentage of hurricane damage is caused not from the wind itself, but from flying debris. Tree limbs, signs and signposts, roof tiles, metal siding, and other lose objects can become airborne missiles that penetrate the outer shells of buildings, destroying their structural integrity and allowing the hurricane winds to act against interior walls not designed to withstand such forces. Once a structure's integrity is breached, the driving rains associated with hurricanes can enter the structure and destroy its contents.

Hurricane winds are unique in several ways:

- They are more turbulent than winds in most other types of storms;
- They are sustained for a longer period of time (several hours) than any other type of atmospheric disturbance;
- They change slowly in direction, thus they are able to seek out the most critical angle of attack on a given structure; and
- They generate large quantities of flying debris as the built environment is progressively damaged, thus amplifying their destructive power.
- In hurricanes, gusts of wind can be expected to exceed the sustained wind velocity by 25% to 50%. This means a hurricane with sustained winds of 150 mph will have wind gusts exceeding 200 mph. The wind's pressure against a fixed structure increases with the square of the velocity. For example, a 100 mph wind will exert a pressure of approximately 40 pounds per square foot on a flat surface, while a 190 mph wind will exert a force of 122 pounds per square foot on that same structure. In terms of a 4 by 8foot sheet of plywood nailed over a window, there would be 1,280 pounds of pressure against this sheet in a 100 mph wind, and 3,904 pounds or 1.95 tons of pressure against this sheet in a 190 mph wind.

The external and internal pressures generated against a structure vary greatly with increases in elevation, shapes of buildings, openings in the structures, and the surrounding buildings and terrain. Buildings at ground level experience some reductions in wind forces simply because of the drag exerted by the ground against the lowest levels of the air column. High-rise buildings, particularly those located along the beachfront will receive the full strength of a hurricane's winds on their upper stories. Recent studies estimate that wind speed increases by approximately 37% just 15 feet above ground level.

Single-family residential construction is particularly vulnerable because less engineering oversight is applied to its design and construction. As opposed to hospitals and public buildings, which are considered "fully engineered," and office and industrial buildings, which are considered "marginally engineered," residential construction is considered "non-engineered." Historically, the bulk of wind damage experienced nationwide has occurred to residential construction. Fully engineered construction usually performs well in high winds due to the attention given to connections and load paths.

Hurricane winds generate massive quantities of debris that can easily exceed a community's entire solid waste capacity by three times or more. Debris removal is an integral first step toward recovery, and as

such, must be a critical concern of all those tasked with emergency management and the restoration of community services.

Table 3.9 - Debris Probability Based on a 10-Year Storm Event

Debris - 10 Year Event	Brick, Wood and Other	Reinforced. Concrete/ Steel	Eligible Tree Debris	Other Tree Debris	Total
St. Lucie	11,128	0	11,280	24,190	46,598
Total	11,128	0	11,280	24,190	46,598
Study Region Total	11,128	0	11,280	24,190	46,598

Source: Hazus Software (2016)

Other Impacts

Damage during hurricanes also may result from possible spawned tornadoes, and inland flooding associated with heavy rainfall that usually accompanies these storms. Hurricane Mitch which devastated Central America in 1998 and was later downgraded to Tropical Storm Mitch dropped as much as 10 inches of rain in some south Florida areas, which resulted in approximately $20 million in crop damage in Palm Beach County alone (Associated Press, 1998). According to the 2014 St. Lucie County CEMP, of St. Lucie County's 337,040 total land acreage, 195,155 are farmland. St. Lucie County is particularly vulnerable to crop damage resulting from the wind and rain from hurricanes and tropical storms.

3.1.2.2 Historic Events

From 1930 through 1959, a total of 58 hurricanes struck the U.S. mainland; 25 of which were Category 3 or higher (major storms). Between 1960 and 1989, 43 hurricanes struck the U.S., of which only 16 were Category 3 or stronger. Most hurricane experts feel we are entering a period of increased hurricane formation like the levels seen in the 1930's and 1940's. Current hurricane risk calculations are complicated by climatic factors suggesting the potential for even greater hurricane frequency and severity worldwide. Since 1995, there have been 110 Atlantic hurricanes, with 15 in 2005, 12 in 2010, and 10 in 2012 respectively. The Treasure Coast region, St. Lucie specifically was not impacted with any substantial impacts until 2017 when Hurricane Irma produced impacts of a statewide rainfall peak of 21.66 in recorded in the City of Fort Pierce (Weather Underground, 2021).

Global warming and climate change may augment storm frequency and precipitation rates associated with storms. The National Oceanic and Atmospheric Administration (NOAA) notes that a modest 0.9°F (0.5°C) increase in the mean global temperature will add 20 days to the annual hurricane season and increase the chances of a storm making landfall on the U.S. mainland by 33%. The warmer ocean surface also will allow storms to increase in intensity, survive in higher latitudes, developing storm tracts that

could shift farther north, producing more U.S. landfalls. Currently, an average of 1.75 hurricanes strikes the U.S. every year. Severe (Category 4 or 5 on the Saffir-Simpson scale) hurricanes strike the U.S. on the average of 3 every 5 years. Annually, hurricanes are estimated to cause approximately $1.2 billion in damages. The densely populated coastal areas on the Atlantic coastline and the Indian River Lagoon coupled with, generally low coastal elevations, increases vulnerability, introducing a strong case for mitigation and preparedness activities for populations, infrastructure, and environmental assets. The potential for property damage and human casualties in St. Lucie County has increased over the last several decades due to rapid growth since 1970, particularly in coastal and waterfront areas.

Since 1851, there have been 290 hurricanes that have struck the United States from Texas to Maine. Of those 39.3%, or 114, have made landfall in Florida. There have been 39 major hurricane strikes to Florida. This represents an average of one hurricane every year, and in 2004, St. Lucie County experienced two back-to-back landfalls within three weeks (NOAA, 2021).

Table 3.10 - Tropical Depressions, Tropical Storms, and Hurricanes for Past 5 Years

Year	Tropical Depressions	Tropical Storms	Hurricanes
2020	31	30	6
2019	20	18	6
2018	16	15	8
2017	18	17	10
2016	16	15	7

Source, National Hurricane Center, 2021

Table 3.11 - St. Lucie County Tropical Storm and Hurricane History

Date	Time	Name	Deaths or injuries	Estimated Property Damage $	Brief Description
10/15/1999	2000-1200	Irene	None	8,000,000	Minimal Hurricane Irene moved northeast from the Florida Keys across south Florida and emerged over the Atlantic near Ft. Pierce. In Martin and St. Lucie counties the greatest impact from the storm was flooding. From 5 to 9 inches of rain fell over the area flooding 300 homes. About 50 homes had major wind damage and thousands of trees were blown down.
9/4/2004	1949	Frances	None	4.8 Billion	The center of category 2 Hurricane Frances reached the Florida east coast near Port St. Lucie in Martin County early on September 5th. Frances was moving to the west northwest at 7 mph and maintained hurricane strength as it crossed the east half of the Florida Peninsula. Frances was downgraded to a tropical storm in the afternoon on the 5th when it was about 50 miles east of Tampa Bay. In Martin, St. Lucie and Indian River counties, the slow-moving storm produced wind gusts to hurricane strength for about 19 hours, producing an estimated 4.5 billion dollars in damage. Wind gusts well over 100 mph destroyed coastal structures, marinas, and vessels. Farther inland, hundreds of homes, mobile homes, and businesses were destroyed, and thousands were damaged. Highest recorded winds for St. Lucie County were 91 knots (105 mph) at St. Lucie Inlet.
9/25/2004	1400-0500	Jeanne	None	1.2 Billion	The center of category 3 Hurricane Jeanne reached the Florida east coast near Port St. Lucie in St. Lucie County shortly after midnight on September 26th, this is in the same location where Hurricane Frances came ashore on September 5th. Jeanne was moving to the west northwest at 12 mph and maintained hurricane strength as it crossed most of the Florida Peninsula. Jeanne was downgraded to a tropical storm in the afternoon of September 26th when it was about 40 miles northeast of Tampa Bay. The eye of Hurricane Jeanne passed over the community of Sewell' Point in Martin County. Over 180 residences were destroyed with about 4000 residences either damaged or destroyed. The highest wind speed recorded was 91 kts (105 mph) in Jensen Beach. No pressure data was recorded for St. Lucie County. Severe beach erosion occurred compounding the damage from Hurricane Frances just 3 weeks earlier.

Source: National Weather Service 2020

Table 3.11 - St. Lucie County Tropical Storm and Hurricane History (continued)

Date	Time	Name	Deaths or injuries	Estimated Property Damage $	Brief Description
10/14/2005	0500-1500	Wilma	None	8,000,000	Hurricane Wilma crossed the southern Florida Peninsula from the southwest exiting the state and moving over the Atlantic Ocean over the Martin/Palm Beach county line. The northern half of the eyewall of Hurricane Wilma moved over coastal St. Lucie County as Wilma moved offshore. The strongest winds in St. Lucie County occurred as the winds backed to the north with the large eye of Wilma over the coast of St. Lucie County. Estimated wind gust over 100 mph occurred along the beaches. Wilma produced widespread wind damage across the county. Forty-eight residences were destroyed and 120 suffered major damage. Most of these were mobile homes. More than 90 percent of St. Lucie County was without electricity. The county's main hospital, Martin Memorial, sustained enough damage to stop taking new patients. As much as 3 to 5 inches of rain fell across the county. Total crop loss including vegetables, citrus, and sugar equals $48 million. The highest reported wind gust was 108 mph (94 knots) at the St. Lucie County EOC at Hobe Sound. Lowest recorded surface pressure was 992.0 millibars from a vessel in the St. Lucie River. Actual surface pressure was likely lower.
8/19/2008	1200-2200	Fay	None	70,000,000	On the morning of August 19th, Tropical Storm Fay came onshore in southwest Florida, moving north-northeast toward Lake Okeechobee. Fay was well formed and intensified over land, exhibiting a classical tropical cyclone eye as it reached peak intensity over the western shore of Lake Okeechobee. Wind gusts of 58 mph were reported in the town of Okeechobee. By the early morning of August 20th, Tropical Storm Fay had moved to southern Brevard County, producing widespread wind gusts over 50 mph. Patrick AFB reported a gust to 62 mph. Fay produced torrential rain along the Space and Treasure coasts on the 20th as the circulation center moved up the Brevard County coast and into the near shore Atlantic waters near Edgewater. Rainfall amounts on the 20th were near 8 to 9 inches in St. Lucie County. In St. Lucie County, rainfall amounts of 10 to 15 inches fell over most of the coastal region, flooding over 55 homes. Damage estimates were over $70 million. Wind gusts in the western part of the county near Lake Okeechobee were estimated to be near 50 mph.
8/27/2012	0500-1700	Isaac	None	1,106,891	Persistent heavy rain bands from Tropical Storm Isaac produced widespread flooding across the county. Rainfall totals from the morning of August 26 through late on August 27 averaged 5 to 10 inches, with isolated totals of 12 to 14 inches. Peak wind gusts reached 35-45 mph along the coast and shore of Lake Okeechobee.
10/26/2012	0000-1600	Sandy	None	3,188,227	Hurricane Sandy moved slowly northwest, parallel to the Florida coast, 200-250 miles offshore. Due to the very expansive wind fields associated with the hurricane, sustained tropical storm winds reached the east-central Florida beaches and adjacent portions of the barrier islands. Large and pounding surf affected the beaches for six or more high tide cycles, during a period of high astronomical tides. Significant beach erosion occurred in south end of South Hutchison Island. Sections of South Highway A1A flooded, and a small section washed out. Damage estimates for the east-central Florida beaches totaled $46 million dollars. St. Lucie County sustained $3,188,277 in damages, $1,095,677 to mosquito impoundments and $2,122,600 to beaches on South Hutchison Island.

Date	Time	Name	Deaths or injuries	Estimated Property Damage $	Brief Description
10/03/2016	0800-1700	Matthew	None	3,973,954.19	Hurricane Matthew was a powerful, long-lived and deadly tropical cyclone which became the first Category 5 Atlantic hurricane since 2007. Preparations began in Florida on October 3 as Matthew approached, with the State Emergency Operations Center (State EOC/SEOC) activating and Governor Scott issuing an Executive Order (EO 16-230) declaring a state of emergency for the entire state. Hurricane Matthew paralleled the Florida coast of the southeastern United States over the next 36 hours, gradually weakening while remaining just offshore before making its fourth and final landfall in South Carolina as a Category 1 hurricane on the morning of October 8. In Florida, over 1 million lost power as the storm passed to the east. Sustained tropical storm force winds were observed in St. Lucie County.
9/05/2017	0800-1800	Irma	None	13,741,421.33	St. Lucie County, Florida declared a local State of Emergency on September 7, 2017, due to the National Weather Service's forecast that Hurricane Irma would make landfall in South Florida and that its path northward would create severe impacts to its residents in the form of storm surge, high winds, large rain amounts, flooding, tornadic activity, and flying debris. Hurricane Irma impacts within St. Lucie County post-landfall included the following: Over 115,000 properties without power. Heavy flooding near the tributaries of the Five Mile and Ten Mile creeks that caused extensive damage to numerous residential, commercial and governmental properties. Displacement of local populace (50+) that required short-term sheltering at the Percy Peek auditorium. Flooding hazards along numerous roadways that required upstream staging. Closure of the school district due to heavy flooding at its administrative offices and other areas around some schools (9/8-16/17).
8/26/2019	0800-1200	Dorian	None	1,996,050.00	Hurricane and storm surge warnings went into effect on September 1, 2019, due to the following meteorological expectations from storm data impacting the County: hurricane force winds are expected as close as 15 miles off of the Florida coast, with the potential for a storm surge of six (6) feet. Hurricane Dorian impacts within St. Lucie County post-landfall included the following: Erosion of Beaches. Damage to Mosquito Impoundments. Minor Localized Road damage. Displacement of local populace that required short-term sheltering at the Havert L. Fenn Center, Westwood Shelter, Fort Pierce Central High School, Treasure Coast High School, and Lakewood Park Elementary.
8/01/2020	0800-08004	Isaias	None	N/A	Isaias' path was difficult to accurately monitor as its sporadic spurts between land and water challenged its ability to significantly strengthen and intensify. Despite its adverse encounters, Isaias was able to develop from a potential tropical cyclone into a category 1 hurricane with its path forecasted to travel through the Caribbean and hit Florida. On August 1, 2020, Isaias inched up the coast of Florida just 5 – 10 miles off the shore of St Lucie County bringing heavy rains and powerful winds. Ultimately for St. Lucie County, Isaias brought peak winds of 45 – 55 mph, 2 – 3 inches in precipitation, and a storm surge of 1 – 2 feet which caused significant beach erosion.

Source: National Weather Service 2020

3.1.2.3 Vulnerability Assessment

St. Lucie County is vulnerable to or may be impacted by Tropical Depressions, Storms, and hurricanes

up to Category 5 strength. Potentially, hurricane events may impact communities in several ways, the list below is not mutually exclusive. Many impacts involve several combined effects on homes, infrastructure, and the environment:

- Excessive wind;
- Excessive water;
- Soil/beach erosion;
- Electric power outage;
- Surface and air transportation disruption;
- Navigable waterway impairment;
- Potable water system loss or disruption;
- Sewer system outage;
- Telecommunications system outage;
- Human health and safety;
- Psychological hardship;
- Economic disruption;
- Disruption of community services;
- Agricultural/fisheries damage;
- Damage to critical environmental resources;
- Damage to identified historical resources;
- Fire;
- Toxic releases; and
- Storm water drainage impairment.

Recent hurricane impacts to the County were Floyd and Irene, which struck Florida in September and October 1999, respectively. More recently, Hurricanes Frances and Jeanne (2004), both directly hit St. Lucie County. Hurricane Wilma (2005) crossed the southern half of Florida and exited the state just north of the County. Hurricane Ernesto threatened the area in 2006 but was not a direct hit. Tropical Storm Fay (2008) and Hurricanes Isaac and Sandy in 2012 impacted the area with flooding and severe beach erosion. Hurricane Matthew (2016) brought powerful winds to St. Lucie County, while Hurricane Irma (2017) produced significant flooding in St. Lucie County. Lastly, Hurricane Dorian (2019) brought beach erosion to the County.

3.1.2.4 Probability Assessment – MEDIUM

St. Lucie County's exposure to hurricanes is high, while the County's hazard history indicates that the probability of future occurrence is medium depending based off of historical data.

3.1.2.4 Risk Assessment - HIGH

All communities within St. Lucie County are highly vulnerable to hurricanes, but they are not all vulnerable for the same reasons. The barrier islands, North and South Hutchinson, City of Fort Pierce, St. Lucie Village, and areas along the intercoastal waterway and St. Lucie River are highly vulnerable to both wind and storm surge damage from hurricanes. Inland communities may have less hurricane vulnerability from flooding but have hurricane vulnerability from wind damage due to their older or less substantial type of construction.

Other than flooding, impacts from tropical storms and hurricanes is the greatest consideration in

mitigation efforts countywide. Public facilities and infrastructure are being hardened or built to updated code to withstand greater winds. Though building/shelter destruction may be avoided, power loss or interruption can be demoralizing and impede quick recovery. The need and expectation for backup power (generators) is a priority for St. Lucie County shelters, hospitals, and other essential services and should be considered for public critical facilities.

3.1.3 Tornados

3.1.3.1 Hazard Identification

Tornados are characterized as violent windstorms with twisting, funnel-shaped clouds forming from sky to ground, spinning at high speed and destroying anything in their paths. A tornado's wind speed normally ranges from 40 to more than 300 mph. Waterspouts are weak tornadoes that form over warm water and are most common along the Gulf Coast and the southeastern states. Waterspouts occasionally move inland and become tornadoes causing damage and injury.

The most common type of tornado, the relatively weak and short- lived type, occurs in the warm season with June being the peak month. They most commonly precede the storm on the leading edge. The strongest, most deadly tornadoes occur in the cool season, from December through April. Occasional windstorms are accompanied by tornadoes and are also widespread and destructive. Damages from tornados are a result of the high wind velocity and wind-blown debris.

When a tornado threatens, only a short amount of time is available to make life or death decisions. The National Weather Service (NWS) issues two types of alerts:

- A Tornado Watch means that conditions are favorable for tornadoes to develop; and
- A Tornado Warning means that a tornado has been sighted or the Weather Field Office has detected rotation on the radar.

Table 3.12 - Enhanced Fujita Tornado Intensity Scale

EF-Scale:	Typical Damage:
EF-0 65-85mph	Light damage. Peels surface off some roofs; some damage to gutters or siding; branches broken off trees; shallow-rooted trees pushed over.
EF-1 86-110mph	Moderate damage. Roofs severely stripped; mobile homes overturned or badly damaged; loss of exterior doors; windows and other glass broken.
EF-2 111-135mph	Considerable damage. Roofs torn off well-constructed houses; foundations of frame homes shifted; mobile homes completely destroyed; large trees snapped or uprooted; light-object missiles generated; cars lifted off ground.
EF-3 136-165 mph	Severe damage. Entire stories of well-constructed houses destroyed; severe damage to large buildings such as shopping malls; trains overturned; trees debarked; heavy cars lifted off the ground and thrown; structures with weak foundations blown away some distance.
EF-4 166-200 mph	Devastating damage. Whole frame houses Well-constructed houses and whole frame houses completely leveled; cars thrown and small missiles generated.
EF-5 >200 mph	Incredible damage. Strong frame houses leveled off foundations and swept away; automobile-sized missiles fly through the air in excess of 100 m (109 yd.); high-rise buildings have significant structural deformation; incredible phenomena will occur.
EF No rating	Inconceivable damage. Should a tornado with the maximum wind speed in excess of EF-5 occur, the extent and types of damage may not be conceived. A number of missiles such as iceboxes, water heaters, storage tanks, automobiles, etc. will create serious secondary damage on structures.

Source: National Weather Service 2021

3.1.3.2 Historic Events

Florida ranks third in the United States in the number of tornado strikes, and the first in the number of tornadoes per square mile. During the period 1950-1994, 82 Floridians were killed; 1998 was the deadliest with 42 deaths in 4 counties; and the 2007 Central Florida tornadoes left 21 dead. In 2012, the state of Florida had 48 tornados touch-down. The National Climatic Data Center (NCDC) indicates that there has been a total of 107 touchdowns in St. Lucie County since 1950 including funnel clouds and waterspouts. St. Lucie County has had four confirmed tornado touchdowns since 2011, the one in 2015. There has been one confirmed tornado as of the 2021 update; the tornado occurred in 2017.

Most of the events have been EFO and EF1; however, two EF2 and two EF3 tornados have impacted the County. NCDC data also indicate that there have been 27 tornado-related injuries, 2 fatalities and $4,378,560 in property damage associated with tornado events in the County.

Table 3.13 - Recent History of Tornados in St. Lucie County

Date	Time	Location	Deaths or Injuries	Property Damage Estimate $	Fujita Scale	Brief Description
8/02/2001	10:30	Western St. Lucie County	None	10,000	EF0	An EF0 tornado touched down briefly in a rural area west of Ft. Pierce. The tornado damaged a mobile home, overturned a farm tractor and blew down about 25 citrus trees.
5/14/2002	1600	Western St. Lucie County	None	10,000	EF0	A small F0 tornado touched down briefly in a truck repair facility, damaging the roof of one structure and destroying large awnings attached to the truck garage.
7/27/2002	1500	Fort Pierce	None	100,000	EF1	An F1 tornado touched down in Ft. Pierce and remained nearly stationary for about one minute. It destroyed the service bay roof of a car dealership, and damaged 70 cars.
8/4/2004	1525	Fort Pierce	None	Unknown	EF0	An F0 tornado touched down near Interstate 95 northwest of Ft. Pierce ripping the porch off a house. Funnel clouds were reported with this storm.
5/25/2005	1415	Port St. Lucie	None	Unknown	EFO	A tornado touched down in a residential area near Port St. Lucie, damaging shingles, pool screens and awnings.
7/23/2007	1730	Port St. Lucie	None	Unknown	EF0	Brief touchdown near Florida Turnpike knocking trees down with no structural damage
8/19/2008	1135	White City	None	Unknown	EF0	Rain bands moving on shore from Tropical Storm Fay produced a brief EF0 tornado in Ft. Pierce. The tornado slightly damaged the roof and interior ceiling of a warehouse.
4/26/2011	1805	Western St. Lucie County	None	None	EF0	A citizen in Port St. Lucie observed a funnel cloud which briefly touched down as a landspout tornado in a rural agricultural area west of the city. Several other reports were received of a funnel cloud, including two pilot reports. No damage occurred. Photos and video were obtained of the event

Source: National Climatic Data Center

Table 3.13 – Recent History of Tornadoes in St. Lucie County, (continued)

Date	Time	Location	Deaths or Injuries	Property Damage Estimate	Fujita Scale	Brief Description
5/8/2012	1408	White City	None	None	EF0	A thunderstorm intensified along the east coast sea breeze and produced a weak brief EF0 tornado (land spout) in a produce field off Glades Cut Off Road west of Port St. Lucie. The tornado quickly crossed the road before lifting.
5/28/2012	1358	Port St. Lucie	None	Unknown	EF0	A line of thunderstorms formed along the sea breeze boundary within the far outer circulation of Tropical Storm Beryl. One of the storms produced a brief tornado in Lyngate Park and near the St. Lucie Medical Center near Port St. Lucie. Estimated sustained winds were around 65 mph, consistent with low-end EF0 damage. Minor damage was sustained to the roofs of two homes, several fences were knocked over, and a few small trees were downed.
7/17/2012	1422	Lakewood Park	None	Unknown	EF0	The very brief EF0 tornado impacted one condominium building within the Indian Pines Village. The tornado stripped several sections of plywood from one roof of a condo and another unit sustained a small hole in the roof and the front entrance awning was peeled back.
8/15/2015	1256	Indrio	None	None	EF0	A motorist near the intersection of Highway US-1 and Indrio Road in Fort Pierce observed a brief touchdown of a weak land spout/tornado that crossed US-1. No damage was reported, and an examination of video relayed via social media suggests maximum winds were below 50 mph.
3/23/2017	1240	Ft Pierce Nelson ARP	None	2000	EF1	Florida Power and Light reported a power pole snapped in a rural area of St. Lucie County between Interstate 95 and the Florida Turnpike. The damage occurred as a severe thunderstorm traveled southwest from the Vero Beach area and acquired strong low-level rotation, resulting in a brief tornado touchdown. Photos of the damage suggest EF-1 damage (90-100 mph).

Source: National Climatic Data Center

3.1.3.3 Vulnerability Assessment

Tornado events can have the following potential impacts within a community:

- Excessive wind;
- Electric power outage;
- Surface and air transportation disruption;
- Telecommunications system outage;
- Human health and safety;
- Psychological hardship; and
- Economic disruption.

Tornadoes and severe thunderstorms can occur anywhere in the County. As the number of structures and the population increases, the probability that a tornado will cause property damage or human casualties also increases. When compared with other states, Florida ranks third in the average number of tornado events per year. These rankings are based upon data collected for all states and territories for tornado events between the years 1991 and 2010 (State of Florida Enhanced Hazard Mitigation Plan).

St. Lucie County's vulnerability to tornadoes is compounded by the high concentration of mobile home residents in large mobile home communities in both incorporated areas, and unincorporated County. There are 8,921 mobile home spaces and 1,184 RV spaces throughout the County (St. Lucie County Planning & Development Services, 2021*)*. Mobile homes are an affordable form of housing in St. Lucie County, and they are distributed throughout the County, in rural as well as urban areas. Although the number of mobile homes within the County has been reduced over the last 5 years, they remain the most vulnerable to tornadic activity.

The majority of Florida tornadoes are weak. There has never been an EF5 tornado documented in Florida – and only 4 EF4 tornados (National Weather Service Melbourne, Florida).

Historically, St. Lucie County has mainly had occurrences of a magnitude of an EF-0 or EF-1 tornado and the impacts have been widespread throughout the county.

> Light damage. Peels surface off some roofs; some damage to gutters or siding; branches broken off trees; shallow-rooted trees pushed over.
>
> Moderate damage. Roofs severely stripped; mobile homes overturned or badly damaged; loss of exterior doors; windows and other glass broken.

3.1.3.4 Probability Assessment - LOW

Because tornado hazards are not linked to geography or geology, it is difficult to determine the probability of future occurrence. However, based on historical data for the State of Florida and St. Lucie County, St. Lucie County could expect an EF-0 or EF-1 magnitude tornado, however stronger magnitude tornados cannot be ruled out. Overall, the probability of a tornado striking any specific point in southeastern Florida is 0.04, or once per 250 years, therefore the chances for a future occurrence is low.

3.1.3.5 Risk Assessment - LOW

Historical data indicate the overall hazard ranking of St. Lucie County to tornadoes is low, (State of Florida Enhanced Hazard Mitigation Plan) but some specific communities have a moderate to high vulnerability to this hazard due to the type of construction or numbers of mobile homes (manufactured

housing units) within their boundaries.

3.1.4 Severe Thunderstorms/Lightning

3.1.4.1 Hazard Identification

The National Weather Service (NWS) defines a severe thunderstorm as a thunderstorm containing one or more of the following phenomena: hail U.S. quarter size or greater, winds gusting in excess of 58 mph, and/or a tornado. Severe weather can include lightning, tornadoes, damaging straight-line winds, and large hail. Most individual thunderstorms only last several minutes; however, some can last several hours. Long-lived thunderstorms are called super cell thunderstorms. A super cell is a thunderstorm that has a persistent rotating updraft. This rotation maintains the energy release of the thunderstorm over a much longer time than typical, pulse-type thunderstorms, which occur in the summer months. Super cell thunderstorms are responsible for producing the majority of severe weather, such as large hail and tornadoes.

Downbursts also are occasionally associated with severe thunderstorms. A downburst is a strong downdraft resulting in an outward burst of damaging winds on or near the ground. Downburst winds can produce damage similar to a strong tornado. Although usually associated with thunderstorms, downbursts can occur with showers too weak to produce thunder. Strong squall lines also can produce widespread severe weather, primarily very strong winds and/or microbursts. A squall is a sudden violent gust of wind often with rain or snow.

When a severe thunderstorm approaches, the NWS will issue one of the two advisories below:

- Severe Thunderstorm Watch: Conditions are favorable for the development of severe thunderstorms.
- Severe Thunderstorm Warning: Severe weather is imminent or occurring in the area.

Hail: Hail is a showery precipitation in the form of irregular pellets or balls of ice more than 5mm in diameter, falling from a cumulonimbus cloud. Hailstones are formed when updrafts carry raindrops up into the highest parts of the cloud and the super-cooled liquid droplets collide. Hail drops back down into the warmer part of the cloud and carried back up, until the internal up and downdrafts can no longer support the size of the hailstone, then it falls to the ground.

The potential damage and hailstorm intensity is described H0 to H10 according to the TORRO Hailstorm Intensity Scale. St. Lucie County could reasonably expect hail up to a size code 5 during a severe thunderstorm, as has occurred.

Table 3.14 - Combined NOAA/TORRO Hailstorm Intensity Scale

Size Code	Intensity Category	Typical Hail Diameter (inches)	Approximate Size	Typical Damage Impacts
H0	Hard Hail	up to 0.33	Pea	No damage
H1	Potentially Damaging	0.33-0.60	Marble or Mothball	Slight damage to plants, crops
H2	Potentially Damaging	0.60-0.80	Dime or grape	Significant damage to fruit, crops, vegetation
H3	Severe	0.80-1.20	Nickel to Quarter	Severe damage to fruit and crops, damage to glass and plastic structures, paint and wood scored
H4	Severe	1.2-1.6	Half Dollar to Ping Pong Ball	Widespread glass damage, vehicle bodywork damage
H5	Destructive	1.6-2.0	Silver dollar to Golf Ball	Wholesale destruction of glass, damage to tiled roofs, significant risk of injuries
H6	Destructive	2.0-2.4	Lime or Egg	Aircraft bodywork dented, brick walls pitted
H7	Very destructive	2.4-3.0	Tennis ball	Severe roof damage, risk of serious injuries
H8	Very destructive	3.0-3.5	Baseball to Orange	Severe damage to aircraft bodywork
H9	Super Hailstorms	3.5-4.0	Grapefruit	Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the open
H10	Super Hailstorms	4+	Softball and up	Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the open

Wind: Damaging winds are more likely to be associated with thunderstorms than tornadoes. In fact, many confuse damage produced by "straight-line" winds and often erroneously attribute it to tornadoes. This occurred in St. Lucie County in March 2015 in the White City area. Several mobile homes were damaged. St. Lucie County could expect to receive up to Force 11 winds during a severe thunderstorm.

Table 3.15 - Beaufort Wind Scale

Force	Wind (Knots)	WMO Classification	Appearance of Wind Effects	
			On the Water	On Land
0	Less than 1	Calm	Sea surface smooth and mirror like	Calm, smoke rises vertically
1	1-3	Light Air	Scaly ripples, no foam crests	Smoke drift indicates wind direction, still wind vanes
2	4-6	Light Breeze	Small wavelets, crests glassy, no breaking	Wind felt on face, leaves rustle, vanes begin to move
3	7-10	Gentle Breeze	Large wavelets, crests begin to break, scattered whitecaps	Leaves and small twigs constantly moving, light flags extended
4	11-16	Moderate Breeze	Small waves 1-4 ft. becoming longer, numerous whitecaps	Dust, leaves, and loose paper lifted; small tree branches move
5	17-21	Fresh Breeze	Moderate waves 4-8 ft. taking longer form, many whitecaps, some spray	Small trees in leaf begin to sway
6	22-27	Strong Breeze	Larger waves 8-13 ft., whitecaps common, more spray	Larger tree branches moving, whistling in wires
7	28-33	Near Gale	Sea heaps up, waves 13-20 ft., white foam streaks off breakers	Whole trees moving, resistance felt walking against wind
8	34-40	Gale	Moderately high (13-20 ft.) waves of greater length, edges of crests begin to break into spindrift, foam blown in streaks	Whole trees in motion, resistance felt walking against wind
9	41-47	Strong Gale	High waves (20 ft.), sea begins to roll, dense streaks of foam, spray may reduce visibility	Slight structural damage occurs, slate blows off roofs
10	48-55	Storm	Very high waves (20-3o ft.) with overhanging crests, sea white with densely blown foam, heavy rolling, lowered visibility	Seldom experienced on land, trees broken or uprooted, “considerable structural damage”
11*	56-63	Violent Storm	Exceptionally high (30-45 ft.) waves, foam patches cover sea, visibility more reduced	
12	64+	Hurricane	Air filled with foam, waves over 45 ft., sea completely white with driving spray, visibility greatly reduced	

Source: National Weather Service

Lightning: Florida is the lightning capital of the country, mainly due to our geography. The very elements that make our state a great place for outdoor activities, warm temperatures, and plenty of water also make the environment primed to produce thunderstorms, which generate lightning.

Lightning is the most lethal component of thunderstorms. As a thunderstorm grows, electrical charges build up within the cloud, and oppositely charged particles gather at the ground below. The attraction between positive and negative charges quickly grows strong enough to overcome the air's resistance to electrical flow. The opposite charges connect and complete the electrical circuit. Charge then surges upward from the ground at nearly one-third the speed of light and produces a bright flash of light (Cappella, 1997).

While the conditions needed to produce lightning are understood, how lightning forms has never been verified. Forecasters may never be able to forecast when and where a lightning strike will take place, however, consistent historical and current technology is fairly certain that lightening accompanies thunderstorms, before, during, and after.

3.1.4.2 Historic Events

In 1997, thunderstorms spawned 103 tornadoes, injured 121 people, and produced over 38 million dollars in property damage statewide. St. Lucie County averages more than 70 days with thunderstorms per year, with the most frequent occurrences being between the months of July and September.

According to the National Climatic Data Center (NCDC), there have been 40 thunderstorm wind incidents in the County since 1975. These incidents caused a total of $288,000 in property damage.

On average, lightning kills more people than any other weather event. Florida leads in the nation in lightning-related deaths and injuries. Most lightning strike fatalities occur in June, July, and August. Between 1990 and 2003, there were 126 lightning-related deaths in Florida (National Lightning Safety Institute, 2015). Florida also has the most strikes, about 12 strikes per square kilometer per year in some places (National Lightning Safety Institute, 2015). Lightning occurs with every thunderstorm and, on average, Florida sees around 70-100 days a year with at least one thunderstorm in the state. Florida averages about 10 deaths and 40 injuries directly due to lightning each year.

Between 1950 and 2016, St. Lucie County recorded 8 lightning-related deaths and 13 injuries (National Climatic Data Center, NWS Melbourne). 35% of brush fires in St. Lucie County from 2011 to 2015 were caused by lightning strikes resulting in nearly 1,000 acres being burned.

Between 2017 and 2020, there were six reported cases of hail, three major thunderstorm events that produced strong winds, and one severe thunderstorm that heavily involved lightning.

3.1.4.3 Vulnerability Assessment

Thunderstorm events can have the following potential impacts within a community:

- Excessive wind;
- Excessive water;
- Damaging hail;
- Electric power outage;
- Surface and air transportation disruption;
- Telecommunications system outage;
- Human health and safety;
- Psychological hardship;
- Economic disruption;
- Fire; and
- Storm water drainage impairment.

Vulnerability to severe thunderstorms and lightning is high countywide in St. Lucie County. Community protective measures include, but are not limited to, construction practices and lightning sirens at public gathering locations.

Lightning strikes can cause intense localized damage, as well as loss of life. In contrast to other hazards such as tornadoes and floods; an estimated 5% of all homeowners' insurance claims are related to lightning damage. Farmers face these same threats plus the threat to livestock. In stormy weather, livestock frequently gather under trees to seek shelter or are trapped in barns where a lightning strike can destroy an entire herd, therefore making the western portion of the County that is inherently agricultural even more vulnerable than other regions to severe thunderstorm/lightning.

3.1.4.4 Probability Assessment - HIGH

The probability of future thunderstorms with winds, hail, and lightning occurrence based on hazard history is high. According to the Florida Climate Center, Florida has 100 days of thunderstorms annually.

3.1.4.5 - Risk Assessment - HIGH

The National Lightning Detection Network's Vaisala map indicated that St. Lucie County lightning strike density is greater in the western two thirds (20-28 per square mile or between 4571 & 7619 strikes per year) of the county than the eastern one third (12-20 per square mile, between 3810 & 5134 strikes per year). This would indicate that the County, with 572 square miles over all could average 8,008 lightning strikes per year, if the 70-100 days a year of severe thunderstorms in the State impact St. Lucie County.

Since 1953, there have been 41 thunderstorm high wind events and 39 hail events totaling approximately $308,500 in damages. That amount may be conservative due to inconsistent damage reporting.

Working communities have a higher vulnerability to economic impacts by lightning than residential or retirement communities, all other factors being equal, while residential and retirement communities have a historically higher vulnerability in terms of lightning damages.

The County can expect losses similar to what it experienced in the past. The most vulnerable areas for citizens in the County are open areas such as the beaches and shoreline, golf courses, open fields, and parks. Risk of multiple injuries or deaths are more prevalent where large populations congregate in these open spaces.

3.1.5 Wildfires

3.1.5.1 Hazard Identification

Wildfire is defined as an undesirable fire occurring in the natural environment. Each year, thousands of acres and many homes are destroyed by fires that can erupt at any time of the year from a variety of causes, including arson, lightning, and debris burning. However, much of Florida's habitat is dependent upon wildfires to support the ecosystem. Many Florida habitats only exist due to the presence of wildfires. Some habitats are caused by frequent fires, while other habitats need only a few large fires over a period of years. Florida's wildfire season occurs from mid-April through July. Most of these fires are set by lightning. Lightning initiated fires were frequent until suppression measures were

implemented.

Several factors influence wildfire frequency and severity, including local weather and climate conditions (e.g., prevalence of storms, lightning, hot temperatures, and drought); forest health characteristics (e.g., brush conditions, tree mortality and density, changes in storms, drought, disease, or pests); human activities (e.g., camping, debris burning, and construction); and existing wildfire prevention measures and forest management practices.

Wildfires are expected to increase in size, frequency, and severity as a result of climate change, especially at the wildland-urban interface. Wildfires can increase risk to people, buildings, property, and infrastructure. They can impact physical and mental health, safety, and security of individuals, and result in electricity outages, water utility disruption, and transportation issues. Wildfires can have cascading effects on communities, such as exacerbating flooding and creating erosion risks, threatening drinking water sources, and altering a community's aesthetics.

The U.S. Census reports Florida's population has nearly tripled in the last century. Local, regional, and state government work to balance these development pressures through the acquisition, conservation, restoration and/or management of preserves and the ecological services provided by natural resource systems.

Virtually all of Florida's habitats need periodic fire to maintain ecosystem health. In natural settings, lightning-induced fire moves through the understory of a forest relatively quickly, avoiding the height and intensity that would kill trees or endanger wildlife. This natural process maintains habitats, returns nutrients to the soil, and creates conditions for rapid growth and renewal.

With urban development, this natural cycle is interrupted to protect human life and property. Today's land managers use a variety of strategies to mimic the natural cycle and maintain healthy natural spaces for the health, safety, and welfare of our community.

Large preserves and forested areas owned by federal, state, and local government implement management plans that include fuel reduction strategies, such as prescribed fire and mechanical removal of underbrush. Reducing the fuel load within a preserve is the first line of defense in avoiding catastrophic fires that endanger not only human life and property. This work becomes more challenging in or near urban areas due to ensuring the proper weather and wind conditions and ensuring fire breaks that delineate extent of the prescribed fire.

St. Lucie County has wildfires throughout the year. The most active part the year is typically December through the beginning of June. Generally, St. Lucie County experiences the greatest number of wildfires during April, May, and June. On average, St. Lucie County has 28 wildfires a year depending on weather conditions. Refer to the following tables for details by cause and year.

3.1.5.2 Historic Events

On April 15, 1999, the worst fire in St. Lucie County started as a small brush fire in western Port St. Lucie burning nearly 2,400 acres, destroying nearly 50 homes, and damaging 30 others with an estimated at $7.3 million in losses. This disaster received a Federal Disaster Declaration.

Table 3.16 highlights St. Lucie County's recent history involving wildfires. Table 3.17 identifies the

number of wildfires experienced within 2011-2015 along with the total amount of acres burned. As such, there have been no significant wildfires since 2015.

Table 3.16 - Historically Significant Wildfires in St. Lucie County

Wildfire Name	Date	Homes threatened	Location	Acres	Cause
Russakis	6/18/2015	4	5501 Emerson	42	powerlines
Savannas	6/11/2014	2 pavilions	Savannas preserve State Park	57.5	Escaped Prescribed Fire
Slash Pine	5/28/2014	10	Tree top trail off Indio in Ft Pierce	10 acres	Debris Burn
Canal Road	02/18/2014	3 pump houses damaged	Bluefield and Germany Canal Rd	211	Incendiary
Heather	3/24/2013	244	Indrio & US1	390	Lightning
Oleander Command	4/3/2012	1	Oleander	1.5	Campfire
Orange	2/17/2011	0	Carlton Road	240	Debris Burning
Midway Command	3/24/2011	5	Midway & US1	40	
Lewis	6/14/2011	0	Edwards & Lewis	23	Lightning
Del Mundo	5/9/2010	3	240 Del Mundo St	300	Children

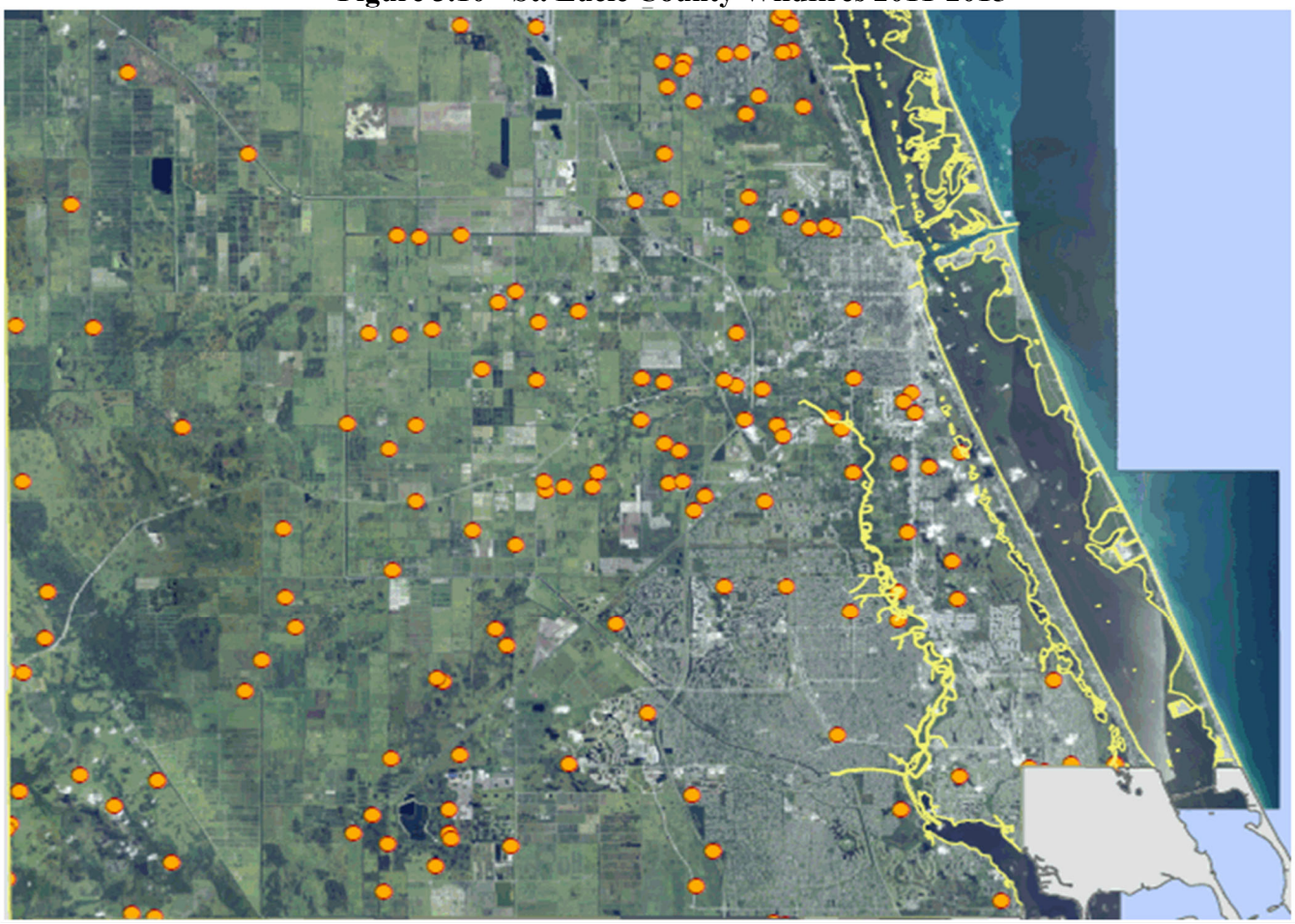
Source: Florida Forest Service

Table 3.17 – St. Lucie County's Five-Year Wildfire History

Year	Number of Wildfires	Acres Burned
2015	49	801
2014	19	250.3
2013	25	402.2
2012	22	376.4
2011	26	172.3

Source: Florida Forest Service

Figure 3.10 - St. Lucie County Wildfires 2011-2015



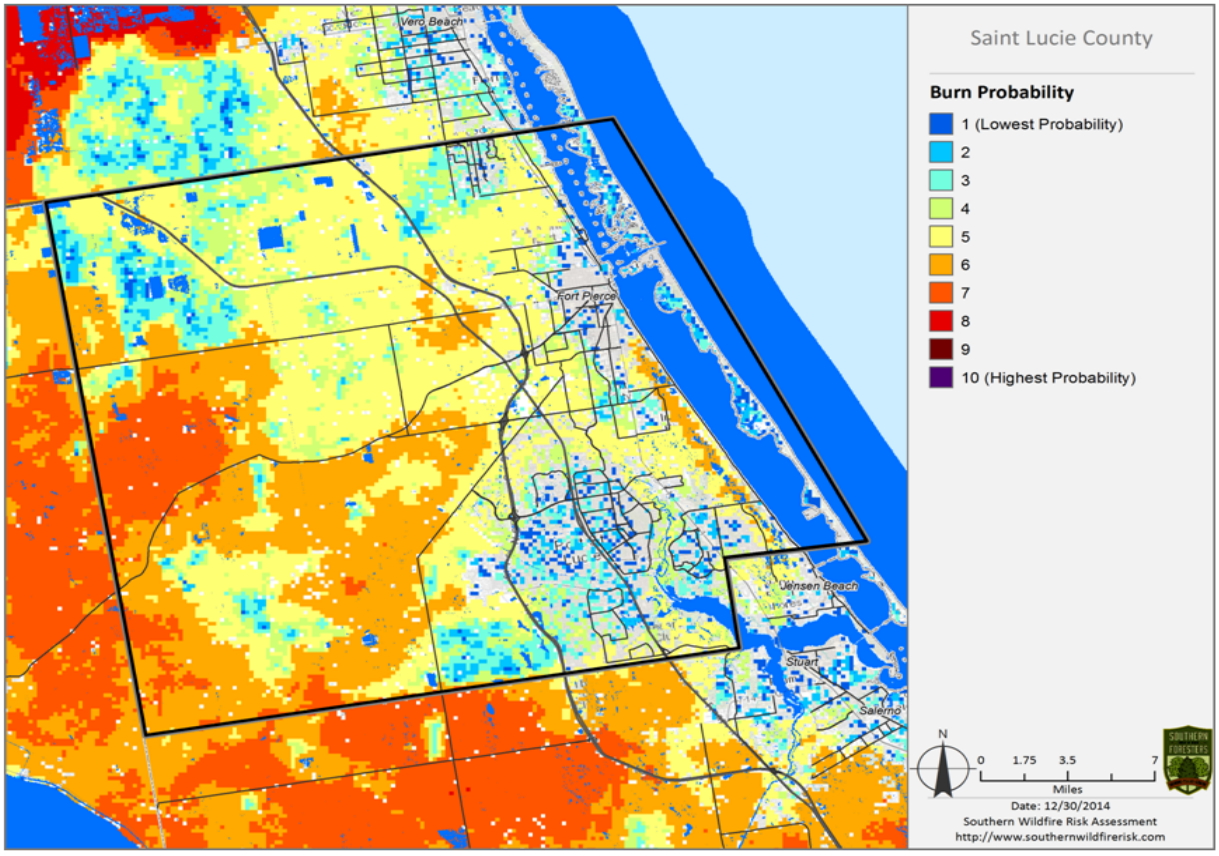
Source: Florida Forest Service

3.1.5.3 Vulnerability Assessment

Wildfires and Urban Interface fires have the potential for the following impacts within communities:

- Lives and property loss
- Electric power outage;
- Surface and air transportation disruption;
- Telecommunications system outage;
- Human health and safety;
- Psychological hardship;
- Economic disruption;
- Disruption of community services;
- Agricultural/fisheries damage;
- Loss of livestock;
- Damage to critical environmental resources;
- Damage to identified historical resources

Figure 3.11 - St. Lucie County Burn Probability Map



Source: Florida Forest Service

3.1.5.4 Probability Assessment – MEDIUM

Based on the historic events of wildfires within St. Lucie County coupled with the environmental landscape and weather season, the probability for a future wildfire occurrence for the County is medium. The ecological composition of the County is diverse, therefore, the threat of a wildfire is concentrated in certain areas within the County. Likewise, the threat of a wildfire is amplified during the dry season versus during the wet or rainy season. Overall, due to the range of two extremes, the probability is rated at medium.

3.1.5.5 Risk Assessment - MEDIUM

Low Wildfire Hazard - Homes are built with concrete and appropriate non-flammable roofing materials. Short grass, low shrubs and light duff are present. The forest and heavy vegetation are not continuous throughout the community. Wildfires that do occur in these areas are less intense and easier to suppress because of the lower volume of fuel to feed and sustain the fire. (City of Fort Pierce, Ankona, Eden, Eldred)

Medium Wildfire Hazard - Wildland vegetation is continuous throughout the community. Tall grass,

medium shrubs, thick duff, and ladder fuels are prominent in the area. Vegetation is less than 30 feet from homes. Homes are built with vinyl, plastic, or other types of less fire-resistant materials. Access is limited and the concentration of fuel to feed fires causes more intense fire behavior. Fire suppression becomes more difficult and costly. (City of Port St. Lucie, Village of St. Lucie, River Park, Fort Pierce North & South, Hutchinson Island North & South, Lakewood Park, River Park)

High Wildfire Hazard

Wildfire hazards include the following:

- Dense, highly flammable vegetation surrounds the neighborhood and is within a few feet of homes.
- A thick layer of vegetation is present on the forest floor.
- Access to the neighborhood is limited to one entrance and/or on poorly maintained roads.
- Continuous, overgrown vegetation limits access and creates intense wildfire conditions.
- Fire suppression is challenging and requires more resources (engines, dozers, and aircraft) and firefighters than normal.

There are four Firewise Communities in St. Lucie County (Savanna Club, PGA Village, Indian River Estates & Walden Woods). These communities are aware of their wildfire risk and take action to reduce their risk.

The Wildland Urban Interface (WUI) Risk Index layer is a rating of the potential impact of a wildfire on people and their homes. The key input, WUI, reflects housing density (houses per acre) consistent with Federal Register National standards. The range of values is from -1 to -9, with -1 representing the least negative impact and -9 representing the most negative impact. For example, areas with high housing density and high flame lengths are rated -9 while areas with low housing density and low flame lengths are rated -1.

Table 3.18 - Fires by Causes (Okeechobee District) 2019

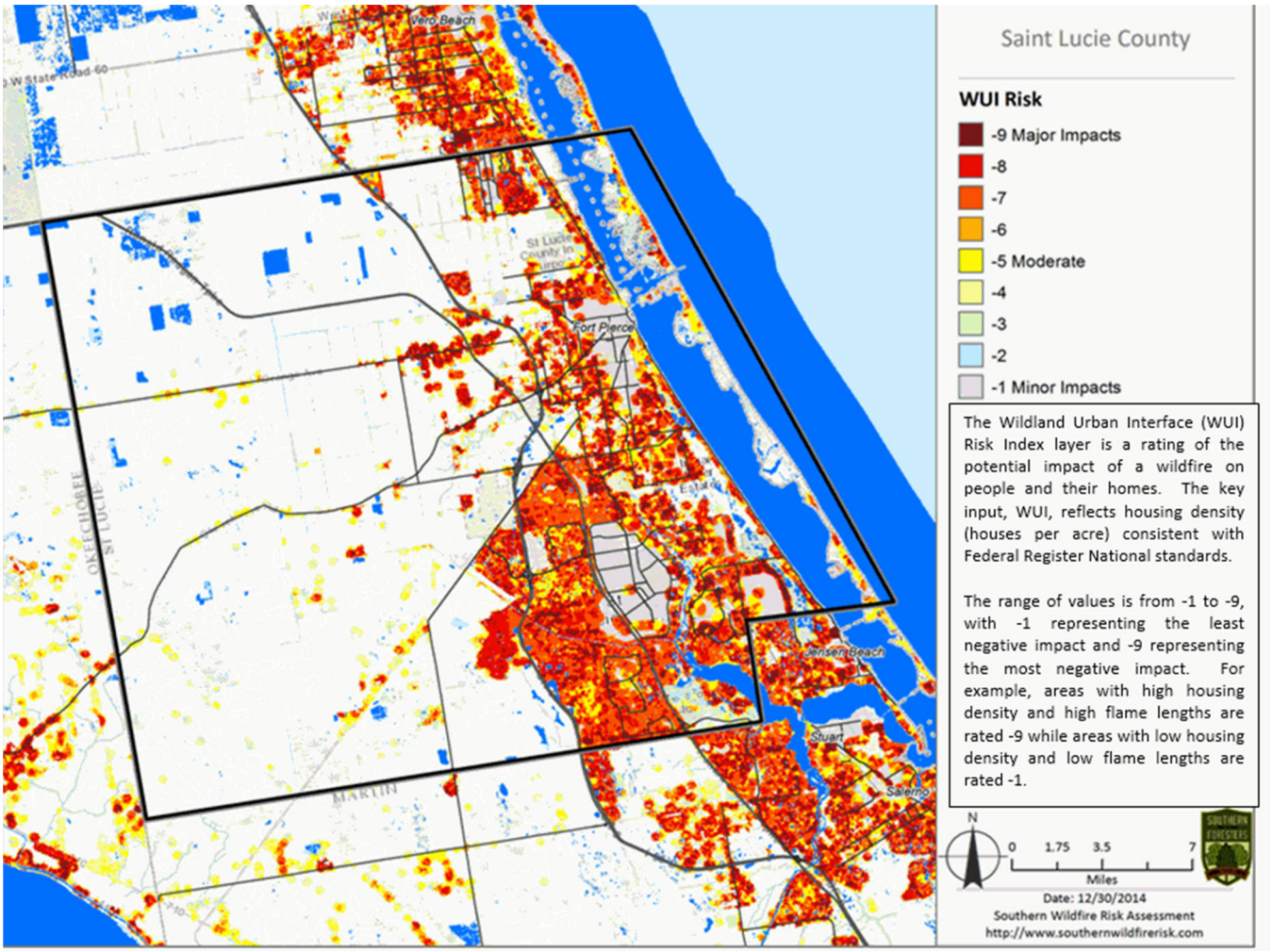
St. Lucie

Cause	Fires	Percent	Acres	Percent
Campfire	1	5.56	27.7	26.23
Children	0	0	0.0	0
Debris Burn*	0	0	0.0	0
Debris Burn--Auth--Broadcast/Acreage	1	5.56	0.5	0.47
Debris Burn--Auth--Piles	0	0	0.0	0
Debris Burn--Auth--Yard Trash	0	0	0.0	0
Debris Burn--Nonauth--Broadcast/Acreage	0	0	0.0	0
Debris Burn--Nonauth--Piles	1	5.56	0.5	0.47
Debris Burn--Nonauth--Yard Trash	0	0	0.0	0
Equipment use*	0	0	0.0	0
Equipment--Agriculture	0	0	0.0	0
Equipment--Logging	0	0	0.0	0
Equipment--Recreation	1	5.56	3.0	2.84
Equipment--Transportation	0	0	0.0	0
Incendiary	1	5.56	0.5	0.47
Lightning	7	38.89	38.7	36.65
Miscellaneous --Breakout	0	0	0.0	0
Miscellaneous --Electric Fence	0	0	0.0	0
Miscellaneous --Fireworks	1	5.56	1.5	1.42
Miscellaneous --Power Lines	3	16.67	1.2	1.14
Miscellaneous --Structure	0	0	0.0	0
Miscellaneous--Other	0	0	0.0	0
Railroad	0	0	0.0	0
Smoking	0	0	0.0	0
Unknown	2	11.11	32.0	30.30
Total	18		105.6	

* Fire cause no longer used

Source: Florida Forest Service 2019

Figure 3.12 - St. Lucie County WUI Risk Index Map



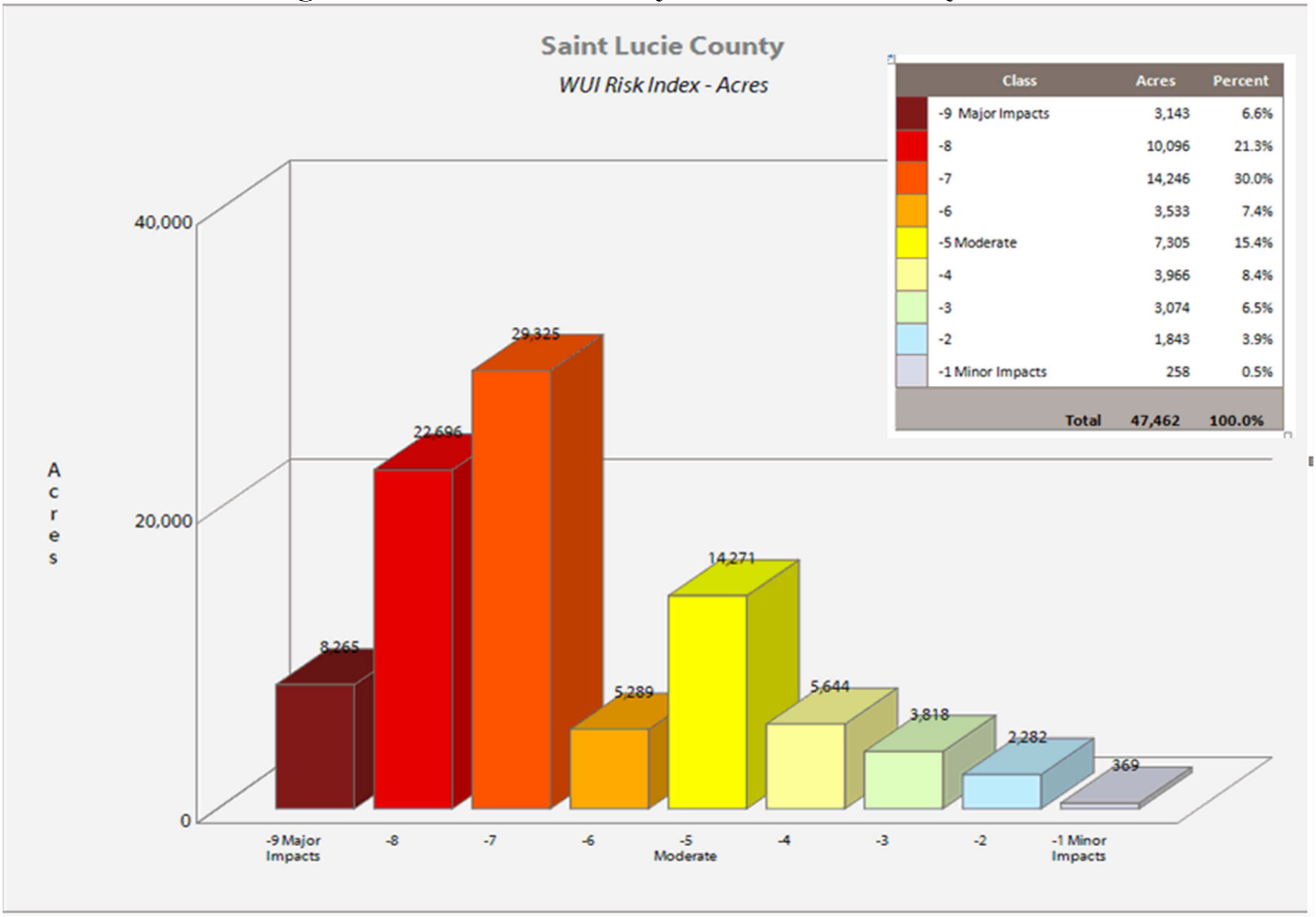
Source: Florida Forest Service 2014

Table 3.19 – Wildfire Call Volume (2016 – 2020)

Year	No. of Calls
2020	283
2019	333
2018	471
2017	520
2016	505

Source: St. Lucie County Fire District (2021)

Figure 3.13 - St. Lucie County WUI Risk Index – by Acres



Source: Florida Forest Service

According to the US Forest Service, burn probability is determined by modeling is based on components of fire regimes (spatial ignition, and fire weather conditions) on landscape of known fuels and topography. Burn probability varies considerably throughout the County and is susceptible to change due to weather conditions.

3.1.6 Erosion and Landslides

3.1.6.1 Hazard Identification

Erosion and Landslides

Erosion is the wearing away and loss of areas such as riverbanks, hillslopes, beaches, shorelines, or dunes by wind or water. It results from periodic natural hazard events such as extreme rain, rapid snow melt, hurricanes, storm surge, wildfires, and windstorms, but may be intensified by human related activities such as vegetation removal or urbanization. Changes in the frequency or severity of storms, wildfires, or storm surge may increase the potential for erosion. Even when gradual, erosion can harm or destroy buildings and infrastructure.

Landslides are the rapid or sudden movement of a mass of earth, debris or rock, down a slope. Landslides

may be spurred by inland and coastal storms or earthquakes, and can become more likely due to severe wildfire, intense precipitation and/or human induced activities.

Although conditions that trigger landslides vary, they occur only on relatively steep (typically greater than 15–20 degrees) and tall slopes. Landslides are also more likely to happen where vegetation does not exist, has been removed, or where the soil moisture level is high. Potential impacts from landslides include environmental disturbance, property and infrastructure damage, and injuries or fatalities.

Beach erosion is a primary concern in St. Lucie County. The wearing away of sand, grasslands, coastal forests, or other natural land material such as dune sediments by wave action, tidal currents, wave currents, drainage or high winds. The wave climate impacting St. Lucie County's shoreline has contributed to the long-term erosion of the barrier island, Hutchinson Island. As a result, the Florida Department of Environmental Protection (FDEP) has concluded that 18 miles of shoreline is "critically eroded." A critically eroded area is defined by FDEP as a segment of the shoreline where natural processes or human activity has caused or contributed to erosion and recession of the beach or dune system to such a degree that upland development, recreational interests, wildlife habitat, or important cultural resources are threatened or lost. To assist with its coastal management strategies and long-term sustainability of its shoreline, the County has developed and adopted a Beach Preservation Plan (BPP), updated 2014. The BPP identifies the current shoreline conditions and provides cost effective strategies for future beach management along the County's shoreline in particular the FDEP classified critically eroded areas.

Wind, waves, and longshore currents are the driving forces behind coastal erosion. This removal and deposition of sand permanently changes beach shape and structure. Most beaches, if left to natural processes, experience natural shoreline retreat. As houses, highways, seawalls, and other structures are constructed on or close to the beach, the natural shoreline retreat processes are interrupted. The beach jams up against these humans caused obstacles and narrows considerably as the structures prevent the beach from moving naturally inland. When buildings are constructed close to the shoreline, coastal property soon becomes threatened by erosion. The need for shore protection often results in "hardening" the coast, with a structure such as a seawall or revetment.

A seawall is a large concrete wall designed to protect buildings or other manmade structures from beach erosion. A revetment is a less expensive option constructed with "rip rap" such as large boulders or concrete rubble. Although these structures may serve to protect beachfront property for a certain period of time, the resulting disruption of the natural coastal processes has serious consequences for all beaches in the area. Seawalls inhibit the natural ability of the beach to adjust its slope to the ever-changing ocean wave conditions. Large waves wash up against the seawall and rebound out to sea carrying large quantities of sand with them. With each storm, the beach narrows, sand is lost to deeper water, and the long shore current scours the base of the wall. Eventually, large waves impact the seawall with such force that a bigger structure becomes necessary to continue to resist the forces of the ocean.

FDEP has identified St. Lucie County as a medium-high risk to erosion. The beaches of Florida will continue to shift and change over time, especially when faced with current levels of development and future impacts from climate change.

3.1.6.2 Historic Events

St. Lucie County has developed, instituted, and/or participated in several beach restoration projects in spanning 30 years. Between 2004 and 2015; Hurricanes Frances and Jeanne (2004), Tropical Storm Wilma (2005), and Hurricanes Isaac and Sandy (2012) caused considerable beach erosion. Hurricane Sandy destroyed the County re-nourishment project in-progress in the south end of South Hutchinson Island in 2012.

3.1.6.3 Vulnerability Assessment

Erosion can have the following potential impacts within a community:

- Soil/beach erosion;
- Navigable waterway impairment;
- Damage to infrastructure;
- Economic disruption;
- Damage to critical environmental resources; and
- Stormwater drainage impairment.

St. Lucie County's vulnerability to soil collapse and beach erosion is moderate along its entire coastline. The most significant area of beach erosion in the County is along South Beach and north at the Fort Pierce Inlet. This area has just been the subject of a major beach re-nourishment project sponsored jointly by the County and U.S. Army Corps of Engineers (ACOE). Other beachfront communities report low to moderate erosion problems. Erosion also is a potential vulnerability for the communities, wildlife habitat and environments located on both estuarine and riverine area such as the Indian River Lagoon and the North Fork of the St. Lucie River.

3.1.6.4 Probability Assessment - HIGH

The probability of beach erosion in St. Lucie County is high. Coastal erosion is continual and cyclical. Erosion is exacerbated by tropical storms, winter storms, and hurricanes. It is anticipated there will be at least one storm event on an annual basis that will contribute to erosion.

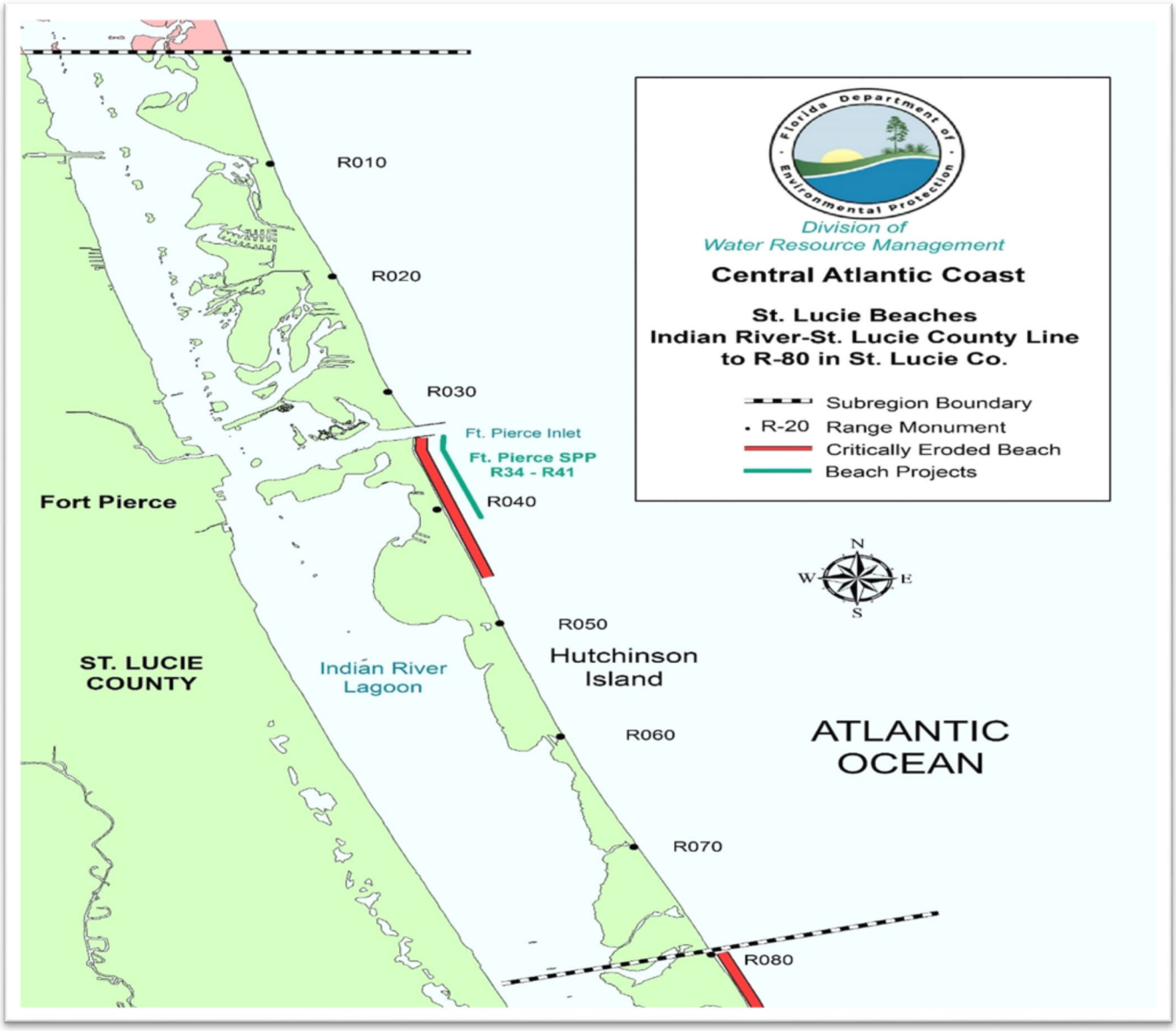
3.1.6.5 Risk Assessment - HIGH

FDEP's Strategic Beach Management Plan for the Central Atlantic Coast region updated a statewide assessment of beach erosion in June 2009. In that assessment, FDEP defined the "critical erosion area" as a segment of shoreline where natural processes or human activity have caused or contributed to erosion and recession of the beach or dune system to such a degree that upland development, recreation interests, wildlife habitat, or important cultural resources are threatened or lost. Critically eroded areas may also include peripheral segments or gaps between identified critically eroded areas which, although they may be stable or slightly erosional now, their inclusion is necessary for continuity of management of the coastal system or for the design integrity of adjacent beach management projects (FDEP, 2009).

Figure 3.13 shows the only critical erosion area (R040) in St. Lucie County as of 2015. R040 extends south from the Fort Pierce Inlet 1.3 miles, threatening recreation, and development interests. This area is currently undergoing re-nourishment in a joint project between the County, City of Fort Pierce, Florida Inland Navigation District, and the US Army Corps of Engineers. The budget for this project is $5.2

million dollars. The southern 3.4 miles of the County shoreline (R070) was under a re-nourishment project when Hurricane Sandy eroded the work that had been done. This project cost 2.96 million.

Figure 3.14 - Critically Eroded Beaches in St. Lucie County



Source: Florida Department of Environmental Protection

[Refer to Appendix G for additional Tables and Figures.]

3.2 OTHER NATURAL HAZARDS

3.2.1 Extreme Temperatures (Heat and Cold)

3.2.1.1 Freezing Temperatures Hazard Identification

A freeze is defined by the National Weather Service (NWS) as when the surface air temperature is expected to be 32 degrees or below over a widespread area for a climatologically significant period of time. The NWS issues a freeze warning when surface temperatures are expected to drop below freezing over a large area for an extended period of time, regardless of whether or not frost develops. According to the Department of Agriculture and Consumer Services, a moderate freeze may be expected every 1 to 2 years. Severe freezes may be expected on an average of once every 15 to 20 years.

Agricultural lands represent nearly one-half of all land in St. Lucie County. Freezes pose a major hazard to the St. Lucie County agriculture industry on a recurring basis and are a significant threat to the economic vitality of the State's agriculture industry (University of Florida, 2001). The Florida Agricultural Statistics Service (FASS) released the 2017 Florida Agriculture by the Numbers statistical report. Working with the Florida Department of Agriculture and Consumer Service (FDACS), a comprehensive report of Florida's agricultural economy shows the importance of citrus farming for Florida and St. Lucie County, and though the County has not been affected by a freeze in several years, the importance of protecting crops is evident. Florida has 47,000 commercial farms and ranches, using a total of 9.45 million acres. Florida ranks first in the U.S. in value of production of cucumbers, grapefruit, oranges, squash, sugarcane, fresh market snap beans, and fresh market tomatoes. Florida ranks second in value of production of bell peppers, strawberries, watermelons, fresh market cabbage and fresh market sweet corn. In 2016, St. Lucie County commercial citrus trees number 3.6 million grown on 26,744 acres. St. Lucie ranked sixth in crop production in the State of Florida with 6,693 boxes of citrus for Crop Year 2015-2016. Citrus harvesting for the most popular eating and juicing oranges and grapefruit begins in September, finishing by late October. Avocados crops are harvested nearly year-round. A freeze would affect the St. Lucie citrus economy severely (FASS, 2016).

3.2.1.2 Historic Events

Florida has experienced several severe or disastrous freezes, where most of the winter crops were lost. The lowest temperature ever recorded in the state of Florida is -2°F in Tallahassee on February 13, 1899 (Florida Department of Emergency Management, 2012). At the same time, snow up to three inches deep was reported by several cities in the Panhandle. Since December 1889, there have been at least 22 recorded severe freezes; the most recent being in 1996, when a Presidential Disaster Declaration was issued for crop losses exceeding $90 billion. During this event, there was extensive loss of citrus trees, and the majority have not been replanted. Freezes in January of 1977 had severe impacts on agriculture around the state. A U.S. Department of Agriculture report indicated the following crop loss: citrus - 35%, vegetables - 95-100%, commercial flowers - 50-75%, permanent pastureland - 50%, and sugar cane - 40%. In addition, there was a severe loss to the tropical fish industry. It is estimated that the freeze cost the Florida economy $2 billion in 1977 dollars (National Weather Service, 1999). St. Lucie County has experienced seven significant freezes since 1970, but none since 2010.

3.2.1.3 Extreme Heat Hazard Identification

Historical records indicate that temperatures are increasing worldwide, and scientists project that temperatures will continue to rise in the future. This means increases in average temperatures as well as more frequent or longer-lasting extreme heat events.

Hotter temperatures can affect public health, buildings and infrastructure, and the natural environment.

Exposure to extreme or prolonged heat can result in heat exhaustion, heat stroke, respiratory problems, and even death. Some individuals, including older adults, young children, people with chronic diseases, or those experiencing homelessness are more vulnerable to extreme heat because they may have underlying health conditions or less access to indoor, climate-controlled spaces.

Heat disorders generally have to do with a reduction or collapse of the body's ability to cool itself by circulatory changes and sweating, or a chemical (salt) imbalance caused by too much sweating. When the body cannot cool itself, or when it cannot compensate for fluids and salt lost through perspiration, the temperature of the body's inner core begins to rise, and heat-related illness may develop. Studies indicate that, other things being equal, the severity of heat disorders tend to increase with age.

In addition, extreme temperatures impact outdoor workers, and the businesses and economies that rely on them. Risks are particularly increased for those in dense urban areas that typically have higher temperatures because of the urban heat island effect.

Extreme heat can put additional strain on building materials and mechanical equipment, making them more susceptible to failure.

Rising average temperatures and longer summers can also cause changes in habitats and growing seasons, increased vector-borne disease patterns, and increased stress on native plant and animal species. In addition, hotter temperatures can increase the risk of other hazards, such as wildfire and drought.

Temperatures that are 10° or more above the average high temperature for a region and last for several weeks are defined as extreme heat (FEMA, 2003). Humid conditions, which add to the discomfort of high temperatures, occur when an area of high atmospheric pressure traps hazy, damp air near the ground.

A heat wave is an extended period of extreme heat and is often accompanied by high humidity (FEMA Ready, 2015). Humid conditions, which add to the discomfort of high temperatures, occur when an area of high atmospheric pressure traps hazy, damp air near the ground.

When the temperature gets extremely high, the NWS has increased its efforts to alert the public as well as the appropriate authorities by issuing Special Weather Statements. Residents should heed these warnings to prevent heat-related medical complications:

- Excessive Heat Watch - Conditions are favorable for an excessive heat event to meet or exceed local Excessive Heat Warning criteria in the next 24 to 72 hours.

- Excessive Heat Warning - Heat Index values are forecast to meet or exceed locally defined warning criteria for at least 2 days (daytime highs = 105-110° Fahrenheit).

- Heat Advisory - Heat Index values are forecast to meet locally defined advisory criteria for 1 to 2 days (daytime highs = 100-105° Fahrenheit).

As a result of the latest research findings, the NWS has devised the "Heat Index" (HI). The HI, given in degrees Fahrenheit, is an accurate measure of how hot it really feels when relative humidity is added to the actual air temperature. The NWS will initiate alert procedures when the HI is expected to exceed 105°F for at least two consecutive days. Possible heat disorders related to the corresponding HI are listed below.

- Human health and safety;
- Psychological hardship;
- Economic disruption;
- Agricultural/fisheries damage;
- Damage or failure of building materials and mechanical equipment, and
- Damage to critical environmental resources.

Table 3.20 - Heat Index Chart

Classification	Heat Index	Effects on the body
Caution	80°F - 90°F	Fatigue possible with prolonged exposure and/or physical activity
Extreme Caution	90°F - 103°F	Heat stroke, heat cramps, or heat exhaustion possible with prolonged exposure and/or physical activity
Danger	103°F - 124°F	Heat cramps or heat exhaustion likely, and heat stroke possible with prolonged exposure and/or physical activity
Extreme Danger	125°F or higher	Heat stroke highly likely

Source: NOAA, 2014

3.2.1.4 Historic Events

The hottest temperature ever recorded in Florida was 109˚F on June 29, 1931, in Monticello, Florida (Florida Department of Emergency Management, 2012). In a normal year, approximately 175 Americans die from extreme heat. However, in 2013, the death toll was 92 (National Weather Service, 2014).

Temperature extremes, both freezes and periods of excessive heat impact communities with a larger population of older people to a greater extent than those with younger populations. According to the 2013 Census, 28.8% of residents in St. Lucie County are over the age of 65. Freezing conditions primarily affect agriculture and homeless indigents. When conditions are predicted to be below freezing, shelters are opened.

According to the National Weather Service, between 1979 and 1999, there have been 249 extreme temperature-related deaths in the state. This number is greater than the number of deaths caused by

hurricanes, tornadoes, and lightning combined. As such, the hazard is felt county-wide.

In recent history (2000-2021), there has been one incident of extreme heat in 2017 which lead to three residents being hospitalized.

Regarding vulnerability, the whole county is moderately vulnerable to extreme heat and cold incidents.

3.2.1.5 Probability Assessment – MEDIUM

Due to a moderate history of extreme temperatures in conjunction with climate change, St. Lucie County's probability of a future extreme temperature occurrence is medium.

3.2.1.6 Risk Assessment - MEDIUM

At the time of Local Mitigation Strategy (LMS) publication, no model was available to determine potential loss in St. Lucie County due to extreme temperatures. The best datum available to estimate potential loss for freezing temperatures is the market value of production in St. Lucie County, which in 2007 totaled $165,000,000.

3.2.2 Drought

3.2.2.1 Hazard Identification

Drought is a normal, recurrent feature of climate, with severe or extreme drought impacting some part of the U.S. each year. Although drought has many definitions, it originates from a deficiency of precipitation over an extended period of time, usually a season or more. Drought produces a complex web of impacts that spans many sectors of the economy and reaches well beyond the area producing physical drought. This complexity exists because water is essential to our ability to produce goods and services (National Drought Mitigation Center, 2015).

Droughts are induced or exacerbated by several factors, including the amount of average precipitation, the length of time between precipitation events, temperature, and water demand. Climate risks are likely to affect all these factors, increasing the likelihood of water shortages.

Droughts may result in reduced surface and groundwater availability. Water demand (particularly in industry sectors such as agriculture or hydropower), precipitation and runoff, groundwater withdrawals, and aquifer recharge may all be affected.

Droughts pose a threat to community water availability, water quality, the environment, and key economic and employment sectors such as agriculture, tourism, and outdoor recreation. Drought also increases the risk of wildfires and erosion.

A few examples of direct impacts of drought are reduced crop, rangeland, and forest productivity; increased livestock and wildlife mortality rates; and damage to wildlife and fish habitat. Social impacts include public safety, health, conflicts between water users, reduced quality of life, and inequities in the distribution of impacts and disaster relief. Income loss is another indicator used in assessing the impacts of drought. For example, reduced income for farmers has a ripple effect throughout the region's economy (National Drought Mitigation Center, 2015).

In St. Lucie County, excess water from an interconnected series of lakes, rivers, canals, and marshes flows either north to the St. Johns River or east to the Indian River Lagoon and Atlantic Ocean. The primary sources of water are watershed areas, Lake Okeechobee, and the County's well fields. Excess water from an interconnected series of lakes, rivers, canals, and marshes flows either north to the St. Johns River or east to the Indian River Lagoon.

Rainfall patterns vary greatly both seasonally and annually in Florida. Therefore, periods of low rainfall are a common occurrence but still may have significant impacts. This especially can be the case if there are several periods of low rainfall in the same year or series of years. Based on daily rainfall records from the Indian River Research and Education Center at Fort Pierce from 1953-2002, periods of 3 weeks or more with cumulative rainfall of less than 0.25, 0.50, and 1.0 inches were identified by researchers from the University of Florida. There have been seven occurrences since 1953 where there were periods of 6 or more weeks with less than 0.25 inch of cumulative rainfall and 33 periods of 4 or more weeks with less than 0.25 inch. There also have been 34 periods of 4 or more weeks with less than 0.50 inch of rain and 52 periods with less than 1.0 inch. Any of these periods could potentially occur again. These periods of drought frequently coincided with the season of late March to mid-October when citrus crops require intense irrigation.

Reducing water demand conserves available water supplies in aquifers, rivers, and lakes. Additional water conservation, capture, and recharge methods extend the use of limited water supplies. For these and other reasons, water suppliers typically advocate for water conservation measures, even in non-drought conditions.

In addition to obvious losses in yields in both crop and livestock production, drought in St. Lucie County is associated with increases in insect infestations, plant disease, and wind erosion. The incidence of forest fires increases substantially during extended droughts, which in turn places both human and wildlife populations at higher levels of risk.

The South Florida Water Management District and County staff manage the County's water resources. Complementing the District's water management efforts during periods of critical water shortage, a countywide, uniform, forceful, contingency plan is in place to effectively restrict the use of water.

3.2.2.2 Historic Events

Utilizing the Palmer Drought Severity index, St. Lucie County has experienced 27 droughts ranging from mild to extreme since 2000. The worst drought (Extreme) occurred from May 1, 2011 until October 2011. The longest drought period was 19 months from August 1, 2006 through February 28, 2008. This drought ranged in severity from Mild to Severe. The last drought was from March 1, 2012 to May 1, 2012 and was classified as Mild. According to the National Integrated Drought Information System, St. Lucie County experienced one severe drought in 2017, and another severe drought in 2019.

3.2.2.3 Vulnerability Assessment

While St. Lucie County is moderately vulnerable to impacts from drought due to the County's large agricultural land tax base, other communities are less vulnerable due to their location and non- agricultural economic base. When the normal climatic cycle is disrupted by periods of drought, one of the potentially most damaging effects is substantial crop loss in the western agricultural areas of the County as this area

is heavily populated with agricultural operations, thus making it extremely vulnerable to incidents of droughts. Overall, the vulnerability and location to droughts is felt county-wide, as the whole county and its industries can be impacted directly or indirectly by a disruption of agriculture practices and water supply changes; all industries are dependent on a constant medium of climatic elements.

Drought can have the following potential impacts within a community:

- Economic disruption;
- Agricultural/fisheries damage;
- Damage to critical environmental resources; and
- Fire hazards.

3.2.2.4 Probability Assessment – HIGH

Based on past occurrences and the cyclical nature of drought, conditions suggests that the probability of future drought incidents in the County is high.

3.2.2.5 Risk Assessment - HIGH

The Palmer Drought Index has become the semi-official drought index. It is most effective in determining long term drought—a matter of several months—and is not as good with short-term forecasts (a matter of weeks). It uses a 0 as normal, and drought is shown in terms of minus numbers; for example, minus 2 is moderate drought, minus 3 is severe drought, and minus 4 is extreme drought. The Palmer Index can also reflect excess rain using a corresponding level reflected by plus figures, i.e., 0 is normal, plus 2 is moderate rainfall, etc.

Another reference tool is the Keetch-Byram drought index (KBDI), which is a continuous reference scale for estimating the dryness of the soil and duff layers. The index increases for each day without rain (the amount of increase depends on the daily high temperature) and decreases when it rains. The scale ranges from 0 (no moisture deficit) to 800 (prime drought condition). The range of the index is determined by assuming that there is 8 inches of moisture in a saturated soil that is readily available to the vegetation.

At the time of LMS publication, no model was available to determine the potential loss associated with drought in St. Lucie County. The best datum available to determine potential loss is the market value of agricultural products in St. Lucie County, which in 2012 totaled $165 million.

3.2.3 Seismic Hazards

3.2.3.1 Hazard Identification

Earthquakes

An earthquake is a sudden, rapid shaking of the earth caused by the breaking and shifting of rock beneath the earth's surface. This shaking can cause buildings and bridges to collapse; disrupt gas, electric, and phone service; and sometimes trigger landslides, flash floods, fires, and tsunamis.

Florida is situated on the trailing (or passive) margin of the North American Plate while California is located on its active margin. The active margin is bounded by faults that generate earthquakes when there

is movement along them. This is the fundamental reason that Florida has an extremely low incidence of earthquakes while California experiences many (mostly small) earthquakes.

All 50 states and five U.S. territories are at some risk for earthquakes. Earthquakes can happen at any time of the year (FEMA Ready, 2015).

Sinkholes

Sinkholes are common features of Florida's landscape where the rock below the land surface is limestone, carbonate rock, salt beds, or rocks that can naturally be dissolved by ground water circulating through them. As the rock dissolves, spaces and caverns develop underground. Sinkholes are dramatic because the land usually stays intact for a while until the underground spaces get too big. If there is not enough support for the land above the spaces, then a sudden collapse of the land surface can occur. These collapses can be small, or they can be large, and they can occur under a house or road.

A significant number of sinkholes tend to occur in the years that follow a drought. When an area has a long-term lack of rain and water levels decrease, there is usually a correlated link to an increase in incidences of sinkholes being reported. Historically, years where dry weather has been followed by wet weather have resulted in some of the greatest increases in sinkhole occurrences.

They are only one of many kinds of karst landforms, which include caves, disappearing streams, springs, and underground drainage systems, all of which occur in Florida. Karst is a generic term that refers to the characteristic terrain produced by erosional processes associated with the chemical weathering and dissolution of limestone or dolomite, the two most common carbonate rocks in Florida. Dissolution of carbonate rocks begins when they are exposed to acidic water.

Most rainwater is slightly acidic and usually becomes more acidic as it moves through decaying plant debris. Limestones in Florida are porous, allowing the acidic water to percolate through them, dissolving some limestone and carrying it away in solution. Over time, this persistent erosion process has created extensive underground voids and drainage systems in much of the carbonate rocks throughout the state. Collapse of overlying sediments into the underground cavities produces sinkholes (Florida Department of Environmental Protection, 2012).

When groundwater discharges from an underground drainage system, it is a spring, such as Wakulla Springs, Silver Springs, or Rainbow Springs. Sinkholes can occur in the beds of streams, sometimes taking all of the stream's flow, creating a disappearing stream. Dry caves are parts of karst drainage systems that are above the water table, such as Marianna Caverns.

Other subterranean events can cause holes, depressions or subsidence of the land surface that may mimic sinkhole activity. These include subsurface expansive clay or organic layers which compress as water is removed, collapsed or broken sewer and drainpipes or broken septic tanks, improperly compacted soil after excavation work, and even buried trash, logs and other debris. Often a depression is not verified by a licensed professional geologist or engineer to be a true sinkhole and the cause of subsidence is not known. Such events are called subsidence incidents (Florida Department of Environmental Protection, 2012).

3.2.3.2 Historic Events

Earthquakes: In January 1879, a shock wave occurred near St. Augustine that is reported to have knocked plaster from walls and articles from shelves. Similar effects were reported in Daytona Beach. The shock was felt in Tampa, throughout central Florida, and in Savannah, Georgia as well (USDOI, USGS, 2015).

In January 1880, another earthquake occurred, this time with Cuba as the focal point. Shock waves were felt as far north as the town of Key West (US DOl, USGS, 2015).

In June 1893, Jacksonville experienced a minor shock wave that lasted about 10 seconds. Another earthquake occurred in October 1893, which also did not cause any damage (USDOI, USGS, 2015).

In November 1948, doors and windows rattled in Captiva Island, west of Ft. Myers. It was reportedly accompanied by sounds like distant heavy explosions (USDOI, USGS, 2015).

Sinkholes: The most damage from sinkholes tends to occur in Florida, Texas, Alabama, Missouri, Kentucky, Tennessee, and Pennsylvania; however, Florida has more sinkholes than any other state in the nation. Florida's average sinkhole size is 3 to 4 feet across and 4 to 5 feet deep. For this reason, and because they are one of the predominant landform features of the State, sinkholes are of particular interest to Florida. Their development may be sudden and has the potential to result in property damage or loss of life.

There are as many as 150 sinkholes reported each year in Florida because the Florida landmass is formed by limestone with a thin layer of sediment covering it, usually consisting of very loose sediment. However, the covering on the porous limestone below is often only temporary. Limestone is very soluble, and as water moves through it, small holes develop and grow into larger holes. Overburdened sediments can cover the hole for a certain amount of time, but once the hole gets larger the ability to bridge across it is compromised and sediments collapse into it.

The following table illustrates the Modified Mercalli Intensity Scale of 1931 and is the basis for the U.S. evaluation of seismic intensity. Unlike earthquake magnitude, which indicates the energy a quake expends, Mercalli intensity denotes how strongly an earthquake affects a specific place. The scale has 12 divisions and given that the best available data do not indicate that there have ever been any earthquakes in St. Lucie County or the municipalities, we could reasonably expect to experience Level I on the intensity scale.

Table 3.21 - The Modified Mercalli Intensity Scale

I. Not felt except by a very few under especially favorable circumstances.
II. Felt only by a few persons at rest, especially on upper floors of buildings. Delicately suspended objects may swing.
III. Felt quite noticeably indoors, especially on upper floors of buildings, but many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibration like passing truck. Duration estimated.
IV. During the day felt indoors by many, outdoors by few. At night some awakened. Dishes, windows, and doors disturbed; walls make creaking sound. Sensation like heavy truck striking building. Standing motorcars rock noticeably.
V. Felt by nearly everyone; many awakened. Some dishes, windows, etc., broken; a few instances of cracked plaster; unstable objects overturned. Disturbance of trees, poles, and other tall objects sometimes noticed. Pendulum clocks may stop.
VI. Felt by all; many frightened and run outdoors. Some heavy furniture moved; a few instances of fallen plaster or damaged chimneys. Damage slight.
VII. Everybody runs outdoors. Damage negligible in buildings of good design and construction slight to moderate in well-built ordinary structures; considerable in poorly built or badly designed structures. Some chimneys broken. Noticed by persons driving motor cars.
VIII. Damage slight in specially designed structures; considerable in ordinary substantial buildings, with partial collapse; great in poorly built structures. Panel walls thrown out of frame structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned. Sand and mud ejected in small amounts. Changes in well water. Persons driving motor cars disturbed.
IX. Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb; great in substantial buildings, with partial collapse. Buildings shifted off foundations. Ground cracked conspicuously. Underground pipes broken.
X. Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations; ground badly cracked. Rails bent. Landslides considerable from river banks and steep slopes. Shifted sand and mud. Water splashed over banks.
XI. Few, if any (masonry), structures are left standing. Bridges destroyed. Broad fissures in ground. Underground pipelines completely out of service. Earth slumps and land slips in soft ground. Rails bent greatly.
XII. Damage total. Waves seen on ground surfaces. Lines of sight and level distorted. Objects thrown upward into the air.

3.2.3.3 Vulnerability Assessment

Although Florida is not usually considered to be a state subject to earthquakes, several minor shocks have occurred over time, but only one caused any damage (US DOl, USGS, 2015). One of the most frightening and destructive phenomena of nature is an earthquake and its aftereffects. As such, if a seismic event was to occur, the vulnerability lies county-wide across nearly 600 square miles. Our municipalities will be more susceptible to infrastructure impacts due to the concentration of population.

Seismic events can have the following potential impacts within a community:

- Electric power outage;
- Surface and air transportation disruption;
- Potable water system loss or disruption;
- Sewer system outage;
- Telecommunications system outage;

- Human health and safety;
- Psychological hardship;
- Economic disruption;
- Disruption of municipal and community services;
- Damage to identified historical resources;
- Fire;
- Flooding;
- Toxic releases; and
- Stormwater drainage impairment.

3.2.3.4 Probability Assessment - LOW

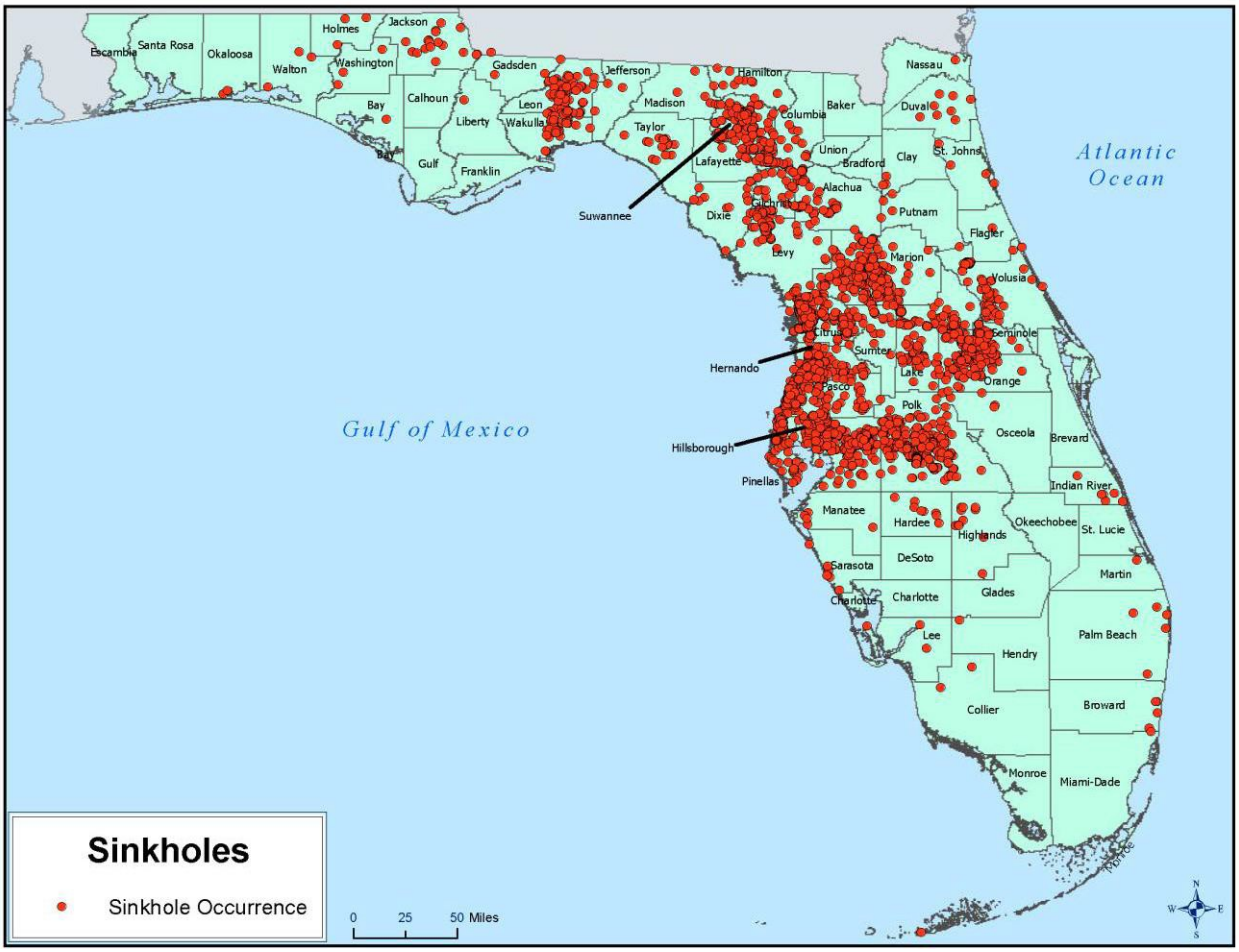
There have never been any soil failures or seismic or sinkhole activity in St. Lucie County. While these hazards exist, the probability of future occurrence at this time must be considered low. Due to the lack of occurrence and extremely low probability of this hazard, impact due to an occurrence in St. Lucie County cannot be accurately identified.

3.2.3.5 Risk Assessment -LOW

The USDOI, USGS and the Florida Department of Natural Resources Bureau of Geology have created a map illustrating sinkhole type, development, and distribution for the state of Florida. Sinkhole risk is categorized using four categories. According to this map, St. Lucie County lies in Area II, which is classified as having coverage between 20 and 200 feet thick, consisting of in cohesive and permeable sand.

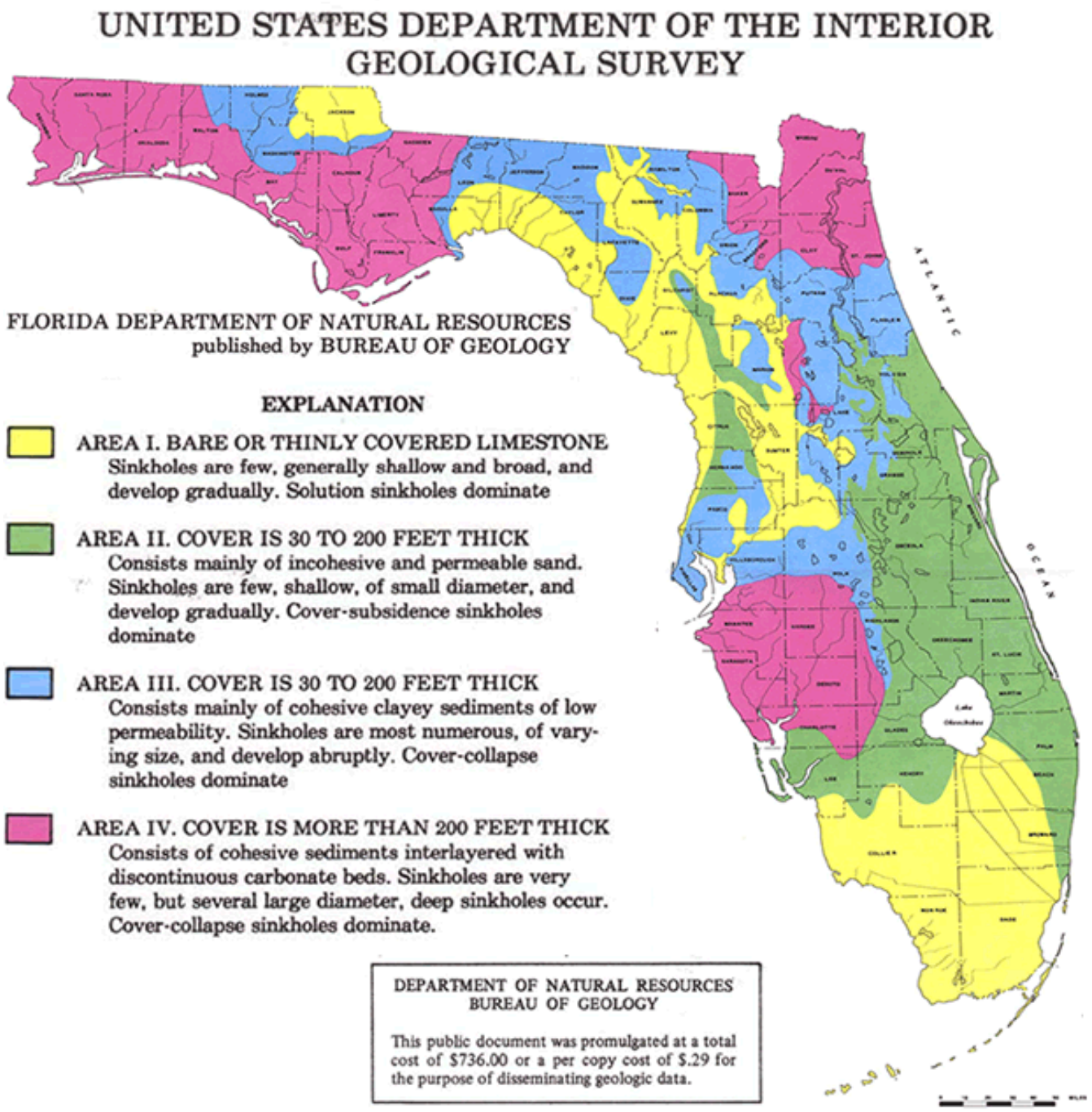
Sinkholes are common wherever there is limestone terrain but are rare in the southern part of the State. The State of Florida Enhanced Hazard Mitigation Plan 2013 reports that Central Florida and the Big Bend region have the largest incidence of sinkholes.

Figure 3.15 - Sinkhole Occurrences in Florida



Source: Florida Division of Emergency Management: State of Florida Enhanced Hazard Mitigation Plan 2019

Figure 3.16 - Sinkhole Areas in Florida



Source USGS

3.2.4 Tsunami

3.2.4.1 Hazard Identification

A tsunami is a series of waves created when a large body of water is rapidly displaced. A tsunami has a much smaller amplitude (wave height) offshore, and a very long wavelength (often hundreds of kilometers long), which is why they generally pass unnoticed at sea, forming only a passing "hump" in the ocean. Tsunamis have been historically referred to as tidal waves because as they approach land, they take on the characteristics of a violent onrushing tide rather than the sort of cresting waves that are formed by wind action upon the ocean. Since they are not actually related to tides, the term is considered misleading, and its usage is discouraged by oceanographers.

Tsunami waves are unlike typical ocean waves generated by wind and storms. When a tsunami approaches the shore, they behave like a very fast-moving tide that extends far inland. Tsunamis are not like the typical wind-generated waves popular with surfers. Even "small" tsunamis are associated with extremely strong currents, capable of knocking someone off their feet. Because of complex interactions with the coast, tsunami waves can persist for many hours. As with many natural phenomena, they can range in size from micro-tsunamis detectable only by sensitive instruments on the ocean floor to mega- tsunamis that can affect the coastlines of entire oceans, as with the Indian Ocean tsunami of 2004 (United States Geological Survey).

If a tsunami-type event were to occur, the hazard would be measured using Deep-ocean Assessment and Reporting of Tsunami (DART) systems which detect unusual variations of waves as they travel towards U.S. coastal communities and therefore, enhances detection, prediction, and measurement capabilities along with real-time tsunami reporting.

Rogue Waves

Rogue Waves are a phenomenon often confused with tsunamis. There is debate as to whether these waves are related to tsunamis, however they are dangerous and cause immense damage as do tsunamis. They are included in this section as the mitigation plans address the threat in the same relative manner. Characteristics of rogue waves include:

- Unpredictable nature;
- Little is known about the formation; and
- May be caused by regularly-spaced ocean swells that are magnified by currents or the atmosphere

3.2.4.2 Historic Events.

The history of big waves hitting Florida is short:

- A powerful earthquake in Portugal in 1755 killed thousands there and launched a tsunami that hit much of the U.S. coast. Scientists do not know if that caused many deaths in Florida, which was sparsely populated at the time;
- An earthquake in Charleston, S.C., in 1886 triggered a wave that surged up the St. Johns River to Jacksonville, causing few if any deaths;
- An 18-foot rogue wave flooded the parked cars of sunbathers on Daytona Beach without warning

in 1992. This event, called a meteorological tsunami (or meteotsunami), was a tsunami- like wave phenomenon of meteorological origin. Tsunamis and meteotsunamis propagate in the water in the same way and have the same coastal dynamics. For an observer on the coast where it strikes, the two types would look the same and have the same impacts. Research is currently underway to better understand these events, with the goal of developing a protocol for issuing meteotsunami warnings along the U.S. coast.

3.2.4.3 Vulnerability Assessment

Tsunami events occur most often in the Pacific Ocean, but they are a global phenomenon, and all are potentially dangerous, though they may not damage every coastline they strike. Analyzing the past 150 years of tsunami records shows that the most frequent and destructive tsunamis to affect the U.S. have occurred along the coasts of California, Oregon, Washington, Alaska, and Hawaii.

The State of Florida is located within the Caribbean area, and over the past 156 years, the Caribbean has experienced more total tsunami events, which have ultimately resulted in over 2,500 deaths. Modeling results from a tsunami triggered by a large Portugal earthquake suggest more significant tsunami impacts locally. Overall, Florida has experienced few destructive tsunami or rogue wave events, but there were several small events. Modeling has indicated that a wave generated in a tsunami threatening St. Lucie County would be 6-8 feet in height. Impact to the County would be comparable to impact because of significant storm surge due to a hurricane.

Computer modeling for a large tsunami originating from the Puerto Rico trench could inundate the St. Lucie County beaches on the barrier islands, including in the City of Fort Pierce to the dune line with 6 to 8-foot waves. In this case, ocean water may breach the dune line in some locations and reach as far as Highway A1A. Therefore, St. Lucie County Emergency Management, in conjunction with the Melbourne Office of the National Weather Service, has developed a St. Lucie County-specific Tsunami Warning and Evacuation Plan. The goal of this plan is to properly prepare and respond to the residents of St. Lucie County in the unlikely event of a tsunami impacting our area. Mitigation efforts for a tsunami include preparation, planning and exercising, providing for immediate evacuations of the beaches through multiple means (mass notification system, sirens, Ocean Rescue personnel, Sheriff's Office personnel, Fire District, and public education). Please refer to the St. Lucie County Tsunami Response Plan – 2018, in Annex C.

3.2.4.4 Probability Assessment - LOW

As there has never been a recorded impact from tsunamis and rogue waves, the probability of future events in St. Lucie County is low.

St. Lucie County Tsunami Hazard Zone

National Weather Service guidelines indicate that the (Florida Atlantic Coast) Tsunami Hazard Zone extends 300 feet inland beyond the high tide location, which is up to the dune line in most of the areas and vertically upward to 15 feet within the zone. To describe the Tsunami Hazard Zone more comprehensively, while also allowing for a greater safety zone for the protection of life and property, St. Lucie County Emergency Management has defined the Tsunami Hazard Zone as the region from east of Highway A1A to the Atlantic. Within this hazard zone there are five facilities considered Critical

Infrastructure - on South Hutchinson Island, Fire Station 2 is on Seaway Drive, Fire Station 8 and a St. Lucie County Water Treatment facility are both located in the 8000 block of South Highway A1A. On North Hutchinson Island, Fire Station 9 and a St. Lucie County Utilities water treatment plant are in the 4600 Bloch North Highway A1A. The St. Lucie Nuclear Power Plant's elevation is above a worst-case scenario tsunami.

St. Lucie County Tsunami Safe Zone

St. Lucie County Emergency Management has defined the Tsunami Safe Zone as the area west of North Old Dixie Highway (U.S. Highway 1), North of Seaway Drive, and West of 2nd St. in Fort Pierce South of Seaway Drive to Florida Avenue.

3.2.4.5 Risk Assessment - LOW

Florida has directly experienced few destructive tsunami and rogue wave events since 1900, with only five small, recorded occurrences. As such, very limited tsunami modeling exists for the Florida east coast, but the threat and risk does exist.

3.2.5 Sea Level Rise

3.2.5.1 Hazard Identification

One of the major impacts of climate change is sea level rise. Sea levels rise due to increased atmospheric temperatures warming ocean waters and melting glaciers and ice sheets. Sea level has risen in Florida about 9 inches over the past century according to the South Florida Water Management District and is projected to accelerate in the coming decades.

The barrier islands of St. Lucie County are North Hutchinson Island south of Vero Beach in Indian River County, and South Hutchinson Island, north of Jensen Beach in Martin County. North Hutchinson and South Hutchinson Islands are separated by the Fort Pierce Inlet. Developed areas are predominately residential. The Indian River Lagoon lies between the western shore of the barrier islands in St. Lucie County and the mainland. This estuary is designated as an Estuary of National Significance. The Lagoon contains highly productive natural communities and ecosystem, including sea grass beds, algal beds, and oyster beds, mud flats, tidal marshes, and mangrove swamps. The Lagoon is heavily used by recreational boaters and is important to the marine business communities as prime locations for boat facilities and waterfront development. Impacts include storm-water drainage systems, saltwater intrusion into public water supplies and sources, and ecological impacts of inundation and saltwater intrusion into estuaries and freshwater systems.

3.2.5.2 Historic Events

June 2012 a regional vulnerability study that included sea level rise, was completed for the Treasure Coast (Martin, St. Lucie, Indian River and Palm Beach counties) by the Treasure Coast Regional Planning Council. In early 2021, St. Lucie County, Port St. Lucie, Fort Pierce, and St. Lucie Village formed a Resilience Steering Committee. Currently, this Committee is in the process of updating sea level rise impact analyses using NOAA 2017 Intermediate High Sea Level projections, with anticipated completion in summer 2021.

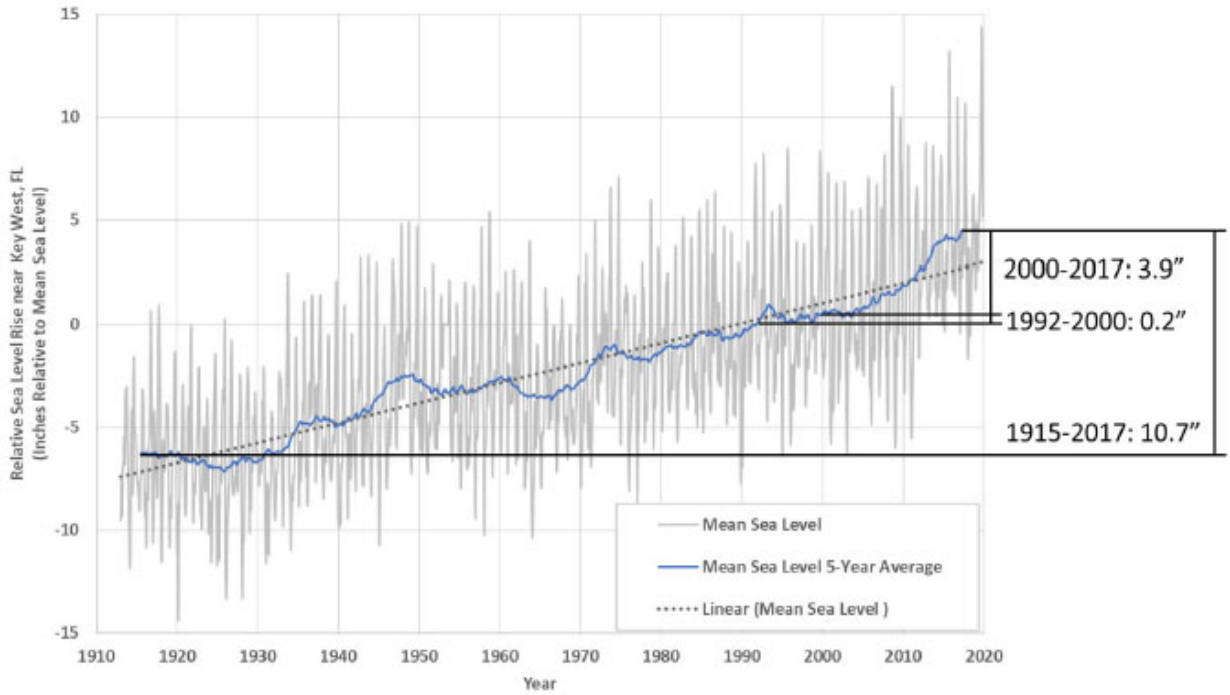
Sea level rise in St. Lucie County is measured using the Key West Tidal Station, which has captured continuous data since 1915. This tide gauge was chosen due to its geographic proximity, long historical record, and to increase capacity to aggregate and coordinate Southeast Florida regional assessments and

resilience plans.

Global mean sea level has risen about 8–9 inches since 1880, with about a third of that coming in just the last two and a half decades. As opposed to global sea level, "relative sea level" in specific locations or regions, has high variability, with more or less rise than the global average due to local factors: ground settling, upstream flood control, erosion, regional ocean currents, and whether the land is still rebounding from the compressive weight of Ice Age glaciers.

Based on the 5-year average of mean sea level at the Key West tide gauge[1], sea level has risen approximately 3.9 inches from 2000 to 2017. In addition, the rate of rise has accelerated over the last 10 years. Recent analyses of tide gauge records acquired along the United States Atlantic coast indicate year-to-year acceleration in the rate of sea level rise (NOAA report, Sweet et al., 2017). During 2010-2015, accelerated sea level rise at rates five times the global average was observed between Key West and Cape Hatteras (Valle-Levinson, 2017), and is attributed to the warming of the Florida Current (Domingues et al., 2018).

Wdowinski et al. (2016) analyzed the Virginia Key tide gauge[2] record (near Miami) and found a significant acceleration in the rate of sea level rise since 2006. The average rate of regional sea level rise since 2006 was 0.35 inches per year (+/- 0.16 inches), significantly higher than the global average rate, which has been estimated to be in the range of 0.16 to 0.2 inches per year for the post-2006 period (WMO, 2019).



Relative Sea Level Rise in Key West, Florida (NOAA Station ID 8724580) presented as monthly mean sea level, 5-year average of monthly mean sea level and linear trend of monthly mean sea level.

Annotated measurements on right of figure are computed by subtracting the 5-year average mean sea levels for the years listed. Sea level rise computed based on the linear trend will differ from the 5-year mean sea level trend shown.

Sea Level Rise proves to be a serious threat to St. Lucie County and the world thereof, however there seems to be no significant, single previous occurrence. Instead, the information referenced above demonstrates a gradual increase throughout recent years that will undoubtedly continue to be monitored and mitigated in the future.

3.2.5.3 Vulnerability Assessment

Sea level rise magnifies the impacts of coastal storms by raising elevation at high tides and the base of storm surge. Coastal areas are sensitive to sea level rise and changes in the frequency and intensity of storm events. Rising sea levels and intensified coastal storms can impact low-lying inland areas, damage coastal ecosystems, intensify coastal erosion and flooding, and introduce saltwater and nonpoint source pollution into many coastal resources such as estuaries.

Low- and moderate-income areas along the coast are generally less able to prepare for, respond to, or recover from impacts of sea level rise and coastal storms. They are also likely to be disproportionately affected by workplace closures, lost business revenue, and loss of public services.

Southeast Florida is vulnerable to sea level rise due to its peninsular geomorphology and low topography. Mapping different sea level rise inundation scenarios helps to identify areas at potential risk and aids in planning for a resilient community. Inundation maps, identifying land at elevations below sea level, highlight areas located near St. Lucie County's coastline and tidal waterways. Inland areas identified as vulnerable are low-lying areas, which may be of future concern for storm water management but are not directly hydrologically connected to tidal waters.

Adaptation of current structures, mitigation and/or managed withdrawal of structures in redevelopment activities can lessen economic and social impacts to County businesses, government, and residents (St. Lucie County CEMP, 2014).

3.2.5.4 Probability Assessment - LOW

At this time, Sea Level Rise is not an additional impact to hurricanes or rough surf that may impact St. Lucie County, therefore the probability is considered low.

3.2.5.5 Methodology

The Sea Level Rise Vulnerability Analysis includes a small area data utilizing parcel-level data identifying structures within the Sea Level Rise Inundation Zone created under the 2-foot scenario, and then added the potential impacts of Cat. 3 and 5 hurricanes, respectively. This identified structures threatened by additional storm surge. In addition, an analysis of roadways within the 2-foot Inundation Zone were analyzed for impacts due to increased storm surge using different scenarios.

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

The created scenario Inundation Zones were used with county Property Appraiser parcel data and Florida Department of Transportation major roads data to identify parcels with structures and roads that could potentially be impacted by the sea level rise scenario.

Table 3.22- Vulnerability to Sea Level Rise and Storm Surge

St. Lucie County

Countywide Estimated Vulnerability to Sea Level Rise and Storm Surge as Increased by Sea Level Rise

Structure Use	Sea Level Rise (2ft) Scenario		Increased Category 3 Storm Surge under Sea Level Rise (2ft)		Increased Category 5 Storm Surge under Sea Level Rise (2ft) Scenario	
	# of Units	Value ($) in	# of Units	Value ($) in	# of Units	Value ($) in thousands
Single Family Residential	1,847	270,561.5	2,018	216,138.2	3,661	287,605.4
Multi-Family Residential	7,347	1,458,039.1	248	165,276.5	770	312,540.1
Mobile Home Residential	2,258	56,894.5	208	4,504.4	146	1,448.5
Institutional/Governmental	140	290,046.6	29	41,190.5	67	166,000.0
Commercial	105	562,849.3	55	16,657.9	93	28,009.2
Industrial	14	5,464.2	36	12,432.7	28	32,447.1
Agricultural	15	1,514.2	5	2,872.3	18	1,455.6
Miscellaneous/Undefined	6	302.2	1	10.7	3	40.5
Total	**11,732**	**2,645,671.6**	**2,600**	**459,083.2**	**4,786**	**829,546.4**

Table 3.23 - Vulnerability to Roadways from Sea Level Rise and Storm Surge

Indian River, Martin, and St. Lucie Counties

Estimated Vulnerability of Treasure Coast Roads to Strom Surge as Increased by Sea Level Rise

Road Functional Classification	Increased Category 3 Storm Surge under Sea Level Rise (2ft) Scenario	Increased Category 5 Storm Surge under Sea Level Rise (2ft)
	Length Inundated (m)	Length Inundated (m)
Rural: Minor Arterial	5,320.52	5,385.94
Urban Collector	53,719.94	121,467.01
Urban: Local	23,041.83	27,253.44
Urban: Minor Arterial	94,017.61	150,691.82
Urban: Principal Arterial - Other	18,175.86	70,000.46
Urban: Principal Arterial - Other Freeways and Expressways	-	1,063.37
Total	**194,275.75**	**375,862.04**

Table 3.24 - Vulnerability to Critical Facilities from Sea Level Rise

St. Lucie County Critical Facilities Estimated Vulnerability to Flooding and								
Category of	Total # of	# of Facilities located in SFHA	# of Facilities Located in Surge Zone					
			Category 1	Category 2	Category 3	Category 4	Category 5	Surge Total
Public Safety	36	6	0	4	1	0	0	5
Healthcare	16	0	0	0	0	0	3	3
Education	91	4	0	0	0	2	1	3
Government	28	2	0	0	0	1	5	6
Infrastructure	41	10	0	3	5	3	0	11
Community Resources	36	6	0	2	5	2	0	9
Recovery Operations	12	0	0	0	0	0	0	0
Shelters	13	0	0	0	0	0	0	0
Group Homes	1	0	0	0	0	0	0	0
Transportation	4	0	0	0	0	0	0	0
Communication	3	1	0	0	0	0	0	0
Banks	0	0	0	0	0	0	0	0
Businesses	0	0	0	0	0	0	0	0
Oil and Gas	4	0	0	0	0	0	0	0
Total	**285**	**29**	**0**	**9**	**11**	**8**	**9**	**37**

Note: See also Section 3.5 – Critical Facilities

3.2.5.6 Risk Assessment – LOW

It is understood that Sea Level Rise is very likely to become more problematic in the future, therefore it is a consideration identified within the 2015 Countywide Post Disaster Redevelopment Plan developed for St. Lucie County by the Treasure Coast Regional Planning Council. St. Lucie LMS will continue to monitor the changes in sea level rise to further assess vulnerability, risk, and impact.

3.2.6 Agricultural Pests and Diseases

3.2.6.1 Hazard Identification

Climate is one of the factors that influence the distribution of diseases borne by vectors (such as fleas, ticks, and mosquitoes, which spread pathogens that cause illness). The geographic and seasonal distribution of vector populations, and the diseases they can carry, depends not only on climate but also on land use, socioeconomic and cultural factors, pest control, access to health care, and human responses to disease risk, among other factors. Daily, seasonal, or year-to-year climate variability can sometimes result in vector/pathogen adaptation and shifts or expansions in their geographic ranges. Such shifts can alter disease incidence depending on vector-host interaction, host immunity, and pathogen evolution (Centers for Disease Control and Prevention).

Florida is among the top three agriculture-producing states in the nation. Agriculture generates farm cash receipts of nearly $6 billion annually, of which, citrus and vegetable crops contribute more than 40%. The industry is susceptible to many hazards including freezes, droughts, and exotic pests or diseases. Agricultural crops are grown throughout the state, and every region is vulnerable

to the effects of an exotic pests or disease infestation. As a result, Florida uses the second highest volume of pesticides in the nation.

Agriculture and citrus production play key role in the St. Lucie County economy; 56.8% of the County is agricultural farmland. The main threats to the St. Lucie County agriculture industry are (1) Citrus canker and greening, (2) Mediterranean fruit fly (Medfly), (3) Tomato Yellow Leaf Curl Virus (TYLCV), and (4) Africanized honeybees.

Citrus Canker and Citrus Greening

Unlike most citrus diseases, which are predominantly fungi (plant-like), citrus canker is a serious bacterial disease. It is microscopic (unseen by the human eye), and can be spread by wind, rain, humans (contact), landscaping (trimming, chipping, cutting, or pruning citrus trees), and fruit removal (peeling, buying, selling, transporting, picking, etc.). Remember that the disease is bacterial in nature and the only remedies existing for its control are decontamination (chemical antibacterial), or sanitation (fire).

The best choice for control is decontamination by antibacterial instead of the latter. The latter choice (firing) involves the eradication of 900 feet of citrus trees within the radius of an infected tree. In a neighborhood or subdivision, this would mean a substantial removal, of neighboring citrus trees for blocks, or in the case of citrus growers the removal of more than 200 acres per infected tree site in contiguous groves.

Since 1995, Citrus Canker has been detected in 24 Florida counties including St. Lucie prior to the 2004 hurricane season, Citrus Canker was confined primarily to South Florida. Florida is currently under a Statewide quarantine by the USDA allowing no citrus to leave the State unless the USDA has issued a limited permit. No Florida grown citrus may enter any other citrus producing states or territories and no citrus plants or parts may enter or exit Florida (Florida Department of Agriculture and Consumer Services, 2012).

Citrus Greening

Huanglongbing (HLB; citrus greening) was discovered in July 2004 in Brazil.is thought to be caused by the bacterium, *Candidatus Liberibacter asiaticus*. HLB has seriously affected citrus production in a number of countries in Asia, Africa, the Indian subcontinent and the Arabian Peninsula. Wherever the disease has appeared, citrus production has been compromised with the loss of millions of trees. In August 2005, the disease was found in the south Florida region of Homestead and Florida City. Since that time, HLB has been found in commercial and residential sites in all counties with commercial citrus (UF-IFAS Citrus Extension, 2013).

Mediterranean Fruit Fly (Medfly)

Another threat to St. Lucie County's agriculture industry is the Medfly. It is one of the world's most destructive pests and infests more than 260 different plants that are important for U.S. food producers, homeowners, and wildlife. It is considered the greatest pest threat to Florida's $1.5 billion citrus crop, as well as endangering many other economically significant crops (Florida Department of Agriculture and Consumer Services, 2020). For example, a Medfly outbreak in 1997 cost an estimated $32 million to eradicate in Manatee, Marion, Orange, Polk, and Sarasota counties (U.S. Department of Agriculture, 1999). Consequences of a long-term or widespread

Medfly infestation in Florida would halt Florida growers from export shipping of fruit and vegetable crops to many foreign and domestic markets. The movement of fruits and vegetables, even within the State, would be disrupted leading to higher prices. Costly post-harvest treatment of fruits and vegetables to meet quarantine restrictions of domestic and foreign markets would also be required and ongoing pesticide treatments by homeowners and commercial growers would be necessary the Medfly is not eradicated in Florida,

Adult Medflies are up to 1/4" long, black with yellow abdomens, and have yellow marks on their thoraxes. Their wings are banded with yellow. The Medfly damages produce by laying eggs in the host fruit or vegetable. The resulting larvae feed on the pulp, rendering the produce unfit for human consumption. In addition to citrus, med flies will feed on hundreds of other commercial and backyard fruit and vegetable crops.

Because medflies are not strong fliers, the pest is spread by the transport of larval-infested fruit. The major threats come from travelers, the U.S. mail, and commercial fruit smugglers. Several steps have been taken to prevent new infestations. State and Federal officials are working with postal authorities to develop ways to inspect packages suspected of carrying infested fruit. In addition, public education efforts carrying the message, "Don't Spread Med" are being expanded (Florida Department of Agriculture and Consumer Services, 1998).

Tomato Yellow Leaf Curl Virus (TYLCV)

The Tomato Yellow Leaf Curl Virus is believed to have entered the state in Dade County sometime in early 1997 (UF, IFAS, 2007). Symptoms vary among tomato types, but in general, leaves produced shortly after infection are reduced in size, distorted, cupped inward or downward, and have a yellow mottle. Less than one in ten flowers will produce fruit after TYLCV infection, severely reducing yields.

The virus is transmitted by adult silver leaf whiteflies. Although frequent applications of pesticides help to decrease whitefly populations and suppress the spread of TYLCV, virus management through whitefly control is not possible in years where whitefly populations are high. Fortunately, the virus is not transmitted through seed or casual contact with infected plants.

Africanized Honeybees

Africanized Honeybees (AHBs) were brought to Brazil in the 1950s for testing as possible alternative pollinators and honey producers because of their reputation of being hardy in tropical environments. At the time, their defensive nature and ability to reproduce in greater numbers were not well understood. Some were accidentally released and have spread throughout South and Central America, Mexico and the southern U.S.

The FDACS reports that Africanized bees have been a threat in the nation’s southwest and southern states since the 1990’s with 17 human deaths reported to present. Florida incurred the first human death from an attack of Africanized bees in April 2008; however, livestock and pets have been the majority of reported deaths. The population has grown and will continue to grow in Florida due to its numerous pathways into the State and the lack of effective eradication products or techniques.

The department monitors 500 bait hives placed throughout the State, primarily in port areas, along Interstate 10 and on the Florida-Alabama border. The bait hives are checked on a three-week cycle based on the reproduction habits of the AHB. St. Lucie County Fire District and Animal Control are equipped to make rescues in the event of an AHB attack. Removal of AHB should be done by private contractors.

NOTE: All honeybees are not Africanized and are a vital part of maintaining a healthy pollination process for habitat retention of several other species and critical to plant, flower, and tree heath and propagation. If there is question on a hive found or bees that cannot be identified, please notify FDEP, the FDACS, and or your local fire rescue or district.

3.2.6.2 Vulnerability Assessment

Agricultural pests and diseases can have the following potential impacts within a community:

- Human health and safety;
- Psychological hardship;
- Economic disruption;
- Agricultural/fisheries damage; and
- Damage to critical environmental resources.

Agricultural pests and diseases are a more significant hazard in those areas of the County where agriculture is a more significant element in the economic base. In 2015-2016, St. Lucie County citrus crops yielded 6.6 million boxes of citrus (FDACS). The State of Florida is ranked fourth in crop acreage production and area harvested for fresh market vegetables and has the second highest tomato sales, bringing in $342 million in 2015-2016 (FDACS 2017 Agricultural Statistics).

3.2.6.3 Probability Assessment - LOW

Given the small number of past events, the probability of future occurrence for agricultural pests and disease is low.

3.2.6.4 Risk Assessment - LOW

At the time of the 2016 LMS, no model was available to determine the potential loss associated due to agricultural pests and disease. Since St. Lucie County has a large agricultural market, damage to the local economy could be significant. Because of the lack of a model, this hazard is not fully profiled.

3.2.7 Dam/Levee Failure

3.2.7.1 Hazard Identification

Ten Mile Creek is an above-ground reservoir of approximately 526 acres surrounded by a 12-to-15-foot-tall embankment. The reservoir was originally designed to store up to 6,000-acre feet of water at an average depth of 10 feet. The project also includes the following components: a natural preserve area, a pump station for filling the reservoir from Ten Mile Creek, a gated water level

control structure for the moderated release of water back to the creek, and a 132-acre STA with associated pumps and structures for water treatment and release. The intent of the WPA is to filter and clean agricultural run-off water before it enters the North Fork of the St Lucie River.

The project was initiated in 2005 by the US Army Corps of Engineers (USACE) with the intent of turning it over to the South Florida Water Management District (SFWMD). Due to construction and legal issues, the project is not complete and has not been turned over to the SFWMD.

3.2.7.2 Historical Occurrences

There are no dam/levee failures that have occurred in the County.

3.2.7.3 Probability Assessment - LOW

Due to this hazard's complexities and its lack of past events, the probability of a future dam/levee failure for St. Lucie County is low.

3.2.7.4 Risk Assessment - MEDIUM

In 2006, the USACE completed a risk and vulnerability assessment based on the original design. Due to re-engineering and construction, this assessment cannot be considered valid. A comprehensive assessment will be done once the legal issues are resolved and the project is completed. As of the 2021 update, there are still no legal resolutions, therefore there is no data available to measure.

3.3 TECHNOLOGICAL HAZARDS

3.3.1 Epidemics and Pandemics

3.3.1.1 Hazard Identification

An epidemic is any rise in cases beyond the baseline for that geographic area.
Epidemics can occur:

- When an infectious agent (such as a virus) suddenly becomes much more prevalent in an area where it already existed
- When an outbreak spreads throughout an area where the disease was not previously known.
- When people who were not previously susceptible to an infectious agent suddenly start getting sick from it.

Infectious diseases emerging throughout history have included some of the most feared plagues of the past. New infections continue to emerge today with the most recent COVID-19 virus becoming a worldwide pandemic that has been affecting the U.S. including Florida and St. Lucie County in February 2020. While many of the old plagues are still with us, new or mutated viruses are emerging regularly. As demonstrated by influenza epidemics and COVID-19, a new infection first appearing anywhere in the world could travel across entire continents within days or weeks. The U.S. and world populations have learned quickly how easily viruses can be carried and spread. Due to the potential of complex health and medical conditions that

can threaten the general population, Florida's vulnerability to an epidemic is continually being monitored. With millions of tourists arriving and departing the State daily, disease and disease exposure (airborne and ingestion) are constantly evaluated and analyzed by the U.S. Center for Disease Control (CDC). Health officials closely monitor this potential threat to the public health. The emphasis upon preventive medical measures such as school inoculation, pet licensing, rodent/insect eradication, water purification, sanitary waste disposal, health inspections, and public health education are mitigation measures taken to thwart potential disasters.

3.3.1.2 Historic Events

During the 2013-2014 season, influenza A (H3N2), 2009 influenza A (H1N1), and influenza B viruses circulated in the United States. 2009 H1N1 viruses predominated overall during the 2013-14 flu season, though influenza B viruses became the predominant virus nationally later in the season causing increases in flu-like symptoms and illness. After several recent influenza A (H3N2)–predominant seasons, 2013-14 was the first H1N1–predominant season since the 2009 H1N1 pandemic (CDC, 2015).

In 2014, the West African Ebola epidemic is the largest in history at that time, affecting four countries. Two imported cases, including one death, and two locally acquired cases in healthcare workers have been reported in the U.S.. The U.S. CDC and partners are taking precautions to prevent additional cases of Ebola in the United States (CDC, 2015). Florida Department of Health - St. Lucie County, St. Lucie County Fire District, Cleveland Clinic (Formerly Martin Health Systems), and the St. Lucie County Sheriff's Office developed a response plan and trained and equipped responders to respond to such an incident should it occur in the County.

Food Contamination

Another potential threat to south Florida's population is food contamination. Frequent news stories document that *E. coli* and botulism breakouts throughout the country are not that uncommon. Most recently, millions of pounds of possibly contaminated beef from the Hudson packing plant were seized by the Department of Agriculture and destroyed.

3.3.1.3 Vulnerability Assessment

Epidemics and pandemics can have the following potential impacts within a community:

- Population Isolation
- Human Health & Safety;
- Psychological Hardship;
- Economic Disruption;
- Widespread unemployment;
- Disruption of Government and Community Services;
- Impact on emergency services; and
- Agricultural/Fisheries Damages.

High-density, low-income communities or neighborhoods that have antiquated well and septic systems in older neighborhoods tend to be at higher risk for illnesses associated with epidemics.

Advances in community health programs have reduced the potential for future occurrence of epidemics, therefore making communities as a whole less vulnerable.

3.3.1.4 Probability Assessment – MEDIUM

At the time, the 2016 LMS was written, the potential for future pandemic occurrence was expected to be low. In February of 2020 and as of this update (2021), there is a significant concern that mutation and the slow movement toward mass vaccination, will allow for continued response to the current pandemic impacts and the impacts of the future. Due to these factors, the probability of a future occurrence for St. Lucie County is medium.

3.3.1.5 Risk Assessment - MEDIUM

Modeling was not conducted to determine potential losses associated with an epidemic or pandemic in St. Lucie County. However, since February 2020 and the onset of COVID-19, there has been significant data generated to illustrate losses in every job sector, jurisdictional, national, and foreign trade, health, hospital, human services, and community wellbeing of residents, and all levels of government policy making. An update to future risk assessment, will rely heavily on the experiences and outcome of the current pandemic affecting St. Lucie County, and the nation.

3.3.2 Radiological Accidents

3.3.2.1 Hazard Identification

While the probability of an actual release of radioactive material is extremely unlikely and the immediate threat to life extremely low, vulnerability to a nuclear plant disaster could consist of long-range health effects with temporary and permanent displacement of population from affected areas. The potential danger from an accident at a nuclear power plant is exposure to radiation. This exposure could come from release of radioactive material from the plant into the environment, usually characterized by a plume (cloudlike) formation. The area the radioactive release may affect is determined by the amount released from the plant, wind direction and speed, and weather conditions (e.g., rain) that would quickly drive radioactive material into the ground, hence causing increased deposition of radionuclides.

Twenty eight of the 67 counties in the State of Florida are involved in preparedness planning for a commercial nuclear power plant emergency. Emergency Planning Zones (EPZs) have been designated for each power plant to enhance planning efforts for an emergency. An EPZ is comprised of two zones, the 10- mile plume exposure zone and the 50-mile ingestion exposure zone. Specific coordinating procedures for response at a nuclear power plant has been prepared in the form of Standard Operating Procedures, including Emergency Classification Levels (ECLs) which are listed below. They assist in public notification and are defined by four categories by the Nuclear Regulatory Commission (NRC).

- **Notification of Unusual Event** - Events are in progress or have occurred which indicate a potential degradation of the level of safety of the plant or indicate a security threat to facility protection has been initiated. No releases of radioactive material requiring offsite response

or monitoring are expected unless further degradation of safety systems occurs.

- **Alert** - Events are in progress or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant or a security event that involves probable life-threatening risk to site personnel or damage to site equipment because of Hostile Action. Any releases are expected to be limited to small fractions of the Environmental Protection Agency (EPA) protective action guides (PAGs).

- **Site Area Emergency** - Events are in progress or have occurred which involve actual or likely major failures of plant functions needed for protection of the public or hostile action that results in intentional damage or malicious acts; 1) toward site personnel or equipment that could lead to the likely failure of or 2) that prevent effective access to, equipment needed for the protection of the public. Any releases are not expected to result in exposure levels which exceed EPA PAG exposure levels beyond the site boundary.

- **General Emergency** - Events are in progress or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity or hostile action that results in an actual loss of physical control of the facility. Releases can be reasonably expected to exceed EPA PAG exposure levels offsite for more than the immediate site area.

3.3.2.2 Vulnerability Assessment

The St. Lucie Nuclear Power Plant (SLNPP) is located on North Hutchinson Island in St. Lucie County. The facility contains two reactors and is owned and operated by the Florida Power & Light Corporation (FP&L). This places the northeast quadrant of St. Lucie County, the City of Fort Pierce, St. Lucie Village, and Port St. Lucie (Zone 7) within the 10-mile EPZ, and places the entire County within the 50-mile IPZ. St. Lucie County Division of Emergency Management has a radiological coordinator on staff.

Emergency response plans written and maintained by the County exceed FEMA's criteria to protect the health and safety of the residents of the County. FEMA reviews the plans annually. Radiological accidents can have the following potential impacts on a community:

- Electrical power outage;
- Surface and air transportation disruption;
- Telecommunications system outage;
- Human and health safety;
- Psychological hardship;
- Economic disruption;
- Disruption of community services;
- Damage to critical environmental resources; and
- Toxic releases.

Nuclear power plant emergency drills are held annually, and FEMA conducts evaluated exercises biennially. Evacuation, notification, and emergency response plans are reviewed by FEMA, incorporated within exercises and evaluation and then incorporated into Florida's Annual Letter

of Certification to FEMA to provide reasonable assurance to the NRC that St. Lucie County's plan and procedures are more than adequate to respond to an emergency at the nuclear power plant.

3.3.2.3 Probability Assessment – LOW

Based on the absence of previous radiological emergencies at the SLNPP and the enhanced safety protocols used at the location, the probability of a future occurrence is low.

3.3.2.3 Risk Assessment - HIGH

Chernobyl, Ukraine in 1986 and Fukushima Japan in 2011 nuclear incidents were due to inadequate design and emergency redundancies. Nuclear power plants in the United States are required to have more redundant systems in place to ensure they will not experience the same failures. There have not been any emergencies requiring response to an incident at the SLNPP to date. Since 2011, the NRC has re-evaluated geological conditions and tsunami probability in this region and have re-confirmed the original evaluation that the SLNPP is not at risk from either hazard. The SLNPP is built 28' above sea level and will not suffer damage from storm surge inundation, or freshwater flooding that could jeopardize the plant's integrity.

3.3.3 Power Failures

3.3.3.1 Hazard Identification

Power failure can result from a variety of related natural and man-made causes such as hurricanes and associated debris, sagging lines due to hot weather, flashovers from transmission lines to close to trees, and incorrect relay settings. Widespread hurricane damage in Florida in 2004 and 2005 resulted in lengthy sustained electric service interruptions for millions of utility customers. No portion of the state is immune to widespread and lengthy electric service interruptions associated with powerful storms that may strike the State during hurricane season.

Nationwide, electric utilities plan their bulk power systems to comply with reliability standards set by the North American Electric Reliability Council (NERC). NERC is comprised of eight regional electric reliability councils. NERC and the regional reliability councils ensure that the bulk electric system in North America is reliable, adequate, and secure. The Florida Reliability Coordinating Council (FRCC) is responsible for ensuring that Peninsular Florida's electric utilities meet federal reliability standards. The FRCC has contracted with Florida Power & Light Company (FPL) to act as the Security Coordinator for Peninsular Florida. The Security Coordinator monitors system conditions in real-time using remote telemetry units at substations and other points in the electric system. The Security Coordinator gathers data on power flows, voltages, and the status of various switching and relaying equipment in the FRCC region.

The Florida Electrical Emergency Contingency Plan was developed to address generating capacity issues, equipment capacity, and consumer demand. Due to State or local emergencies, the Florida Electrical Emergency Contingency Plan was developed. The Contingency Plan has four stages (Florida Reliability Coordinating Council, 2004).
The plan: (1) provides for early identification of situations that could lead to electricity shortages; (2) coordinates actions among utilities, regulators, and state and local emergency

agencies, (3) establishes a communication network to assist consumers during an electricity shortage; and (4) issues appeals for voluntary conservation. Alerts have been created to give early warning of potential electricity shortfalls and bring utilities, emergency management officials, and the public to a state of preparedness.

Generating Capacity Advisory

A Generating Capacity Advisory is primarily for information purposes. It starts utility tracking activities, and it initiates inter-utility and inter-agency communication. No action by the public is required. General information may be distributed to consumers to forewarn them of conditions if necessary.

Generating Capacity Alert

A Generating Capacity Alert starts actions to increase reserves. Available emergency supply options will be explored. When reserves fall below the size of the largest generating unit in the state, loss of that size unit to an unexpected mechanical failure could lead to blackouts somewhere since insufficient backup is available.

Generating Capacity Emergency

A Generating Capacity Emergency occurs when blackouts are inevitable somewhere in Florida. Every available means of balancing supply and demand will be exhausted. Rolling blackouts, manually activated by utilities, are a last resort to avoid system overload and possible equipment damage. Frequent status reports are provided to agencies and the media. The Division of Emergency Management will consider using the Emergency Broadcast System to inform citizens of events and to direct them to available shelters if conditions warranted. Recognizing the consequences of a loss of electricity, individual utility emergency plans include provisions for special facilities critical to the safety and welfare of citizens.

System Load Restoration

System Load Restoration is instituted when rolling blackouts have been terminated and power supply is adequate. It is the recovery stage, and efforts are made to provide frequent system status reports.

3.3.3.2 Historic Events

In the U.S., from July 2nd to August 10th, 1996, the Western States Utility Power Grid reported widespread power outages that affected millions of customers in several western states and adjacent areas of Canada and Mexico.

A massive power outage struck the northeast on August 14th, 2003. Areas affected by the outage included New York City and Albany, New York; Cleveland and Toledo, Ohio; Detroit and Lansing, Michigan; parts of New Jersey and Connecticut; as well as Toronto and Ontario, Canada. The most extensive power failure in history, it shut down 10 major airports, 9 power plants, affected 50 million people, and led to a declared State of Emergency in New York City. The Ford Motor Company lost production capability at 21 of its facilities. Two deaths and 71 fires

were attributed to the outage in New York City alone (Gellman and Milbank, 2003). The preliminary economic impacts of this event are large. It is estimated that the power failure cost approximately $1 billion including $800 million in unsold goods and services and $250 million in spoiled food.

3.3.3.3 Vulnerability Assessment

The vulnerabilities of all communities to power failures are considered moderate. The power grid throughout St. Lucie County is diversified, and there are no single choke points or distribution nodes whose failure would disrupt power distribution to the entire community.

Power failure can have the following potential impacts on a community:

- Electric power outage;
- Surface and air transportation distribution;
- Potable water system loss or disruption;
- Sewer system outage;
- Telecommunications system outage;
- Human and health safety;
- Psychological hardship;
- Economic disruption; and
- Disruption of community and essential services

3.3.3.4 Probability Assessment – HIGH / LOW

The probability of future occurrence of small-scale power outages in St. Lucie County is high, due to the frequency of thunderstorms and lightning as well as extremely minor transportation system accidents. The probability of future occurrence of large-scale power outages in St. Lucie County is low.

3.3.3.5 Risk Assessment - MEDIUM

At the time of publication, no model was available to determine the potential loss associated with power failure in St. Lucie County.

3.3.4 Hazardous Materials Accidents

3.3.4.1 Hazard Identification

Hazardous materials accidents, spills, and/or releases can occur on roadways, rail, or fixed facility storing or transporting hazardous materials. The entire State is at risk to an unpredictable accident of some type. Most accidents are small spills and leaks that can be contained onsite. However, but some incidents result in large scale releases of hundreds or thousands of gallons/pounds of materials that causes minor or major injuries, property damage, environmental contamination, or other consequence. Hazardous materials can be poisonous, corrosive, flammable, radioactive, and/or toxic and pose dangers to humans, wildlife, and environments. Hazardous materials are regulated by the U.S. Department of Transportation, the Environmental Protection Agency (EPA),

and the Departmental of Environmental Protection (DEP).

Emergencies involving hazardous materials can be expected to range from a minor accident with no off- site effects to a major accident that may result in an off-site release of hazardous or toxic materials. The overall objective of chemical emergency response planning and preparedness is to minimize exposure for a wide range of accidents that could produce off-site levels of contamination in excess of Levels of Concern established by the EPA. Minimizing this exposure will reduce the consequences of an emergency to people in the area near to facilities that manufacture, store, or process hazardous materials (TCRPC, 1998).

A large volume of hazardous materials is transported to and through the County by railroad and highway, air, water, and pipeline daily. Within St. Lucie County, there are several both public and private fixed facilities that produce or use hazardous materials. Coordinating procedures for hazardous material response are found within the County's Emergency Plan for Hazardous Materials. U.S. Highway 1 is the main urban north-south route connecting the adjacent counties and serving the coastal area. The Florida Turnpike, a north-south toll route, and Interstate 95 bisect the County, running parallel to each other. Two railroads pass through St. Lucie County, running north and south. The eastern railroad is serviced by Florida East Coast Railway, and the western railroad by the CSX Corporation. In addition to the County's Emergency Plan for Hazardous Materials, Local Emergency Planning Committee officials have prepared a plan for use in responding to and recovering from a release of hazardous or toxic materials. This plan addresses the range of potential emergency situations and the appropriate measures to be implemented to minimize exposure through inhalation, ingestion, or direct exposure (TCRPC, 1998). Within the County there are numerous public and private facilities that store hazardous materials and Extremely Hazardous Substances (EHS's). The frequency of fixed facility hazardous materials releases is 3-5 per year with the majority of these having been small-scale incidents. The severity of impact of such an event depends on the proximity to population, chemical character, wind direction, response capability and situational awareness. Under SARA Title III reporting there are fifty- two sites storing EHS's in the County. The number of facilities varies from year to year as new facilities come online and others permanently remove chemicals.

The Florida Gas Transmission Company (GSTC) owns and operates a line that transports natural gas through St. Lucie County. GSTC has a pressure booster facility on Orange Avenue Extension. Several other companies have buried distribution and feeder pipes throughout the County.

Mishandling and improper disposal or storage of medical wastes and low-level radioactive products from medical use are also a hazard to St. Lucie County. For example, a few years ago an incident occurred in New Jersey when improper disposal of medical wastes resulted in some of the used products ending up on Atlantic Ocean beaches.

3.3.4.2 Vulnerability Assessment

The Emergency Planning and Community Right-to Know Act (EPCRA) Section 304 (Emergency Notification) requires facilities to notify the State Emergency Response Commission (SERC) housed under Florida Department of Emergency Management (FDEM) and the Local Emergency Planning Commission (LEPC) if there is a release into the environment of an Extremely Hazardous Substances (EHSs) or CERCLA hazardous substance (HS) equal to or exceeding minimum

reportable quantities. The EPA issues a List of EHSs and the reportable and release threshold quantities that trigger chemical and business registration and inventory reporting to enhance response to accidental releases to protect people and environment.

There are several factors that determine a community's vulnerability to a chemical release. The State of Florida State Emergency Response Commission (SERC), and the Treasure Coast Local Emergency Planning Committee (LEPC) work to minimize threat and risk though public education, but the others include:

- The major road and railway transportation routes that pass through a community
- Facilities that store, manufacture, and/or transport hazardous materials generators located in or near the community; and
- Response resources (trained personnel and equipment) able to respond to an area of possible impact from a hazardous materials release.

Hazardous materials events can have the following potential impacts within a community:

- Surface and air transportation disruption;
- Human health and safety;
- Psychological hardship;
- Economic disruption;
- Disruption of community services;
- Fire; and Toxic releases.

Overall, St. Lucie County has a moderate vulnerability to impacts from hazardous materials releases. There are relatively few major generators within the County, and those that do exist are generally not situated in urban or major population centers. Areas of high vulnerability for these hazardous materials accidents are the Cities of Fort Pierce and Port St. Lucie, due to the transportation networks (both highway and rail) that pass through these areas.

Because of its location relative to the St. Lucie NPP, all of St. Lucie County has a high vulnerability to a nuclear power plant accident or nuclear materials release and this is discussed under the Nuclear Hazards section of this Plan.

3.3.4.3 Probability Assessment – MEDIUM

The probability of future occurrence of hazardous materials accidents in the County remains medium due to major transportation routes in the County and the low chance of new facilities. The frequency of fixed facility hazardous materials releases in the county is 1-3 per year with the majority of these having been small-scale incidents and transportation related accidents (Florida Division of Emergency Management, State Watch Office 2019).

3.3.4.4 Risk Assessment - MEDIUM

HAZUS software is available to determine scenario driven potential losses associated with hazardous materials accidents in St. Lucie County. St. Lucie County has 56 EPCRA Section 302

facilities that store, manufacture, and or transport EHSs. These facilities file annual chemical inventory reports with the State of Florida SERC and TCLEPC to maximize knowledge to hazardous materials response teams and minimize risk for release through preparedness. The County also participates in the Small Quantity Waste Generator (SQG) program in partnership with Florida Department of Environmental Protection (FDEP). This program monitors facilities and amounts of chemical waste generated by each facility. Chemicals range from used oil and antifreeze, recyclable metals such as aluminum, paint solvents, and spent halogen and fluorescent lamps.

3.3.5 Transportation System Accidents

3.3.5.1 Hazard Identification (Highway, Rail, Air and Sea)

Florida has a large transportation network consisting of major highways, airports, marine ports, and passenger railroads. The heavily populated areas of St. Lucie County are particularly vulnerable to serious accidents, which are capable of producing mass casualties. With the linear configuration of several major highways in St. Lucie County, such as interstate highways and the Florida Turnpike, major transportation accidents could occur in a relatively rural area, severely stressing the capabilities of local resources to respond effectively. A major transportation accident could also involve a large number of tourists and visitors from other countries, given Florida's popularity as a vacation destination, further complicating the emergency response to such an event.

As a major industrial nation, the U.S. produces, distributes, and consumes large quantities of oil. Petroleum-based oil is used as a major power source to fuel factories and various modes of transportation, and in many everyday products, such as plastics, nylon, paints, tires, cosmetics, and detergents. With billions of gallons of oil being stored throughout the country, the potential for an oil spill is significant, and the effects of spilled oil can pose serious threats to the environment.

3.3.5.2 Historic Events

A notorious example is the crash in the Everglades of ValuJet Flight 597 on May 11, 1996, which resulted in 109 fatalities and cost millions of dollars, severely taxing the financial and public safety resources of Dade County. In 2010, an oil-drilling platform in the Gulf of Mexico had exploded. The Deepwater Horizon explosion resulted in an estimated 4.9 million barrels of oil being discharged into the Gulf of Mexico. Coastal communities had cleaned up 4.6 million pounds of oily material in 2013. St. Lucie County was not impacted by the oil spill (Encyclopedia Britannica, 2014).

3.3.5.3 Vulnerability Assessment

St. Lucie County has about 22 miles of Atlantic Ocean coastline that is subject to contamination caused by an oil spill. There are two active oil field regions in Florida: in Escambia and Santa Rosa counties in the Panhandle, and Collier, Dade, Hendry, and Lee counties in southwest Florida. Oil spills may occur from various activities including pipeline ruptures; well blowouts; leaking oil storage containers; and activities associated with offshore oil exploration, production, and transportation.

The probability of coastal oil spills in St. Lucie County is currently in the medium to low range, with low frequency and a potential for high severity of impacts to beaches, wildlife, community populations and tourism. St. Lucie County has an extremely limited history of minor oil spills. Florida prohibits oil drilling in its waters within 125 miles of its shoreline, yet St. Lucie County is vulnerable to coastal oil spills resulting from in-shore activities as well as from the aftereffects of hurricanes on offshore tanker transport ships. Regardless of cause, a large coastal oil spill could directly affect the value of the properties involved and, in the case of a long-term incident, could damage the overall coastal recreational and commercial activities of the area. St. Lucie County Emergency Management and the Engineering Department, including coastal engineering, actively participates with the U.S. Coast Guard in the planning and maintenance of the Area Contingency Plan (ACP) for St. Lucie County in planning for an oil spill impacting the County. The ACP was significantly updated after Deep Water Horizon.

Transportation system accidents can have the following potential impacts within a community:

- Surface and air transportation disruption;
- Navigable waterway impairment;
- Human health and safety;
- Economic disruption;
- Disruption of community services;
- Environment;
- Wildlife and Habitat;
- Fire; and
- Toxic releases.

3.3.5.4 Probability Assessment – LOW

Due to the minor history of the various transportation systems accidents and the geographical location of St. Lucie County, the probability of a future occurrence for a significant transportation systems accident is deemed low.

3.3.5.5 Risk Assessment - MEDIUM

The St. Lucie County International Airport (SLCIA), referred to as "The Gateway to the Bahamas," is a busy general aviation airport owned and operated by the St. Lucie County Board of County Commissioners. The Treasure Coast International Airport and Business Park Master Plan was updated in 2011. Aviation is an important element of the economy in St. Lucie County, and this activity raises the County's vulnerability to aviation associated accidents. The airport is home to more than 200 privately owned aircraft. There are nine (9) flight schools, several commercial aircraft construction and maintenance operations. The airport is located directly to the north of the City of Fort Pierce, and the runway approach passes directly over the Town of St. Lucie Village.

Vulnerability to transportation system accidents is also associated with the highway and rail systems that run through the County. Individual community and population center vulnerabilities to this hazard are entirely dependent upon location. The City of Fort Pierce is the County's major transportation hub, with rail yards, trucking centers, and a port. Transportation accidents have

created blockages of highways within the City. Due to their locations along the rail line, both St. Lucie Village and unincorporated South Indian River Drive have higher vulnerabilities to rail system accidents. St. Lucie Village also is more vulnerable to plane crashes due to its location relative to the St. Lucie airport. The western, unincorporated portion of the County and City of Port St. Lucie has higher vulnerability to major highway accidents due to the presence of I-95 and the Florida Turnpike.

The Port of Fort Pierce is located within the Indian River Lagoon, a designated National Estuary under the EPA's National Estuary Program (Section 320 - 33 USC 1330) of the Clean Water Act. As such, this Port is located within an environmentally sensitive area. Spills of any type in such areas are of more significance due to the sensitive nature of the environmental resources seen there.

At the time of publication, data were not available to determine the potential loss in St. Lucie County due to transportation system accidents.

Figure 3.17 – Forecast of Aviation Activity

FAA APPROVED FORECAST SUMMARY				
	2008 *(Base Year)*	**2013**	**2018**	**2028**
AIRCRAFT OPERATIONS				
Air Taxi	953	1,088	1,244	1,623
Military	357	357	357	357
Itinerant General Aviation	85,566	92,650	101,009	123,625
Local General Aviation	73,400	82,014	92,261	117,993
TOTAL OPERATIONS	**160,277**	**176,111**	**194,871**	**243,599**
PEAK OPERATIONS				
Peak Month	16,704	18,354	20,309	25,387
Average Day	691	759	840	1,050
Peak Hour	104	114	126	158
BASED AIRCRAFT				
Single-Engine Piston	122	137	155	199
Multi-Engine Piston	59	59	59	59
Turboprop	12	13	14	17
Jet	14	20	26	46
Helicopter	4	5	6	8
TOTAL BASED AIRCRAFT	**211**	**233**	**260**	**327**
ANNUAL INSTRUMENT APPROACHES				
Instrument Operations	24,261	26,918	29,865	36,764

Source: St. Lucie County International Airport Master Plan (2011)

3.3.6 Wellfield Contaminations

3.3.6.1 Hazard Identification

The development of wellfield protection programs is a major preventative approach for the protection of community drinking water supplies. Wellfield protection is a means of safeguarding public water supply wells by preventing contaminants from entering the area that contributes water to the well or wellfield over a period of time. Management plans are developed for the wellfield protection area that include inventorying potential sources of ground water contamination, monitoring for the presence of specific contaminants, and managing existing and proposed land and water uses that pose a threat to ground water quality.

Ground water is an essential natural resource. It is a source of drinking water for more than half of the U.S. population and more than 95% of the rural population. In addition, ground water is a

support system for sensitive ecosystems, such as wetlands or wildlife habitats.

3.3.6.2 Historic Events

Between 1971 and 1985, there were 245 ground water-related outbreaks of disease, resulting in more than 52,000 individuals being affected by associated illnesses. While most of these diseases were short- term digestive disorders caused by bacteria and viruses, hazardous chemicals found in wells nationwide also pose risks to public health.

The 1986 Amendments to the Federal Safe Drinking Water Act require states to implement wellfield protection programs for public water wells. Prevention strategies include maintaining isolation distances from potential contamination sources, reporting to the state violations of isolation distance, and asking a local governmental unit to regulate these sources.

3.3.6.3 Vulnerability Assessment

St. Lucie County's Conservation Element of the Comprehensive Plan contains a policy regarding wellfield protection. The policy (8.1.5.1) outlines the following standards for wellfield protection within the County:

1. Assure adequate and safe water supplies to present and future citizens of the County;
2. Comply with Federal and State regulations in the best interests of the County and its future growth and development;
3. Avoid crisis water supply situations through careful groundwater resources planning and conservation;
4. Identify and protect the functions of public wellfield areas, including recharge of those areas, and provide incentives to keep the present and future public well fields compatible with the needs expressed in 1) above;
5. Ensure that new development is compatible with existing local and regional water supply capabilities; and
6. Protect present and future public well fields against depletion and contamination through appropriate regulation, incentives, and cooperative agreements.

Cleaning up contaminated ground water can be technically difficult, extremely expensive, and sometimes simply cannot be done. Contaminated ground water also affects the community by discouraging new businesses or residents from locating in that community. Wellfield contamination may have the following potential impacts within a community:

- Potable water system loss or disruption;
- Sewer system outage;
- Human health and safety;
- Psychological hardship;
- Economic disruption; and
- Disruption of community services.

Section 6.03.00 of the St. Lucie County Land Development Code also outlines requirements for

protecting wellfields within the County. Wellfield contamination has not been a major problem for most of St. Lucie County. There is some potential exposure to this hazard in the eastern portion of the County, but overall, the County vulnerability to this hazard is considered low.

3.3.6.4 Probability Assessment – LOW

As there have been no significant instances of wellfield contaminations within St. Lucie County, the probability of a future occurrence is low.

3.3.6.5 Risk Assessment - LOW

At the time of publication, no data were available to determine the potential loss associated with wellfield contamination in St. Lucie County. However, wellfield contamination has not been a major problem for most of St. Lucie County. There is some potential exposure to this hazard in the eastern portion of the County, but overall, the County's risk to this hazard is considered low.

3.3.7 Communications Failures

3.3.7.1 Hazard Identification

As society emerges from industrial production into the age of information, we are seeing new kinds of technological accidents/disasters. Recently, a communications failure occurred that was the worst in 37 years of satellite service. Some major problems with the telecommunications satellite Galaxy IV drastically affected 120 companies in the paging industry. Radio and other forms of news broadcasts also were affected. The pager failure not only affected personal and business communications, but emergency managers and medical personnel as well.

3.3.7.2 Vulnerability Assessment

Communications failure can have the following potential impacts within a community:

- Telecommunications system outage;
- Economic disruption; and
- Disruption of community services.

Communications failures have a greater potential to produce adverse economic impacts in business- based rather than retirement or residential communities. On the other hand, communications system failures in residential and retirement communities may put more human lives at risk. St. Lucie County's vulnerability to communications systems failures is generally considered moderate. The Cities of Fort Pierce and Port St. Lucie have a higher vulnerability to this hazard because they are centers of government and business within the County. St. Lucie County's vulnerability to this hazard is no greater or less than most other Florida coastal counties. The County and all jurisdictions maintain a robust system of redundancy in the communications structure. St. Lucie County has two redundant data centers, one at the Information Technology Data Center and one at the Emergency Operations Center. These data centers provide

redundancy for much of the County's IT infrastructure.

3.3.7.3 Probability Assessment – LOW

Based off the lack of significant past events and the operation of important back-up measures put into place, the probability of future occurrence of communications failure in St. Lucie County is low.

3.3.7.3 Risk Assessment - LOW

At the time of publication, no data were available to determine the potential losses in St. Lucie County due to communications failure, however, human and health services, law enforcement and fire rescue would certainly be compromised with downed communications.

3.4 HUMAN CAUSED HAZARDS

This subsection will now identify those hazards in St. Lucie County identified as being human caused hazards.

3.4.1 Terrorism and Sabotage

3.4.1.1 Terrorism

Terrorist attacks both foreign and domestic may pose a threat to our community at any time. These attacks may take the form of chemical releases, biological, mass shootings, or improvised explosives, commonly referred to by the Region 5 Central Florida Regional Domestic Security Task Force (RDSTF) as CBRNE (Chemical, Biological, Radiological, Nuclear and Explosive Incendiary). In 2001, several letters containing anthrax were delivered to various locations in the United States. One of them was sent to a tabloid media center in Boca Raton, Florida resulting in one person dying from the exposure and a second employee being hospitalized, and five others exposed without effect.

The building was closed and required federal assistance to decontaminate the facility. Public hysteria from the event impacted emergency services across the United States with concern that biological agents could have been released to the public at other venues as well. Public governmental/political, transportation, commercial, infrastructure, cultural, academic, research, military, athletic, and other activities, and facilities constitute opportunistic targets for attacks causing catastrophic levels of property and environmental damage, injury, and loss of life. Acts of terrorism also can create disasters, which threaten the safety of a large number of citizens.

3.4.1.2 Historic Events

On September 11, 2001, terrorists attacked the World Trade Center in New York City and the Pentagon in Washington, DC, crashing hijacked commercial airplanes into the structures. Approximately 3,000 civilians and emergency response personnel perished in the attack. The long-term economic and psychological impacts of this event are astounding. New York City

alone experienced capital losses totaling 34 million dollars. The World Trade Center bombing attack resulted in a loss of 12.5 million square feet of office space and damaged 7.7 million more. The insured losses associated with the event totaled 52 million dollars to date. The City estimates that 125,300 jobs were lost because of the attack (National Conference of State Legislatures, 2003).

3.4.1.3 Cyber Attacks - Computer and Sabotage

The President's Commission on Critical Infrastructure Protection (PCCIP) recently reported that there is increasing threat that the U.S. could suffer something like an "Electronic Pearl Harbor." Networked information systems present new security challenges in addition to the benefits they offer. Long-term power outages could cause massive computer outages, with severe economic impacts such as loss of sales, credit checking, banking transactions, and ability to communicate and exchange information and data. "Today, the right command sent over a network to a power generating station's control computer could be just as effective as a backpack full of explosives, and the perpetrator would be harder to identify and apprehend," states the PCCIP report.

With the growth of a computer-literate population, increasing numbers of people possess the skills necessary to attempt such an attack. The resources to conduct a cyber-attack are now easily accessible everywhere. A personal computer and an Internet service provider anywhere in the world are enough to cause a great deal of harm. Threats include:

- Human error;
- Insider use of authorized access for unauthorized disruptive purposes;
- Recreational hackers - with or without hostile intent;
- Criminal activity - for financial gain, to steal information or services, or organized crime;
- Industrial espionage;
- Terrorism - including various disruptive operations; and
- National intelligence - information warfare, intended disruption of military operations.

The effects of such activities may take the form of disruption of air traffic controls, train switches, banking transfers, police investigations, commercial transactions, defense plans, power line controls, and other essential functions. The loss of computer access, and IT capabilities and services are a hardship for businesses, citizens, and safety. Computer failures could affect emergency communications as well as routine civilian applications, such as telephone service, banking and brokerage transactions, credit card payments, Social Security payments, pharmacy transactions, airline schedules, etc.

3.4.1.4 Vulnerability Assessment

Terrorism and sabotage events can have the following potential impacts within a community:

- Electric power outage;
- Surface and air transportation disruption;
- Potable water system loss or disruption;
- Sewer system outage;
- Telecommunications system outage;
- Human health and safety;

- Psychological hardship;
- Economic disruption;
- Disruption of community services;
- Damage to critical environmental resources;
- Damage to identified historical resources;
- Fire; and Toxic releases.

A decade ago, the possibilities for terrorism and sabotage in St. Lucie County was extremely limited, and the County's vulnerability to this hazard very low. However, local governments and agencies data are being held captive through computer viruses. The data is released upon payment of a ransom to the hijacker(s). Local governments are investing in protection software to protect electronic assets costing governments and taxpayers thousands. The City of Fort Pierce has a slightly higher vulnerability to terrorism as the center of government including the federal courthouse, but this vulnerability is still considered low. Port St. Lucie has a slightly higher risk of what may be described as "Celebrity Terrorism" due to the national prominence of some of their citizens, New York Mets Spring Training, but the overall community vulnerability remains low. St. Lucie County would be vulnerable to terrorist acts targeting (a) the nuclear power facility; (b) food production facilities; (c) water and wastewater treatment facilities; (d) public/crowded events; and (e) residents with considerable wealth.

3.4.1.5 Probability Assessment - LOW

Although terrorism has come to the forefront recently, in St. Lucie County, the probability of future occurrence is low due to the County's history in regard to this hazard.

3.4.1.6 Risk Assessment – LOW/MEDIUM

At the time of publication, no data were available to determine the potential loss in St. Lucie County due to terrorism.

3.4.2 Civil Disturbances

3.4.2.1 Hazard Identification

As in any other area, St. Lucie County is subject to civil disturbances in the form of riots, mob violence, and a breakdown of law and order in a focalized area. Communities with racial mixtures, gang violence, and drug trafficking are increasingly aware of the need to plan for civil disturbance emergencies. Although they can occur at any time, civil disturbances are often preceded by periods of increased tension caused by questionable social and/or political events such as controversial jury trials or law enforcement actions. Police services are responsible for the restoration of law and order in any area of the County.

3.4.2.2 Vulnerability Assessment

Civil disturbance can have the following potential impacts within a community:

- Surface and air transportation disruption;

- Human health and safety;
- Psychological hardship;
- Economic disruption;
- Disruption of community services;
- Damage to identified historical resources; and
- Fire.

The City of Fort Pierce has a moderate vulnerability in this area, and the Indiantown area has a low vulnerability. In general, civil disturbance is not a significant hazard faced by St. Lucie County.

3.4.2.3 Probability Assessment - LOW

The probability of future occurrence of civil disturbances in St. Lucie County is considered very low as there has been no significant events to date.

3.4.2.4 Risk Assessment - LOW

At the time of publication, no data were available to determine the potential loss in St. Lucie County due to civil disturbance.

3.4.3 Mass Migration

3.4.3.1 Hazard Identification

Florida's location as the nearest U.S. landmass bordering the Caribbean basin makes it a chosen point of entry for many migrants attempting to enter the country illegally. A major consequence of a mass arrival of illegal immigrants could be a disruption of the routine functioning of the impacted community, resulting in significant expenditures related to the situation. Enforcement of immigration laws is a Federal government responsibility. However, it is anticipated that joint jurisdictional support of any operation will be required from the State and local governments.

3.4.3.2 Historic Events

An example of this threat occurred in 1994, when the state responded to two mass migration incidents. In May 1994, there was an unexpected migration of approximately 100 Haitian refugees; while in August 1994, there was an influx of 700 Cubans. These events are typically preceded by periods of increasing tension abroad, which can be detected and monitored.

3.4.3.3 Vulnerability Assessment

The Atlantic shore of St. Lucie County is the sporadic scene of the arrival of undocumented immigrants. The County has both the history and the potential for the unannounced arrival of a large number of immigrants.

Until relieved of the responsibility by the State and Federal governments, St. Lucie County must be capable of providing mass refugee care to include shelter, food, water, transportation, medical, police protection, and other social services. St. Lucie County is growing in population. However, a sudden mass exodus or migration to the area could strain or overwhelm local resources

and infrastructure. During a mass migration, community populations can increase significantly when large numbers of families are displaced from other communities fleeing disaster impacts. Temporary mass migration into the County may require shelter services in a host capacity. Additional reliance on community members, hotels, churches and state and federal programs may be necessary to house dislocated families.

Mass migration can have the following potential impacts within a community:

- Human health and safety;
- Psychological hardship;
- Economic disruption; and
- Disruption of community services.

Reviewing the data on past mass population movements such as the Haitian influx and Cuban raft incidents of the 1980's indicates that mass migration has never reached a crisis state for the local authorities in St. Lucie County. Overall, the County vulnerability to this hazard is very low. Due to demographic features, the City of Fort Pierce has a slightly higher, but still low vulnerability to illegal migration impacts.

3.4.3.4 Probability Assessment – LOW

There is a low probability for experiencing a heightened mass migration event in St. Lucie County; there have been no reported incidents at this point in time.

3.4.3.5 Risk Assessment - LOW

At the time of publication, no data were available to determine the potential loss in St. Lucie County due to mass migration.

3.5 CRITICAL FACILITIES

St. Lucie County has conducted an inventory of critical facilities located within the hazard areas boundaries. For purpose of this LMS these include emergency service facilities, medical facilities, government facilities, schools, emergency/evacuation shelters, fire and police stations, emergency operation center, facilities used by special needs populations, and any other facilities identified by the Division of Emergency Management. Those critical facilities that are highlighted [Facility Name] remain open during a hazard event. Please refer to **Appendix B** for a list of additional critical facilities in St. Lucie County and its jurisdictions that remain open during a hazard event.

Table 3.25 – Critical Facilities in Flood Prone Areas

Facility Name	Facility Type	Address	Municipality	County	State	Flood Zone	Zone Subtype	SHFA	Risk Level	FHZ Label	Description
Orange Blossom Mall Site	Education Facility	4204 Okeechobee Rd	FP	St. Lucie County	FL	AE		T	High Risk Areas	1% Annual Chance Flood Hazard	Inside Special Flood Hazard Area
City of Ft Pierce EOC	Emergency Response Facility	920 S US Highway 1	FP	St. Lucie County	FL	AH		T	High Risk Areas	1% Annual Chance Flood Hazard	Inside Special Flood Hazard Area
FPUA substation	Energy Distribution Control Facility	205 AE Backus Ave	FP	St. Lucie County	FL	X	0.2 Pct Annual Chance Flood Hazard	F	Moderate Risk Areas	0.2% Annual Chance Flood Hazard	Outside Special Flood Hazard Area
Station #11 Shinn Rd	Fire Station / EMS Station	3501 Shinn Rd	FP	St. Lucie County	FL	A		T	High Risk Areas	1% Annual Chance Flood Hazard	Inside Special Flood Hazard Area
Station #2 South Beach	Fire Station / EMS Station	880 Seaway Dr	FP	St. Lucie County	FL	AE		T	High Risk Areas	1% Annual Chance Flood Hazard	Inside Special Flood Hazard Area
Station #8 S Hutchinson Island	Fire Station / EMS Station	7583 S Ocean Dr	FP	St. Lucie County	FL	AE		T	High Risk Areas	1% Annual Chance Flood Hazard	Inside Special Flood Hazard Area

Table 3.25 – Critical Facilities in Flood Prone Areas (continued)

Facility Name	Facility Type	Address	Municipality	County	State	Flood Zone	Zone Subtype	SHFA	Risk Level	FHZ Label	Description
US Coast Guard Station	Government or Military Facility	900 Seaway Dr	FP	St. Lucie County	FL	AE		T	High Risk Areas	1% Annual Chance Flood Hazard	Inside Special Flood Hazard Area
SLC Health Office\Clinic	Hospital / Medical Center	412 Browns Ct	FP	St. Lucie County	FL	AE		T	High Risk Areas	1% Annual Chance Flood Hazard	Inside Special Flood Hazard Area
SLC Health Office\Clinic	Hospital / Medical Center	408 Browns Ct	FP	St. Lucie County	FL	AE		T	High Risk Areas	1% Annual Chance Flood Hazard	Inside Special Flood Hazard Area
Ft Pierce Police Department	Law Enforcement	920 S US Highway 1	FP	St. Lucie County	FL	AH		T	High Risk Areas	1% Annual Chance Flood Hazard	Inside Special Flood Hazard Area
SLC Sheriffs Nettles Island Substation	Law Enforcement	9801 S Ocean Dr	JB	St. Lucie County	FL	AE		T	High Risk Areas	1% Annual Chance Flood Hazard	Inside Special Flood Hazard Area
Ft Pierce Branch Library	Library	101 Melody Ln	FP	St. Lucie County	FL	X	0.2 Pct Annual Chance Flood Hazard	F	Moderate Risk Areas	0.2% Annual Chance Flood Hazard	Outside Special Flood Hazard Area
SLC Historical Museum Complex	Museum	414 Seaway Dr	FP	St. Lucie County	FL	AE		T	High Risk Areas	1% Annual Chance Flood Hazard	Inside Special Flood Hazard Area
SLC Smithsonian Marine Center	Museum	701 Seaway Dr	FP	St. Lucie County	FL	X	0.2 Pct Annual Chance Flood Hazard	F	Moderate Risk Areas	0.2% Annual Chance Flood Hazard	Outside Special Flood Hazard Area
Florida Power & Light Nuclear Power Plant	Nuclear Facility	6501 S Ocean Dr	FP	St. Lucie County	FL	AE		T	High Risk Areas	1% Annual Chance Flood Hazard	Inside Special Flood Hazard Area

Table 3.25 – Critical Facilities in Flood Prone Areas (continued)

Facility Name	Facility Type	Address	Municipality	County	State	Flood Zone	Zone Subtype	SHFA	Risk Level	FHZ Label	Description
Florida Power & Light Nuclear Power Plant	Nuclear Facility	6501 S Ocean Dr	FP	St. Lucie County	FL	AE		T	High Risk Areas	1% Annual Chance Flood Hazard	Inside Special Flood Hazard Area
Fredrick Douglas Memorial Park	Park	3600 S Ocean Dr	FP	St. Lucie County	FL	AE		T	High Risk Areas	1% Annual Chance Flood Hazard	Inside Special Flood Hazard Area
Ft Pierce State Recreation Area	Park	905 Shorewinds Dr	FP	St. Lucie County	FL	AE		T	High Risk Areas	1% Annual Chance Flood Hazard	Inside Special Flood Hazard Area
Savannas Recreation Complex	Park	1400 Midway Rd	FP	St. Lucie County	FL	AH		T	High Risk Areas	1% Annual Chance Flood Hazard	Inside Special Flood Hazard Area
Waveland Beach Complex	Park	10350 S Ocean Dr	JB	St. Lucie County	FL	VE		T	High Risk - Coastal Areas	1% Annual Chance Flood Hazard	Inside Special Flood Hazard Area
White City Park Complex	Park	1801 W Midway Rd	FP	St. Lucie County	FL	AE	Floodway	T	High Risk Areas	Regulatory Floodway	Inside Special Flood Hazard Area
Indian River Terminal Co	Port Facility: Commercial Port	100 Terminal Dr	FP	St. Lucie County	FL	AE		T	High Risk Areas	1% Annual Chance Flood Hazard	Inside Special Flood Hazard Area
JES Seventh Day Adventist School	School	3201 Memory Ln	FP	St. Lucie County	FL	X	0.2 Pct Annual Chance Flood Hazard	F	Moderate Risk Areas	0.2% Annual Chance Flood Hazard	Outside Special Flood Hazard Area
St Andrews Episcopal School	School	210 S Indian River Dr	FP	St. Lucie County	FL	X	0.2 Pct Annual Chance Flood Hazard	F	Moderate Risk Areas	0.2% Annual Chance Flood Hazard	Outside Special Flood Hazard Area

Table 3.25 – Critical Facilities in Flood Prone Areas (continued)

Facility Name	Facility Type	Address	Municipality	County	State	Flood Zone	Zone Subtype	SHFA	Risk Level	FHZ Label	Description
St James Christian Academy K-12	School	4300 Okeechobee Rd	FP	St. Lucie County	FL	AE		T	High Risk Areas	1% Annual Chance Flood Hazard	Inside Special Flood Hazard Area
Forest Grove Middle School	School: Middle School	3201 S 25th St	FP	St. Lucie County	FL	X	0.2 Pct Annual Chance Flood Hazard	F	Moderate Risk Areas	0.2% Annual Chance Flood Hazard	Outside Special Flood Hazard Area
State Government Bldg.	State Government Facility	337 N US Highway 1	FP	St. Lucie County	FL	X	0.2 Pct Annual Chance Flood Hazard	F	Moderate Risk Areas	0.2% Annual Chance Flood Hazard	Outside Special Flood Hazard Area
Ft Pierce Wastewater Treatment Plant	Wastewater Treatment Plant	403 Seaway Dr	FP	St. Lucie County	FL	AE		T	High Risk Areas	1% Annual Chance Flood Hazard	Inside Special Flood Hazard Area
North Hutchinson Island WWTP Complex	Wastewater Treatment Plant	3251 N SR Highway A1A	FP	St. Lucie County	FL	X	0.2 Pct Annual Chance Flood Hazard	F	Moderate Risk Areas	0.2% Annual Chance Flood Hazard	Outside Special Flood Hazard Area
South Hutchinson Island WWTP	Wastewater Treatment Plant	7601 S Ocean Dr	JB	St. Lucie County	FL	AE		T	High Risk Areas	1% Annual Chance Flood Hazard	Inside Special Flood Hazard Area
Back Pump No 4	Water Pumping Station	13510 Okeechobee Rd	FP	St. Lucie County	FL	A		T	High Risk Areas	1% Annual Chance Flood Hazard	Inside Special Flood Hazard Area
Bryn Mawr Utility Site	Water Supply or Treatment Facility	N SR Highway A1A	FP	St. Lucie County	FL	X	0.2 Pct Annual Chance Flood Hazard	F	Moderate Risk Areas	0.2% Annual Chance Flood Hazard	Outside Special Flood Hazard Area

FPUA Water Storage	Water Tank	7581 S Ocean Dr	JB	St. Lucie County	FL	AE		T	High Risk Areas	1% Annual Chance Flood Hazard	Inside Special lood Hazard Area

Table 3.25 – Critical Facilities in Flood Prone Areas (continued)

Facility Name	Facility Type	Address	Municipality	County	State	Flood Zone	Zone Subtype	SHFA	Risk Level	FHZ Label	Description
FPUA Water Storage	Water Tank	S Ocean Dr	FP	St. Lucie County	FL	X	0.2 Pct Annual Chance Flood Hazard	F	Moderate Risk Areas	0.2% Annual Chance Flood Hazard	Outside Special Flood Hazard Area

Source: St, Lucie County Division of Emergency Management (2021)

3.6 THREAT ASSESSMENT

The Local Mitigation Strategy (LMS) Hazards Vulnerability Sub-Committee determined and prioritized the level of threat posed by the following hazards according to the risk and exposure caused by the hazard to the St. Lucie County Whole Community. Information presented in the LMS on the vulnerability and risk posed by the hazard to the St. Lucie County Whole Community assisted the LMS Hazards Vulnerability Review Sub-Committee in determining a score to then rank the level of threat that the hazard poses to St. Lucie County's population, properties, and environment / community. Twenty-five (25) hazards were identified for the 2021 LMS after assessing all the existing hazards presented in the 2016 LMS, as well as identifying any new hazard that was not previously mentioned in the Plan.

3.6.1 Hazards Vulnerability Sub-Committee

Upon request from the LMS Working Group Chair, a Hazards Vulnerability Sub-Committee was created to assess the hazards presented in the 2016 LMS. The five-member group consisted of members from the following jurisdictions / LMS Working Group agencies.

Table 3.26 - Members of the Hazards Vulnerability Sub-Committee

Jurisdiction / LMS Working Group Member Agency	Work Title
St. Lucie School District	Executive Director of Growth Management, Land Acquisition, Inter-Government Relations Facilities & Maintenance
Port St. Lucie Public Works	Deputy Director
St. Lucie County Public Works	Assistant Road & Bridge Manager
Fort Pierce Utilities Authority	Director of Electric and Gas Systems
Fort Pierce Engineering Department	Assistant City Engineer

3.6.2 Threat Level Definitions

The level of threat posed by each hazard described in this section is ranked by the following calculation:

Risk + Exposure = Threat

Scale and level: Each threat was given a score from 0 – 5 in the Risk and Exposure factors. Both scores were added to determine a total that it is defined as a threat score caused by the hazard to the St. Lucie County Whole Community. A determination of how scores correlate to the level of threat is as follow:

Low = 0-1	Medium = 2 - 3	High = 4 - 5

After each Sub-Committee member added their scores, a simple average was taken from the Sub-Committee's totals (i.e., threat score) on each hazard to determine a list of scores from highest to lowest – see **Table 3.27.**

The list of scores was then organized showing the hazard's level of threat arranged from the highest score ranked as #1 followed by the next highest score ranked #2 and so on. See **Table 3.29** for the results showing a ranked list of threats posed by hazards to the St. Lucie County Whole Community.

3.6.3 Risk

The level of risk is determined by the hazard's likelihood of occurrence which means how often one would expect this hazard to impact the County. For each hazard, the following scale was used to determine the level of risk:

0-1 = not likely to occur = **Low;**

2-3 = might occur = **Medium**; and

4-5 = very likely to occur = **High.**

As hazards were determined as having a risk factor of low, medium, and high in the Risk Assessment, Sub-Committee members placed a score for the hazard using the definitions and scale previously mentioned.

Guidance on the risk factor - based on historical data, the following scale can be used as a guide to further determine the likelihood that St. Lucie County will be impacted by the hazard within a given period of time:

- **Low (0-1)** - Although the hazard is noted, no previous occurrence has been recorded and the hazard is considered no threat to the jurisdiction or there is some potential for the hazard to exist once every 10 years or more.
- **Medium (2-3)** - Potential for the hazard to exist once every 6-9 years.
- **High (4-5)** - Potential for the hazard to exist once every 0-5 years.

3.6.3.1 Probability

Probability is determined by incorporating the historical data of previous occurrences into the hazard analysis. By doing this, the probability of a future occurrence can be gauged and placed into three categories – low, medium, and high. The metric is defined below:

- **Low (0-1)** - No previous occurrence has been recorded and/or the occurrence happens less frequently than 10 years.
- **Medium (2-3)** - Occurs once every 6-9 years.
- **High (4-5)** - Occurs once every 0-5 years.

3.6.4 Exposure

Exposure means how severe the hazard is likely to negatively impact the number of people and structures, the value of structures, and the environment (including communities).

For each hazard, the following scale was used to determine the level of exposure:

0-1 = **low** possibility of death, injury and destruction in properties and the environment / community;

2-3 = **some** potential for death, injury and destruction in properties and the environment / community; and

4-5 = **strong** potential of death, injury and destruction in properties and the environment / community.

Guidance on the exposure factor - The following scales can be used as a guide to further determine the level of exposure caused by the hazards that impact the St. Lucie County Whole Community:

3.6.4.1 Magnitude

Human Impact (Possibility of death or injury)

- Low = No possibility of death or injury to some potential for death or injury
- Moderate = Potential for death or injury
- High = Strong potential for death or injury

Property Impact (Physical losses and damages)

- Low = No possibility of physical loss and/or damage to some potential for physical loss and/or damage
- Moderate = Potential for physical loss and/or damage
- High = Strong potential for physical loss and/or damage

Spatial Impact (Amount of geographic area affected)

- Low = No geographic area affected up to 25% of total land mass affected
- Moderate = 25%-50% of total land mass affected
- High = 50% or more of total land mass affected
-

Economic Impact (Interruption of business services)

- Low = No interruption of business services to some potential for business service interruption
- Moderate = Potential for business service interruption
- High = Strong potential for business service interruption

3.6.6 Threat Assessment Calculation

Each hazard described below was given a score from 0 – 5 to determine a threat score which was used to determine a ranking level posed by the hazard. The following calculation was used:

Risk + Exposure = Threat

Each factor was given a range of scores to further determine the overall score using the following scale to determine a threat level. Each hazard was given a level of risk from the Risk Assessment previously presented in this LMS:

Low = 0-1	Medium = 2 - 3	High = 4 - 5

Hazard Vulnerability Sub-Committee members used the following to calculate the threat score for each hazard:

HAZARD	RISK	EXPOSURE	THREAT
Agricultural Pests and Diseases **Risk – Low**			
Civil Disturbances **Risk – Low**			
Communication Failures **Risk – Low**			
Cyber Attacks (Cyber Security) **Risk - Medium**			
Dam/Levee Failures (10-Mile Creek) **Risk – Medium**			
Droughts **Risk – High**			
Epidemics/Pandemics **Risk – Medium**			

Sample

HAZARD	RISK	EXPOSURE	THREAT
Erosions **Risk - High**			
Extreme Temperatures **Risk - Medium**			
Flooding **Risk – High**			
Hazardous Materials Accidents **Risk – Medium**			
Hurricanes / Tropical storms (storm surge) **Risk - High**			
Mass Migration **Risk - Low**			
Power Failures **Risk - Medium**			
Radiological Incidents **Risk - High**			
Sea Level Rise **Risk - Low**			
Seismic Hazards (e.g., Earthquakes, Sinkholes) **Risk - Low**			
Severe Thunderstorms / Lightning **Risk - High**			
Terrorism (Sabotage, CBRN) **Risk - Low**			
Tornados **Risk – Low**			
Transportation System Accidents **Risk - Medium**			
Tsunami			

Sample

Sample

HAZARD	RISK	EXPOSURE	THREAT
Risk - Low			
Wellfield Contamination **Risk - Low**			
Wildfires **Risk - Medium**			

3.6.5.1 Hazards Vulnerability Sub-Committee Threat Assessment Calculations

St. Lucie County Emergency Management Division staff used the chart referenced below to calculate the threat score for each hazard. Totals from the five-member Hazards Vulnerability Sub-Committee were listed and a simple average was calculated to show an overall total representing the "Threat" score for each hazard impacting the St. Lucie County Whole Community.

Table 3.27 - Sub-Committee Hazard Vulnerability Threat Scores

Hazard	St. Lucie School District GV	SLC Public Works SS	PSL Public Works	Fort Pierce Utilities Authority	Fort Pierce Engineering Department	Total Threat Score (Average)
Agricultural Pests and Diseases Risk – **Low**	3	4	2	5	2	3.2
Civil Disturbances Risk – **Low**	3	4	2	3	0	2.4
Communication Failures Risk – **Low**	3	5	2	3	0	2.6
Cyber Attacks (Cyber Security) Risk – **Medium**	6	7	6	8	4	6.2

Table 3.27 - Sub-Committee Hazard Vulnerability Threat Scores (continued)

Hazard	St. Lucie School District GV	SLC Public Works SS	PSL Public Works	Fort Pierce Utilities Authority	Fort Pierce Engineering Department	Total Threat Score (Average)
Dam/Levee Failures (10-Mile Creek, Blackwell Reservoir) Risk – **Medium**	1	5	5	4	3	3.6
Droughts Risk - **High**	8	9	9	9	5	8
Epidemics/Pandemics Risk - **Medium**	6	8	5	6	7	6.4
Erosions Risk - **High**	9	8	9	8	5	7.8
Extreme Temperatures Risk - **Medium**	7	8	6	7	4	6.4
Flooding Risk – **High**	10	10	9	9	7	9
Hazardous Materials Accidents Risk – **Medium**	5	8	5	6	2	5.2
Hurricanes / Tropical storms (storm surge) Risk - **High**	9	10	8	9	10	9.2
Mass Migration Risk - **Low**	2	2	2	3	0	1.8
Power Failures Risk - **Medium**	5	6	6	8	6	6.2
Radiological Incidents Risk - **High**	5	9	8	9	10	8.2
Sea Level Rise Risk - **Low**	4	4	2	3	4	3.4
Seismic Hazards (e.g., Earthquakes, Sinkholes) Risk - **Low**	3	5	1	1	0	2
Severe Thunderstorms/Lightning Risk - **High**	7	9	10	9	6	8.2
Terrorism (Sabotage, CBRN) Risk - **Low**	4	5	2	3	0	2.8
Tornados Risk - **Low**	4	5	1	4	2	3.2
Transportation System Accidents Risk - **Medium**	5	4	6	6	4	5
Tsunami Risk - **Low**	3	4	1	1	0	1.8
Wellfield Contamination Risk - **Low**	3	4	1	4	2	2.8

Wildfires Risk - **Medium**	7	8	4	6	8	6.6

Table 3.28 - Threat Score by Hazard for St. Lucie County & Jurisdictions

Hazard	Sub-Committee Members Total Threat Scores (Average)	Rank
Hurricanes / Tropical storms (storm surge) Risk - High	9.2	**1**
Flooding Risk – High	9	**2**
Severe Thunderstorms/Lightning Risk - High	8.2	**3**
Radiological Incidents Risk - High	8.2	**4**
Droughts Risk - High	8	**5**
Erosions Risk - High	7.8	**6**
Wildfires Risk - Medium	6.6	**7**
Extreme Temperatures Risk - Medium	6.4	**8**
Epidemics/Pandemics Risk - Medium	6.4	**9**
Cyber Attacks (Cyber Security) Risk – Medium	6.2	**10**
Power Failures Risk - Medium	6.2	**11**
Hazardous Materials Accidents Risk – Medium	5.2	**12**
Transportation System Accidents Risk – Medium	5	**13**

Table 3.28 - Threat Score by Hazard for St. Lucie County & Jurisdictions (continued)

Hazard	Sub-Committee Members Total Threat Scores (Average)	Rank
Dam/Levee Failures (10-Mile Creek) Risk – Medium Blackwell Reservoir	3.6	**14**
Sea Level Rise Risk - Low	3.4	**15**
Tornados Risk - Low	3.2	**16**
Agricultural Pests and Diseases Risk – Low	3.2	**17**
Terrorism (Sabotage, CBRN) Risk - Low	2.8	**18**
Wellfield Contamination Risk - Low	2.8	**19**
Communication Failures Risk – Low	2.6	**20**
Civil Disturbances Risk – Low	2.4	**21**
Seismic Hazards (e.g., Earthquakes, Sinkholes) Risk - Low	2	**22**
Mass Migration Risk - Low	1.8	**23**
Tsunami Risk - Low	1.8	**24**

Table 3.29 - Hazards Ranked by Impact to St. Lucie County & Jurisdictions

Hazard	Rank
Hurricanes / Tropical storms (storm surge) Risk – High	**1**
Flooding Risk – High	**2**
Severe Thunderstorms/Lightning Risk - High	**3**
Radiological Incidents Risk - High	**4**
Droughts Risk - High	**5**
Erosions Risk - High	**6**
Wildfires Risk - Medium	**7**
Extreme Temperatures Risk - Medium	**8**
Epidemics/Pandemics Risk - Medium	**9**
Cyber Attacks (Cyber Security) Risk – Medium	**10**
Power Failures Risk - Medium	**11**
Hazardous Materials Accidents Risk – Medium	**12**
Transportation System Accidents Risk - Medium	**13**
Dam/Levee Failures (10-Mile Creek) Risk – Medium Blackwell Reservoir	**14**
Sea Level Rise Risk - Low	**15**
Tornados Risk - Low	**16**
Agricultural Pests and Diseases Risk – Low	**17**
Terrorism (Sabotage, CBRN) Risk - Low	**18**
Wellfield Contamination Risk - Low	**19**
Communication Failures Risk – Low	**20**

Table 3.29 - Hazards Ranked by Impact to St. Lucie County & Jurisdictions (continued)

Hazard	Rank
Civil Disturbances Risk – Low	**21**
Seismic Hazards (e.g., Earthquakes, Sinkholes) Risk - Low	**22**
Mass Migration Risk - Low	**23**
Tsunami Risk - Low	**24**

END OF SECTION

4.0 MITIGATION STRATEGY

Due to key findings from LMS Working Group meetings, assessment of hazards impacting the St. Lucie County Whole Community, development of a threat assessment, and implementation of mitigation initiatives in community and public sectors the following has driven the development of goals, objectives, and strategies of the Unified Local Mitigation Strategy (LMS):

- Flooding and hurricanes occur the most frequently; place the most people at risk, and produce the greatest amount of damage of all the natural hazards faced by the County. There has been an increase in severe weather, tropical storms and hurricanes impacting St. Lucie County since 2016.

- The Hazards Vulnerability Sub-Committee ranked Tropical Storms / Hurricanes as the #1 threat for St. Lucie County. This is a change from the 2016 LMS which ranked Flooding as the most impacting hazard to the St. Lucie County Whole Community.

- Wildland fires occur more frequently than flooding and hurricanes, but historically have had a lower impact on the community. Exposure to the impacts of wildland fire continues to increase as urban interface areas are developed next to wildland areas.

- Agriculture is an important component of the local economy; therefore, drought and agricultural pests and diseases can be as damaging to the agricultural community as beach erosion and flooding are to the coastal and intra-coastal communities.

- While a major focus of mitigation is retrofitting, the most effective time to mitigate is before development orders are approved. Adding hazard mitigation requirements may add to the cost of development, but this cost is relatively small. Following a disaster, the cost of recovery and redevelopment can be enormous. Recovery cost tends to become public costs that local governments must assume.

- While all jurisdictions in St. Lucie County are in the National Flood Insurance Program (NFIP), St. Lucie County, City of Fort Pierce and the City of Port St. Lucie participate in the Community Rating System (CRS) Program or the NFIP to the maximum extent possible. Having a strong CRS Program reduces the cost of flood insurance premiums to St. Lucie County residents, and the FMA Program is a major source of funding to assist in retrofitting flooding problems.

- Properties on the barrier islands are susceptible to both flooding and wind-related storm damage. There are a number of important public facilities in those areas. By hardening these facilities, the chance of their being impacted by storm events can be significantly reduced.

- Transportation commercial and private on Interstate 95 and the Florida Turnpike has continually increased in volume, the probability of truck rollovers spilling of toxic contaminants and/or hazardous materials also continues to increase. The St. Lucie County Fire District hazardous materials teams have increased response training activities in efforts to become proactive in planning for releases.

- Florida East Coast Railway (FEC) and CSX Railroad traverse several densely populated areas of coastal urban population, putting an ever-increasing number of people at risk from train derailment and potentially significant toxic and hazardous material spills. The addition of passenger rail will present additional planning concerns for derailments.

- Through Hazard Mitigation Grant Program (HMGP) funding from Hurricanes Irma, Hurricane Dorian, Community Development Block Grant (CDBG) – Mitigation (MIT), and Cares Act, projects have increased development of retrofitting roads, supplying critical facilities with generators, hardening critical facilities, implementation of a county-wide Threats, Hazards, Identification, Risk Assessment (THIRA), as well as the implementation of a fiber optic connection among the Port St. Lucie EOC, County EOC, Sheriff's Office, and other first responder agencies.

- Funding from CDBG has allowed the development of a Resiliency Plan and program which is addressing the long term impacts of global warming and sea level rise to St. Lucie County.

- Since 2016, St. Lucie County's population has grown substantially, increasing the need to expand and improve hazard mitigation techniques. Population growth has been accommodated largely through the construction on infill single family home lots, however we have also experienced growth moving towards western St. Lucie County and east along the coastal barrier island.

- The County has taken initiative and implemented several actions to reduce the likelihood of natural disasters within flood prone areas.

- The Federal Emergency Management Agency (FEMA) has identified special flood hazard areas within the boundaries of St. Lucie County. These areas may be subject to periodic inundation by floodwater, which could result in loss of life and property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety, and general welfare

- 2018, the St. Lucie County Board of County Commissioners (BOCC) adopted Ordinance 18-001, to amend section 6.05.00 – Floodplain Management. This ordinance is now consistent with Florida's model ordinance. The ordinance meets NFIP requirements and explicitly coordinates with the Florida Building Code. Specific descriptions St. Lucie County's requirements in its Building Code are as follow:

R322.2.1 Elevation requirements.

1. Buildings and structures in flood hazard areas including flood hazard areas designated as Coastal A Zones, shall have the lowest floors elevated to or above the base flood elevation plus 1 foot (305 mm), or the design flood elevation, whichever is higher.
2. In areas of shallow flooding (AO Zones), buildings and structures shall have the lowest floor (including basement) elevated to a height above the highest adjacent grade of not less than the depth number specified in feet (mm) on the FIRM plus 1 foot (305 mm), or not less than 3 feet (915 mm) if a depth number is not specified.
3. Basement floors that are below grade on all sides shall be elevated to or above base flood elevation plus 1 foot (305 mm), or the design flood elevation, whichever is higher.

Exception: Enclosed areas below the design flood elevation, including basements with floors that are not below grade on all sides, shall meet the requirements of Section 322.2.2.

R322.3.2 Elevation requirements.

1. Buildings and structures erected within coastal high-hazard areas and Coastal A Zones, shall be elevated so that the bottom of the lowest horizontal structure members supporting the lowest floor, with the exception of pilings, pile caps, columns, grade beams and bracing, is elevated to or above the base flood elevation plus 1 foot (305 mm) or the design flood elevation, whichever is higher.
2. Basement floors that are below grade on all sides are prohibited.
3. The use of fill for structural support is prohibited.
4. Minor grading, and the placement of minor quantities of fill, shall be permitted for landscaping and for drainage purposes under and around buildings and for support of parking slabs, pool decks, patios and walkways.
5. Walls and partitions enclosing areas below the design flood elevation shall meet the requirements of Sections R322.3.4 and R322.3.5.

- 2019, St. Lucie County amended its Land Development Code and Comprehensive Plan to reflect FEMA's revised Flood Rate Maps (FIRM), which resulted from their Flood Insurance Study. Through these floodplain management practices, the County has improved the protections for human health, minimize property damage, encourage appropriate construction practices, and safeguard individuals from unwittingly purchasing land subject to flood hazards and reduce economic losses caused by floods.

- In the 2019 update of the St. Lucie County Comprehensive Plan,

    - Objective 1.1.4 (c)(d)(e)(g) were included to address the protection of areas designated for conservation of environmental habitats, potable water wellfields and aquifer recharge areas and to regulate areas subject to seasonal and periodic flooding an provide for drainage and Stormwater management. In addition, the Plan sets guide to the protection of native and drought tolerant species in lieu of exotic and water consumptive plants.
    - Policy 1.1.4.1 - The Land Development Code shall maintain the specific and detailed provisions necessary to implement the adopted Comprehensive Plan, and which at as a minimum include the following:
        - (c) Protect those areas designated for conservation purposes or that contain other special environmental habitat as identified in the Future Land Use and other elements of the St. Lucie County Comprehensive Plan;
        - (d) Regulate areas subject to seasonal and periodic flooding and provide for drainage and stormwater management;
        - (e) Protect potable water wellfields and aquifer recharge areas;
        - (f) Regulate signage;
        - (g) Provide minimum landscaping standards for all development that encourages the use and protection of native and drought tolerant species in lieu of exotic and water consumptive plants;

    - Objective 2.1.2, Policy 2.1.2.5 – addresses the intergovernmental coordination among County, Transportation Planning Organization (TPO), the municipalities, and the Florida Department of Transportation (FDOT) to retrofit the US-1 Corridor to meet future capacity needs.

    - Objective 8.1.7: The County shall strive to increase community resiliency through continued coordination and cooperation.

- Policy 8.1.7.1 – St. Lucie County shall coordinate with municipalities, neighboring counties, regional, State, and federal government agencies, universities, not-for-profit organizations, non-governmental organizations and private organizations to coordinate the updating and analyzing data regarding vulnerability and storm impacts, and to exchange data and develop coordinated strategies to address energy conservation and mitigation and adaptation strategies.
- Policy 8.1.7.2 – St. Lucie County shall continue to support public education and outreach programs addressing issues including but not limited to: energy efficiency; water conservation; solid waste reduction and recycling; native landscaping; air quality; greenhouse gas reduction; and adaptation and response planning.
- Policy 8.1.7.3 – The County shall coordinate with regional agencies in the identification of modeling resources and development of adaptation strategies.
- Policy 8.1.7.4 – The County shall encourage partnerships between local government agencies, universities, professionals and practitioners to foster an environment for connecting scientific research and education with practical applications that will contribute to the resiliency and adaptation within the built and natural environments.

To see details of how LMS initiatives have been incorporated into the St. Lucie County Comprehensive Plan go to **Appendix H – LMS Plan Integration (new).**

Reference: St. Lucie County Comprehensive Plan :
https://www.stlucieco.gov/departments-services/a-z/planning-and-development-services/planning/comprehensive-planning

4.1 MITIGATION GOALS AND OBJECTIVES

The LMS Working Group developed four (4) goals and numerous objectives to guide its work in the development of this plan, program and strategies in the St. Lucie Whole Community. The goals and objectives help focus the efforts and resources to reduce hazard related losses and damages in the future, as well as avoiding duplication of efforts, funding, and implementation.

After examining development in planning, project management, mitigation programs, progress in building codes and initiatives, the LMS Working Group decided to keep the same goals and objectives from the 2016 LMS. As such, the goals and objectives used as a guide for the development of the 2021 LMS, as well as mitigation plans, programs, and incentives implemented across the board for the St. Lucie Whole Community are as follow:

Goal 1: Reduce the loss of life and property

- Objective 1.1 Reduce flooding and/or wind damage.
- Objective 1.2 Eliminate or retrofit repetitive loss properties.
- Objective 1.3 Retrofit and/or construct new critical facilities.
- Objective 1.4 Protect and restore areas susceptible to erosion.
- Objective 1.5 Improve local roadways to ensure safe, efficient, evacuation.
- Objective 1.6 Reduce the potential threat of fires, wildland and structural.
- Objective 1.7 Increase public awareness of hazards and their impacts.
- Objective 1.8 Evaluate codes, policies, ordinances, and regulations for natural hazards.
- Objective 1.9 Reduce exposure to potential environmental hazards.

Goal 2: Achieve safe and fiscally sound, sustainable communities.

- Objective 2.1 Integrate hazard reduction into local planning and development processes.
- Objective 2.2 Enhance environmental quality and/or function of natural resource.
- Objective 2.3 Prepare informational materials explaining the positive relationship between sustainable communities and disaster-resistant and resilient communities.
- Objective 2.4 Create and maintain current an all-hazards database.
- Objective 2.5 Promote implementation of cost-effective mitigation projects.
- Objective 2.6 Enhance geographic information system (GIS) capabilities for use in hazard analysis.

Goal 3. Facilitate orderly recovery during post-disaster redevelopment.

- Objective 3.1 Create more resilient disaster-resistant businesses.
- Objective 3.2 Ensure economic viability of the local business community following disaster events.

Goal 4. Optimize the effective use of all available resources.

- Objective 4.1 Establish public/private partnerships.
- Objective 4.2 Establish procedures strengthening intergovernmental coordination and cooperation.

4.2 MITIGATION INITIATIVES

The LMS Working Group is responsible for discussing new ideas / concepts, identifying projects and activities that will impact the St. Lucie Whole Community, such as jurisdictions, special districts, and public and private sector partners of the Working Group, to implement the LMS goals, objectives.

Several mitigations initiatives were developed and implemented in jurisdictions' planning processes and mechanisms to serve the LMS Working Group's goal of mitigating the St. Lucie Whole Community:

1. Community Rating System (CRS) User Group. Although not a formal Sub-Committee of the LMS Working Group, the CRS User Group was created by the CRS Coordinators of St. Lucie County and the Cities of Fort Pierce and Port St. Lucie to work as a collaborative strategic group. The group meets at least twice a year to discuss strategies and tasks that will benefit all three (3) jurisdictions in meeting CRS program guidelines without duplicating efforts. The CRS User Group also seeks new trainings and ideas from other CRS User Groups throughout the state of Florida to enhance the capabilities of the CRS programs in St. Lucie County and the Cities of Fort Pierce and Port St. Lucie.

   An

2. Program on Public Information (PPI) Sub-Committee. Under the auspices of the LMS Working Group, the PPI Sub-Committee was created to ensure marketing strategies in promoting the CRS programs and flood awareness for St. Lucie County and the Cities of Fort Pierce and Port St. Lucie are not duplicated and as strategies are put in order, results would benefit all three (3) jurisdictions which participate in the CRS program. The PPI Sub-Committee was created in 2020 to identify, assess, and implement various marketing opportunities found in community events, trainings, exercises provided countywide that can benefit St. Lucie County and the Cities of Fort Pierce and Port St. Lucie in meeting criteria and points found in the CRS Coordinators' Manual. The Sub-Committee developed and approved a PPI Plan (Annex B).

3. Project Prioritized List (PPL) Scoring Review Sub-Committee. The LMS Working Group discussed ways to improve the evaluation and scoring process of new and re-submitted mitigation projects from LMS Working Group member agencies. The Working Group

formed the PPL Scoring Review Sub-Committee to review the current process at length and evaluate the current scoring system. The PPL Scoring Review Sub-Committee met several times to review the current evaluation and scoring process found in the LMS and revised it to ensure a fair process to successfully rank projects based on adherence to the LMS goals.

4. Review Sub-Committee – The LMS Working Group created a Review Sub-Committee that assessed the information held in the 2016 LMS and updated its format, content and provided recommendations to ensure that the new version would be inclusive and consistent of hazards, as well as the progress and development achieved by the Working Group.

5. Hazards Review Sub-Committee – The LMS Working Group created a Hazards Review Sub-Committee to address changes in vulnerability and exposure from hazards impacting the St. Lucie Whole Community. The Sub-Committee assessed the current information of the 2016 LMS and made recommendations to ensure that recorded impacts from hazards to the St. Lucie Whole Community are consistent throughout the LMS, as well as inputting new information from 2016 through 2020.

6. Resiliency Program – St. Lucie County and its municipalities have committed to working collaboratively on a community-wide resilience plan. A multi-jurisdictional St. Lucie Community Resilience Steering Committee has been established, made up of directors from all jurisdictions, as well as regional agencies such as the Health Department, Regional Planning Council, School Board, etc.

   The goal is to take a systems-thinking approach to resilience planning -- with the health, safety and welfare of people being the overarching system we are focused on and upon which we evaluate our success. The County received two grants to assist in creating a community-wide resilience plan. The County is currently in the final stretch of a DEP-Florida Resilient Coastlines Program grant that funded vulnerability assessments. In addition, we have been awarded a Community Development Block Grant Mitigation (CDBG-MIT) grant to perform additional vulnerability assessments, develop a capacity assessment, adaptation strategies, and action plan, involve community and sector stakeholders, and begin fostering a Treasure Coast Regional Collaborative.

7. Threats, Hazards, Identification Risk Assessment (THIRA). Through the CDBG-MIT funds, the City of Port. St. Lucie will be conducting a countywide THIRA in collaboration with the LMS Working Group and the Resiliency Group. The THIRA will replace the assessment process of the LMS, as the THIRA will provide a more comprehensive approach in assessing the impacts of hazards in the St. Lucie Community.

4.2.1 National Flood Insurance (NFIP) Compliance

St. Lucie County, the City of Fort Pierce, the Town of St. Lucie Village, and the City of Port St. Lucie are participating communities in the NFIP Program. Each jurisdiction within the county is an active participant in the NFIP. In an effort to ensure continued compliance with the NFIP, each participating community will:

1. Continue to enforce their adopted floodplain management ordinance requirements, which include regulating all new development and substantial improvements in Special Flood Hazard Areas (SFHA).
2. Continue to maintain all records pertaining to floodplain development, which shall be available for public inspection.
3. Continue to notify the public with proposed changes to the floodplain ordinance or Flood Insurance Rate Maps (FIRM).
4. Maintain the FIRM map and Letter of FIRM Map Change repositories.
5. Continue to promote flood insurance for all properties.
6. Continue their CRS public outreach programs, as applicable.

Table 4.1 National Flood Insurance Program Summary per jurisdiction, below shows effective dates for the initial identification, the initial Flood Insurance Rate Map areas identified and the current effective map date for each jurisdiction within St. Lucie County.

Table 4.1 National Flood Insurance Program Summary per Jurisdiction

CID #	Community	Initial Identification	Initial FIRM	Current Effective Map Date
120286	Fort Pierce	05/24/74	12/01/77	02/19/20
120287	Port St. Lucie	12/13/74	03/15/82	02/19/20
120288	St. Lucie Village	11/29/74	04/01/80	02/19/20
120285	County Unincorporated	01/24/75	08/17/81	02/19/20

Source: FEMA; Federal Emergency Management Agency Community Status Book Report, Florida; May 2021

4.2.2 Community Rating System (CRS)

The CRS is a voluntary incentive program that recognizes and encourages community floodplain management practices that exceed the minimum requirements of the NFIP. In CRS communities, flood insurance premium rates are discounted to reflect the reduced flood risk resulting from the community's efforts that address the three goals of the program:

1. Reduce and avoid flood damage to insurable property.
2. Strengthen and support the insurance aspects of the National Flood Insurance Program.
3. Foster comprehensive floodplain management.

Participation in the CRS program can reduce Flood insurance premiums up to 45 percent for residents within St. Lucie County. The number of mitigation actions that reduce the impacts of flooding is directly related to lower insurance premiums. The goals of the CRS are to reduce flood losses, to facilitate accurate insurance ratings, and to promote the awareness.

Table 4.2 CRS per Jurisdiction

CID #	Community Name	CRS Entry Date	Current Effective Date	Current Class	% Discount for SFHA	% Discount for Non-SFHA	Status

120286	Fort Pierce	10/1/1992	5/1/2012	6	20	10	C
120287	Port St. Lucie	10/1/1991	10/1/1996	8	10	5	C
120285	County Unincorporated	10/1/1994	5/1/2009	6	20	10	C

4.3 MITIGATION PROGRAMS

4.3.1 HUD CDBG and CDBG-DRI Programs

HUD sponsors a number of programs that can be used to further the goals of hazard mitigation within a community. The Community Development Block Grant (CDBG) Small Cities Program provides funding to improve local housing, streets, utilities, and public facilities in small cities. Disaster Recovery Initiative (DRI) funds are provided for disaster relief, long-term recovery, and mitigation activities in areas affected by a presidential disaster declaration.

4.3.2 Florida Inland Navigation District (FIND)

FIND provides assistance on certain waterway-related projects including navigation channel dredging, channel markers, navigation signs or buoys, boat ramps, docking facilities, fishing and viewing piers, waterfront boardwalks, inlet management, environmental education, law enforcement equipment, boating safety programs, beach re-nourishment, dredge material management, environment mitigation, and shoreline stabilization.

4.4 UPDATING THE PLAN AND PROJECT LIST

There are two updating processes connected to the LMS. One describes how the Prioritized Project List (PPL) is updated annually. A detailed description of the PPL updating procedure is provided below. The second updating process, involves the 5-year update of the Plan sections of the LMS.

At the heart of the LMS is the PPL. The PPL is a rank order of priority projects that if implemented will result in a more disaster-resistant and resilient community.

When current projects are completed, new needs surface, new funding opportunities arise, and events occur that affect priorities, it is important that the PPL be a dynamic document. For this reason, the window to submit projects to the PPL is always open. All applicants desiring to have their project on the PPL must submit their proposed project utilizing the Mitigation Measure (Project or Initiative) Proposal Form (Appendix C). The following sections identify the multi-step prioritization methodology.

4.4.1 Project Prioritization List (PPL)

The County, municipalities, and districts have already implemented numerous mitigation projects, such as:

- installation of storm shutters on public buildings; and

- retrofitted storm-water drainage systems; and
- raised finished floor elevation to 18 inches above base flood elevation; and
- distribution of informative publications on hurricanes to local residents; and
- installation of emergency generators at key critical facilities.

The objective of developing a countywide PPL for mitigation projects is to allow City and County governments to better focus mitigation efforts and resources while maintaining a historical database. The existence of this list will speed local receipt of federal disaster mitigation funds and will place St. Lucie County in a more competitive position when competing for other, non-disaster-related mitigation grant funds.

To develop the PPL, each local government was invited to submit a list of mitigation projects for inclusion in the unified, countywide list. A project prioritization methodology was to enable the working group to score and rank a list of projects. Projects are ranked according to the stakeholders' priorities. Should funding become available during the year, the Committee will review top projects to determine what projects should be submitted for funding. The St. Lucie County LMS Working Group last updated the PPL August 3, 2020.

The development of the PPL is not a one-time process. To be effective, the list must be dynamic, a living document designed to track project status; completed and deleted projects as well as phased projects and will be revised as progress is made on projects and new hazards or increased vulnerabilities are identified. The PPL process will be updated and implemented as far as possible on an ongoing quarterly basis. The current PPL is located in Appendix E.

For tracking purposes, there is an Eliminated Projects List which contains projects that were removed from the PPL for a variety of reasons including completion, deferral, and deletion. The current list can be found in Appendix E with the PPL.

4.4.2 Prioritization Process

The Working Group determined proposed LMS mitigation projects and activities are to be evaluated and prioritized based on the following scoring system and procedures:

1. Projects will be scored only on the basis of documents submitted by the individual or agency proposing the mitigation project.
2. Projects may be submitted to the LMS Working Group at any time. Organizations are encouraged to do so as soon as the need is identified. However, projects of a time-sensitive nature, such as HMGP projects requiring LMS Working Group- ranking, shall be submitted to the LMS Coordinator no later than one month in advance of when the LMS Working Group ranking is due.
3. Each project will be scored on the eleven Scoring Factors listed in Table 4.3.
4. Each Scoring Factor is assigned point criteria ranging from 0 to 3.
5. Each Scoring Factor is assigned a weight. The weight indicates the relative importance of each Scoring Factor.
6. To determine a project's score on each scoring factor, the number of points is multiplied by the weight.
7. A project's total score is the sum of the scores of the eleven Scoring Factors. The highest

possible score is 120.

Table 4.3 PPL Scoring Factors and Weights

SCORING FACTOR		POINT CRITERIA	WEIGHT	POINTS	SCORE
1	Consistency with LMS Goals		4		
		3- Addresses the highest LMS goal (reduce the loss of human life through provision of sheltering, evacuation, disaster preparedness, emergency response, hazard mitigation, or other services.)			
		2- Addresses the second highest LMS goal (To ensure orderly, effective, short-term Recovery and redevelopment by establishing a program that provides adequate shelters, community health services, food and water, debris removal and promotes rapid economic recovery following a disaster.)			
		1 – Addresses at least one of the three lowest LMS goals A. (To minimize public and private exposure to loss of property and economic disruption in the event of natural, technological, and human caused hazards.) B. (To achieve safe and financially sound, sustainable communities through thoughtful long range planning of natural and human caused environment) C. (To optimize the effective use of all available resources by establishing public/private partnerships and by promoting intergovernmental coordination and cooperation.)			

		0- Fails to address any of the listed LMS goals.			
2	Consistency with Hazard Impact		4		
		· Addresses at least one of the three highest hazards A. Wind Event (Hurricane, Tornado, Tropical Storm) B. Flooding C. Epidemic			
		· Addresses at least one of the three second highest hazards: A. Terrorism/Sabotage B. Hazardous Materials Accident, Wellfield /Surface Water Contamination C. Wildfire			
		1 – Addresses at least one of the remaining hazards: A. Radiological Hazard B. Power/Communication Failure C. Transportation System Accident D. Drought E. Erosion F. Agricultural Pest/Disease G. Civil Disturbance			
		H. Extreme Temperature I. Mass Migration J. Seismic (Sinkholes, Earthquakes) K. Thunderstorm/Lightning			
		0- Fails to address any LMS listed disasters			
3	Consistency with Laws and/or Policies		2		
		3- Consistent with existing laws/policies			
		2- New legislation or policy changes needed, but no conflicts identified			

		1- New legislation or policy changes needed, but may conflict with existing laws, regulations, and/or policies			
		0- Inconsistent with laws and/or policies			
4	Consistency with Local Plans		4		
		3- Supported in both the Comprehensive Emergency Management Plan and a jurisdiction's Comprehensive Plan			
		2- Supported in either the Comprehensive Emergency Management Plan or a jurisdiction's Comprehensive Plan			
		1- Supported in other government plan			
		0- Not supported in any government plan			
5	Scope of Benefits – Jurisdictions		4		
		3- Benefits the health and safety of all Municipalities and the unincorporated county			
		2- Benefits the health and safety of 2 to 3 jurisdictions (municipality or the unincorporated county			
		1- Benefits the health and safety of 1 jurisdiction (municipality or the unincorporated county			
		0- Provides no significant benefits to any jurisdiction			
6	Scope of Benefits – County		4		
	Population				
		3- Benefits 67% to 100% of the County population			
		2- Benefits 33% to 66% of the County population			
		1- Benefits 1% to 32% of the County population			
		0- Provides no significant benefit			
7	Importance of Benefits – Essential Services		4		
		3- Needed for essential services: Medical, Shelter, Custodial Care, Educational, Emergency, Utility, Police, Food			
		0- Not needed for essential services			

8	Importance of Benefits – Critical Facilities		4		
		3- The project facility is a designated primary critical facility			
		2- The project facility is a designated secondary critical facility			
		0- The project facility is not a designated critical facility			

9	Benefit/Cost Ratio		2		
		3- 4.0 or higher			
		2- Between 2.0 to 3.9			
		1- Between 1.0 to 1.9			
		0- Less than 1 or a formal analysis has not been completed			
10	Financing		4		
		3- Eligible for more than one grant and is scheduled for future funding in jurisdiction's approved budget or capital plan			
		2- Eligible for grant funding from at least two grant sources			
		1- Eligible for grant funding			
		0- Not scheduled for funding in jurisdiction's approved budget or capital plan and is not			
		eligible for grant funding			
11	Time Necessary for Implementing		4		
		3- Less than 2 years			
		2- 2 to 3 years			
		1- 3 to 4 years			
		0- Greater than 4 years			

4.4.3 Cost Benefit Review

The cost benefit review is included in Scoring Factor 9. The cost benefit criterion is analyzed by comparing mitigation effects each project will create versus the monetary value of the elements of the project. As it is difficult to monetize these mitigation and community benefits, they do often outweigh the cost that comes with each project, and for that, the scoring factor is taken into

consideration during the evaluation and prioritization of projects. Specifically during the cost benefit analysis, a global view is utilized to weigh the factors of multi-jurisdiction and population impacts into the scoring matrix to best execute the proposed mitigation practices and plans to effectively achieve the LMS goals and objectives.

4.4.4 Tie Break Methodology

This project prioritization methodology may result in tie scores for projects that address the same hazards. For instance, most stormwater management projects will address the same goals and hazards, perhaps resulting in tie ranking scores. Because of this, it is important to develop a tie-break methodology.

1. For projects with identical ranking scores that address different LMS Goals, the project that addresses the highest LMS Goal shall be ranked higher.
2. For instance, if a tornado project and a hazardous materials accident project received identical ranking scores, the tornado project would be ranked higher because overall hazard priority is higher than hazardous materials accidents. For projects with identical ranking scores that address identical LMS Goals, the project that addresses the highest ranked hazard shall be ranked higher.
3. For projects with identical ranking scores that address the same LMS Goals and the same hazards, the project that serves the greatest percent of the County's population shall be ranked the highest.
4. For projects with identical ranking scores that address the same LMS Goals, the same hazards and the same percent of the County's population; the project that has the highest benefit cost analysis shall be ranked the highest.

4.4.5 Project Evaluation Worksheet

The Hazard Mitigation project evaluation criteria worksheet is used as a consistent approach, to assign a numeric value to each project. It allows the St. Lucie County Local Mitigation Strategy Work Group to prioritize projects relative to one another based on several factors outlined in Appendix E.

4.5 IMPLEMENTATION PROGRAM

The LMS program relies on plan implementation as the cornerstone of success, plan update, project update and prioritization are cyclical and reinforce the goals and objectives of the local government's comprehensive planning, hazard mitigation and the creation of resiliency in the wake of disaster. Without an implementation program, either the Plan "gathers dust on the shelf" or lags along implementing projects incrementally, based more on agencies or individuals' interest than on a prioritized need basis. Discussed below are issues related to the organizational arrangement and administrative responsibility, the role of the Working Group, plan monitoring, plan funding, and plan update processes.

4.6 FUNDING

Whether projects are implemented in many instances is dependent on whether or not funding is available, match requirements are met or whether grant applications were awarded. Programs are unpredictable (funded some years, cutback other years, or completely eliminated). The County and its municipalities maintain contact with their FDEM liaison and the FDEM Hazard Mitigation Grant Program Coordinator and the Treasure Coast Regional Planning Council (TCRPC) for available grants opportunities. In addition, the Region IV FEMA - PDM Senior Coordinator for Florida is an excellent resource as well.

4.7 INSTITUTIONAL ARRANGEMENT

Effective implementation requires the strong support of the locally elected body, dedicated staff to maintain documentation and understanding within the stakeholder groups and the public. The creation of a disaster-resistant community is achieved once the concept becomes part of the mindset and fabric of the private and public sectors of a community. It requires an advocate, someone or a group who believes the issue to be essential to the long-term sustainability of the community. This individual or group of individuals is represented by the LMS Coordinator, the Working Group, the stakeholder groups, and the public. The LMS Coordinator and the Working Group continually reassess the vulnerabilities of the community and identifying potential strategies and partners to address the vulnerabilities and means to affecting change whether it is a brick and mortar project or implementing a new programmatic initiative or modification to existing codes or plans.

4.8 IMPLEMENTATION STRATEGY

The implementation strategy is based on information gathered from the Working Group as well as key community stakeholders and citizens. The hazards and community issues identified as well as the community's institutional analysis are used to determine the best means to implement mitigation strategies in St. Lucie County. The implementation strategy includes the goals and objectives identified by the Working Group as well as a list of prioritized mitigation activities.

4.9 INTEGRATION INTO LOCAL PLANS

Hazards are pervasive throughout our local communities. While it is understood that the issue of hazard mitigation is a central focus of the LMS, there are other planning mechanisms where this important issue should be addressed. Issues of land use, infrastructure, and environment have been addressed in local comprehensive plans; however, few plans properly address the impact disasters may have on existing and future development. Disasters have enormous physical and social impacts on the community. Other types of planning mechanisms where hazards should be addressed include county and city CEMPs, Continuity of Operations Plans (COOP), Flood mitigation plans, State Housing Initiative Partnership Program (SHIP), and Local Development Review (LDR). Disaster planning is relevant to historic resources, waterfront development, community redevelopment, and low income neighborhoods where substandard housing is typically found has resulted due to use of poor construction methods and materials, and/or lack of adequate maintenance by the homeowner.

From a regulatory standpoint, local government comprehensive plans administered under the provisions of Section 163.3161, Florida Statutes are the cornerstone of growth management in Florida. Being supported by force of law, local comprehensive plans are extremely important vehicles to implement hazard mitigation. Local governments under Section 163.3161, Florida Statutes, are required to update their capital improvement plans (CIPs) annually. The projects included on the LMS PPL also should be incorporated into the local comprehensive plan CIPs. This should be accomplished annually in keeping with the annual update of the jurisdiction's list of projects. As a unified LMS Working Group, all jurisdictions follow the same integration process.

During LMS Working Group quarterly meetings, Working Group members comment on the update on projects that have been submitted for funding and project management, and how the project contributes to the St. Lucie Whole Community. Updates on projects are recorded in meeting minutes as well as the Project Prioritized List (PPL) and Eliminated Projects List.

As mentioned in Chapter 2.1, members of the LMS Working Group serve as liaisons to their respective divisions, departments, and organizations that implement and promote mitigation programs and projects. The LMS serves as the unified mitigation document that sets strategies, goals, and objectives for all jurisdictions, agencies, and organizations who adopt the LMS in resolutions, letters of support, and other organizational systems used to adopt the LMS as an authoritative document. As such, the LMS is cited as the guiding document in major plans and policies used for the growth and planning development of the St. Lucie Whole Community, which include but are not limited to:

1. Comprehensive Plans
2. Capital Improvement Plans
3. Growth Management Plans
4. Comprehensive Emergency Management Plans (CEMP)
5. Continuity of Operations Plans (COOP)
6. Floods Hazards Specific Plans

Each of the representatives in the LMS Working Group serves an important position within their jurisdictions or private sector organization they serve. Many are department directors and administrators understand how to implement the LMS strategies, goals and objectives within their organization’s plans and program administration. Working Group members use the LMS to support and enhance mitigation programs like the Community Rating System (CRS), project works, and resiliency projects. Jurisdictions like the City of Port St. Lucie and Fort Pierce often partner with St. Lucie County departments and divisions to work on mitigation projects that benefit the entire community. Using similar planning processes within jurisdictions, Working Group members reference the LMS as the unified mitigation strategy for the St. Lucie Whole Community, as it meets local, State, and Federal criteria in funding sources and project management.

For example, the LMS is cited in the St. Lucie County Comprehensive Plan’s goals, which delineates a comprehensive approach in the development of infrastructure, programs, projects and resources to St. Lucie County.

Goal 5.2: Reducing vulnerability to hazards. St. Lucie County shall strive to protect the people and property in St. Lucie County from the effects of hurricane storm damage and other hazards. St. Lucie County shall weigh future development as to the impact it would have on the County's ability to protect the people and property in St. Lucie County from the effects of hurricanes, storm surges, wildfires, sinkholes or other potential hazards.

Objective 5.2.1: *Coastal High Hazard Area.* The County shall address development and redevelopment in the coastal area consistent with the County's Comprehensive Emergency Management Plan, Local Mitigation Strategy, and the National Flood Insurance Program.

To see specific further LMS plan integration as well as mitigation program integration in local and community programs see Appendix D – Stakeholder Participation, Appendix E – Project Prioritized List (PPL) and Eliminated Projects List, and Appendix F – Resolutions.

4.10 INTEGRATION PROCESS

The following process is followed to ensure widespread integration of hazard mitigation into local planning mechanisms in St. Lucie County.

1. An invitation from the LMS Chair, along with a letter of support from the chair of the Working Group is transmitted to local organization and planning heads and directors, inviting each to attend an LMS Working Group meeting to discuss ways in which hazard mitigation can be best integrated into planning matters.

2. Meeting of the LMS Working Group is held. This phase could be said to be the institutionalization of hazard mitigation into the local planning and development.

3. Each director is asked to work with their planning staff to develop a strategy to integrate hazard mitigation into their planning programs and to evaluate whether their regulations address hazard mitigation, identify gaps, then seek possible alternatives.

4. At the next meeting of the LMS, directors will report their situation to the LMS Working Group

5. Identified changes will be made through the plan amendment process. Refer to Section 163.3187, Florida Statutes, and Chapter 27P-6; F.A.C. Local governments can seek plan amendments twice each year.

This is the preferred approach because the formal, legally mandated Evaluation and Appraisal Report process in which local comprehensive plans undergo extensive review and scrutiny and modification occurs every seven years.

*The County itself and the jurisdictions alike utilizes the LMS as a planning and development tool as a basis or supplement to governmental plans. Thus, the LMS is often integrated into other plans. These plans include but are not limited to County and City Compressive Emergency Management Plans (CEMPs), County and City Community Rating Systems (CRSs), County and City Capital Improvement Plans (CIPs), and Flood and Stormwater Management plans. The LMS is

incorporated in different ways within each document. For instance, certain plans use the LMS as a reference, while others use it as a management instrument. Under both uses, the LMS is an essential resource in local planning mechanisms at all levels.*

For example, the City of Port St Lucie notes: "The City of Port St Lucie uses the Local Mitigation Strategy as a planning tool as well as a project development tool. The LMS was used to develop the City's Comprehensive Emergency Management Plan (CEMP) and is referred to throughout the document. When planning and ranking mitigation projects throughout the City the LMS is used as a reference. The LMS also has helped drive steps the City has taken to increase our Flood Mitigation posture including, dedicating a 0.5 Full Time Employee (FTE) to managing the City's Community Rating System (CRS) and completing and the City Council has adopting a Storm Water Management Master Plan.

4.11 PLAN MONITORING

Once the participants adopt the LMS, monitoring the progress of plan implementation is extremely important. It is through the monitoring process the Working Group determines whether implementation is occurring as originally envisioned. Determining whether the implementation timeframes are being met is critical. The monitoring process is also important to identify why actions/initiatives are not occurring. The identification of obstacles to implementation also is important, for example, funding cutbacks, unsuccessful grant applications, and staff changes (e.g., key individual resigns or reassigned to new job, unexpected design problems, unexpected complexity in securing permits, lose commitment of partner agencies/organizations). Having an understanding of the timing and flow of projects as well as the availability of funding sources and community support also is key to successfully implementing the identified strategies. Certain events or circumstances can alter the traditional means of operation and implementation.

Step 1 Each quarter, the designated point-of-contact for each individual mitigation project or initiative identified on the PPL will report progress to the St. Lucie County LMS Coordinator. For the first and third quarters, the point-of-contact will complete an Individual Project Progress Report (Appendix C) for each project and submit it to the St. Lucie County LMS Coordinator. For the second and fourth quarters, an informal progress check-in will take place between the point-of-contact and the St. Lucie County LMS Coordinator. The point-of-contacts also will be responsible for submitting any supporting documentation such as newspaper articles or other relevant media.

Step 2 Based on the submitted progress report forms and progress check-ins, the St. Lucie County LMS Coordinator will complete quarterly progress reports for the overall LMS program and submit them to the elected boards of the County and municipalities.

Step 3 At the end of each year, the St. Lucie County LMS Coordinator will prepare an LMS Annual Report. The Annual Report will be submitted to the elected boards of the County and municipalities.

Step 4 Besides reporting to local governments, the St. Lucie County LMS Coordinator and/or

Chair of the LMS Working Group will be available to make similar presentations to private sector organizations, non-profit organizations (e.g., Council on Aging, Chambers of Commerce) and community organizations.

4.12 COMPREHENSIVE UPDATE

The LMS planning process is dynamic and results in the development of a set of prioritized projects and initiatives with the aim of mitigating hazard impacts. To ensure this Local Mitigation Strategy is consistent with current community issues and characteristics, it is important that it be periodically reviewed and updated. During preparation for LMS meetings and agenda preparation, The LMS Coordinator, the Chairman of the Working Group, and the Co-Chairman will solicit requests for changes to each jurisdiction's mitigation projects and/or strategies from participating jurisdictions as part of the Working Group meeting process. At each meeting the LMS is evaluated for any needs for changes. The LMS Coordinator evaluates the plan prior to meetings, in order to recommend any changes needed. All jurisdictions and participating parties are able to submit projects for consideration at any time.

In developing this updating process, three key sources were consulted to shape the process and procedures developed herein:

- Section 163.3191, Florida Statutes,
- the evaluation and appraisal process of local government comprehensive plans; and
- FEMA Local Mitigation Planning Handbook.

A key objective in the development of the process was to keep it from being excessively bureaucratic and cumbersome.

The LMS update process will occur on a 5-year cycle as is recommended by FEMA's DMA2K. The Working Group indicated that there needed to be some abbreviated reassessment of the Strategy following a Disaster Declaration. The LMS update procedures will be initiated and carried out by the Director of St. Lucie County's Department of Public Safety. The Director's responsibility is to ensure that the following update procedures are implemented in a timely manner. Both the regular, 5-year, Strategy update processes, as well as the abbreviated review process applicable following a Disaster Declaration, are depicted in Figure 6.2.

4.12.1 Comprehensive Update Procedures

The regular updating process will occur every 5 years. The administrative steps, as described below, constitute the procedures that will be followed.

Step 1 The LMS Coordinator of the Division of Emergency Management will activate the update process in January of the fourth year of the update cycle by notifying each member of the Working Group of an initial organizational meeting. At that time, the LMS Coordinator will request information updates on those serving on the Working Group (name of person, address, telephone number, and e-mail address, if available).

Step 2 The LMS Coordinator prepares meeting agenda in coordination with the Chairman of the

Working Group to be distributed in advance of the meeting to members of the Working Group.

Step 3 Working Group meeting is held. A brief review of the updating process is discussed. There will be a discussion of whether the evaluation criteria are still appropriate or whether modifications or additions are needed due to change of conditions over the period since the last update process occurred. The data needs will be reviewed, data sources identified, and responsibility for collecting information will be assigned to members.

Step 4 A draft report will be prepared. Evaluation criteria to be addressed.

Step 5 The LMS Coordinator determines best method to solicit public input. The LMS Coordinator is responsible for public noticing/advertising requirements. All Working Group members are informed and invited to attend public meeting.

Step 6 A public meeting is held. The LMS Coordinator or a representative of the Working Group presents findings, conclusions, and recommendations of the effort. Public comments are recorded.

Step 7 The LMS Coordinator of the Division of Emergency Management distills and synthesizes public comments in memorandum.

Step 8 The LMS Coordinator coordinates and organizes second meeting of Working Group. The draft report is distributed to the Working Group seven days prior to the meeting. The Working Group meeting is held. Consensus is reached on changes to the draft. If certain local governments cannot reach agreement on certain issue(s) and/or project prioritization(s), the conflict resolution process may be triggered for those specific items parties cannot agree upon. A vote is taken securing approval of the draft report, contingent upon integrating Working Group comments into the report.

Step 9 The LMS Coordinator incorporates modifications/additions resulting from Working Group meeting.

Step 10 The LMS Coordinator finalizes the report. Copies are distributed to Working Group members.

Step 11 Each jurisdictional representative presents the updated report to their respective governing body and other interested parties. If there are new or modified recommendations that their local government could implement to further the countywide Strategy, member seeks direction from governing body to implement appropriate strategies.

Step 12 The final updated LMS is formally adopted by all of the participating jurisdictions.

Step 13 The final updated LMS is forwarded on to the State Hazard Mitigation Officer at the

Florida Division of Emergency Management.

4.12.2 Methodology

Potential LMS mitigation projects and activities will be evaluated based on the following four criteria:

1. Which goal(s) the project addresses;
2. Which hazard(s) the project addresses;
3. Whether or not the project is supported in a plan or policy of the jurisdiction (i.e., Comprehensive Emergency Management Plan, Stormwater Management Plan, etc.);
4. Population benefiting from the mitigation project;
5. Does the project address an immediate threat to public health, safety, and welfare; and
6. What is the project's benefit cost ratio?

In order to evaluate the projects, the Working Group must first establish the priority goals and hazards using the following methodology. The process listed below will be followed during each update of the LMS.

The Working Group members were provided a survey of all submitted projects. Each stakeholder will complete a Project Scoring Sheet for each project. After scoring each project, a list of each stakeholder's projects is prioritized. If any projects received the same ranking, the stakeholder determines the final ranking order. A summary of those rankings were conducted and a final list was composed by stakeholder from those scores. A summary of the rankings were provided to all LMS Committee members and those rankings were submitted to the FDEM on January 30, 2015.

4.13 CONTINUING PUBLIC INVOLVEMENT

The St. Lucie County LMS Working Group recognizes the importance of public involvement in the LMS planning process. The Committee is committed to providing opportunities for the public to become and engaged in the LMS process. The Committee will ensure continued public involvement through the following methods:

- Advertising quarterly meetings of the LMS Working Group in local newspapers via press release and posting meeting dates to County website and calendar to ensure opportunities for the public to attend;
- Post updated LMS information and data on County and municipal websites when available;
- Engaging in public hazard awareness events and programs to make residents more aware of the hazards that St. Lucie County faces; and
- Providing copies of the final LMS at local library branches, city halls, and County Administrator and Mayoral offices for the public to view.

The LMS Coordinator shall have the responsibility of ensuring that these activities are being implemented.

4.14 CONFLICT OF RESOLUTION

With multiple local governments involved in the development of the St. Lucie County LMS, differences of opinions may arise over the course of the program with regard to goals, objectives, policies, and projects. Governments often have different interests, priorities, and needs as well as distinct constituents. In cases where an impasse occurs, there needs to be a procedure that can be activated to resolve such conflicts. This section describes the procedure that will be used to resolve conflicts arising among the participating entities in the development of the St. Lucie County LMS. The Conflict Resolution Process is depicted in Figure 6.3. The specific steps are described in detail below.

Prior to developing the process, other dispute resolution processes were investigated. They included the Treasure Coast Regional Planning Council (TCRPC) Dispute Resolution Process, the Palm Beach County Multi-jurisdictional Issues Coordination Forum, the South Florida Growth Management Conflict Resolution Consortium, the Volusia County Coastal Management Element Conflict Resolution Program, and the Monroe County procedures for resolving disputes during the planning, design, construction, and operation of wastewater collection/treatment and effluent disposal facilities.

The two types of conflicts that may arise are issues and disputes. Issues are technical problems that are susceptible to informal solution by emergency management or planning office staff. Disputes are problems that escalate to levels requiring formal resolution by neutral third parties. In either case, resolution or settlement will not be binding, but a mutual, agreed to understanding among the disputing parties.

Developing an LMS is a cooperative, collaborative process, and local governments should be able to reach consensus on most issues and problems that arise during the development period. When occasions arise where local governments cannot reach agreement on a particular issue or project, they will be able to petition a hearing of the issues before the Working Group.

Section 6.8.2 provides a detailed, step-by-step procedure that would be followed should a dispute arise during the study. The LMS Coordinator will serve as staff support to the Working Group.

4.14.1 Conflict Resolution Procedure

Objective: To institute a fair, effective, and efficient process to resolve conflicts among local governments during the development of the single, countywide LMS.

During the development of the LMS, local governments may reach an impasse on a particular issue or position. The local government has an opportunity to elect to exercise the following LMS Conflict Resolution Process.

Step 1 The local government would submit a Letter of Dispute (LOD) to the LMS Coordinator explaining in as much detail as possible, their concern and position along with documentation to support their position. In addition, they would outline potential alternative solutions.

Step 2 The LMS Coordinator would review the LOD making sure that it clearly outlined the position of the local government(s) and provided sufficient information supporting their position so the dispute at question could be easily understood by the members of the Working Group. If necessary, the LMS Coordinator would contact the disputing party and ask for additional information/data necessary to clarify the position.

Step 3 The LMS Coordinator will schedule a meeting of the LMS Working Group. In an effort to continue to try to resolve the impasse expeditiously, the LMS Coordinator will make every attempt to schedule the meeting within two calendar weeks from the date once the LMS Coordinator determines that there is sufficient information available to proceed to the Working Group. Each member will be sent a copy of the LOD and any supportive materials provided by the disputing party. The disputing party will be notified of the meeting date and time.

Step 4 A meeting of the Working Group will be held. The representative of the disputing party will present their positions to the Working Group. Based on the ensuing discussion, hopefully resolution will be achieved. At the end of the meeting, if no mutually acceptable compromise is achieved, the position of the Working Group will be final. Whatever the outcome of the meeting, a memorandum of understanding will be prepared by the LMS Coordinator. To be official, the memorandum must have the concurrence of the LMS Working Group Chair and a representative of the disputing party.

ANNEX A - FLOOD HAZARD SPECIFIC PLAN

Flood

Hazard Specific Plan

St. Lucie County
Public Safety Department
Division of Emergency Management

15305 W Midway Road
Ft. Pierce, FL 34945
772-462-8100

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RECORD OF CHANGES

This Record of Changes is used to record all published changes. All major changes will be routed to plan holders within ninety (90) days of the promulgation of the change.

Change Number	Section, page, or graphic edited	Date Entered	Posted By

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PROMULGATION STATEMENT

Submitted herein is the Flood Hazard Specific Plan (FHSP), which serves as a roadmap for response and recovery from flooding. This FHSP supports the St. Lucie County Comprehensive Emergency Management Plan (CEMP) and supersedes any previous plan promulgated for this purpose. This plan establishes the framework defining the implementation and coordination of incident objectives in response to a flood.

This plan has been developed in support of the CEMP, following the guidance of the State of Florida Comprehensive Emergency Management Plan, the National Response Framework, the National Incident Management System, and FEMA's *Comprehensive Preparedness Guide* (CPG) 101 (v. 2.0) – *Developing and Maintaining Emergency Operations Plans*. The efficient and effective implementation of this plan is the responsibility of the Emergency Management Safety Planner, the Emergency Operations Manager, or his/her designee. A program of review and evaluation of this plan is essential to its overall effectiveness.

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

Ron Parrish, MPA, EFO, Director
Department of Public Safety

3-5-2019
Date

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EXECUTIVE SUMMARY

The Flood Hazard Specific Plan (FHSP) will serve as a support annex to the St. Lucie County (SLC) Comprehensive Emergency Management Plan (CEMP). This FHSP is a key component of the CEMP, as it establishes the framework for defining the process and coordination of actions through the St. Lucie County Emergency Operations Center (EOC), SLC agencies, and emergency response partners before, during, and after the impacts produced by this specific hazard. This FHSP addresses the coordination of facilities, personnel, equipment, and supplies that are assigned under the auspices of agencies designed to mitigate the impacts of the specific hazard which ensures the rapid mobilization of assets and the response to the incident/event created by the hazard.

The *St. Lucie County Local Mitigation Strategy* (LMS) ranks floods at the top of the list of identified natural hazards because of their projected impact potential across the entire spectrum of community exposure and services. This FHSP describes two (2) specific types of flooding conditions:

1. Tidal Surge

2. Riverine/Estuarine Flooding

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INTRODUCTION

Flooding incidents associated with rain, tropical storms, and hurricanes are considered the hazard with the greatest impact, and likelihood in St. Lucie County. The St. Lucie County Local Mitigation Strategy (LMS) ranks floods at the top of the list of identified hazards because of their projected impact across the entire spectrum of community exposure and services. Riverine and coastal flooding, specifically, are the types of floods to affect communities across the County. The heavy summer rainfall pattern in the county coupled with the hurricane season (June 1 through November 30) makes St. Lucie County particularly vulnerable to flooding, especially later in the wet season when the water table is high and the ground is saturated from impacts of rain events. St. Lucie County averages around 54 inches of rain per year and 124 rain days, with the majority occurring between the months of June and October.

Flooding events can negatively impact lives, property, the environment, and economic development in St. Lucie County in a short amount time. Flooding can cause widespread damage to cars, houses, businesses, crops, and outdoor equipment. Vulnerable populations in St. Lucie County are the most affected by flooding disasters such as families and individuals with low and fixed incomes, the elderly, transient migrants who work in agricultural areas, and persons with disabilities. Approximately 10% of the County's housing units (14,000 out of 141,000) are located within a Special Flood Hazard Area (SFHA). See Figure 1 on the following page.

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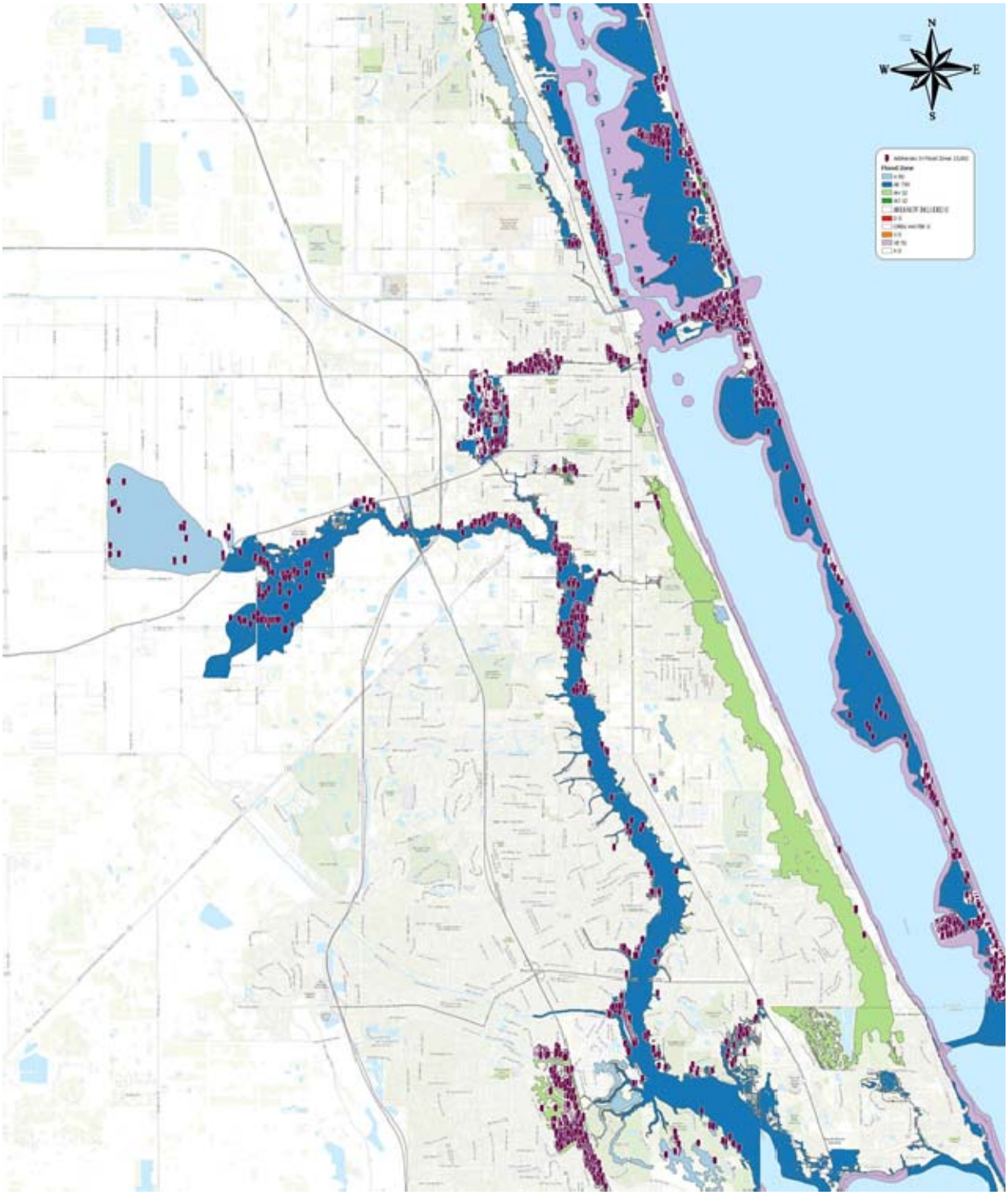
Figure 1
Homes located in the Special Flood Hazard Area (SFHA)



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Significant expanses of street flooding can be costly in terms of loss of access and function for extended periods of time, and can create dangerous, potentially deadly, driving conditions for residents and rescuers. Reports of electrocutions are not uncommon occurrences as people enter flooded areas where live wires are down or generators are present. The ability to evacuate residents, transport persons with special needs, as well as a first responder's ability to gain ingress to affected areas become difficult in areas where waters rise quickly and inundate major roads and thoroughfares. After the passing of storms, flooded locations can be difficult to assess by damage assessment teams, until waters recede enough to safely inspect damaged areas, such as affected properties, roads, and vehicles. Additionally, it is uncertain to adequately identify and quantify the amount of deterioration found in infrastructure from inundations. Usually infrastructure systems in communities begin to fail from deteriorated pipelines and motors after some time passes after a flooding incident, such as sewage systems, pumps, and underground utility cables.

Public health issues frequently arise during and after flooding conditions should the County's potable water supply become contaminated from soil sediments, chemicals, and/or sewage in standing water. These particulates may infiltrate drinking water facilities, fresh water wells, and other potable water sites. Sewage overflow raises serious health concerns, increasing the potentiality of the spread of communicable diseases such as dysentery and malaria from contaminated drinking water as well as from mosquitoes that tend to multiply exponentially in flooded areas. Beyond the initial physical water damage caused by flooding, an equal or even greater issue is the potential for mold which grows quickly in warm humid structures after being exposed to floods. Mold can create health problems for occupants and lead to costly building cleanup and repairs. Consequently, flood insurance rates can sky rocket leaving residents unable to afford insurance premiums. Florida residents and businesses hold more than 40% of all the flood insurance policies issued nationwide. In all, flooding disasters in St. Lucie County can lead to costly response and recovery efforts that may negatively impact the community's economy and standard of living.

The Flood Hazard Specific Plan (FHSP) deals with the County's two (2) most common forms of flooding – riverine and tidal surge. A third, less probable, which will not be addressed in this FHSP, and has the greatest potentiality for lethality is a Tsunami. A Tsunami Response Plan is available separate from this FHSP. The rest of this FHSP describes emergency operating procedures relating to floods and outlines agency roles and responsibilities for responding to and recovering from significant flooding incidents from local to regional, state, and federal jurisdictions.

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HAZARD IDENTIFICATION

Flood is defined in the standard National Flood Insurance Program (NFIP) policy as a general and temporary condition of partial or complete inundation of two (2) or more acres of normally dry land area or of two or more properties from, "overflow" of inland or tidal waters; unusual and rapid accumulation or runoff of surface waters from any source; mudflow; or collapse or subsidence of land along the shore of a lake or similar body of water as a result of erosion or undermining caused by waves or currents of water exceeding anticipated cyclical levels that result in a flood as defined above." (Federal Emergency Management Agency, 2017).

As a relatively flat, low lying, coastal county, which experiences frequent intense rain and periodic tropical storms, St. Lucie County is especially vulnerable to several forms of inland flooding; from nuisance flooding (i.e., ponding, standing water) to major deep and long-lasting periods of inundations that may negatively impact lives, property, and community health.

The following two (2) types of flooding incidents have been identified by the LMS as likely hazards to occur in St. Lucie County: 1) tidal surge associated with northeasters and tropical cyclones and 2) estuarine/riverine flooding caused by overflow from rivers, streams and swamps; associated with rain runoff from aerial flooding.

Hydrology of St. Lucie County

Flood prone areas are widely distributed throughout St. Lucie County. Areas close to the coast, the intercostal and the St. Lucie River and its North Fork are particularly susceptible to flooding. A key aspect towards understanding the County's hydrology is its topography, as it is a key factor as to where water pools after heavy rains, tidal surge, estuarine or riverine floods. The county topography is divided into three (3) major regions. In the southwest is the Osceola Plain, with elevations ranging from approximately 30 to 60 feet. The Atlantic Coastal Ridge is a narrow zone along the Indian River reaching elevations of 60 feet. The bulk of the county lies in the Eastern Valley between these two (2) zones, where elevations range from about 15 to 30 feet. A barrier island system ranges from a few hundred feet to three-fourths mile wide with elevations ranging from sea level to about 16 feet at dune crests.

Major natural drainage features include Ten-mile and Five-mile Creeks which feed into the North Fork of the St. Lucie River's draining areas of the Eastern Valley. Much of the region is also affected by extensive canal systems operated by three (3) agencies: the South Florida Water Management District, the North St. Lucie River Water Management District, and the Fort Pierce Farms Water Management District. Three (3) major canals, C-23, C-24, and C-25, divide the

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county into four (4) general regions: north, west, south, and east-central. The latter portion, bounded by C-24 to the south and west and by C-25 to the north, includes the North St. Lucie Water Control District which is divided by a complex network of secondary canals. To the north is the Fort Pierce Farms District, also with a pervasive secondary system. These canals help retain needed water for agriculture during winter (low rainfall) months, and provide some degree of control over drainage at normal frequency levels; however, they are not designed for the control of area-wide flooding at the 1- percent-annual-chance level (also known as the "hundred year flood").

The area lying between U.S. Route 1 and the coastal ridge, and extending from Fort Pierce southward into Martin County is known as the Savannahs. This wetlands complex consists of a series of freshwater lakes, ponds, and marshes and is a recreational center for the county.

Flooding in St. Lucie County results from two (2) major sources: rainfall runoff causing overflow of streams, ponding, and sheet flow; and hurricane storm surge causing extreme water levels in coastal and tidal regions. Wave action which accompanies northeasters can also cause coastal flooding and serious erosion, although extreme (1-percent-annual-chance flood) levels are not to be expected from such storms. Major rainfall events can occur with hurricanes, tropical storms, northeasters, or localized thunderstorms. Due to the flatness of the terrain, many inland areas are characterized by shallow flooding and ponding after heavy rainfall.

The flood of September 20-22, 1985, affected large areas of St. Lucie County. Over a four-day period, 14 inches of rain were recorded in the City of Fort Pierce, with about half falling during a seven-hour period over the night of September 20, 1985. Flooding of streets and houses was widespread, especially in the central area around Five-mile and Ten-mile Creeks, where large numbers of residents were evacuated from their homes. Flood elevations during this storm approximated 1-percent-annual-chance levels and greater in many areas.

On October 17, 1995, an estimated 13 inches of rain fell in the county, flooding 12 homes and most roadways in the southern part of the county. Total damage was estimated near $4 million. Hurricane Frances crossed Florida in September 2004, causing widespread flooding of roads, residences and businesses in coastal communities. When Tropical Storm Fay hit Florida on August 19, 2008, rainfall amounts from 10 to 15 inches fell over St. Lucie County as well as Martin, Okeechobee, and Indian River Counties. Property damage estimates were $67 million. In December 2009, a South Florida Water Management Rain Gage recorded a 24-hour total of nearly 13 inches, which caused extensive flooding to roadways, lowlands, and urban areas (FEMA, 2012).

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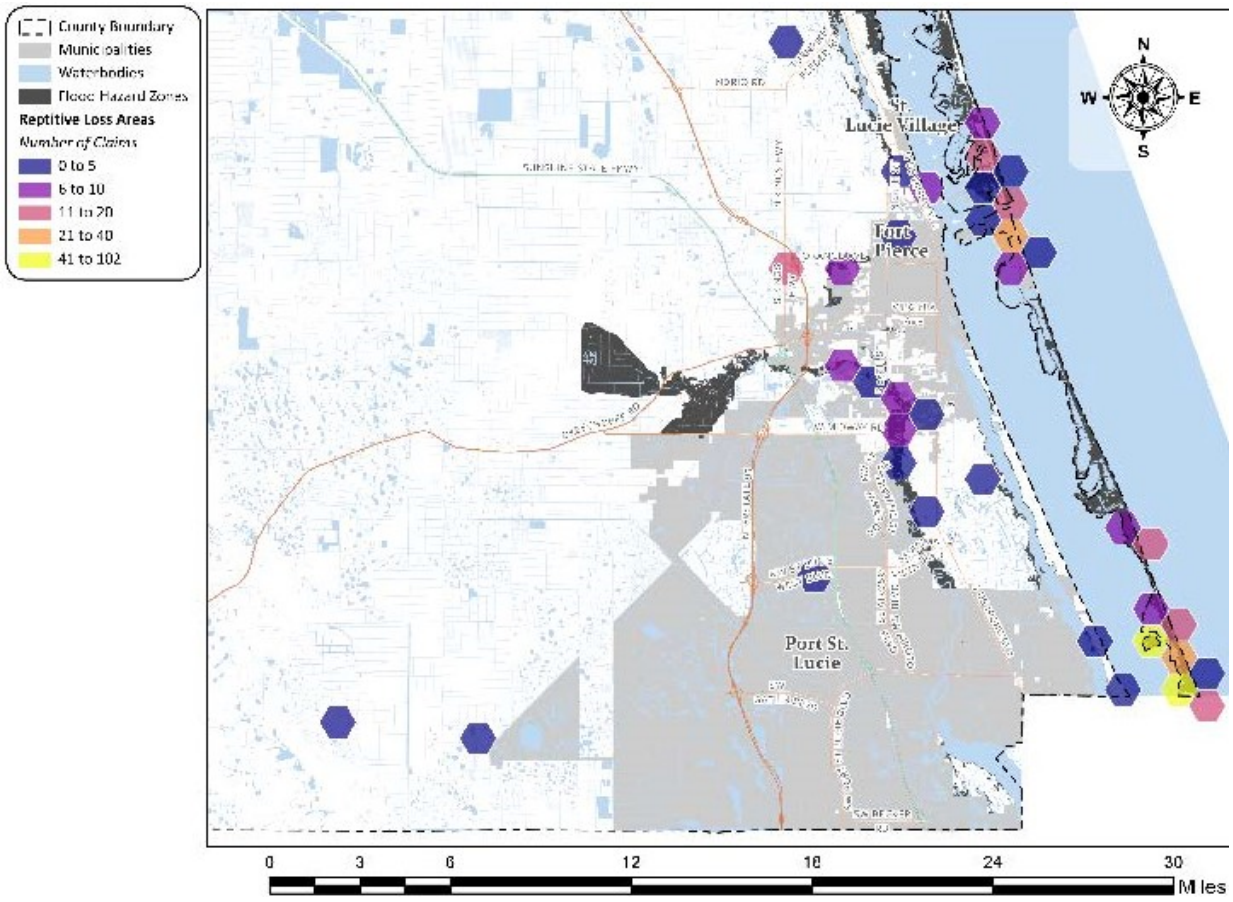
Flood Insurance in St. Lucie County

A review of recent flood incidents using the NOAA's "Storm Events Data Base" suggests that St. Lucie County exceeds the national average of 25% of flooding occurring outside of Special Flood Hazard Areas (SFHAs). The data also reveals these flood events occur throughout the year and are not only the result of tropical systems (Table 1). There were nine (9) recorded flood events between 1998 and 2018 of these nine (9) only three (3) were the result of tropical systems. Damages totaled from the flood events were $67 million in property damage and $20 million in crop damage. These flood incidents surpass FEMA's one hundred year floods or base floods which are used to draw flood maps. A misnomer regarding 100-year or base floods is that it is a flood that occurs every one hundred years, in fact the 100-year flood has a 26% chance of occurring during a 30 year period (FEMA, 2000). Even a significant number of county properties carried on FEMA's "repetitive flood loss list" lie outside SFHAs (as demonstrated in Figure 2).

Figure 2
Repetitive Loss Areas



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Reflective of the increasing importance of flooding is the consequent recent climbing costs of flood insurance rates. In an effort to moderate costs to property owners, the county has expended significant time and resources to ensure that new Flood Insurance Rate Maps (FIRMs) proposed by FEMA accurately and fairly represent risk to life and property and that insurance policy increases imposed by the Biggert Waters Insurance Reform Act of 2012 are affordable, fair, and do not negatively affect home ownership and the local economy. To date approximately 6% of property owners in Unincorporated St. Lucie County carry flood insurance. Baring the high instance of flooding in the County, the County's Departments and leadership are aligned with FEMA's goal of increasing the number of Flood Insured in St. Lucie.

Table 1

Flood Events Table (National Oceanic and Atmospheric Administration, 2018)

EVENT_ ID	BEGIN_ LOCATION	BEGIN_ DATE	EVENT TYPE	SOURCE	FLOOD_CAUSE
5666352	PORT ST LUCIE	8/12/1998	Flood	Law Enforcement	
134664	INDRIO	8/19/2008	Flood	Newspaper	Heavy Rain / Tropical System
200275	FT PIERCE NELSON ARP	12/17/2009	Flood	State Official	Heavy Rain
395879	PORT ST LUCIE	8/27/2012	Flood	Emergency Manager	Heavy Rain / Tropical System
482619	VIKING	1/9/2014	Flood	Emergency Manager	Heavy Rain
553913	ELDRED	2/28/2015	Flood	Law Enforcement	Heavy Rain
626988	VIKING	5/17/2016	Flood	Emergency Manager	Heavy Rain
661655	INDRIO	10/6/2016	Flood	Broadcast Media	Heavy Rain

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EVENT_ ID	BEGIN_ LOCATION	BEGIN_ DATE	EVENT TYPE	SOURCE	FLOOD_CAUSE
720102	FT PIERCE NELSON ARP	9/10/2017	Flood	Emergency Manager	Heavy Rain / Tropical System

Sea Level Rise and Other Precursors of Flooding Incidents

Global average sea level has risen by about 7–8 inches (about 16–21 cm) since 1900, with almost half this rise occurring since 1993, as oceans have warmed and land-based ice has melted. Relative to the year 2000, sea level is very likely to rise 1 to 4 feet (0.3 to 1.3 m) by the end of the century. Although precipitation from rainfall is predicted to decrease in our region, oceans are projected to continue to warm thereby creating stronger tropical systems; exacerbating tidal surge from already rising oceans (USGRP, 2018). Sea level rise is not itself viewed to be an immediate hazard, thereby not warranting response and recovery procedures within this Flood Hazard Specific Plan (FHSP). However, the indirect impacts of sea level rise such as coastal erosion, salt water intrusion, and impeded storm water drainage are covered in detail in the LMS. The LMS also describes the impacts of tsunamis and rogue waves. Although low risk due to the amount of danger to life and property as well as disruption to government services a Tsunami plan.

PURPOSE

This FHSP details the responsibilities, policies, and strategies which should be implemented by St. Lucie County in the event of significant flooding. Its primary purpose is to prepare for the most efficient deployment of resources to:

1. Provide effective intra-agency and inter-agency cooperation and communications before, during, and after a flood incident.

2. Achieve a coordinated response consistent with prevailing conditions and information provided by external agencies including the National Weather Service (NWS), water control districts within and affecting St. Lucie County and other sources.

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3. Define the roles and responsibilities of the County, municipalities, and supporting agencies involved in a flood emergency.

4. Outline procedures to be utilized in minimizing the effects of a flood emergency in St. Lucie County.

SCOPE

This FHSP allows for the flexibility and adaptability to provide the emergency organizational structure for flooding incidents impacting St. Lucie County, regardless of type or size, and identifies the roles, responsibility, and lines of authority within the section of the EOC.

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AUTHORITIES AND REFERENCES

Table 2

Authorities

Statute	Agency	Authority
Chapter 252, Florida Statutes Emergency Management Act Section 381.003, F.S.	Florida Division of Emergency Management	Allows Governor to declare a State of Emergency. Gives Governor and Division direction and control of emergency management. Allows Governor and Division to delegate authority to carry out essential functions to protect the peace, health, safety, and property of the people of Florida.

Table 3

References

Document	Version	Owner/Location
State Comprehensive Emergency Management Plan (SCEMP)	2016	Florida Division of Emergency Management
Comprehensive Emergency Management Plan	2017	St. Lucie County
Local Mitigation Strategy	2016	St. Lucie County
How to read a Flood Insurance Rate Map (FIRM) Tutorial	2010	FEMA
Community Rating System Coordinators Manual	2017	FEMA
Flood Products – What do they Mean?	2012	National Weather Service

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Document	Version	Owner/Location
Storm Events Database – Search Results for Saint Lucie County	2018	National Oceanic and Atmospheric Administration
Severe Weather 101 – Floods	2011	National Severe Storms Laboratory
The Recovery Timeline: Short Term Decisions with Long Term Effects on Community Recovery	2016	Haggerty Consulting (Brock Long)
Study Models Tsunami Risk for Florida and Cuba	2017	University of Miami
Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment Volume II	2018	United States Global Change Research Program

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PLAN DEVELOPMENT AND MAINTENANCE

The Flood Hazard Specific Plan (FHSP) is a dynamic document that adapts to changes in policy, priorities, and needs, and will be updated as needed in compliance with the CEMP. Authority for changes to this FHSP is delegated to the Director of the Public Safety Department or the Emergency Operations Manager of the Division of Emergency Management, who are responsible for the coordination of changes with affected agencies, and after concurrence, may make changes to this FHSP. A Record of Changes, displayed at the front of this document and is used to record all published changes. All major changes will be routed to plan holders within 90 days of the promulgation of the change. In addition, *SOG DEM-002 – Review and Maintenance of EM Plans*, establishes a policy and procedures for the review and maintenance of all Emergency Management plans. The FHSP is maintained and updated as per the schedule found in *SOG DEM-002 – Review and Maintenance of EM Plans.*

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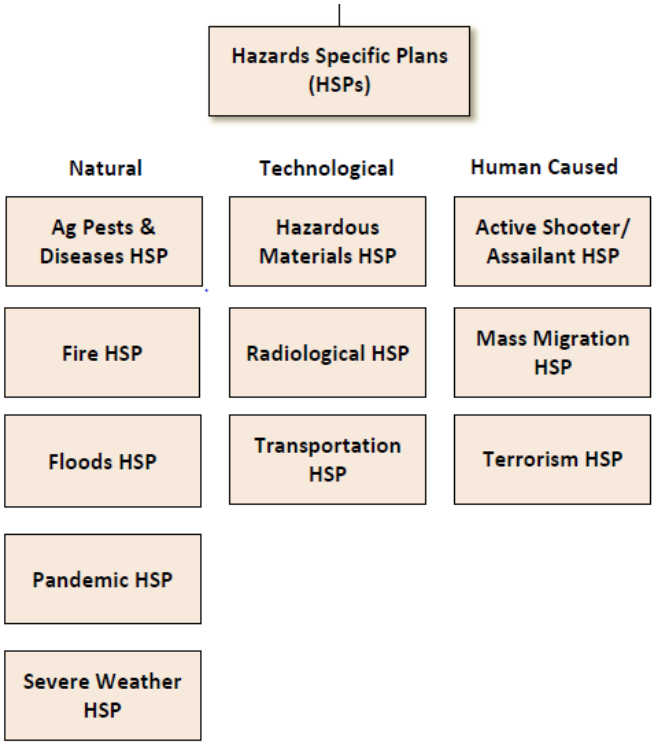
SITUATION OVERVIEW

HAZARD VULNERABILITY ANALYSIS

Hazard identification, analysis and risk assessment are detailed in the *St. Lucie County Local Mitigation Strategy* (LMS). It involves the identification of natural and human-caused hazards and assessment of risks to persons, public and private property, environment and structures. The LMS also details data and loss estimation projections and can be utilized in the post-event assessments to evaluate consequences for each of the hazard categories. In addition, SLC has Hazard Specific Plans (FHSPs) (as depicted in Figure 1) that should be referenced as a guide for the impact and operational considerations specific to that type of event. These are available at the St. Lucie County Division of Emergency Management office. The Incident Command System (ICS) response will be consistent regardless of the hazards because of its functional unit management structure; it is applicable across a spectrum of incidents differing in size, scope, and complexity.

Figure 3

Hazard Specific Plan Matrix



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CAPABILITY ASSESSMENT

In compliance with internal planning processing, state requirements, and NIMS criteria, this FHSP utilizes data from the LMS, and the CEMP to determine the hazard identification, community vulnerability, and resource capacity within local, county, state, and federal agency partners to underline the process of acquiring assistance in an effective and efficient means to assist communities impacted by flooding incidents.

PLANNING ASSUMPTIONS

- According the St. Lucie County LMS flooding is St. Lucie County's most prevalent hazard.
- By virtue of its coastal location and tropical weather characteristics, St. Lucie County is susceptible to numerous forms of flooding, the most common being storm/tidal surge, riverine, flash, inland, and estuarine flooding.
- The heavy rainfall pattern in the county coupled with the hurricane season (June 1 through November 30) makes St. Lucie County particularly vulnerable to flooding, especially later in the hurricane season.
- Flash and inland flooding may occur anytime of the year, with little or no warning.
- Flooding caused by hurricanes or tropical storms pose the greatest risk to people and property.
- Because of the county's lack of elevation and its extraordinarily abundant water features, inland flooding can occur essentially anywhere within its jurisdictional boundaries.
- Flooding can be localized or widespread.
- Except for storm surge most flooding in the county is shallow, low or no velocity, and sheet flooding.
- Frequent flooding incidents that are manageable in size, complexity, and severity are handled by municipal and county first responders.
- The threats of flooding by a tsunami or rogue wave are addressed in the Tsunami Response Plan.

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- Obscured road and canal boundaries present a significant safety risk to drivers and pedestrians.

- The duration of floodwaters may range from hours to weeks.

- Communities impacted by prolonged isolation due to inland flooding may not have access to resources and may experience significant health risks (e.g., dehydration, disease outbreak).

- In-structure flooding should be minimal because of local building and floodplain management codes and practices.

- Critical facilities are defined by the LMS as any facility that would have a major negative effect on a large percentage of the population of a community if affected by the impact of a hazard, such as floods. These facilities are included in Emergency Management Plans or other operational plans developed by an official local governmental entity/organization.

- The National Weather Service (NWS), local media sources, local water districts, direct public reporting, and the U.S. Army Corps of Engineers (USACE) (in cases where flooding causes a dam/levee breach) will be key resources for information and warnings on potential flood threats.

- The Public Safety Director and/or Emergency Operations Manager, using information from partner agencies as well as other sources, will quickly assess the situation to determine the appropriate level of EOC activation.

- Response and recovery operations may be hampered by blocked roads, damaged bridges and roads, street flooding, and downed trees, utility poles and power lines.

- Aerial surveillance and special water and all terrain equipment may be critical to damage assessment and emergency access to flood victims.

- Utility customers may experience compromised sewage systems and contaminated drinking water following a flooding incident.

- Casualties may be anticipated from electrocutions, drowning, and health issues related to contaminated water, mold, and stress.

- A disaster caused by flooding may occur with little or no warning, and may escalate rapidly.

- Disaster effects may extend beyond county boundaries and many areas of the state may experience casualties, property loss, disruption of normal life support systems, and loss of regional, economic, physical, and social infrastructures.

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- All organizations in St. Lucie County will continue to respond to disaster events utilizing SOGs/SOPs of effective inter- and intra- organizational communications and/or internal resources until they are exhausted; necessitating mutual aid response requests.

- Disasters caused by flooding are managed locally. The Emergency Management command and control structure in Florida is based on a bottom-up approach of resource allocation; municipal to the county EOC, to the State Emergency Operations Center (SEOC) and finally to the federal government; escalating to each level as resources are exhausted.

- Local municipalities will integrate with the county's operations in order for the response and recovery process to be effective.

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CONCEPT OF OPERATIONS

The St. Lucie County (SLC) Emergency Operations Center (EOC) is responsible for the management of response and recovery actions to all-hazards impacting St. Lucie County. Local support systems may be able to handle smaller incidents, but incidents spanning across jurisdictional boundaries or incidents which require multiple operating periods may necessitate the assistance of EOC coordination. Larger incidents will require additional resources such as mutual aid with local jurisdictions, regional and state resources and possible federal agency support and Emergency Mutual Aid Compacts (EMAC) among states.

Flooding incidents in SLC may occur with little or no warning, and may quickly yield to disaster conditions in neighborhoods and major business districts. Depending on the severity, longevity, and complexity of the incident, a surge in widespread calls for rescue operations may occur which can quickly overwhelm local 9-1-1 dispatch centers and response organizations. Tactical objectives implemented in response to floods impacting residential areas in short timeframes may include the evacuation of trapped residents, protection of critical facilities and residential communities, activation of shelters, and transportation of vulnerable populations to shelters, hospitals, and critical outpatient health services (e.g., dialysis treatment).

In the instance that flooding causes any type of damage to properties and critical facilities, and once it is determined by emergency management officials that it is safe to go outside, county, municipal, and other agency survey teams will conduct damage assessments to prioritize response actions, estimate costs in damage, and report outcomes to state and federal agencies for the qualification and implementation of recovery and disaster assistance programs for local residents and the community at large. Damage assessments are also utilized to prioritize tactical operations in the safe collection and disposal of debris caused by floods. In the instance flood waters are slow to recede, it is expected that the longer water stays trapped in dwellings, the more damage will be found to that property to the point where it may be deemed unusable or unsuitable to live in by building and/or insurance officials.

ALERT AND NOTIFICATION

National Weather Service Severe Weather Advisories

St. Lucie County relies on the National Weather Service (NWS) for weather threat recognition. The NWS issues severe weather advisories for SLC and the region six to twelve (6-12) hours before the expected impact of a severe weather incident. Based on the severe weather advisories and expectancy of flood severity announced by the NWS, leadership in local communities and in the Emergency Management discipline determine the appropriate response and protective actions

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to be implemented in potentially affected neighborhoods. Specific weather products used by the NWS as they relate to floods are defined as follow:

Areal Flood: Issued for flooding that develops more gradually, usually from prolonged and persistent moderate to heavy rainfall. This results in a gradual ponding or buildup of water in low-lying, flood prone areas, as well as small creeks and streams. The flooding normally occurs more than six hours after the rainfall begins, and may cover a large area. (National Weather Service, 2018)

Coastal Flooding: Flooding which occurs when water is driven onto land from an adjacent body of water. This generally occurs when there are significant storms, such as tropical and extratropical cyclones.

Flash Flood: A rapid and extreme flow of high water into a normally dry area, or a rapid water level rise in a stream or creek above a predetermined flood level, beginning within six hours of the causative event (e.g., intense rainfall, dam failure). However, the actual time threshold may vary in different parts of the country. Ongoing flooding can intensify to flash flooding in cases where intense rainfall results in a rapid surge of rising flood (National Severe Storms Laboratory, 2018).

Flood Advisory: Issued when flooding that is not considered a significant threat to life or property is expected or occurring. This usually deals with nuisance flooding problems, such as flooding in low-lying areas and areas of poor drainage, as well as minor flooding of streets and roadways. This type of flooding causes some inconvenience, but is not generally considered a significant threat to life or property.

Flood Watch: A Flood Watch is issued when conditions are favorable for flooding. It does not mean flooding will occur, but it is possible.

Flood Warning: A Flood Warning is issued when flooding is imminent or occurring.

E911 Communications Center

The St. Lucie County EOC houses the E911 Communications Center, a county-wide 24-hours a day, seven (7) days a week staffed Public Safety Answering Point (PSAP), which provides monitoring, notification, and warning to St. Lucie County Fire/ Rescue, St. Lucie County Sherriff's Department, Fort Pierce Police Department and Port St. Lucie Police Department. Aside from serving local first responders as a dispatch center, the Communications Center serves as an informational dispatch center as well, providing monitoring, notification, and warning to the State Watch Office, municipal partners, non-governmental and other partner agencies also

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acting as a point of contact for county and municipal agencies, as well as the Fire District after normal business hours, weekends and holidays.

The E911 Communications Center provides alerts and notifications to the aforementioned agencies in accordance with hazard specific notification guidelines and pertinent SOGs, should an incident or event warrant. In some instances, pre-activation notification may not be possible due to the magnitude or rapidity of the incident and its necessary response. The Communications Center has an up-to-date listing of key emergency management personnel throughout the county in addition to key municipal contacts and stakeholders. When possible, appropriate agencies in the EOC organizational structure will be notified in advance to allow for incident specific response planning using Alert St. Lucie by the Communications Center or designee from the Public Safety Department.

Notification Systems

Notification of flooding, like any natural or human caused threat to the residents of the county, will be disseminated to the general public, impacted municipal jurisdictions, response and recovery organizations, EOC staff, vulnerable critical facilities, neighboring jurisdictions that may be impacted, and the State EOC. Notifications during an emergency need to be timely, accurate, and coordinated, such that the message may be disseminated by all available public information mechanisms. In order to ensure timely notification of citizens, SLC has established primary and multiple back-up dissemination systems to ensure accurate and timely notification to the public and emergency response personnel.

The E911 Center within the EOC functions as an inter-disciplinary multi-jurisdictional "all hazards" communications hub for the entire county and its three (3) municipalities. It is equipped with a variety of primary and secondary computer and communication systems, such as Alert St. Lucie, powered by Everbridge® (hereinafter referred to as Alert St. Lucie) is the county's primary notification system and will likely be used to alert the general public for flood emergencies. Alert St. Lucie allows for the notification of partners, general public, and a notification based on geographical characteristics. This system will likely be used in addition to the Public Information Officer's (PIO) use of media outlets, including county owned Channel 28, public electronic, and print media. Alert St. Lucie is activated by the E911 Center in concert with other notifications as directed by the DEM. Alert St. Lucie works from customized hazard specific 'scenario' lists as well as geographic boundaries.

The EOC has access to Emergency Satellite Communications (ESATCOM) telephones, which are linked to the FDEM State Watch Office (SWO). The EOC is also equipped with several T1 internet connections, and secondary warning systems such as regular telephones, cellular

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telephones, facsimile machines, and Amateur Radio equipment. Primary and secondary notification systems are operated by DEM personnel 24/7 and tested regularly to ensure functionality during a routine response and disasters of all types.

The County's internal collaborative incident management software system, WebEOC,® is the primary mechanism to request resources, assign and track mission requests, monitor critical situational awareness, such as road closures and shelters, and publish and review situation reports and Incident Actions Plans (IAPs). Partner agencies including municipal partners are provided access to WebEOC® via the Internet when a flood emergency demands the interaction of all affected response agencies to communicate and track information with one another. The system allows for the EOC staff to monitor incident progress internally. WebEOC® is password protected and users are given access to it only after being authorized by their assigned supervisor within EOC operations.

Another notification tool that is utilized is the Emergency Alert System (EAS). EAS is a national warning system that superseded the Emergency Broadcast System (EBS) in 1997. EAS utilizes commercial television and radio stations to broadcast the emergency message. This notification method has the potential to reach the most people and remains the most popular notification source. This system is tested weekly.

The National Oceanic and Atmospheric Administration's (NOAA) Hazard –Weather Alert Radio' system is another means of alerting the general public of a large/wide scale incident such as a tornado. While these weather alert radios are not distributed universally throughout the county, they do offer emergency managers and fire officials another reliable and redundant means by which protective action notifications can be sent to the general public.

If necessary due to a night time or a quickly escalating threat to residents, such as the development of tornado activity sirens and loudspeakers from police and fire vehicles may be utilized to warn the public, emergency vehicles will pass through the threatened neighborhood to awaken the public with instructions to tune into local media stations for further information on the impending danger. This form of notification is typically coordinated by the SLSO and SLC Fire District.

Public Warning

The public is notified by the E911 Communications Center, the Public Safety Department, and/or the Public Information Officer (PIO) of the EOC. St. Lucie County will utilize the PIO to communicate to all public media sources. The E911 Communications Center or designee from the Public Safety Department may also activate the notification system, Alert St. Lucie, to reach

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vulnerable populations through direction of the Director of the Public Safety Department (or Assistant Director), or the Emergency Operations Manager. Examples of public warning systems include: Alert St. Lucie (powered by Everbridge), the St. Lucie County public website, social media, Emergency Alert System (EAS), installed sirens, SLCTV (cable channel) and Telecommunications Device for the Deaf (TDD).

Municipal Partner Notifications & Warning

Maintaining ongoing communications with all municipal partners is a vital response priority. During "blue sky" periods, St. Lucie County DEM collaborates with the County's three (3) municipalities via EM Team meetings with designated representatives from each municipality. Representatives, a primary and support from each municipality, are included in the EM Team distribution list to specifically receive emergency management information, alerts, and notifications. These individuals are invited to EM Team meetings where mutual issues regarding emergency management and disaster preparedness, mitigation, response, and recovery are discussed.

During "gray skies," St. Lucie County coordinates all hazard monitoring information, event escalation information, protective action decisions, and recovery information with impacted municipal jurisdictions throughout the event with the designated municipal EM representatives. Municipal coordination is also conducted in compliance with the Hazard Specific Plans primarily through conference calls, Situational Awareness Reports, Flash Reports, Situation Reports (SitReps), web-based incident management platform (i.e., WebEOC®), and direct communication.

On Call Officer Program

The On Call Officer (OCO) is responsible for the daily coordination and initial and ongoing monitoring of incidents and events of countywide significance. The On Call Officer is rotated between selected Public Safety staff members on a weekly basis and is on call and available to respond to any incident 24 hours a day, seven (7) days a week to assist the on-scene Incident Commander (IC) with alert and notification, resource management, public information, and protective actions.

Public Information Line

When necessary, the Public Safety Department will activate the Public Information Line (PIL), a component of the 911 Communications Division. The PIL may be accessed by dialing (772) 460- HELP (3457) or (772) 429-3919 a toll-free line with a Telecommunications Device for the Deaf (TDD) for the hearing impaired as well The PIL, when activated, interacts primarily with county residents, but may also interact with federal, state, and local agencies, in addition to agencies in other counties via telephone. The purpose of the PIL is not necessarily to resolve a specific problem, but to inform and to coordinate information for those who can solve their own problems. Examples of such assistance may include providing updated information regarding

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school openings/closings, debris removal schedules, clarification of current protective action orders, general guidance on pet/service animal services and current public health advisories.

Social Media Coordination

The EOC's PIO manages all County social media accounts such as Facebook and Twitter to track, monitor, respond to, collect, and provide information during an emergency. Through effective use of social media networks, the PIO is able to limit rumors and reduce the circulation of false information on the Internet, provide factual and relevant information, obtain firsthand accounts from people on location, track geographically where resources are needed, and maintain a constant web presence. Social media has become a necessity for emergency managers and first responders over the years, and the integration has been termed Social Media Emergency Management. Due to social media, traditional forms of news have transformed from being provided by media conglomerates to peer to peer information dissemination, sharing information instantaneously with friends, family and the world, 24-hours a day. The public looks to social media for trending news, which is provided by others in their network.

WebEOC®

WebEOC® Professional is a premiere Crisis Information Management Software (CIMS) that was developed over a decade ago to meet the needs of emergency management agencies at the federal, state, and local levels. WebEOC® includes a default set of boards and plugins that enable any agency to begin using it almost immediately anywhere, making it possible to monitor and manage an emergency response. St. Lucie County EM Team are registered in WebEOC® using their email addresses as user names and create their own passwords to access the system. WebEOC® is primarily used to communicate, maintain situational awareness, and process resource requests. WebEOC® is widely used in the state of Florida and has been adopted by the Florida Division of Emergency Management (FDEM), which makes it seamless to communicate with other counties and the State, as well as processing resource requests.

Alert St. Lucie

Alert St. Lucie is a mass notification system powered by Everbridge. This program allows users to receive emergency information via their home phone, cell phone, email, text, or ContactBridge App. The user chooses how they receive the message. Different distribution lists have been arranged to send Alert St. Lucie messages, such as the EM Team, County Administration, Public Safety staff, and the public at large. Examples of information that users receive include messages from the NWS (flash flood warnings, tornado warnings, severe weather information), Public Safety Department (e.g., crime alerts, major road closure, informational updates, gas leaks). EM Team and County personnel can receive messages on EOC activation, readiness messages, and current incident information. To register with Alert St. Lucie, one can go to the site: www.stlucieco.gov/alert.

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Integrated Public Alert and Warning System (IPAWS)

IPAWS is a modernization and integration of the nation's alert and warning infrastructure, and will save time when time matters most, protecting life and property. St. Lucie County applied for and received approval to use IPAWS through the Alert St. Lucie system. Federal, state, local, tribal, and territorial alerting authorities can use IPAWS and integrate local systems that use Common Alerting Protocol (CAP) standards with the IPAWS infrastructure. IPAWS provides public safety officials with an effective way to alert and warn the public about serious emergencies using the Emergency Alert System (EAS), Wireless Emergency Alerts (WEA), the National Oceanic and Atmospheric Administration (NOAA) Weather Radio, and other public alerting systems from a single interface. St. Lucie County Public Safety Department is able to alert the public at large, not just St. Lucie registered recipients, to be notified of a local threat incidents impacting the County, such as floods, hazardous material leaks, and radiological incidents.

Winlink 2000

Should internet and phone communications fail, the EOC is able to continue to communicate with other counties, FDEM's State Watch Office through Winlink, which is a worldwide system for sending and receiving e-mail over radio. The 800 MHz program is a redundant communications system that serves a purpose when all other standard communications systems fail due to power and telephone system loss. Winlink consists of a group of Common Message Servers (CMS) placed at various locations around the world. These servers connect via the Internet to Radio Message Servers (RMS) in many geographic locations to form a star network configuration. The final component is the client computer (i.e., your computer) which runs to send/ receive messages through your radio.

Like regular e-mail, Winlink messages are sent to a specific address, and they may contain file attachments such as pictures, weather maps, spreadsheets, ICS forms etc. E-mails can be sent between Winlink stations and normal SMTP/ POP3 e-mail servers such as gmail.com. The ability of Winlink to transfer messages between system with different capabilities (VHF/ UHF, HF, and standard e-mail) greatly increases interoperability in an emergency system.

EOC Notifications and Reports

If time allows to send proper notification and reports to the EM Team before and/ or during the impact of a flooding incident the following will be sent via email and/or WebEOC® (See Attachment 3: Samples of EOC Notifications and Reports):

Situational Awareness Reports: These reports are sent to the EM Team, County Administration, SLC Directors, Public Safety – DEM staff, and E911 Supervisors and Managers when a National Weather Service advisory has been promulgated to impacted areas throughout the County.

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These reports are sent many hours in advance of a weather event that may bring flooding conditions.

Flash Reports: These reports are sent to the EM Team, County Administration, SLC Directors, Public Safety – DEM staff, and E911 Supervisors and Managers when a National Weather Service advisory has been promulgated to impacted areas throughout the County that warrants immediate action, such as the implementation of protective measure, including but not limited to the activation of the EOC.

Situation Reports (SitReps): These reports may be provided after the impact of the incident or during an EOC activation, whether full (Level 1) or partial (Level 2). They provide situation summary and actions taken to reduce or eliminate the impact of the flooding incident. SitReps are only distributed to the EM Team.

Incident Action Plan (IAP): These short plans give concise objectives to the EM Team to achieve for the next Operational Period of the EOC activation. They are used during Level 1 (Full) or Level 2 (Partial) activations. IAPs are only distributed to the EM Team.

TRIGGER POINTS

If a flooding event advances beyond normal response capability and meets any of the following trigger points, then the IC, or designee, shall notify the E911 Center, On Call Officer, the Emergency Operations Manager, and/ or the Public Safety Director, initiating an escalation of the flood event response and County support, which may include the activation of the EOC:

- Local resource capabilities may be exhausted and a request for mutual aid support is anticipated.
- A sizeable evacuation is required.
- Damage caused by the flood warrants a comprehensive damage assessment which may reach thresholds for a Small Business Administration (SBA) or Presidentially Declared disaster.
- Expansion of command and control is required beyond the capabilities of the impacted local jurisdiction(s) or agencies responding to the incident to coordinate multiple responding agencies, impacted jurisdictions, and various levels of municipal, county, and regional response protocols.
- A legal/statutory threshold has been reached that requires notification of outside agencies.
- A declaration of a state of emergency (local, state or federal) has been invoked.

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When the flooding event reaches these trigger points the Public Safety Director, Assistant Public Safety Director, or Command Staff with direction from the County Administrator at the EOC may decide to move to a Level 2 (Partial Activation) or a Level 1 (Full Activation) of the EOC as described in the CEMP.

COMMAND AND COORDINATION

Command and coordination will be accomplished in accordance with the St. Lucie County CEMP, Section Coordinating Procedures, SOGs, and existing structures and other requirements. Command and coordination will first be implemented on scene under the authority of the IC who will make tactical decisions to respond to threats caused by the flood to the public. Expansion of command and control will depend on the severity, size, and complexity of flooding incident encountered.

In accordance with emergency management industry practice the On Call Officer may respond to the affected area to assess the situation, and as deemed appropriate, will participate in discussions with the Command Staff at the scene to ensure that county support is provided. The On Call Officer shall be the DEM's initial and primary point of contact in terms of initial and on-going, on-scene coordination of information and resources until the EOC activated, being relived or upon incident termination. The On Call Officer will communicate the nature, scope, and details of an incident or event to the Public Safety Director and is expected to carry out all reasonable actions necessary to mitigate the impact of the flooding incident(s). During a Level 1 (Full Activation) or Level 2 (Partial Activation) of the EOC, the On Call Officer's role may be transferred to the Planning Section's Situation Unit as outlined in the CEMP and applicable section coordinating procedures.

DEM staff responding to the EOC may be requested to administer the following or additional actions:

- Identification and delegation of protective measures.
- Deployment and tracking of resources.
- Development and dissemination of planning products.
- Multi-Agency Coordination
- Evacuation or Temporary Closure of a populated geographical area

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RESPONSE FRAMEWORK

General

Depending on the size, complexity, and duration of a flooding incident, cooperation and collaboration amongst local, regional, state, and federal agencies may be called upon to eliminate or reduce the threat of the hazard to the affected population, properties, and the environment. Flood related incidents, like many other hazards, are first mitigated by local rescue teams. Law enforcement, the Fire District and public works agencies are typically the first ones to provide incident management at the location of affected areas

County agencies are encouraged to use the National Incident Management System (NIMS) as the standard for incident management which is also incorporated in the CEMP. The NIMS concept establishes ICS as the standard organizational structure for incident management. The ICS incorporates a hierarchical, unified command structure which organizes senior managers and key employees into specifically focused groups to implement specific tasks. ICS is normally structured to facilitate activities in five major functional areas: command, operations, planning, logistics, and finance/administration. The ICS structure develops in a top-down, modular fashion that is based on the size and complexity of the incident. In the event that a flooding emergency calls for county assistance and resource allocation, the trigger point components delineated in this FHSP and the "Flood Incident Time Delineation Checklist" (See Attachment 1) will be the reference for emergency personnel to conduct time triggered response procedures.

A larger scale flooding emergency will typically require additional resources that exceed the capabilities of county and municipal agencies. Such an emergency would require a collaborative effort in resource allocation from regional and state agencies. Agency partners typically activate a State Mutual Aid Agreement (SMAA) to facilitate the provision of necessary resources and complex incident management such as comprehensive resource management, air operations, advanced multi-agency planning and public information. Consequence management will be needed and span multiple operational periods. The CEMP will be the primary response guidance document for disaster response operations caused by inundations. This FHSP will also be activated to provide guidance as to the implementation of protective, response, and short term recovery actions. Depending on the level of support provided to rescue teams (e.g., incident management teams), the EOC will be activated either at Level 2 (Partial Activation) or Level 1 (Full Activation). The State EOC will be contacted and informed periodically as incident management is conducted. Resource requests to the State EOC will be handled by the EOC.

The following charts provide a brief overview of response resources with a description of each provided. Resource requests will be entered into WebEOC® and processed based on priority and

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availability, if the resource is not available locally the request will be sent to the State. If the State cannot fulfill the request, it will be passed to neighboring states and the federal government until the request is filled. Provide an accurate description of the resource being requested as well as a detailed justification of why it is needed. For example, requesting a generator would not be sufficient and would slow the process, as generators can be ordered to power anything from a single room to an entire hospital.

Table 4

Local and Regional Response

Agency	**Resource**	**Description**	**Resource Typing Library Tool**
SLC Fire District and Regional Domestic Security Task Force (RDSTF)	Regional Hazardous Materials Team Swift water Rescue Teams	The Swiftwater/Flood Search and Rescue (SAR) Team Conducts search, rescue, and recovery for humans and animals in swiftwater, swiftwater/flood, stillwater, and stillwater/flood environments.	*Request through Fire District's dispatch if the EOC is not activated. WebEOC® entry for resource request is made if the EOC is activated.* ***Swiftwater/Flood Search and Rescue Team***
SLC Fire District and Regional Domestic Security Task Force (RDSTF)	Air Boats	An airboat, also known as a fan boat, is a flat-bottomed watercraft propelled by an aircraft-type propeller and powered by either an aircraft or automotive engine.	NA
SLC Sheriff's Office and Regional Domestic Security Task	Air Support – Helicopters – Search and Rescue	The Search and Rescue (SAR) Aircraft – Helicopter/Rotary Wing resource is equipped to conduct	SAR Helicopter

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Agency	Resource	Description	Resource Typing Library Tool
Force (RDSTF)		helicopter-based search, rescue, and recovery operations.	
SLC Community Services and St. Lucie Schools	Buses	A a large motor vehicle carrying passengers by road.	Buses
SLC Planning Department Services, Property Appraiser, and Public Works	Damage Assessment Teams (DATs)	Assesses the magnitude of damage an incident has caused to public infrastructure such as facilities, roadways, piping systems, and bridges	DAT
SLC Planning Department Services, SLSO, and Property Appraiser	Drones	An Unmanned Aircraft System (UAS) Team is an aircraft operations team without a human pilot onboard, also known as a drone. The pilot on the ground has a Federal Air Administration (FAA) or military license to collect data for improved situational awareness through remote sensing. The UAS Team operates under the Air Operations Branch, as established by the requestor.	UAS Team

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Agency	Resource	Description	Resource Typing Library Tool
St. Lucie School Schools, American Red Cross, or SLC Parks and Recreation for use of the Fenn Center.	Evacuation Shelter	An Evacuation Shelter serves the general population in an existing facility (or facilities), such as a school, community center, convention center, or church that the Authority Having Jurisdiction (AHJ) has temporarily converted for use as a shelter for disaster survivors.	Evacuation Shelter
Department of Health and Medical Examiner	Fatality Management	The Fatality Management (FM) Disaster Portable Morgue Unit (DPMU) is a mobile facility consisting of personnel, equipment, and supplies to support specially trained teams that respond to a mass fatality incident. The Medical Examiner/Coroner (ME/C), under the designated medico-legal authority, assists the local jurisdiction in identifying human remains through forensic dental pathology, forensic anthropology, latent	Fatality Management Disaster Portable Morgue Unit

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Agency	Resource	Description	Resource Typing Library Tool
		print examination, and Deoxyribonucleic acid DNA testing. The DPMU also prepares and ensures the disposition of human remains.	
SLC Fire District	Fire Fighting Boats	A fireboat is a specialized watercraft with pumps and nozzles designed for fighting shoreline and shipboard fires.	Fire Boat
SLC Cooperative IFAS Agricultural Extension and FL Department of Agriculture and Consumer Services	Livestock Rescue	The Animal Search and Rescue Team locates, stabilizes, extricates, and evacuates animals in a disaster environment	Animal Search and Rescue Team
SLC Community Services Department	Long Term Shelter	A Long-Term Shelter is in a safe and accessible location to provide sustained support services to disaster survivors for more than 2 weeks. The Authority Having Jurisdiction (AHJ) establishes shelters when housing stock is not available or is	Long Term Shelter

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Agency	Resource	Description	Resource Typing Library Tool
		insufficient for intervals longer than two weeks and up to several months. Long-Term Shelters are existing facilities temporarily converted by the AHJ to provide safe, accessible, and secure housing. Soft-sided or temporary structures may be available when existing facilities are unavailable or insufficient, depending on the availability of open space and support services.	
SLC Fire District	Swamp Buggy	Aan amphibious vehicle with wheels or a continuous track and an elevated body, used for navigating marshes or swamps.	NA
SLC Fire District and SLSO	Water Craft – Inflatables	An inflatable boat is a lightweight boat constructed with its sides and bow made of flexible tubes containing pressurized gas.	NA

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Agency	Resource	Description	Resource Typing Library Tool
SLC Public Works Department and ESF 3 – Public Works	Water Pumps, De Watering	Cconstruction dewatering, unwatering, or water control are common terms used to describe removal or draining groundwater or surface water	Water pump

ROLES AND RESPONSIBILITIES

The following are the roles and responsibilities of key Lead and Support Agencies relevant to floods.

Lead Agencies

Local: St. Lucie County Division of Emergency Management (DEM)

- Supports Incident Management mission by providing leadership and expertise to implement critical aspects of the flood response and recovery process.
- Maintains command and control of incident operations.
- Supports application of County plans, including the CEMP, Local Mitigation Strategy (LMS), Recovery Plan, and the Post Disaster Redevelopment Plan (PDRP).
- Multi-agency coordination, communications, resource allocation/tracking, mission tracking, information collection, analysis, dissemination.
- Command Staff decision formulation and implementation.

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State: Florida Division of Emergency Management (FDEM).

- Primary link with local government, represents Governor, works with Federal Coordinating Officer to formulate state requirements, helps set priorities for Federal resources.

- State Emergency Operations Center (SEOC) coordinates off-scene activities supported by the state.

- Governor activation of National Guard for logistics, search and rescue, decontamination, etc. as needed.

- Governor requests Declaration and Federal Assistance as required

Federal: Federal Emergency Management Agency (FEMA)

- Provides direct access to designated senior officials and assistance programs in every Federal agency.

- Coordinates Federal response operations/assistance supports community response and recovery.

- Facilitates Federal funding streams and solutions to assistance gaps.

Support Agencies

National Weather Service (NWS)/National Oceanic and Atmospheric Administration (NOAA)/National Hurricane Center (NHC)

- Provides weather, hydrologic, and climate forecasts and warnings.

- Keeps emergency managers informed on real time developments and forecasts via situational reports, conferences calls, webinars, etc.

- Issues flood watches and warnings.

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Water Control Districts (WCD)

- Coordinates water management information and actions with the Emergency Operations Center (EOC), and other stakeholder groups.
- Coordination between WCD's to move excess water to control flooding.
- Distributes flood alerts.
- Coordinates multi-agency drought/flood control decisions and actions.

American Red Cross (ARC)

- Provides humanitarian disaster relief to deal with immediate emergency needs.
- Provides shelter, food, health and emotional service to address basic needs
- Feeds emergency workers, handles inquiries from concerned family members, and helps victims access available resources.

St. Lucie County Fire District (SLFD)

- Search and rescue
- Uses specialized equipment and skills for access to areas and for rescue operations.
- Assists with rapid impact assessment.

St. Lucie County Sheriff's Office (SLSO)

- Provides security and maintains law and order in disaster area as needed.
- Staffs checkpoints to prevent unauthorized entry; traffic control as needed.
- Provide assistance to municipal police departments through appropriate channels.

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Municipalities

- Dispatch representatives to St. Lucie County EOC to coordinate between jurisdictions during incident
- Implement Incident Command system.
- Coordinate and support multi-jurisdictional response and recovery.

Florida Department of Health (FDOH) – St. Lucie County

- Evaluates, recommends, and implements public health strategies.
- Inventories availability of health resources and services.
- Optimizes use available health resources based on needs; requisitions resources as required.
- Monitors conditions for possible disease outbreaks.

St. Lucie County Environmental Resources Department (ERD)

- Assesses post disaster environmental needs.
- Identifies potential ground water pollution situations.
- Assesses coastal erosion.
- Assesses ecological impacts.
- Provides specialized vehicles and equipment as needed.

SLC Utilities, Fort Pierce Utilities Authority, and Port St. Lucie Utilities

- Conduct utilities damage assessments.
- Tests water quality; manages water/wastewater problems.
- Recommends water restrictions.

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St. Lucie County Planning and Development Services Department

- Leads damage assessment efforts.
- Conducts habitability assessments.
- Administers rebuilding decisions.

Solid Waste Authority

- Coordinates debris removal and management.
- Disposes of debris.

Mosquito Control

- Implement vector control procedures post flood to prevent the spread of mosquito born disease.

EOC Levels of Activation

The Public Safety Department and DEM operate the EOC under three (3) levels of activation as described below.

Table 5

SLC EOC Levels of Activation and Operational Conditions

LEVEL 3 – MONITORING
Staff in the Public Safety Department including DEM work daily on this level and possibly for during incidents or special events that have the potential for escalation; but can be resolved using local resources. The E911 Center, DEM, and/or other emergency management personnel are actively monitoring the incidents/events throughout the County that are mitigated by first responders. Notifications are made to appropriate Division and County personnel, EM Team, and support organizations that may be required to take action as part of their normal responsibilities.

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LEVEL 2 – PARTIAL ACTIVATION

Selected Emergency Operations Center (EOC) staff is notified. The EOC is staffed by the Division of Emergency Management (DEM) personnel, appropriate Sections, their staff, and outside agencies as required to meet the operational needs of the incident. Members of the EM Team staff the EOC. Usually, there are more than one (1) operational period and activation can span for days.

LEVEL 1 – FULL ACTIVATION

All lead and support agencies are notified. The Emergency Operations Center (EOC) is staffed by the Division of Emergency Management (DEM) personnel, the Command Staff, all Sections, ESFs, and Units, as well as State and Federal Representatives. Usually, there are multiple operational periods and activation can span for days, weeks, and possibly months.

PROTECTIVE ACTIONS

As identified under the "Hazard Identification" section of this plan the two most frequent type of flooding St. Lucie County experiences are tidal surge flooding and riverine/estuarine flooding. Tidal surge flooding in our area is most frequently caused by tropical cyclones, less frequently by winter storms occurring off our coast frequently known as "Northeasters" and King Tides which have been exacerbated by Sea Level Rise in recent decades (USGRP, 2018). Riverine and Estuarine flooding can be caused by tidal surge as our rivers and estuaries flow to the ocean or by areal flooding resulting in an overflow of rivers and estuaries.

Should a flood event impact our community the following protective measures may be put into place by SLC DEM:

Evacuation

Evacuation requires the movement of people to safer locations (e.g., areas away from potential inundations) which is likely needed in the event that continued flood advisories persist. There are 13,832 residences located in flood hazard areas in St. Lucie County. These residents or residents outside of flood hazard areas may be evacuated to areas not impacted by flooding in the county. In the event of an evacuation a host shelter may be opened outside of the hazard risk zone.

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An evacuation decision should include considerations of the type of severe flooding threat being posed to the population, geographic impact area, transportation requirements, need for shelters, traffic control, timing available to move people to safety, and the potential of impacting other jurisdictions or regions with the movement of people. The on-scene IC may decide to evacuate at-risk populations, threatened facilities, large public gathering forums such as stadiums and concert venues, schools, and other vulnerable locations. The American Red Cross (ARC) is typically involved in evacuations due to the fact that ARC personnel are involved in the temporary provision for shelter, food, and clothing which are often necessary to provide to disaster survivors.

Widespread evacuations throughout SLC require DEM's coordination. All policies effecting the direction and control of the evacuation remain the responsibility of the SLC BOCC and are administered by the EOC through the Public Safety Department. The Department Director has the authority to order a Local State of Emergency which may ease a countywide evacuation and/or a shelter-in-place order applicable to all jurisdictions. Implementation of these protective actions, however, requires the input of the County Administrator in cooperation and coordination with all available EOC partners, such as municipalities, state agencies, and the private sector.

Cordoning

The area impacted may be restricted to incoming traffic. Law Enforcement would conduct this operation immediately.

Boil Water Notices

If an area water treatment facilities or piping is affected by contaminated flood waters, boil water orders may be distributed to the affected areas.

Shelter-In-Place

Due to the imminent and quick impact of flash floods brought on by severe thunderstorms or tropical cyclones (e.g., tropical depression, tropical storm, and hurricanes), the on-scene IC may advise vulnerable populations to remain within their homes or a structure and avoid outdoor movement. The EOC may assist the on-scene IC in providing public information regarding additional measures which can be taken to further protect occupants within structures from rising waters, strong winds, and large hail, that typically are experienced in a severe weather situation. This action is typically accomplished by sending out pre-scripted messages from Alert St. Lucie to the affected area or areas prone to flooding, such as Special Flood Hazard Areas (SFHA), repetitive loss properties areas, storm surge areas, and riverine flood prone areas.

An Executive Order, which restricts the movement of at-risk populations, may be voluntary or involuntary and will be enforced by law enforcement. Through a Shelter-In-Place Order, public

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officials anticipate that structures such as homes, businesses, or schools can provide protection from flood hazards (e.g., flash floods). If the Shelter-In-Place Order remains in effect for long periods of time, the logistical support of isolated populations may become a significant challenge.

Shelter Coordination

A variety of shelter options are available to accommodate disaster survivors of flooding incidents needing temporary shelter. Shelter options are implemented depending on the combination type of flood conditions and size, scope, and duration of the flood situation impacting the general population. Shelters that are available and may be opened are as follow:

- Hurricane Shelters
- Host Shelters (Non-Risk, All-Hazards)
- Special Needs Shelter
- Pet Friendly Shelter
- Shelters for Families of Emergency Workers

Hurricane Shelters are schools coordinated by the St. Lucie School District. These consist of Primary and Secondary shelters. The ARC supports the operations of these shelters by staffing four (4) which are a part of the Primary shelter list. School principals serve as shelter managers.

Host Shelters are those where NonProfit and Faith Based organizations in coordination with the ARC operate to assist the general public in any other threat other than a landfalling cyclone (i.e., tropical storms and hurricanes). These may be opened in addition to Hurricane Shelters should the need arise. The County may contribute to the opening of a facility to serve as a Host Shelter, depending on the availability of the resource.

St. Lucie County operates a Special Needs Shelter Program to provide shelter for citizens with medical conditions and/or require continuous power supply for survival. The Special Needs Shelter is located at the Havert L. Fenn Center, a County facility, and is staffed by primarily by Florida Department of Health – St. Lucie professionals. The building is wind resistant, not located in a flood-risk area, and is equipped with back-up generators.

To be eligible for the Special Needs Shelter Program, applicants must pre-register and meet the following established criteria:

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- Persons who are non-ambulatory and/or have a chronic, stable condition, are not suitable for regular shelter placement, and do not require hospitalization.

- Persons with minor health/medical conditions, psychological illness and/or cognitive disorders (developmental disabilities, dementia, etc.) that require professional observation, assessment and maintenance.

- Persons with the need for medication and/or vital sign monitoring and are unable to do so without professional observation.

- Persons who are dependent on electricity for medical devices, such as oxygen dependence.

The application for determination of eligibility of access to the Special Needs Shelter Program is approved by the Florida Department of Health (FDOH) in St. Lucie County. Transportation assistance may be provided by transportation services from Community Services Department until is it no longer safe to operate, due to unsafe roads and conditions. Special Needs Shelter occupants will not be released to return home until the area from which they came has been determined safe for their return. Special Needs Shelter occupants whose homes have been destroyed or rendered unsafe for occupancy will be provided assistance by the ARC, the St. Lucie County Division of Human Services, and/or the Florida Department of Children and Families (DCF). Activation of the Special Needs Shelter Program is authorized by the EOC and implemented by ESF 8 Health and Medical. The Public Safety Department maintains a list of all registrants assigned to the Special Needs Shelter Program in electronic and hard copy format. These registrants are notified through Alert St. Lucie of shelter opening, transportation services, and other important information.

A pet friendly shelter for residents living in evacuation zones, mobile homes, manufactured homes and housing of known substandard construction is coordinated by the Public Safety Department, Animal Safety, Service and Protection (ASSP) Division. Pre-registration is required for the hurricane pet-friendly shelter. The registration form for pre-registering animals is available on the ASSP website: https://www.stlucieco.gov/departments-services/a-z/public-safety/hazardous-weather/pet-shelter-registration.

Shelter for Families of Emergency Workers: St. Lucie County has established a shelter for family members of County employees who reside in evacuation zones and are required to work during the disaster. The shelter is centrally located in the County to allow families of County personnel to stay during the flood emergency and for County personnel to visit the shelter without driving long distances.

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Curfew

As a result of substantiated threats or otherwise dangerous conditions resulting from flooding conditions, SLC, in close coordination with the municipal jurisdictions, may issue Executive Orders for curfews to ensure public safety during a state of emergency. Curfew Orders restrict the travel and movement of persons within identified geographic areas. The purpose of Curfew Orders is to protect public safety and maintain order.

Curfew Authority: The County Administrator, in collaboration with the St. Lucie county Sheriff and municipalities within SLC, may establish a countywide curfew or a specific area curfew, to restrict travel and movement within the County.

All of the aforementioned protective actions can be implemented in advance as these types of floods can be accurately predicted by our partners at the National Weather Service (NWS) hours if not days in advance. Tsunami Flooding to our area although unlikely would be a little to no-notice yet high impact type incident (University of Miami, 2016). Due to the potential loss of life and property caused by a no-notice flood incident. A Tsunami Response Plan has been written to mitigate the loss of life and property in the unlikely event one should occur.

Reentry

Re-entry into an evacuated area after a large-scale flooding incident will be coordinated between County and municipal officials in order to ensure that it is done safely and orderly. Re-entry activities will be coordinated by ESF #16 – Law Enforcement. Each municipality will be responsible for its jurisdiction and will maintain control over its support resources, such as police and public works services. St. Lucie County Fire District will assist the municipalities with firefighting and EMS. Decisions to allow re-entry to a municipality will rest with municipal officials and the County IC at the EOC. The County will provide assistance when requested based upon the availability of resources.

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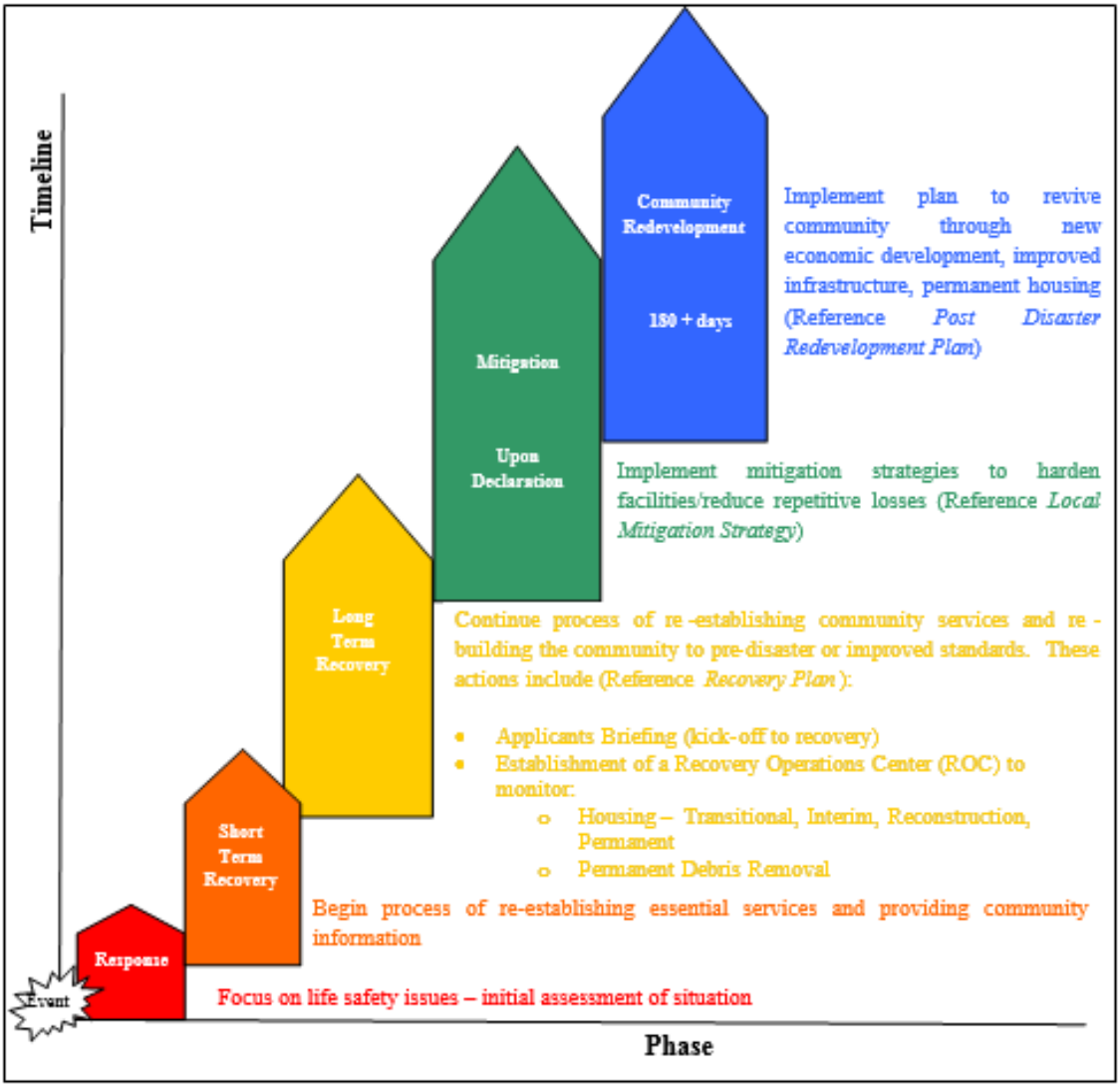
RECOVERY

The priorities and objectives for the response and recovery of the event will shift over time. It is important for the St. Lucie County EOC and its partnering agencies to not only be monitoring the current activities but also to be anticipating the next steps. Figure 4 shows the shifting of priorities over time from immediate response to long term recovery. Actions occurring in the long term recovery period and beyond will often be coordinated and managed by existing housing and urban development planning agencies after the EOC has demobilized.

Figure 4

Actions Occurring in Long Term Recovery and Beyond



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SHORT TERM RECOVERY ISSUES

Recovery operations in the aftermath of a flood event to affected areas in St. Lucie County (SLC) will occur by implementing the recovery actions described in this FHSP, the CEMP, the Recovery Plan, and Post Disaster Redevelopment Plan (PDRP). Recovery efforts address short to long term operations such as debris removal, property valuation, planning and development, and infrastructure repair. During recovery operations and as operations transition from an emergent need to a more deliberate process of service delivery, the need to fully staff the EOC should likely diminish.

A damage assessment process and evaluation for the need of resource allocation would likely determine the need for either a short term recovery or long-term recovery process. The short and long term recovery processes delineated for Flood Events (referenced above) will be implemented. (Reference: *Recovery Plan*)

LONG TERM RECOVERY ISSUES

Based on the severity of the flooding event St. Lucie County may choose to activate the Post Disaster Redevelopment Plan (PDRP).

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MITIGATION

"Studies have shown, "for every $1.00 invested in mitigation saves taxpayers $4.00 on recovery", (Former FEMA Director R. David Paulson). Due to the expense and difficulty a community incurs in responding to and recovering from a flooding event, time and money spent on mitigating flooding's impact in St. Lucie County is a wise investment of resources. The County currently is an active member of the National Flood Insurance Program's (NFIP) Community Rating System (CRS). CRS is a voluntary incentive program which recognizes communities for implementing flood management practices rewarding the community's citizens with reduced flood insurance premiums (Federal Emergency Management Agency, 2017). This program offers guidance to aid the local government and its citizens to mitigate from the impacts of flooding events.

Common funding sources the federal and state government offer to aid in flood mitigation are,

- Hazard Mitigation Grant Program (HMGP) – Typically available after a federal disaster declaration and can be used for projects such as wind proofing and facility hardening and flood control measures.

- Pre-Disaster Mitigation Program (PDM) – This program was developed to assist with implementing cost-effective hazard mitigation activities prior to disaster such as structural retrofitting and protective measures for utilities and infrastructure, as well as storm water management projects.

- Residential Construction Mitigation Program (RCMP) – Offered through the state of Florida in order to support public outreach, wind research, mobile home tie-downs and roof strapping programs, as well as improving wind resistance to homes through various hardening projects.

Other Federal Sources to pursue Federal Mitigation Funding from include:

- Federal Emergency Management Agency (FEMA): Public Assistance and Individual Assistance grants – these programs go into effect after a Presidential Disaster Declaration is issued

- Department of Housing and Urban Development (HUD): Community Development Block Grant Disaster Recovery Program- HUD provides flexible grants to help cities, counties, and States recover from presidentially declared disasters, especially in low-income areas, subject to availability of supplemental appropriations.

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- Federal Transit Administration (FTA) Emergency Relief Programs - enables FTA to provide assistance to public transit operators in the aftermath of an emergency or major disaster.

- Federal Highway Administration (FHWA) Emergency Relief Programs - Congress authorized in Title 23, United States Code, Section 125, a special program from the Highway Trust Fund for the repair or reconstruction of Federal-aid highways and roads on Federal lands which have suffered serious damage as a result of (1) natural disasters or (2) catastrophic failures from an external cause.

- Department of Agriculture's Disaster Protection and Recovery: Project funds address erosion related watershed impairments by supporting activities such as removing debris from stream channels, road culverts, and bridges; reshaping and protecting eroded banks; correcting damaged drainage facilities; repairing levees and structures; and reseeding damaged areas.

(Long, 2017)

Whether projects are implemented in many instances is dependent on whether or not funding is available, match requirements are met or whether grant applications were awarded. Programs are dynamic (funded some years, cutback other years, or completely eliminated). The County and its municipalities maintain contact with their FDEM liaison and the FDEM Hazard Mitigation Grant Program Coordinator and the Treasure Coast Regional Planning Council (TCRPC) for available grant opportunities. In addition, the Region IV FEMA - PDM Senior Coordinator for Florida is an excellent resource as well. The county will continue to pursue all available funding sources in order to help protect the lives and properties of citizens of the county. (Reference: *Local Mitigation Strategy*)

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TRAINING AND EXERCISE

DEM collaboratively works with the Florida Division of Emergency Management (FDEM) in conducting an annual statewide hurricane exercise before the start of the Atlantic Hurricane Season. These exercises are normally conducted in the form of a Homeland Security Exercise and Evaluation Program (HSEEP) functional exercise. DEM typically exercises the county's core capabilities and that of partnering agencies. EOC sections, branches and units conduct internal training for staff on WebEOC® use and other area specific roles and responsibilities to carry out during an EOC activation. Although there are no hurricane-specific response training programs, staff participates in all-hazards training, which are typically carried out during an activation of the EOC in response to a landfall of tropical cyclones (e.g., depression, tropical storms, and hurricanes). (Reference: *Multi-Year Training and Exercise Plan*).

RESPONSIBILITIES

All ESFs, Units, and agencies are responsible for training and exercising their internal staff members, as applicable, based on DEM, state, and federal recommendations. All agencies are also responsible for training and exercising their internal staffs although DEM will coordinate countywide exercises. Please refer to the St. Lucie County Multi Year Training and Exercise Plan for specific information.

OUTREACH AND EDUCATION

DEM provides the following outreach materials and education activities:

- St. Lucie County has developed a Program for Public Information under the CRS, NFIP which provides flood mitigation and safety information to the St. Lucie County Community.
- DEM information booth at the County Fair.
- Public presentations to groups, home owner associations, businesses, and other civic groups upon request.
- A media briefing is provided annually to all media partners.
- Social media sites such as Facebook and Twitter are used for preparedness information and hazard updates.

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ACRONYMS

AHJ	Authority Having Jurisdiction
ARC	American Red Cross
BCC	Board of County Commissioners
CEMP	St. Lucie County Comprehensive Emergency Management Plan
CPG 101	Comprehensive Planning Guide 101
CRS	Community Rating System
DAT	Damage Assessment Team
DEM	St. Lucie County Division of Emergency Management
DNA	Deoxyribonucleic acid
DPMU	Disaster Portable Morgue Unit
EAS	Emergency Alert System
EBS	Emergency Broadcast System
EM	Emergency Management
EMAC	Emergency Mutual Aid Compact
EOC	Emergency Operations Center
ERD	St. Lucie County Environmental Resources Department
ESATCOMM	Emergency Satellite Communications
FAA	Federal Air Administration
FDEM	Florida Division of Emergency Management
FDOH	Florida Department of Health
FEMA	Federal Emergency Management Agency
FHSP	Flood Hazard Specific Plan
FIRM	Flood Insurance Rate Map

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FM	Fatality Management
FTA	Federal Transit Administration
FTWA	Federal Highway Administration
HMGP	Hazard Mitigation Grant Program
HSEEP	Homeland Security Exercise and Evaluation Program
HUD	US Department of Housing
IC	Incident Commander
ICS	Incident Command System
IPAWS	Integrated Public Alert and Warning System
LMS	St. Lucie County Local Mitigation Strategy
ME/C	Medical Examiner/Coroner
NFIP	National Flood Insurance Program
NHC	National Hurricane Center
NIMS	National Incident Management System
NOAA	National Oceanic and Atmospheric Administration
NWS	National Weather Service
OCO	On Call Officer
PDM	Pre-Disaster Mitigation Program
PDRP	Post Disaster Redevelopment Plan
PIL	Public Information Line
PIO	Public Information Officer
POP3	Post Office Protocol version 3
PSAP	Public Safety Answering Point
RCMP	Residential Construction Mitigation Program

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SCEMP	State Comprehensive Emergency Management Plan
SFHA	Special Flood Hazard Area
SitRep	Situation Report
SLC	St. Lucie County
SLFD	St. Lucie County Fire District
SLSO	St. Lucie County Sheriff's Office
SMAA	State Mutual Aid Agreement
SMTP	Simple Mail Transfer Protocol
SOG	Standard Operating Guideline
SOP	Standard Operating Procedure
SWO	State Watch Office
TCRPC	Treasure Coast Regional Planning Council
TDD	Telecommunications Device for the Deaf
UAS	Unmanned Aircraft System
UHF	Ultra High Frequency
USACE	U.S. Army Corps of Engineers
USGRP	United States Global Change Research Group
VHF	Very High Frequency
WCD	Water Control Districts

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ATTACHMENT 1: FLOODING INCIDENT TIME DELINEATION CHECKLIST

*In the status column, indicate **C** for completed tasks or **N/A** for non-applicable tasks.*

Mitigation Action

Status	Mitigation Action	Responsibility
	Coordinate and plan at least one exercise (table-top or practical) on a bi-annual basis	Planning
	Coordinate with local planning boards and inspections departments regarding building codes and code enforcement to minimize damage	Planning
	Conduct hazard analysis of vital facilities and the impact of severe weather on one or more of the facilities	Planning
	Procure or produce information pamphlets for distribution to the public as applicable	PIO
	Determine the availability of shelters and obtain shelter agreements with the American Red Cross	Logistics

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Pre-Incident

Status	**Pre-Incident** (if advance warning of potential threat)	**Responsibility**
	Ensure the public is well informed regarding severe weather watches and warnings	PIO / Public Information Unit (ESF 14)
	Coordinate with the National Weather Service for timely watches and warnings affecting local jurisdictions	Planning
	Coordinate with local broadcast media to ensure timely and accurate Emergency Alert System activation.	PIO / Public Information Unit (ESF 14)
	Coordinate with schools, daycare centers, hospitals etc. concerning the proper precautions and emergency actions prior to severe weather	Operations Section
	Coordinate with the Red Cross, public agencies, and/or the Salvation Army for shelter operations	Operations
	Coordinate with electric utilities to share information concerning power outages	Operations

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Status	**Pre-Incident** (if advance warning of potential threat)	**Responsibility**
	Issue alerts and warnings based on procedure, as warranted	PIO/Planning
	Establish communications with the National Weather Service	Planning/ Operations

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Incident Occurrence

Status	**Incident Occurrence** (includes no-notice events)	Responsibility
0 to 4 hours		
	Identify immediate action or response requirements	Operations
	Immediately carry out those action requirements necessary to preserve life and/or property, including the deployment of	Operations
	Activate the EOC as appropriate	Planning
	Organize or establish the EOC, based on operational procedure	Planning
	Establish Communications with responding agencies	Operations
	Through communications with responding agencies determine as quickly as possible: • Number of Killed or Injured • General Boundaries of the affected area • The general extent of power or other utility disruption • Immediate needs of response forces • If voluntary evacuation of the population has begun • Location of any triage area • Location of any congregate care area established or ad hoc	Operations
	Evaluate the overall county situation.	Planning
	Establish communications with the State Watch Office.	Ops / Planning
	Establish communications with and request a liaison from the state transportation and electric and gas utilities if necessary.	Operations
	Establish ongoing reporting from the response forces, private agencies and utilities.	Planning

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Status	**Incident Occurrence** (includes no-notice events)	**Responsibility**
	Coordinate with the Red Cross (or designated lead agency) the opening of appropriate number of shelters in the appropriate areas, based on shelter procedure.	Logistics
	On order, evacuate affected areas with assistance from response forces. (Coordinate)	EPG
	Conduct first staff briefing as soon as practicable after EOC activation.	Planning
	Provide PIO with updated information.	Planning
	Establish a schedule for briefings.	Planning
	Cause public information to be released, via the public information officer (PIO) as soon as practical.	PIO/ PIO / Public Information Unit
	Establish 24/7 duty roster for the EOC and/or command post.	Planning
	Activate financial tracking plan coordinated by the Finance	Admin/Finance
4 to 8 hours		
	Activate or establish rumor control through the public information officer (PIO).	Planning
	Provide response forces with updated information, as appropriate.	Operations
	Develop and post any required maps or diagrams.	Operations
	Review and follow resource procurement procedure.	Logistics
	Activate damage assessment and follow damage assessment procedure.	Planning
8 to 12 hours		
	Brief city/county/agency/utility executives.	IC/PIO/Liaison
	Inventory additional resources that may be used or called upon for use.	Logistics

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Status	**Incident Occurrence** (includes no-notice events)	Responsibility
	Obtain information from utilities regarding outages, length of repair, safety, etc.	Operations
	Develop or generate reports for the following, as appropriate •FEMA •State •Local elected officials •County/City/Town Managers •Others requiring or requesting reports	Planning

Status	**Incident Occurrence** (includes no-notice events)	Responsibility
	12 hours through remainder of operational periods	
	Activate formal resource request procedure and resource tracking.	Logistics
	Coordinate all resource requests being forwarded to the state.	Logistics
	Develop a 12 (or 24) hour incident action plan outlining actions that must be accomplished in the next 12 (or 24) hours.	Planning
	Conduct a "second shift" or relieving shift briefing.	Planning
	Discuss with and present to your relief, the incident action plan for the next 12 hours.	Planning
	Gather damage assessment information (public, housing business) from damage assessment teams.	Operations
	Obtain information from Red Cross regarding number of people sheltered and support necessary for continued operation.	Logistics
	Obtain from Red Cross an estimated duration period for continued shelter operations, if any.	Logistics
	Assess citizen / community needs for individual assistance and/or public assistance.	Operations
	Activate local unmet needs committee if appropriate.	Operations
	Gather financial information from the Finance Officer.	Admin / Finance

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Status	**Incident Occurrence** (includes no-notice events)	**Responsibility**
	As appropriate gather additional information to include: •Personnel that responded and the time involved in the response •Time sheets or time logs •Supplies used •Contracts issued •Purchase orders issued •Any other expenditures	Admin/Finance or Planning
	Coordinate recovery organizations including federal and state agencies and private or volunteer relief organizations.	Ops/Planning
	Establish donated goods management based on policy and procedure.	Logistics
	If a Presidential declaration of disaster is made, file “Request for Public Assistance" to apply for assistance as soon as possible with the proper state or federal agency.	IC / Planning
	Ensure public officials are made aware of the assistance application process, if applicable.	IC/ County Admin
	Ensure the general public is made aware, through the public information officer, of the assistance application process, if applicable.	PIO/Planning
	Brief elected officials with updated information and disaster recovery progress.	IC / Planning

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Post Incident

Status	Post Incident	Responsibility
	Perform and incident critique as soon as possible with response organizations	Planning
	Review Agency self-performance	Planning
	Review the plan and identify areas for adjustment	Planning
	Adjust the plan as critique indicates	Planning
	Implement hazard mitigation or modify hazard mitigation plan accordingly.	ESF 5 / Planning

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ATTACHMENT 2: SAMPLES OF EOC NOTIFICATIONS AND REPORTS

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Department of Public Safety
Division of Emergency Management
Ron Parrish, MPA, CFO, EFO, Director
www.stlucieco.gov/eoc
772-462-8100
FOR INTERNAL USE ONLY

Emergency Management Situational Awareness Report

Date/Time:	On Call Officer:	EOC Activation Level:
Thursday, May 24, 2018/ 14:40 HRS	Gustavo Vilchez	Level 3 - Normal Operations
Rainfall in St. Lucie County – MTD:	**Rainfall in St. Lucie County – YTD:**	**Inches above/below normal:**
8.06	16.15	2.22

Situation Summary:
The National Hurricane Center (NHC) is reporting that a broad surface low (Invest 90L) will lift slowly northward through late week and likely develop into a tropical or sub-tropical cyclone this weekend across the Gulf of Mexico. This system has an 80% (high) chance of becoming a tropical depression or tropical storm Saturday through Tuesday. Widespread rainfall amounts of 3-6" are expected statewide. Forecasts are showing St. Lucie County to receive 3-4" for the next 7 days. Regardless of development, locally heavy rainfall is expected this weekend across the state.

Five-Day Graphical Tropical Weather Outlook
National Hurricane Center Miami, Florida

Caribbean/Gulf Satellite Image

For more information go to www.hurricanes.gov.

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ST. LUCIE COUNTY FLORIDA	**St. Lucie County** **Emergency Operations Center** **FLASH REPORT # 3**	**DEPARTMENT OF PUBLIC SAFETY** Phone: 772-462-8100 (8 a.m. to 5 p.m.) FAX: 772-462-8484 15305 W. Midway Road Ft. Pierce, FL 34945 www.stlucieco.gov/eoc
1. INCIDENT NAME Sub-Tropical Storm Alberto	2. DATE Sunday, May 27, 2018	3. TIME 0845 HRS
4. EOC ACTIVATION LEVEL 3 - Monitoring	5. LOCAL STATE OF EMERGENCY DECLARED? No	6. PREPARED BY Gustavo Vilchez, Emergency Operations Manager

7. SUMMARY OF CURRENT SITUATION AND ACTIONS

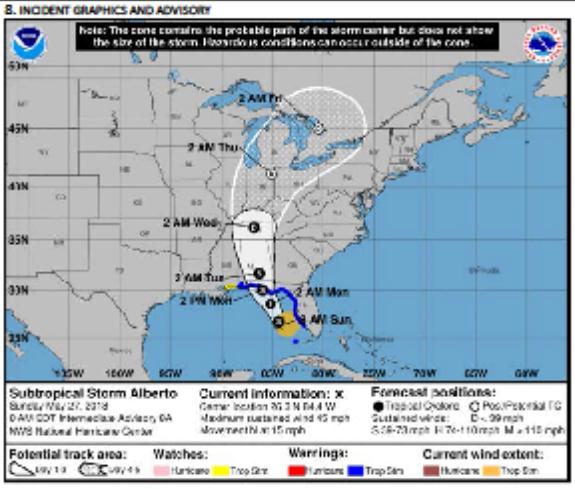
The National Hurricane Center (NHC) is reporting that at 8am EDT Sunday, the center of Sub-Tropical Storm Alberto was located 165 miles southwest of Tampa, Florida, which is also 240 miles south of Apalachicola, Florida. Maximum sustained winds have increased to 45mph and Alberto is moving quickly north around 15 mph. A motion toward the north-northwest is forecast tonight through Monday night. On the forecast track, the center of Alberto will cross the eastern and northern Gulf of Mexico through Monday, and make landfall over the northern Gulf Coast Monday afternoon or Monday evening. Gradual strengthening is forecast until the system reaches the northern Gulf Coast on Monday. Steady weakening is expected after Alberto makes landfall, and it is forecast to become a tropical depression by Tuesday.Flood Watches are in effect for Central and South Florida, as well as the western Panhandle. Widespread rainfall amounts of 3-6" are expected statewide. A State of Emergency issued by Governor Scott. See attachment for full weather forecast.

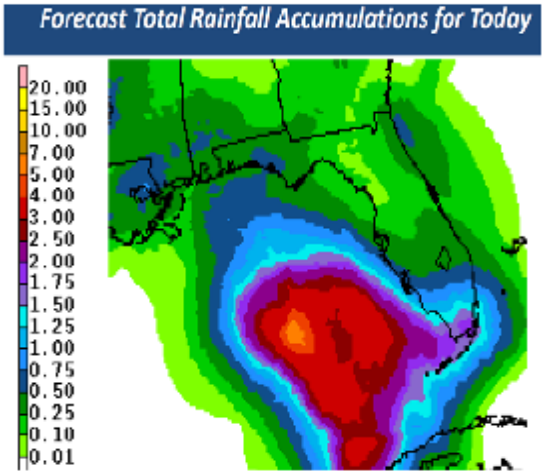
ANTICIPATED ACTIONS

IMPORTANT NOTE: The following table identifies a ***tentative*** schedule based on the current information on hand. These are only estimated dates and times; they have not been finalized and are likely to change based on the receipt of additional information. ***These dates and times are to be used merely as a preliminary planning guideline.*** The information contained in this advisory is to inform public safety agencies to assist them in their planning efforts and is *NOT* intended for general, public, or media distribution. Please do not distribute this information to the general public or the media – the general public should be referred to the Emergency Information Center at 772.462.8100.

EOC ACTIONS	ESTIMATED DATE AND TIME
EOC will remain at Level 3 (Monitoring) – Emergency Operations Manager, Public Safety Director, Section Chiefs, and deparment directors on standby.	Continuing
Alert St. Lucie calls to the public issued	May 27, 2018/ 8:00 AM
State Briefing for PSD/DEM staff only	May 27 - 28, 2018/ 11:15 AM
Temporary Host Shelter on Standby	May 27, 2018 – May 29, 2018
EM Team and Partners to conduct protective measures to their critical facilities, fuel up vehicles, and monitor closely to local news and weather.	May 27 – May 29, 2018

8. INCIDENT GRAPHICS AND ADVISORY





Flood and Flash Flood Watches are in effect for most of the state, including all counties in Central and South Florida, and in the Panhandle and Big Bend. There is a marginal to slight risk (level 2 of 5) of tornadoes for much of the state for today and Monday. Tornado Watches may be issued. For more information go to http://www.nhc.noaa.gov/

9. APPROVED BY Ron Parrish, Public Safety Department	10. TITLE Director	11. DATE/TIME 2018-05-27/ 0845 HRS

Distribution: ESF/EOC Group; PS Alert; BOCC Directors

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ST. LUCIE COUNTY FLORIDA	**Situation Report #5**	Emergency Operations Center Public Safety Department Division of Emergency Management
EVENT/INCIDENT Hurricane IRMA	EOC Activation Level 1 (Full Activation)	Operational Period Sept 11, 2017 800 HRS – Sept 12, 2017 1800 HRS
Date: Sept. 12, 2017	Time: 0800 HRS	

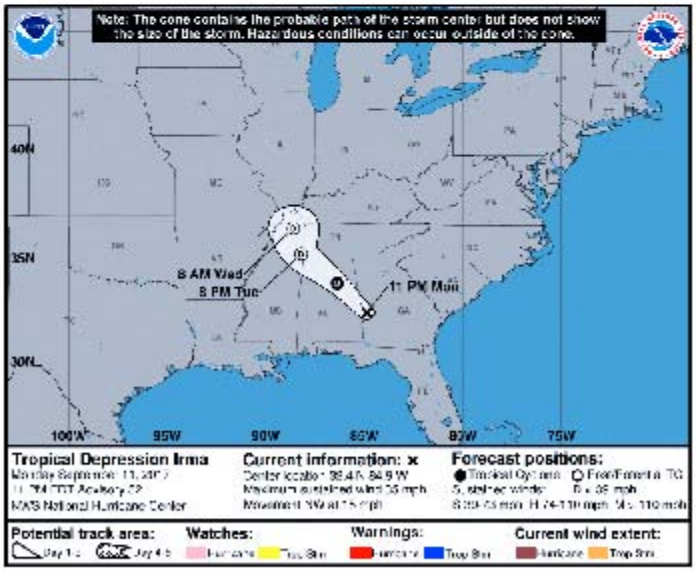
SITUATION SUMMARY

The St. Lucie County EOC continues its activation at Level 1 (Full Activation) through 1800 this evening. The County is in the assessment and recovery phase from the impact of Hurricane Irma. Following the storm's impacts, over 115,000 properties were without power; as of Sept. 11, 2017 at 1800, over 109,000 remained without power. Flooding near tributaries Five Mile and Ten Mile creeks has caused damage to numerous residential, commercial and governmental properties, causing displacement and requiring the opening of a shelter for displaced residents. All general population shelters have been closed. Damage Assessment is in process and will continue through the next operational period.

Weather Summary

WIND AND SEA IMPACT:
Long period ocean swells will produce a high rip current risk at area beaches. Though southwest winds will subside to around 10 knots by this afternoon, moderate to large swells will keep conditions hazardous in the open Atlantic. Nearshore, hazardous conditions will occur near inlets during the outgoing tide this morning.

WEDNESDAY THROUGH MONDAY:
Long period swells will result in a moderate to high rip current risk into late week. Moisture will return from the south mid to late week and bring a chance of afternoon lightning storms, with the greatest chances Thursday into Friday.



Page 1

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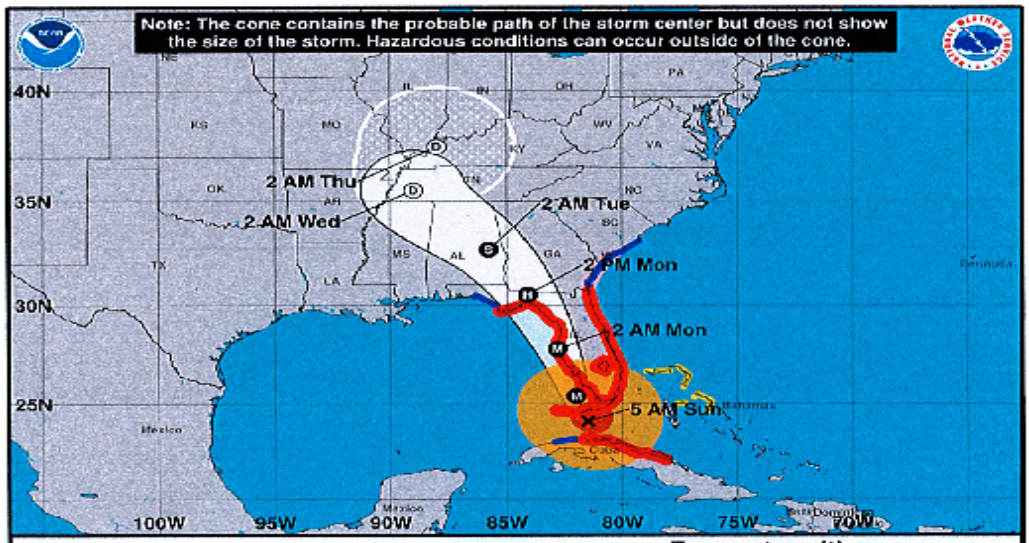
Incident Action Plan

INCIDENT BRIEFING (ICS 201)

1. Incident Name: Hurricane Irma	2. Incident Number: 004	3. Date/Time Initiated: Date: 09-10-2017 Time: 0800 HRS

4. **Map/Sketch** (include sketch, showing the total area of operations, the incident site/area, impacted and threatened areas, overflight results, trajectories, impacted shorelines, or other graphics depicting situational status and resource assignment):



Hurricane Irma
Sunday September 10, 2017
5 AM EDT Advisory 45
NWS National Hurricane Center

Current information: ×
Center location 24.1 N 81.5 W
Maximum sustained wind 130 mph
Movement NW at 6 mph

Forecast positions:
● Tropical Cyclone ○ Post/Potential TC
Sustained winds: D < 39 mph
S 39-73 mph H 74-110 mph M > 110 mph

Potential track area: Day 1-3, Day 4-5
Watches: Hurricane, Trop Stm
Warnings: Hurricane, Trop Stm
Current wind extent: Hurricane, Trop Stm

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ATTACHMENT 3: CRITICAL FACILITIES LIST

The following list depicts critical facilities in high and moderate risk flood-prone areas that include Special Flood Hazard Areas (SFHA). Full information can be found in the EOC's internal server.

Back Pump No 4
Bryn Mawr Utility Site
City of Ft Pierce EOC
Florida Power & Light Nuclear Power Plant
Florida Power & Light Nuclear Power Plant
Forest Grove Middle School
FPUA substation
FPUA Water Storage
FPUA Water Storage
Fredrick Douglas Memorial Park
Ft Pierce Branch Library
Ft Pierce Police Department
Ft Pierce State Recreation Area
Ft Pierce Waste Water Treatment Plant
Indian River Terminal Co
JES Seventh Day Adventist School
North Hutchinson Island WWTP Complex
Orange Blossom Mall Site
Savannas Recreation Complex
SLC Health Office\Clinic
SLC Health Office\Clinic
SLC Historical Museum Complex
SLC Sheriffs Nettles Island Substation
SLC Smithsonian Marine Center
South Hutchinson Island WWTP
St Andrews Episcopal School
St James Christian Academy K-12
State Government Bldg
Station #11 Shinn Rd
Station #2 South Beach
Station #8 S Hutchinson Island
US Coast Guard Station
Waveland Beach Complex
White City Park Complex

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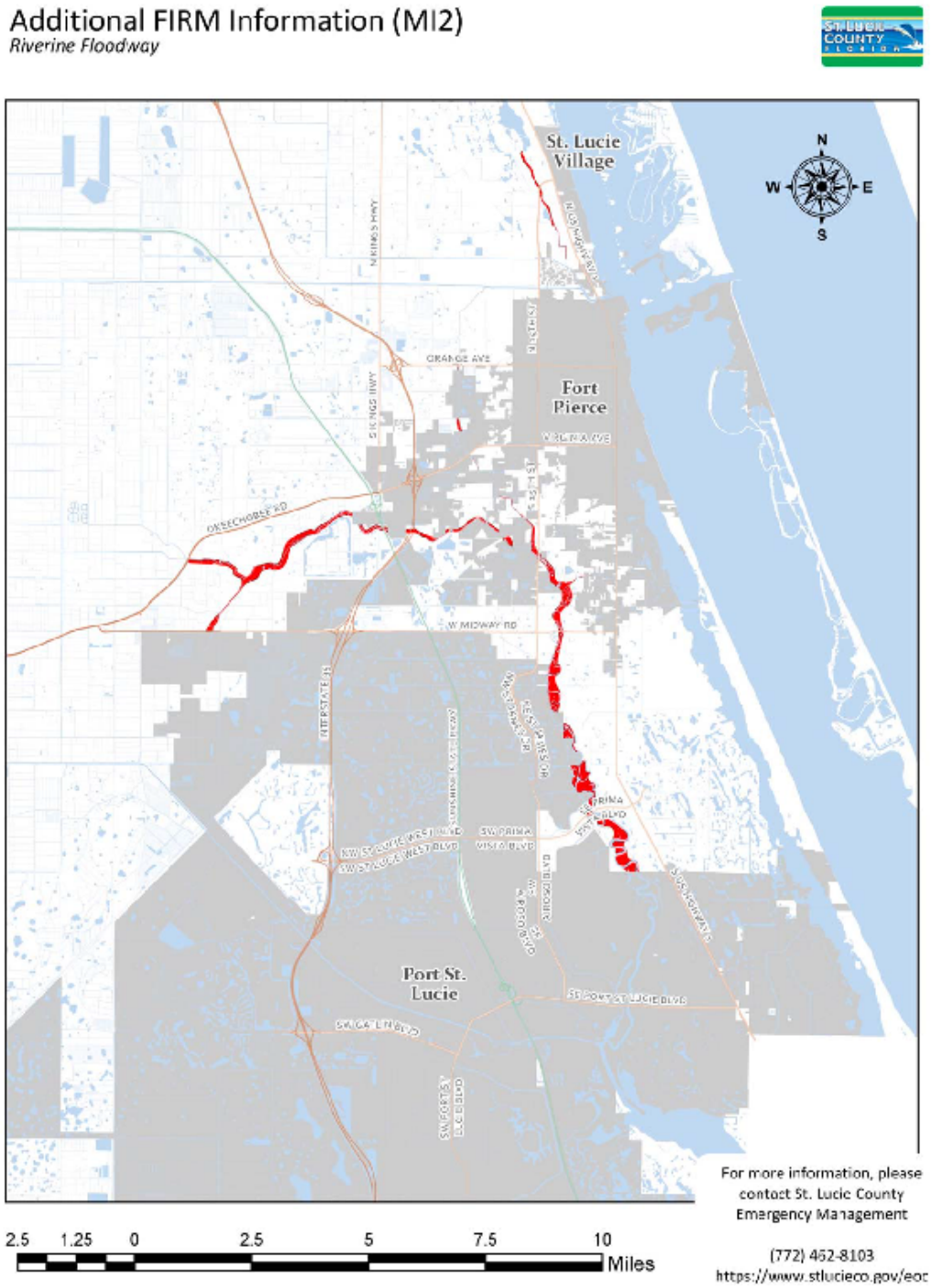
ATTACHMENT 4: MAPS



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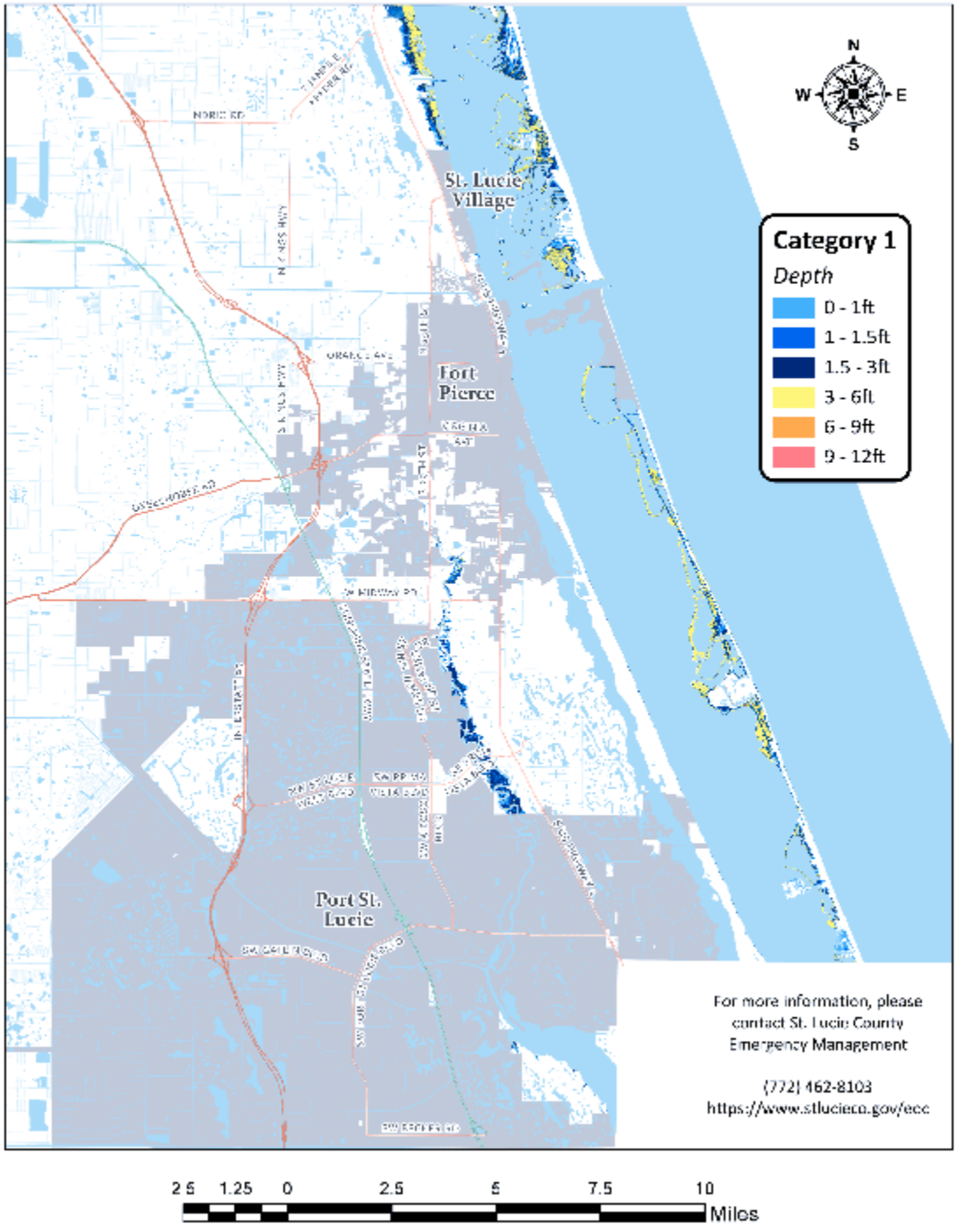
Flood Depth Data (MI4)

Storm Inundation: Category 1



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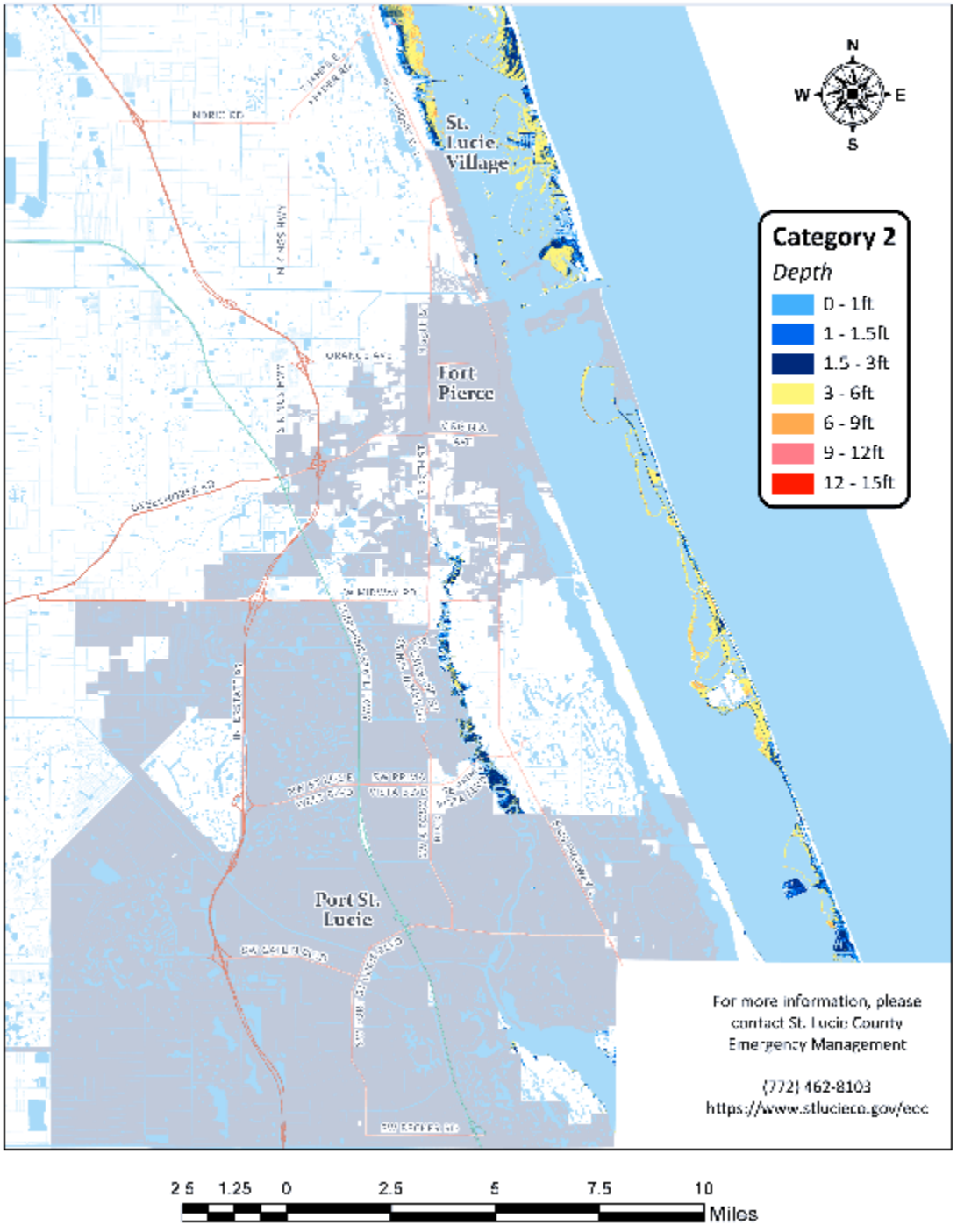
Flood Depth Data (MI4)

Storm Inundation: Category 2



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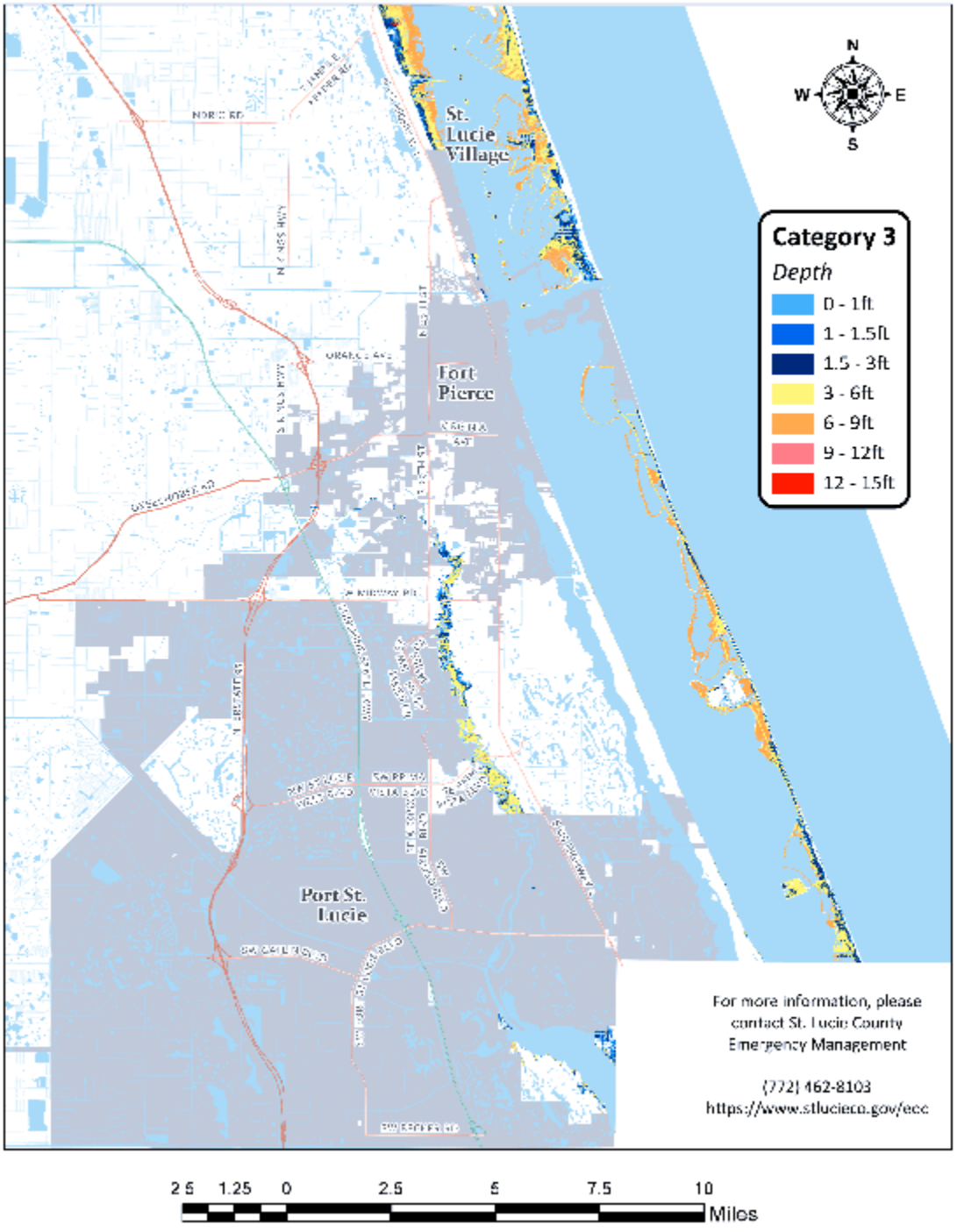
Flood Depth Data (MI4)

Storm Inundation: Category 3



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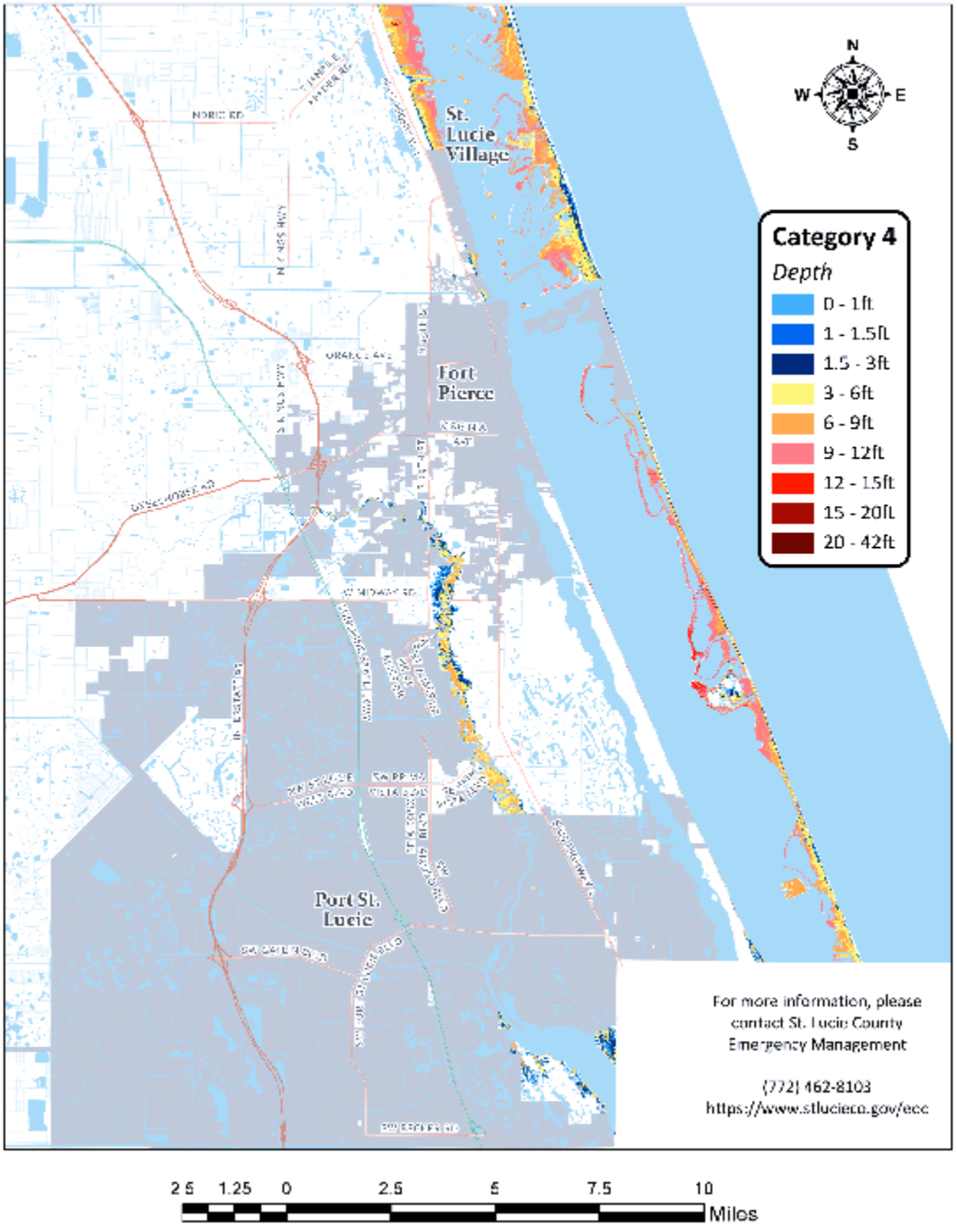
Flood Depth Data (MI4)

Storm Inundation: Category 4



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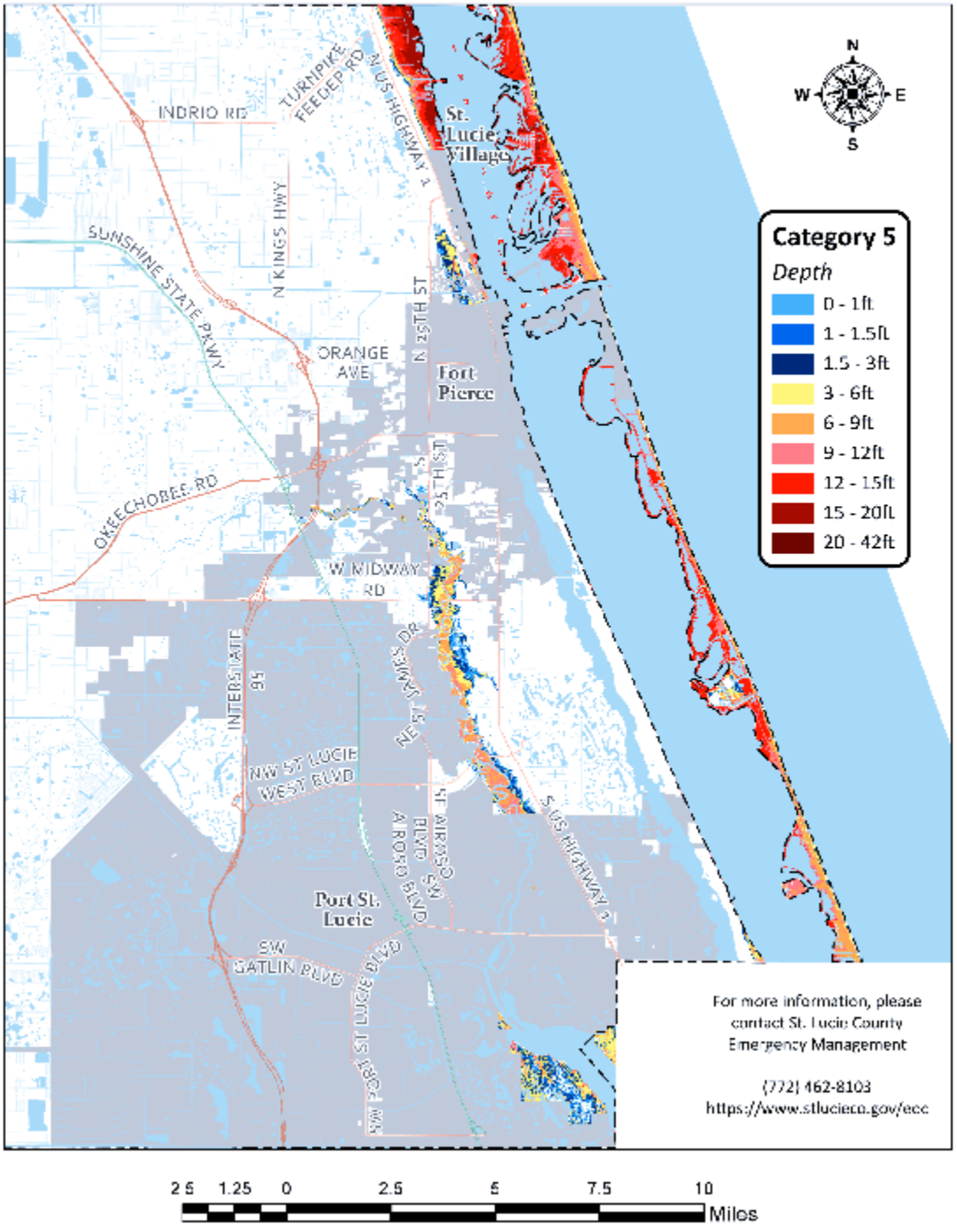
Flood Depth Data (MI4)

Storm Inundation: Category 5



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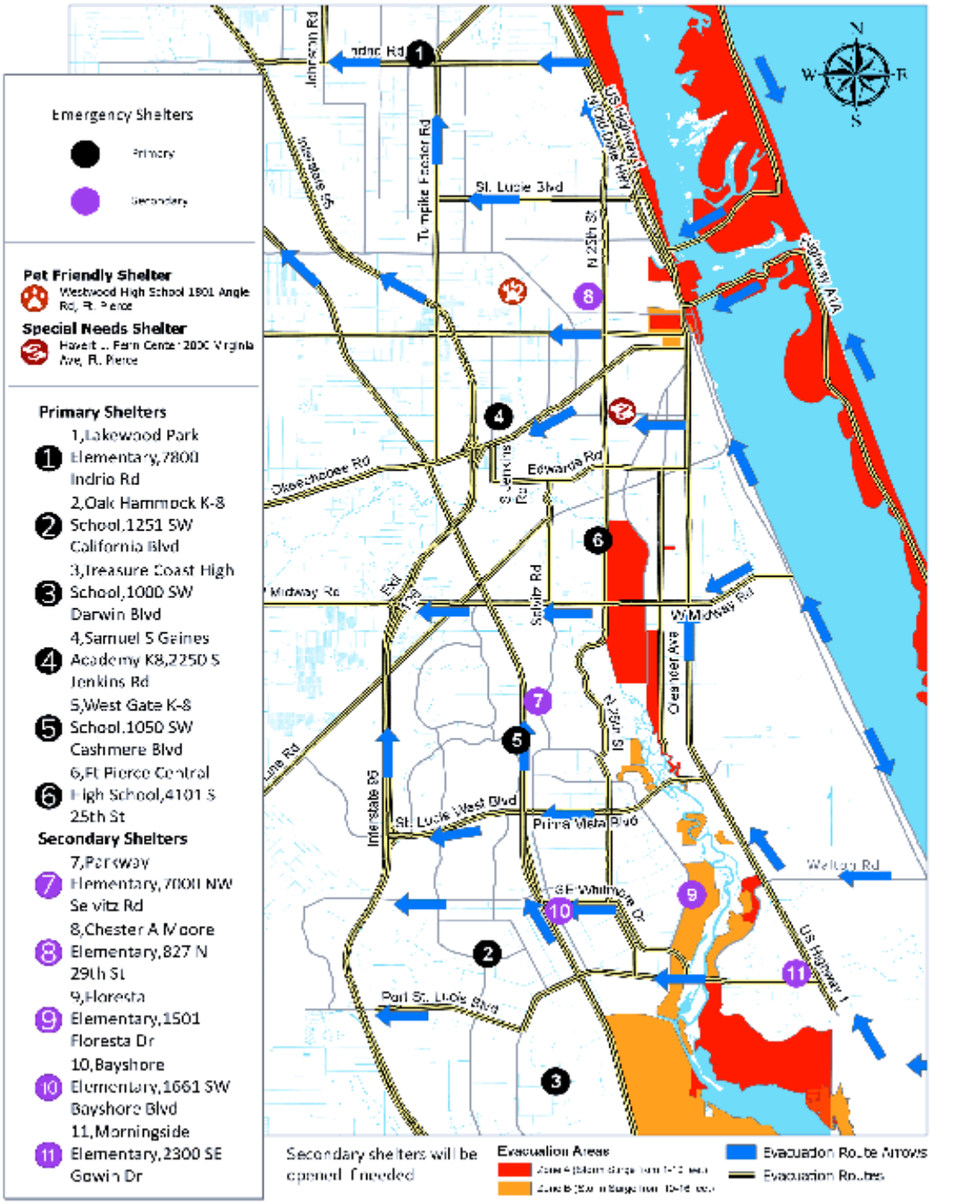
Emergency Shelters 2019



Check County website or call Public Info Line for shelter openings: www.stlucieco.gov/eoc; 772-460-HELP (4357)

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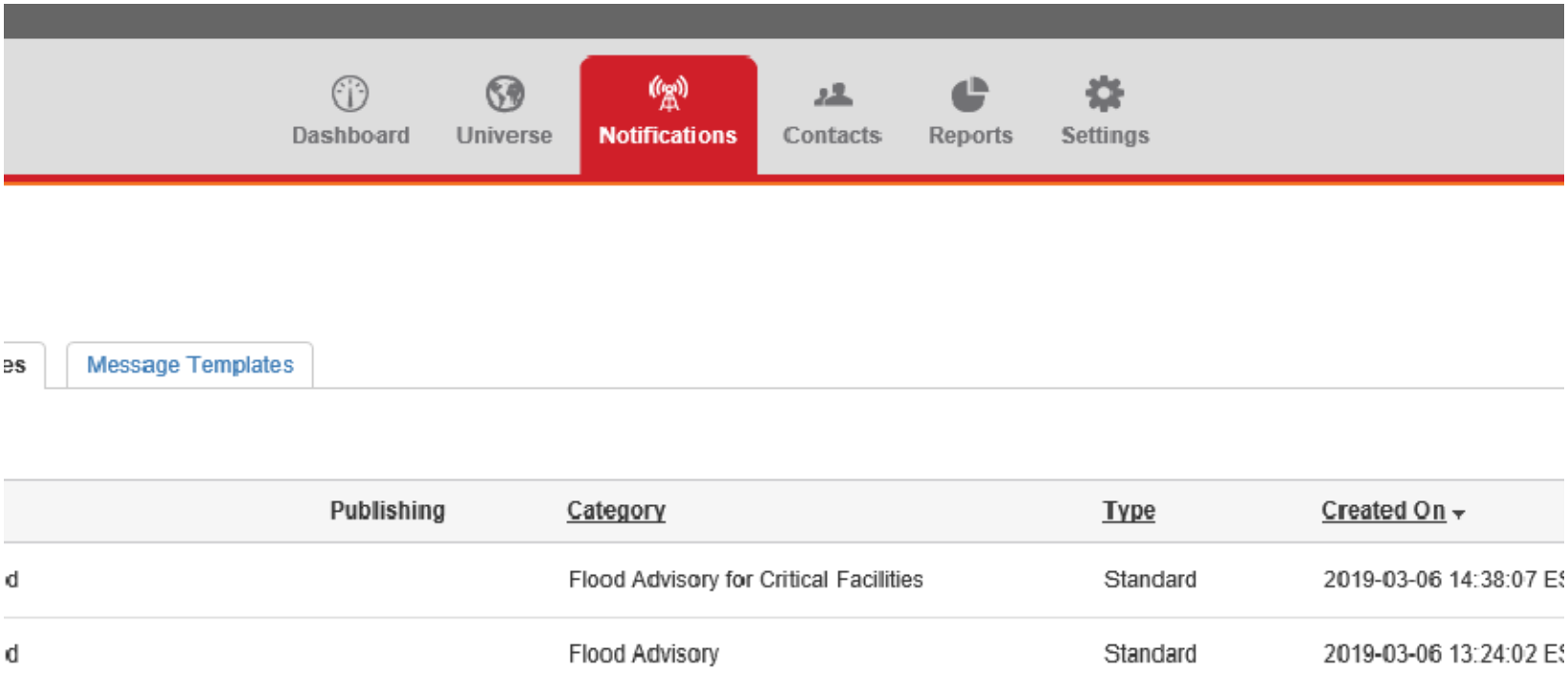
ATTACHMENT 5: ALERT ST. LUCIE MESSAGES



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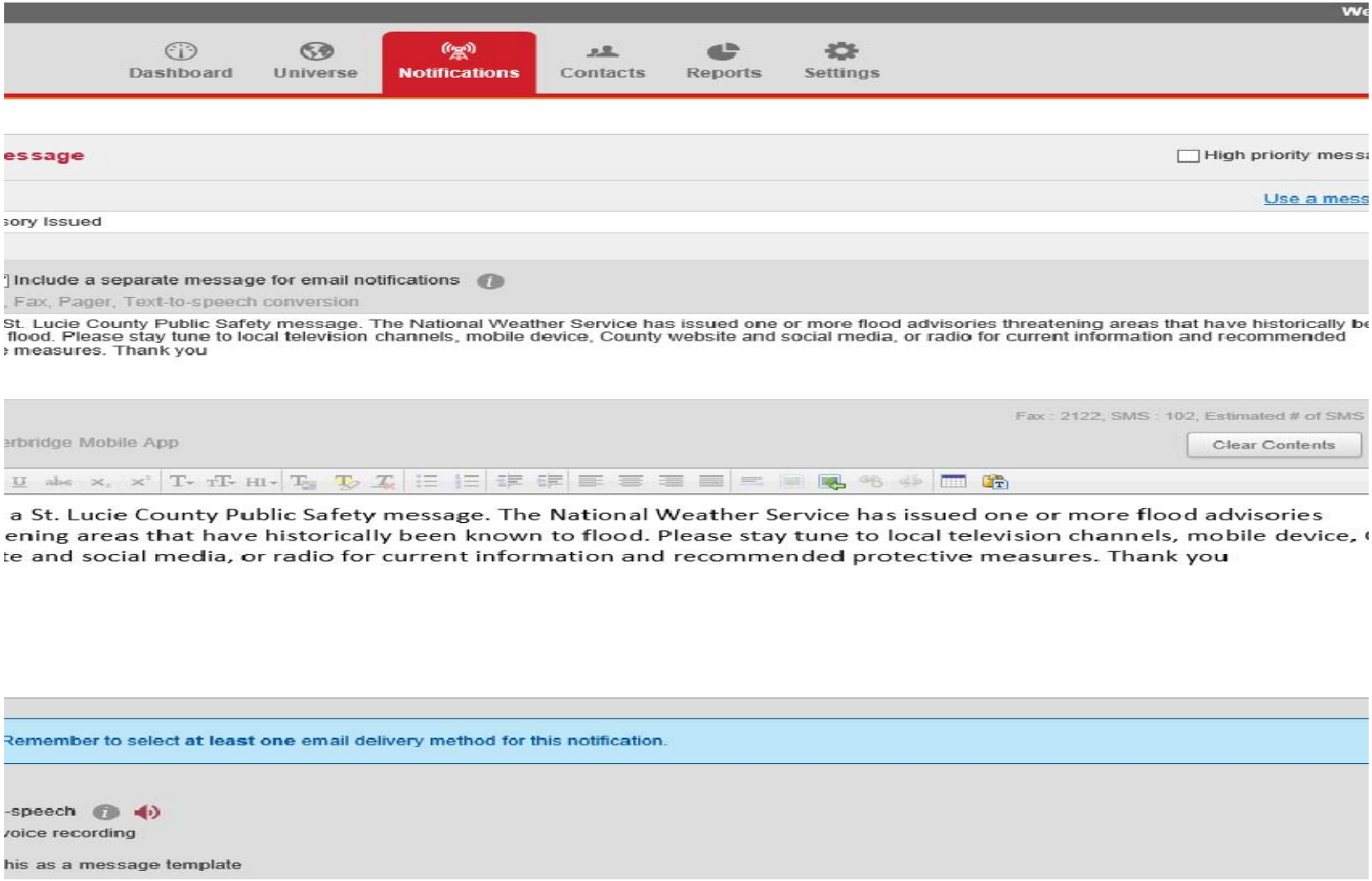
Flood Advisory to EM Team and County Staff



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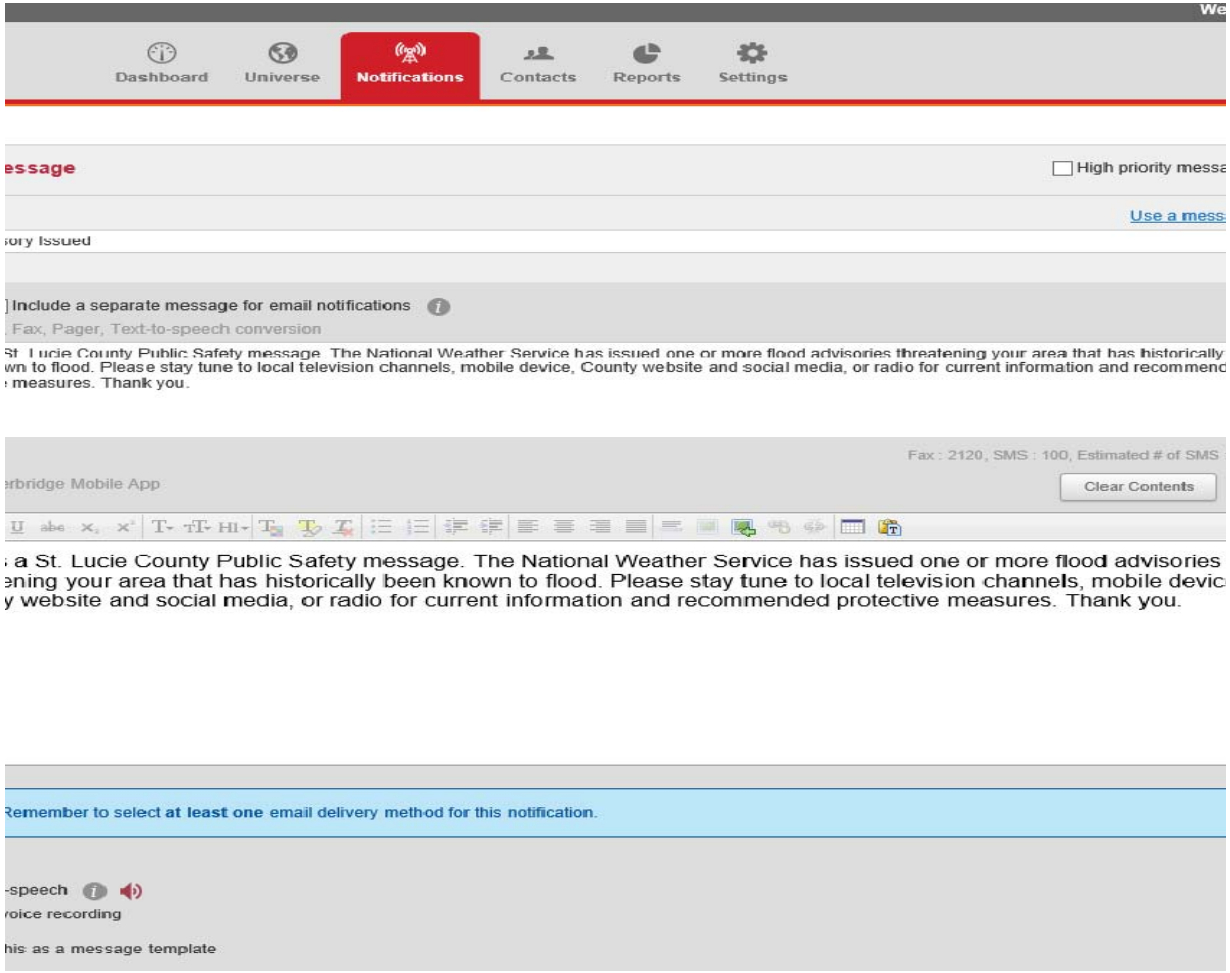
Flood Advisory Message to Critical Facilities in Floodplain



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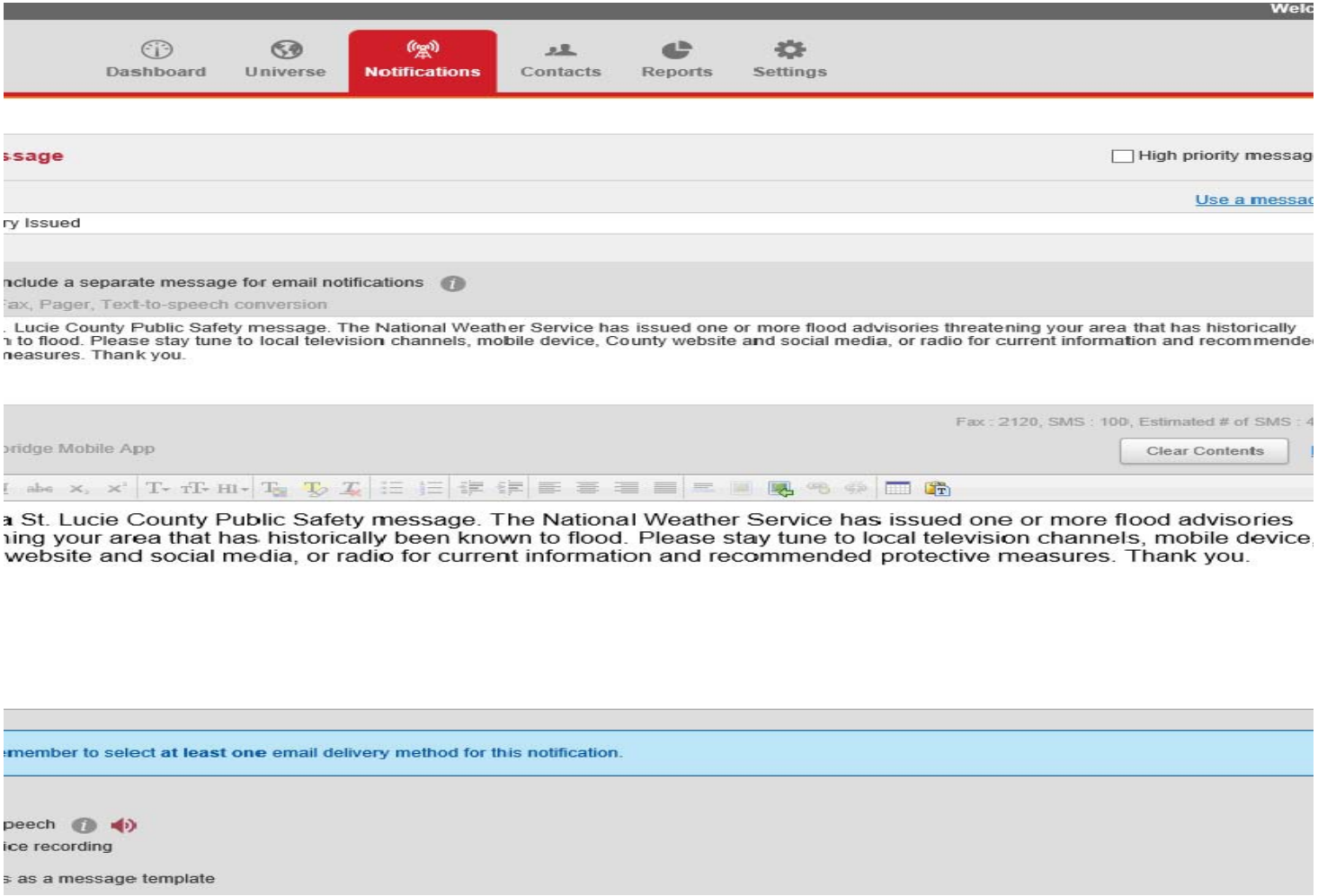
Flood Advisory Message for Public in Floodplain



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ANNEX B - PPI PLAN

UNIFIED PROGRAM FOR PUBLIC INFORMATION (PPI)

Unincorporated St. Lucie County, the City of Fort Pierce, the City of Port St. Lucie

Brent McFarland

RECORD OF REVISIONS

Date	Revision
May 2021	Document Created

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I. Background

Flooding incidents associated with rain, tropical storms, and hurricanes are considered the hazard with the greatest impact, and likelihood in St. Lucie County. The St. Lucie County Local Mitigation Strategy (LMS) ranks floods at the top of the list of identified hazards because of their projected impact across the entire spectrum of community exposure and services. Riverine and coastal flooding, specifically, are the types of floods to affect communities across the County. The heavy summer rainfall pattern in the county coupled with the hurricane season (June 1 through November 30) makes St. Lucie County particularly vulnerable to flooding, especially later in the wet season when the water table is high, and the ground is saturated from impacts of rain events. St. Lucie County averages around 54 inches of rain per year and 124 rain days, with the majority occurring between the months of June and October.

Flooding events can negatively impact lives, property, the environment, and economic development in St. Lucie County in a short amount of time. Flooding can cause widespread damage to vehicles, houses, businesses, crops, and outdoor equipment. Vulnerable populations in St. Lucie County are the most affected by flooding disasters such as families and individuals with low and fixed incomes, the elderly, transient migrants who work in agricultural areas, and persons with disabilities. Approximately 10% of the County's housing units (14,000 out of 141,000) are located within a Special Flood Hazard Area (SFHA). See Figure 2 on the following page.

The PPI was introduced by the Federal Emergency Management Agency (FEMA) as a new planning tool to provide a step-by-step coordinated approach to flood hazard outreach, which the PPI sub-committee followed in developing this PPI (Figure 1). The purpose of developing this plan is to improve communication with citizens, and to provide information about flood hazards, flood safety, flood insurance, and ways to protect property and natural floodplain functions to those who can benefit from it.

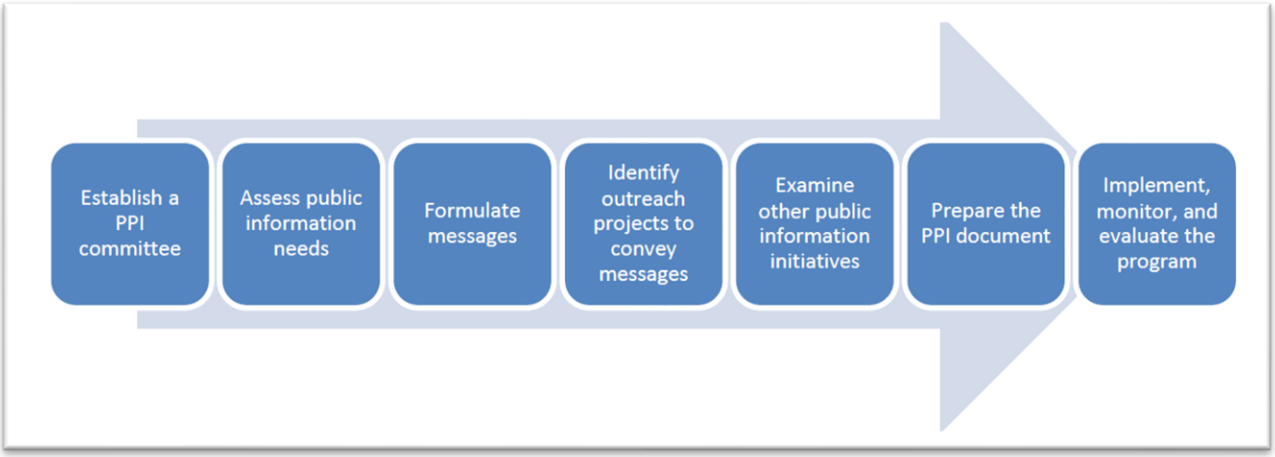


Figure 1 – *PPI Planning Process*

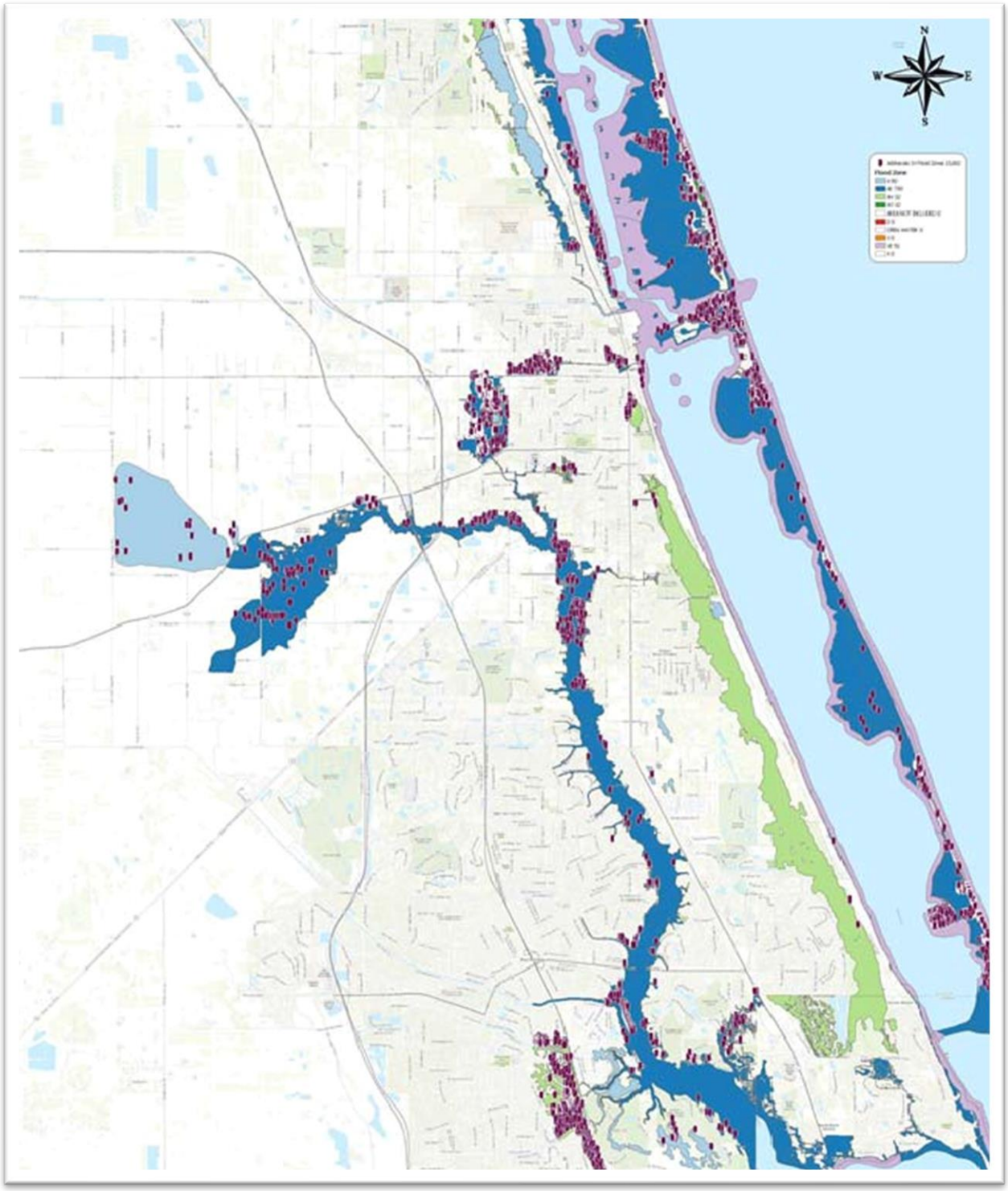


Figure 2 - *Homes Located in the Special Flood Hazard Area (SFHA)*

II. PPI Sub-Committee

The Program for Public Information sub-committee (PPI sub-committee) is a sub-committee of the of the Local Mitigation Strategy (LMS) working group. This sub-committee was tasked with developing this PPI plan.

The PPI sub-committee is a multi-jurisdictional sub-committee of the St. Lucie County Local Mitigation Strategy Working Group comprised of members from the City of Fort Pierce, City of Port St. Lucie and the un-incorporated areas of St. Lucie County. The group represents various backgrounds, and all have a special interest in reducing our community's flood risk. These stakeholders represent local government, mortgage brokers, insurance agents, and community residents. The following table outlines the members active in this sub-committee:

Name	Representative for:	Affiliation
Harry Burton*, CFM Floodplain Coordinator	City of Port St. Lucie	City of Port St. Lucie
Alicia Forbis* SMU Assistant/GIS Specialist	City of Fort Pierce	City of Fort Pierce
Kristie Kirstein*, CFM CRS Coordinator, PPI Chair	City of Fort Pierce	City of Fort Pierce
Karen Kozac*, MS, RN, PM Emergency Management Safety Planner	St. Lucie County	St. Lucie County
Joe Sweat* Marketing Specialist, PPI Information Officer	City of Fort Pierce	City of Fort Pierce
Gustavo Vilchez*, MBA Emergency Operations Manager	St. Lucie County	St. Lucie County
William Weinshank*, MBA Emergency Management Administrator	City of Port St. Lucie	City of Port St. Lucie
Charlene Adair	City of Fort Pierce	Floodplain Resident
Aaron Bowles, P.E.	St. Lucie County	MBV Engineering, Vice President
Angela Hayle	City of Port St. Lucie	Agent of ACCH Insurance Agency
Ryan Huff, P.E.	City of Fort Pierce	Milcor Group, Member of the Treasure Coast Builder's Association (TCBA)
Cecilia Jaimes	City of Port St. Lucie	VP and Commercial Lender with Center State Bank
Sabrina Rogers	St. Lucie County	Owner/Operator of Jaguar Insurance
Ed Roseberry, CFM	City of Fort Pierce	FEMA Region 4 Director – Florida Floodplain Manager's Association (FFMA)

** designates Fort Pierce, Port St. Lucie and St. Lucie County employees (7 out of 14 members)*

The role of the PPI sub-committee is to provide input regarding target audiences, types and delivery of messages, and insight into ongoing efforts in the community. Members were also asked to share information on any efforts related to this work that have occurred or are occurring within St. Lucie County.

Government representatives met to complete step one "Establish a PPI Committee" of the seven-step plan outlined in the 2017 CRS Manual by securing 7 members from throughout the community.

The initial sub-committee meeting was held October 30, 2019 at the St. Lucie County Emergency Operations Center. During this meeting, an overview of the National Flood Insurance Program (NFIP), the Community Rating System (CRS), and the function of the PPI sub-committee were provided.

The second meeting was held on December 18, 2019, at the same location. The agenda followed steps two through five of the seven step plan. During the meeting, the sub-committee discussed:

- Step 2- Assess Public Information Needs – The group discussed target areas and target audiences
- Steps 3 and 4 – Formulate Messages and Identify Outreach Projects - The group provided ideas for messages and projects
- Step 5- Examine other Public Information Initiatives - Gathered information from the group regarding existing projects already implemented throughout the community.

Based on the information gathered during the second meeting, the governmental representatives met on several occasions and assembled the first draft of the Program for Public Information (PPI) Plan. The PPI Plan was presented to the sub-committee for review on December 16, 2020. With the approval of the sub-committee, the plan was forwarded to FEMA Region IV Office's Insurance Specialist (ISO) for review and comments on 5/4/2021. The plan was presented to the Local Mitigation Strategy Working Group for approval and adoption on 6/16/2021.

III. Goals

The members of the PPI sub-committee share a common vision for a better-informed public that is educated about flood risks, what they can do to decrease future damage, the benefits of flood insurance, and to increase flood hazard awareness. The PPI Plan is the tool to achieve that vision. The PPI sub-committee is recommending 2 goals and supportive objectives.

1. Through the outreach materials and methods, encourage residents to adopt behaviors that improve flood hazard preparedness and decrease future flood damage.
    a. Provide relevant information to residents regarding flood hazards; place added focus on residents in special flood hazard areas and that are in the repetitive loss areas.
    b. Provide detailed information to inquirers through our website and publications.
    c. Provide quick response to residents after they have been flooded. Have relevant information they may need available and ready to distribute.
2. Increase flood hazard awareness and motivate actions to reduce flood damage, encourage flood insurance coverage, and protect the natural functions of flood plains.
    a. Enhance flood hazard warning and response capabilities.
    b. Provide detailed information to residents, businesses, and other relevant stakeholders located within and outside of Special Flood Hazard Areas.
    c. Implement flood mitigation strategies and educate residents on the functions of flood plains and natural areas.

IV. Community Needs

Based on the U.S. Census the population of St. Lucie County for 2019 is estimated at 328,297. 24% of the residents are over the age of 65 and 23% speak a language other than English at home. Therefore, using different types of media to deliver similar topics will reach more of the community.

It has been determined by the Federal Emergency Management Agency (FEMA) that properties located in the special flood hazard area (SFHA) are at higher risk for flooding. There are approximately 515 square miles of land throughout St. Lucie County. Approximately 10% of the community's population is located within the SFHA. It is important to communicate with these

residents and encourage them to be aware of their flood risk and educate them on what they can do to protect their property.

V. Flood Hazards

St. Lucie County is exposed to flooding from hurricanes, severe thunderstorms, tropical storms, and storm surges from the Atlantic Ocean. For the majority of the county, the primary causes of flooding are hurricanes or tropical storms. However, the county's low-lying topography combined with its subtropical climate makes it vulnerable to riverine and storm associated flooding. Heavy rainfalls allow for flooding in low lying streets and properties. Heavy rainfall within a short timeframe can also cause drainage systems to rapidly meet capacity and contributes to the occurrence of street flooding. The areas of St. Lucie County that are most susceptible to flooding are the barrier islands and areas bordering the Indian river Lagoon, the St. Lucie Savannahs, and the St. Lucie river/tributaries. All jurisdictions have specific areas in which flooding is a recurring problem. Flooding in St Lucie County results from one or a combination of the following meteorological events:

1) tidal surge associated with hurricanes and tropical storms.

2) overflow from streams and swamps associated with rain runoff.

When intense rainfall events occur, streams and drainage ditches tend to reach peak flood flow concurrently with tidal water conditions associated with coastal storm surge. This greatly increases the probability of flooding in low lying areas.

VI. Flood Insurance Data

Fort Pierce

Table 1 on the following page titled "City of Fort Pierce Flood Insurance Overview" contains a wealth of information on flood insurance policies in the City of Fort Pierce. This data is current as of October 2, 2020, and can be summarized as follows:

There are over 22,966 units in Ft. Pierce, of which 3804 of them are in special flood hazard zones. However only 2,667 are insured by the National Flood Insurance Program. After breaking down the number of units within each special flood hazard zone, it was found that several special flood zones have a low percentage of polices. Tracking this metric will be a prime indicator in the success of this plan. There is no better way of protecting properties at risk from flooding than educating owners and tenants and having them obtain flood insurance.

Another focus point is with the increase of annual hurricanes, tropical storms and other coastal storms, and sea level rise, numerous properties outside the special flood hazard area are also at risk from flooding. Only 7% of the units outside the special flood hazard area (X Zones) have flood insurance. Many of these properties can obtain a preferred risk flood insurance policy, which offers low-cost coverage to owners and tenants of eligible buildings.

Future reports detailing flood insurance policies in our community will be a key measure of influence and success. There are always opportunities to educate the community about the risk of flooding and options to protect people and property from this risk. This is a primary focus of the Program for Public Information and will be evaluated annually by our group.

City of Fort Pierce
Flood Insurance Overview

Total By Community	
Total Number of Policies:	4089
Total Premiums:	$1,890,073.00
Insurance in Force:	$893,427,500.00
Total Number of Closed Paid Lossses:	1156
$ of Closed Paid Losses:	$32,498,572.00

	Policies in Force	Number of Closed Paid Losses	$ of Closed Paid Losses
Single Family	1010	644	$16,648,379.64
2-4 Family	332	168	$2,623,014.66
All Other Residential	2594	241	$6,626,911.41
Non Residential	153	103	$6,600,266.55
Total	4089	1156	$32,498,572.26

	Policies in Force	Number of Closed Paid Losses	$ of Closed Paid Losses
Condo	2864	217	$6,191,879.40
Non Condo	1225	939	$26,306,682.86
Total	4089	1156	$32,498,572.26

	Policies in Force	Number of Closed Paid Losses	$ of Closed Paid Losses	# of Units within each Special Flood Hazard Area
AE Zones	2628	904	$29,199,137.18	3574
A Zones	26	13	$12,294.00	120
AO Zones	4	8	$96,428.80	44
AH Zones	5	7	$111,901.12	51
VE Zones	4	7	$131,492.69	15
Standard X Zones	413	113	$1,644,604.11	X Zones
Preferred X Zones	930	74	$1,104,497.84	19162
Total	4010	1126	$32,300,355.74	22966

Based on data provided by the Insurance System Office dated October 2 ,2020

Table 1- City of Fort Pierce Flood Insurance Overview

Port St. Lucie

Table 2 on the following page titled “City of Port St. Lucie Flood Insurance Overview” contains information regarding flood insurance policies within the City of Port St. Lucie.

The City of Port St. Lucie has over 81,327 units within its jurisdictional boundaries, of which 912 units lie within the special flood hazard zones. Only 8% of the units in the SFHA are insured through the National Flood Insurance Program. Further breaking down the data by zone reveals that several zones have a low percentage of policies. This metric will be used to gauge the effectiveness of outreach projects and this plan.

Outside of the SFHA (X zones), only 6.65% of units have flood insurance. As the number of tropical cyclones and rainfall events continues to rise annually, the risk of flooding increases across the whole community. Floods do not read flood maps, and the risk is never zero. Increasing the number of flood insurance policies outside of the SFHA in the areas of minimal risk is another focus point for outreach efforts.

City of Port St. Lucie
Flood Insurance Overview

Total by Community	
Total Number of Policies	6,019
Total Premiums:	$2,342,112
Insurance in Force:	$1,786,644,500
Total Number of Closed Paid Losses:	486
$ of Closed Paid Loses	$1,915,017.28

Insurance Coverage by Occupancy			
	Policies in Force	Number of Closed Paid Losses	$ of Closed Paid Losses
Single Family	5,777	467	$1,495,670.56
2-4 Family	91	7	$44,916.13
All Other Residential	52	3	$18,034.27
Non-Residential	99	9	$356,396.32
Total	6,019	486	$ 1,915,017.28

	Policies in Force	Number of Closed Paid Losses	$ of Closed Paid Losses
Condo	146	8	$16,099.18
Non-Condo	5,873	478	$1,898,918.10
Total	6019	486	$ 1,915,017.28

Insurance Coverage by Flood Zone				
	Policies in Force	# of Buildings	Number of Closed Paid Losses	$ of Closed Paid Losses
AE Zones	181	121*	84	$ 253,730.73
A Zones	0	0	4	$ 1,961.24
AO Zones	0	0	0	$ -
AH Zones	46	569	6	$ 5,234.38
VE Zones	0	0	0	$ -
Standard X Zones	43	X Zones	35	$ 419,781.77
Preferred X Zones	5,326	80637	273	$ 1,106,201.47
Total	5596	81,327	402	$ 1,786,909.59

**Includes Multiple Family Residential Buildings*

Table 2- City of Port St. Lucie Flood Insurance Overview (Based on information provided by the Insurance Services Office on 11/4/20)

VII. Repetitive Loss Properties

FEMA classifies Repetitive Loss Properties as those that have made flood damage claims of $1000 or more twice within a 10-year period. FEMA classifies Severe Repetitive Loss Properties as any property that has at least four NFIP claim payments (including building and contents) over $5000 each, and the cumulative amount of such claims payments exceeds $20,000. These properties are subject to change over time and will depend on the frequency and severity of the seasonal coastal storms that affect the area. Due to Privacy Act requirements, Repetitive Loss and Severe Repetitive Loss properties will be generalized based on location and will further be known as Repetitive Loss Areas. These areas and the amount of repetitive loss properties in them will aid in the determination of which portion of the community have the most frequent and severe flood related damages to residences.

Fort Pierce

As of October 2, 2020, Fort Pierce has experienced a total of 1,156 flood losses since December 1, 1977 with total claims paid in the amount of $32,498,572.26. There are currently 142 repetitive loss properties, 13 have been mitigated against damages caused by flood through either elevation or demolition of the structure. There are 1559 structures within the Repetitive Loss Area, this area includes the above-mentioned repetitive loss properties and other surrounding properties that are at similar risk.

Port St. Lucie

As of November 02, 2020, the City of Port St. Lucie has experienced a total of 486 flood losses since December 1, 1977 with total claims paid in the amount of $1,915,017.28. There are currently 14 repetitive loss properties within City Limits. There are 155 structures within the Repetitive Loss Area, this area includes the above-mentioned repetitive loss properties and other surrounding properties that are at similar risk.

St. Lucie County

As of 2019, the Unincorporated Areas of St. Lucie County had 284 repetitive loss properties, which is a decrease from 345 in 2018. Most of the repetitive loss areas lie within low lying areas along the St. Lucie River as well as on North and South Hutchinson Island.

VIII. Target Audiences/Areas

Fort Pierce:

Target audience #1 – Properties located in the SFHA (Zone AE, Coastal A, AH and VE).

Fort Pierce has 4392 acres of land located in the SFHA; this area is considered a high-risk area for flooding. Property owners in these areas are vulnerable to flood hazards. Understanding what flood zone their properties are in and the need to have flood insurance was of great importance.

Target audience #2 – Properties located in the repetitive loss area.

Fort Pierce currently has 16 separate Repetitive Loss Areas. It is evident that properties in these areas are prone to repetitive flooding. It is important to inform property owners that even if they are not located in a SFHA, their property may be at a high risk of flooding.

Target audience #3 – Documented areas with local drainage problems.

Fort Pierce also has 8 separate areas that are known to flood frequently. It is important to inform property owners to keep basins, drainage areas, swales etc. clear of debris to allow proper flow of rain waters.

Port St. Lucie:

Target audience #1 – Properties located in the SFHA (Zone AE, Coastal A, AH and VE).

The City of Port St. Lucie has 5222 acres of land located in the SFHA, which is considered high-risk for flooding. Within these Special Flood Hazard Areas, only 33% of the structures have insurance coverage.

Target audience #2 – Properties located in repetitive loss areas.

The City of Port St. Lucie has 14 Repetitive Loss Areas. These areas are prone to repetitive flooding. It is important to inform property owners at risk of flooding, regardless of their SFHA, about the flood hazards that face them.

Target audience #3 – Properties located in moderate to low risk areas.

Almost 99% of the City and over 80,000 structures lie within the X Zones, with only 6.5% insurance coverage. Although this area is moderate to low risk for flood hazards, that does not mean it is immune to flood hazards. Informing all residents about flood risks and ways to mitigate flood damage only increases the City's resiliency.

St. Lucie County

Target audience #1 – Properties located on North and South Hutchinson Island

Target audience #2 – Properties located in low lying areas along the St. Lucie River

IX. Existing Public Information Efforts

Knowing what other public information is reaching our community is a key part of developing a Public Information Program. The program is designed to build community resilience to flooding by influencing residents to adopt behaviors to improve flood hazard preparedness and decrease future flood damage. The table below contains initiatives that are in place that support our goals and CRS messages.

Existing Public Information Efforts

Organization	Project	Subject Matter	Frequency
Fort Pierce Engineering Dept	Handouts and brochures	Stormwater Pollutions (6 different handouts) Protecting our Indian River Lagoon (2 different handouts) No illegal dumping	Year-round
	A booth at Earth Day at the Oxbow -Handouts and brochures	Stormwater Pollutions (4 different handouts) Protecting our Indian River Lagoon (2 different handouts) No illegal dumping	Once a year
	Marked Storm Drains	No illegal dumping	Year-round
Fort Pierce Building Dept	Handout and brochures	Various flood related topics	Year-round
	Facebook messages	Various flood related topics	Weekly thru hurricane season
	Bill inserts (FPUA customers)	Various flood related topics	Once a year
	Brochure mailed to SFHA and RLA	Various flood related topics	Once a year
	Website Information	Various flood related topics	Year-round
	FEMA Videos ran on FP TV	Various flood related topics	Multiple times thru hurricane season
Yellow Pages	Information in the phone book	Various flood related topics	Once a year
Fort Pierce Utilities	Website Information	Various flood related topics	Year-round
	Bill inserts (FPUA customers)	Hurricane Preparedness	Once a year
	Door Hangers	Damage to utilities (after a storm)	FRP only after a storm
FPL	Brochures	Storm Preparedness	
	Website Information	Storm Preparedness Protect natural floodplain functions	Year-round
	Mass customer emails	Stay prepared - peak of hurricane season	during hurricane season

Center for Disease Control	Website Information	Flood safety tips Storm Preparedness Generator safety Turn around don't drown Returning home after a flood	Year-round
Environmental Protection Agency	Website Information	Flood safety	Year-round
Red Cross	Website Information	Flood safety - Before/during/after Storm Preparedness	Year-round
Radio Station 103.7	Radio Commercial	Flood Insurance (NFIP)	throughout hurricane season
Hulu	90 second commercial	Flood Insurance (NFIP)	throughout hurricane season
Port St. Lucie - Public Works	Website Information	Floodplain Information webpage	Year-round
	Website Information	Flood Zone Map	Year-round
	Brochures	Flood Facts	Year-round (available in lobby and website)
	Verification of Flood Zone	Verify if a property is located in a flood zone	When requested
Port St. Lucie - Building Dept.	Website Information	National Flood Insurance Program	Year-round
SLC - Public Safety	Public Outreach - HOA Community Presentations	Disaster preparedness	Twice Monthly - year-round (24 per annum)
	Public Outreach - Hurricane Fair/Public Safety Fair	Disaster preparedness	Two events annually
	Website Information	Disaster preparedness	Year-round
SLC - Communications	website, social media, press releases, video PSA	Disaster preparedness & various flood-related topics	Year-round
SLC - Extension/Ag	Handouts and brochures, website information	Filing an Insurance Claim National Flood Insurance Program (NFIP) Information Disaster Preparedness Flood Insurance Damage Mitigation Construction Alternatives	
SLC - EOC	Text-push	Pending Storm	FPR - as needed
Florida Heath Department	Facebook messages	Various flood related topics	throughout hurricane season

X. Projects and Initiatives

The focus of the PPI plan is to encourage flood preparedness and awareness. The sub-committee has selected 10 topics and messages that need to be disseminated to the selected audiences.

Topic 1 Know your flood hazard

Message(1):	Find out what your flood zone is
Outcome(1):	Increase request for map information
Message(2):	Your property is in an area prone to flooding, protect yourself from repetitive loss
Outcome(2):	Residents in repetitive loss areas will be more aware of the hazard

Topic 2 Insure your property for your flood hazard

Message(1):	Consider buying flood insurance. Homeowners insurance and renters insurance do not typically cover flood damage.
Message(2):	Purchase flood Insurance. Flood insurance provides financial protection for cost of repairs due to flood damage.
Message(3):	Protect the life you've built with flood insurance. Visit floodsmart.gov or contact your local insurance agent to purchase flood insurance.
Outcome(all):	Increase # of flood insurance policies

Topic 3 Protect people from the flood hazard

Message(1):	Flood safety measures: Do not walk-through flowing water, Do not drive through a flooded area, stay away from down power lines, be alert of gas leaks
Outcome(1):	Decrease # of cars stuck in middle of flooded roads; decrease # of injuries
Message(2):	To obtain important flood related information sign up for Alert St. Lucie at https://member.everbridge.net/index/453003085614926#login
Outcome(2):	Increase number of people signed up to receive alerts

Topic 4 Protect your property from the flood hazard

Message(1):	Just one inch of water can cause $25,000 of damage to your home. Visit (jurisdiction's website) for protection measures you can take
Outcome(1):	Decrease # of damaged buildings
Message(2):	It's better to be prepared and prevent flood damage. (jurisdiction's name) offers flood protection assistance by providing information and recommendations regarding retrofitting and flood control techniques. Contact us at (jurisdiction's contact info)
Outcome(2):	Increase # of requests for flood protection assistance

Topic 5 Build responsibly

Message(1):	Know your local flood regulations: When your structure has been damaged or flooded, you may be subject to substantial damage or substantial improvement visit (jurisdiction's website) for more information
Outcome(1):	Decrease # of damaged buildings, increase # of building permits after an event.

Topic 6 Protect natural floodplain functions

Message(1): Sweep up yard debris, rather than hosing down areas. Leaves, grass clippings and tree trimmings that are blown into the streets clog catch basins increasing the risk of flooding on your street

Outcome(1): Decrease # of complaints of clogged catch basins

Message(2): Don't dumb or throw anything into the storm sewers, inlets, ditches or basins. If you see dumping or debris in ditches or basins please notify (jurisdiction's phone #)

Outcome(2): Decrease # of violations

Topic 7 Tips for hurricane season

Message(1): Stay prepared for possible flooding throughout hurricane season. Weather you live in a hurricane prone area or not, heavy rains or flooding may still affect you. Get A Plan! FLGetAPlan.com

Outcome(1): Less properties damaged

Message(2): In preparation for hurricane season, visit St. Lucie County website and reference the annual Disaster Preparedness Guide to learn about Special Needs shelter (medical) eligibility and how to register. www.stlucieco.org/eoc . Special Needs registration: www.stlucieco.gov/specialneeds

Topic 8 Flooding can happen anywhere, even outside a special flood hazard area

Message(1): Every property is vulnerable to flooding. Flooding can happen anywhere, at any time. Waiting until a disaster strikes is too late. That's why it's important to protect the life you've built with flood insurance. If you live outside the special flood hazard area, you can obtain flood insurance at a low premium. Contact an insurance agent for more information.

Outcome(1): Increase # of flood insurance polices in low risk areas

Topic 9 Flood mitigation

Message(1): Mitigation is the effort to reduce loss of life and property by lessening the impact of disasters. Take action now before the next disaster to reduce human and financial consequences later. Visit (jurisdiction's website) to see how you can reduce your risks.

Outcome(1): Decrease # of insurance claims

Topic 10 Working to protect our waterways

Message(1): Water quality is an important part of the natural and beneficial function of our floodplain. Do your part to help protect our waters, businesses and residents can be invaluable participants in the effort to protect our waters. It is very important that a spill, leak, or other discharge is reported immediately so the contaminates can be contained to avoid polluting our waterways. Do your part by reporting spills, leaks or other illicit discharges to (jurisdiction's phone #)

Outcome(1): Increase the # of reports received. Improve the quality of our waterways

The overall goal is to make information more readily available to the community in a manner that will encourage the audience to adopt behaviors that improve preparedness and decrease future flood damage. The following table provides a comprehensive list of the projects.

Program for Public Information Project List 2021							
OP	Audience	Project	Topic/Message	Assignment	Jurisdiction	Schedule	Stakeholder
1	Builders	Presentation At TCBA	Topic 5 Message 1 Topic 4 Message 1 Topic 6 Message 2	FP	All	Once a Yr	TCBA
2	Whole Community	Social Media	Topic 1 Message 1 Topic 2 Message 1 Topic 3 Message 1 Topic 3 Message 2 Topic 4 Message 1 Topic 4 Message 2 Topic 5 Message 1 Topic 6 Message 1 Topic 6 Message 2 Topic 7 Message 1 Topic 7 Message 2 Topic 8 Message 1 Topic 9 Message 1	All	All	Flood awareness week and hurricane season	Facebook Next Door
3	Whole Community	Utility Bill	Topic 2 Message 1 Topic 3 Message 1 Topic 3 Message 2 Topic 4 Message 2 Topic 6 Message 2 Topic 10 Message 1	All	All	Once a year	Utility Company
4	SFHA	ICC Flood Insurance Coverage handout	(activity 370)	PSL/FP	PSL/FP	Year around	FEMA
5	Whole Community	Hurricane Expo Booth/handouts	Topic 2 Message 1 Topic 3 Message 1 Topic 3 Message 2 Topic 4 Message 2 Topic 6 Message 2 Topic 10 Message 1	PSL	All	June of each year	Several Sponsors
6	SFHA/RLA	Mailer	Topic 1 Message 2 Topic 2 Message 3 Topic 5 Message 1 Topic 8 Message 1	All	All	Once a year	Na
7	Whole Community	Earth Day Handouts	Topic 2 Message 1 Topic 3 Message 1 Topic 3 Message 2 Topic 4 Message 2 Topic 6 Message 2	All	All	Once a year	Several Sponsors

			Topic 10 Message 1				
8	Whole Community	"when waves swell" video (social media/local gov tv station)	Topic 3 Topic 4	All	All	Flood awareness week And Hurricane Season	FEMA Facebook Next Door
9	Whole Community	"when clouds form" video (social media/local gov tv station)	Topic 1 Topic 2 Topic 3 Topic 4	All	All	Flood awareness week And Hurricane Season	FEMA Facebook Next Door
10	Whole Community	Booth at County Fair	Topic 2 Message 1 Topic 3 Message 1 Topic 3 Message 2 Topic 4 Message 2 Topic 6 Message 2 Topic 10 Message 1	All	All	March of each year	ST Lucie County Fair Asso.
11	Whole Community	Booth at Public Safety Fair	Topic 2 Message 1 Topic 3 Message 1 Topic 3 Message 2 Topic 4 Message 2 Topic 6 Message 2 Topic 10 Message 1	All	All	Once a year	Na
12	Whole Community	Booth at TC Home Expo	Topic 2 Message 1 Topic 3 Message 1 Topic 3 Message 2 Topic 4 Message 2 Topic 6 Message 2 Topic 10 Message 1	All	All	Once a year	
13	Business Community	Handouts at Chamber of Commerce	Activity 370	PSL/FP	PSL/FP	Year around	FEMA Chamber of Commerce
14	Whole Community	City Website		PSL	PSL	Year around	Na
15	Whole Community	County Website		SLC	SLC	Year around	Na
16	Whole Community	City Website	Topic 1 Topic 2 Topic 3 Topic 4 Topic 5 Topic 6 Topic 7 Topic 10	FP	FP	Year around	Na
17	Whole Community	Handout	Topic 9	SLC	All	Year around	
18	Whole Community	Bank Events Handouts	Activity 370	PSL/FP	PSL/FP		Banks
19	Whole Community	Handouts (difference between	Activity 370 or Topic 2	All	All	Year around	

		homeowner & flood insurance)					
20	Target Audience	Handouts at Neighborhood meetings	Varied flood topics	PSL	PSL	Oct and Nov	Na
21	Whole Community	Article in Biweekly Magazine	Topic 2	PSL	PSL		Na
22	Whole Community	Wildland Fire Expo (handouts)	Topic 2	PSL	PSL	Jan	
23	Whole Community	Handouts in 5 locations	Topic 2	PSL	PSL	Year around	
24	Whole Community	Citizen Summit Provide handouts/answer questions	Topic 2	PSL	PSL	Feb	Na
25	Business Community	Business Expo		All	All		
26	Whole Community	Friday Fest Handouts/booth	Topic 2 Message 1 Topic 3 Message 1 Topic 3 Message 2 Topic 4 Message 2 Topic 6 Message 2 Topic 10 Message 1	All	All	1st Friday of the month	Fort Pierce Mainstreet
27	Whole Community	Video from the Fort Pierce Mayor (Social Media/FPTV)	Activity 370	FP	FP	Hurricane Season	Facebook Next Door
28	Whole Community	Mayor to speak at Hurricane Expo	Activity 370	PSL	PSL	June each year	Several Sponsors
29	.2% Flood Zone Properties	Mailer	Activity 370	FP	FP	Once a year	Na
Flood Response Preparations							
1	Whole Community	Social Media	Topic 3 Message 1-2 Topic 4 Message 1-3 Topic 7 Message 1-2	All	All	At the threat of a flood or storm	Facebook Next Door
2	Whole Community	Social Media Handouts	Topic 5 Message 1-2	All	All	After a flood or storm	Facebook Next Door DBPR
3	Whole Community	Social Media Handouts	Topic 9 Message 1	All	All	After a flood or storm	Facebook Next Door FEMA

In order to ensure that there is unified messaging throughout the communities' public information, recommendations are made for the following activities:

Map Information Service: Providing accurate hazard information is vital component in the continuing effort to protect lives and property. All jurisdictions will publicize the availability of personal assistance provided by the FIRM's and understanding the other risks associated with flooding and other special flood related hazards.

- All FIRM panel information
- FIRM zone and base flood elevation
- Areas East of the Coastal Construction Control Line
- Coastal Barriers Resources Act areas
- Locations in the Repetitive loss area
- Areas with local Drainage problems
- Properties within the LiMWa

Website: The internet is fact becoming one of the primary means in which people access news and information. Websites allow form more in-depth exploration into topics of concern to each audience reader and can be tailored to local conditions. Each communities' website should have links to other websites that have more detailed information on flood related topics.

The websites should be checked monthly to ensure the links are still working. They should be updated annually to reflect changes recommended by the PPI committee during the annual evaluation process.

Flood Protection Assistance: One of the priority messages determined by the committee is mitigation for flood prone structures. Fort Pierce and Port St. Lucie will offer flood protection advice by providing information and recommendations regarding retrofitting, flood control techniques and other ways residents can protect their property from flooding. Publication of this service will be included in the annual outreach to our residents. The outreach projects proposed in this PPI should include reminders that residents are encouraged to call their community's floodplain official to request assistance or to schedule a site visit to discuss mitigation and/or flooding issues on their property.

The staff providing the assistance should remind everyone that they face a flood hazard regardless of their location. They should encourage residents to consider mitigation efforts both large and small in order to reduce flooding loss. They should also promote those retrofitting measures that can impact flood insurance premiums.

Drainage maintenance: State and local regulations prohibit dumping. One of the PPI priority messages is to encourage citizens to report illegal dumping. That message should be included in projects disseminated to all people, not just those going to the SFHA or repetitive loss areas.

XI. Flood Response Preparations

Flooding incidents in SLC may occur with little or no warning and may quickly yield to disaster conditions in neighborhoods and major business districts. Depending on the severity, longevity, and complexity of the incident, a surge in widespread calls for rescue operations may occur which can quickly overwhelm local 9-1-1 dispatch centers and response organizations. Tactical objectives implemented in response to floods impacting residential areas in short timeframes may include the evacuation of trapped residents, protection of critical facilities and residential communities, activation of shelters, and transportation of vulnerable populations to shelters, hospitals, and critical outpatient health services.

The PPI sub-committee recognizes the need to prepare and coordinate with other community resources in the event of a flood hazard event. The extent of the damage caused by a flood is related not just to its severity, but also the level of public awareness and preparedness, early warning systems, and dissemination of timely and effective information to the public.

Each jurisdiction's annual flood and hurricane information outreach informs the public about flood zones, storm surge, evacuation zones, and how they will be warned and the safety measures they should take, should a hurricane and/or flooding occur.

During and in preparation for an event, information is disseminated by the St. Lucie County Emergency Operations Center in accordance with the St. Lucie County Comprehensive Emergency Management Plan.

Notification of flooding, like any natural or human caused threat to the residents of the county, will be disseminated to the general public, impacted municipal jurisdictions, response and recovery organizations, EOC staff, vulnerable critical facilities, neighboring jurisdictions that may be impacted, and the State EOC. Notifications during an emergency need to be timely, accurate, and coordinated, such that the message may be disseminated by all available public information mechanisms. In order to ensure timely notification of citizens, SLC has established primary and multiple back-up dissemination systems to ensure accurate and timely notification to the public and emergency response personnel. Such dissemination systems include press releases, Alert St. Lucie, and a public information line. A more detailed description of public information initiatives can be found in Section X. Projects and Initiatives.

The sub-committee has selected 5 of the earlier mentioned topics and messages that should be disseminated at different stages once the EOC has been activated.

"At the threat of a flood or storm"

Topic 3 Protect people from flood hazard

Message(1): Sign up for emergency alerts at https://member.everbridge.net/index/453003085614926#login
Outcome(1): Increase # of people signed up to receive alerts
Message(2): Turn around don't drown
Outcome(2): Decrease # of cards stuck on flood roads

Topic 4 Protect your property from flood hazard

Message(1): Protect your home, put up shutters or plywood
Message(2): Using sandbags is a simple and effective way to prevent or reduce flood water damage. Properly filled and placed sandbags can act as a barrier to divert moving water around, instead of through building. Sandbag construction does not guarantee a water-tight seal but is satisfactory for use in most situations. Sandbags alone should not be relied on to keep water outside a building.
Message(3): Prepare for flooding, implement your flood mitigation plan. Remember, if damage does occur obtain permits before starting repairs.
Outcome(all): Less properties are damaged

Topic 7 Tips for hurricane season

Message(1): Do not get on the road without a chosen destination
Outcome(1): Less people on the roads during a storm
Message(2): Know where the evacuation shelters are. Visit www.stlucieco.org/eoc
Outcome(2): Less people injured

"After a flood or storm"

Topic 5 Build responsibly

Message(1): Hire only licensed contractor
Outcome(1): Fewer citations for unlicensed contactors
Message(2): Contact your local floodplain official for information on flood regulations
Outcome(2): Fewer cases of unpermitted work and more complaint structures

Topic 9 Flood mitigation

Message(1): If you have flood insurance under the National Flood Insurance Program, you may be eligible to file a claim for "Increased Cost of Compliance" which could help elevate your home or other mitigation options. Talk to your insurance agent.
Outcome(1): More complaint structures

XII. Annual Evaluation and Updates

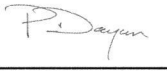
The PPI sub-committee meets at least two times per year to assess the implementation of the outreach projects. The sub-committee also convenes annually to evaluate the PPI for the effectiveness of its projects, audiences, messages, and outcomes. The sub-committee reviews each project identified during the previous year and evaluates which projects need to be modified and may refine the messages as needed to increase the effectiveness to existing audiences or to reach new audiences. The sub-committee also evaluates the need for additional projects each year.

Each year an evaluation report will be prepared and approved by the sub-committee, and then submitted to the Local Mitigation Strategy Working Group and Governing Bodies. The evaluation report will also be submitted as part of our CRS annual recertification.

Every Five years, the entire PPI will be updated, insurance coverage evaluated and approved by the sub-committee, and then submitted to the Local Mitigation Strategy Working Group and Governing Bodies. The updated PPI will also be submitted as part of our CRS cycle application.

XIII. Plan Adoption

This plan becomes effective as an Annex to the St. Lucie Local Mitigation Strategy (LMS) by vote of the LMS Working Group to make such plan the working strategy for the LMS Working Group's Program for Public Information (PPI) Sub-Committee. The LMS Working Group adopted this plan on June 16, 2021. The updated LMS will be adopted by resolution by each governing body no later than September 30, 2021.



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Patrick Dayan, PE, LMS Working Group Chair

ANNEX C - TSUNAMI PLAN

ST. LUCIE COUNTY

DEPARTMENT OF PUBLIC SAFETY

TSUNAMI RESPONSE PLAN

July 2018

Annex C

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Record of Changes

This Record of Changes is used to record all published changes. All major changes will be routed to plan holders within ninety (90) days of the promulgation of the change.

Change Number	Section, page, or graphic edited	Date Entered	Posted By

Promulgation

Submitted herein is the Tsunami Response Plan, which serves as a roadmap for response and recovery from a tsunami impacting St. Lucie County. This plan supports the St. Lucie County Comprehensive Emergency Management Plan (CEMP) and supersedes any previous plan promulgated for this purpose. This plan establishes the framework defining the implementation and coordination of incident objectives in response to a flood.

This plan has been developed in support of the CEMP, following the guidance of the State of Florida Comprehensive Emergency Management Plan, the National Response Framework, the National Incident Management System, and FEMA's *Comprehensive Preparedness Guide* (CPG) 101 (v. 2.0) – *Developing and Maintaining Emergency Operations Plans*. The efficient and effective implementation of this plan is the responsibility of the Emergency Management Safety Planner, the Emergency Operations Manager, or his/her designee. A program of review and evaluation of this plan is essential to its overall effectiveness.

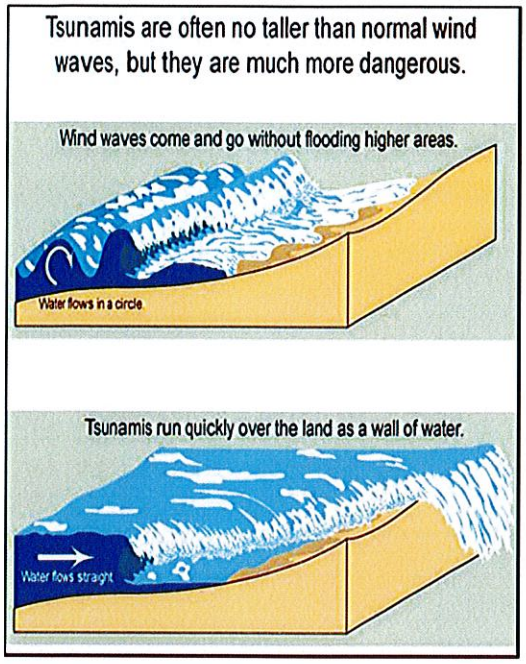
This plan is hereby promulgated as of the date signed below.

Ron Parrish, MPA, EFO, Director
Department of Public Safety

Date 3/5/19

Introduction

What are Tsunamis? The U.S. Geological Survey defines tsunamis as ocean waves caused by large earthquakes and landslides that occur near or under the ocean. Tsunami waves are unlike typical ocean waves generated by wind and storms. When tsunamis approach shore, they behave like a very fast moving tide that extends far inland. Tsunamis are not like the typical wind-generated waves popular with surfers. Even "small" tsunamis are associated with extremely strong currents, capable of knocking someone off their feet. Because of complex interactions with the coast, tsunami waves can persist for many hours. As with many natural phenomena, tsunamis can range in size from micro-tsunamis detectable only by sensitive instruments on the ocean floor to mega-tsunamis that can affect the coastlines of entire oceans, as with the Indian Ocean tsunami of 2004. (United States Geological Survey, n.d.)



Can a tsunami happen here on the east coast of Florida? Soon after the devastating tsunami in the Indian Ocean on December 26, 2004, many people have asked, could such a tsunami happen here in Florida? More recently, an 8.9 magnitude earthquake hit off the east coast of Japan on March 11, 2011. The quake -- one of the largest in recorded history -- triggered a 23-foot tsunami that battered Japan's coast, killing hundreds and sweeping away cars, homes, buildings, and boats. This devastating event again stimulated inquiries about a tsunami impacting Florida and inquiries about our ability to respond to such an event.

"The chance of any tsunami at all is extremely remote," said Bart Hagemeyer, meteorologist in charge of the weather service in Melbourne. But, no matter how slight the risk, the St. Lucie County Emergency Management Division wants to be prepared. Computer modeling for a large tsunami originating from the Puerto Rico trench could inundate the St. Lucie County beaches to the dune line. Modeling results from a tsunami triggered by a large Portugal earthquake suggest more significant tsunami impacts locally. In this case, ocean water may breach the dune line in some locations and reach as far as US Highway 1. Therefore, St. Lucie County Emergency Management, in conjunction with the Melbourne Office of the National Weather Service, has developed a St. Lucie County-specific ***Tsunami Warning and Evacuation Plan***. The goal of this plan is to properly prepare and respond to the residents of St. Lucie County in the unlikely event of a tsunami impacting our area.

Tsunami Terms and Definitions (FEMA, 2011)

St. Lucie County Tsunami Hazard Zone
National Weather Service guidelines indicate that the (Florida Atlantic Coast) Tsunami Hazard Zone extends 300 feet inland beyond the high tide location. In order to verbally describe the Tsunami Hazard Zone more comprehensively, while also allowing for a greater safety zone for the protection of life and property, St. Lucie County Emergency Management has defined the Tsunami Hazard Zone as the region from east of US Highway 1 to the Atlantic.

St. Lucie County Tsunami Safe Zone
St. Lucie County Emergency Management has defined the Tsunami Safe Zone as the area west of US Highway 1.

Tsunami Watch
A tsunami was or may have been generated, but is at least two hours travel time to the area in watch status. The watch area may be upgraded to an advisory or warning or canceled based on updated information and analysis. Therefore, emergency management officials and the public should prepare to take action. Watches are normally issued based on seismic information without confirmation that a destructive tsunami is underway.

County Actions:

- EM officials will notify County/local public safety officials of the Tsunami Watch.
- Officials will review plans and stand prepared to order/enact evacuation for the Tsunami Hazard Zone if the Tsunami Watch is upgraded to a Tsunami Warning or Tsunami Advisory.

Tsunami Warning
A potential tsunami with significant widespread inundation is imminent or expected. Warnings alert the public that widespread, dangerous coastal flooding accompanied by powerful currents is possible and may continue for several hours after arrival of the initial wave. Warnings also alert emergency management officials to take action for the entire tsunami hazard zone. Appropriate actions to be taken by local officials may include the evacuation of coastal areas, and the repositioning of ships to deep waters when there is time to safely do so. Warnings may be updated, adjusted geographically, downgraded, or canceled. To provide the earliest possible alert, initial warnings are normally based only on seismic information.

County Actions:

- Officials will immediately enact evacuation plans by notifying and enforcing evacuation of those in the ocean, on the beaches, and within the Tsunami Hazard Zone.

Tsunami Advisory
An earthquake occurred which might generate a tsunami and produce strong currents or waves dangerous to those in or near the water. Coastal regions historically prone to damage due to strong currents induced by tsunamis are at the greatest risk. The threat may continue for several hours after the arrival of the initial wave, but significant widespread inundation is not expected for areas under an advisory. Appropriate actions to be taken by local officials may include closing beaches, evacuating harbors and marinas, and the repositioning of ships to deep waters when there is time to safely do so. Advisories are normally updated to continue the advisory, expand/contract affected areas, upgrade to a warning, or cancel the advisory.

County Actions:

- Officials will immediately enact evacuation plans by notifying and enforcing evacuation of those in the ocean and on the beaches.

Tsunami Information Statement
An earthquake occurred or a Tsunami Watch, Advisory, or Warning was issued for another section of the ocean. In most cases, information statements are issued to indicate there is no threat of a destructive tsunami and to prevent unnecessary evacuations as the earthquake may have been felt in coastal areas. An information statement may, in appropriate situations, caution about the possibility of destructive local tsunamis. Information statements may be re-issued with additional information, though normally these messages are not updated. However, a watch, advisory, or warning may be issued for the area, if necessary, after analysis and/or updated information becomes available.

County Actions:

- If earthquake magnitude is 6.5 or greater, continue to monitor tsunami Information Statements for a possible upgrade to a Tsunami Watch/Warning/Advisory.
- Otherwise, no further actions are required.

Causes of Tsunamis

- Usually by earthquakes
- Less commonly by landslides (into the water and completely below the water)
- Infrequently by volcanic eruptions or explosive decompression of underwater methane deposits
- Very rarely by a large meteorite impact in the ocean
  (Tsunami Geology - What Causes a Tsunami?, n.d.)

Atlantic Ocean Tsunamis

The history of big waves hitting Florida is short:

- A powerful earthquake in Portugal in 1755 killed thousands there and launched a tsunami that hit much of the U.S. coast. Scientists don't know if that caused many deaths in Florida, which was sparsely populated at the time;
- An earthquake in Charleston, S.C., in 1886 triggered a wave that surged up the St. Johns River to Jacksonville, causing few if any deaths;
- An 18-foot rogue wave flooded the parked cars of sunbathers on Daytona Beach without warning in 1992. This event, called a meteorological tsunami (or meteotsunami), was a tsunami-like wave phenomenon of meteorological origin. Tsunamis and meteotsunamis propagate in the water in the same way and have the same coastal dynamics. For an observer on the coast where it strikes, the two types would look the same and have the same impacts. Research is currently underway to better understand these events, with the goal of developing a protocol for issuing meteotsunami warnings along the U.S. coast.

Florida does have a natural defense against a tsunami. The state's shallow, coastal waters will act as a breakwater, dissipating some of the powerful wave's energy.

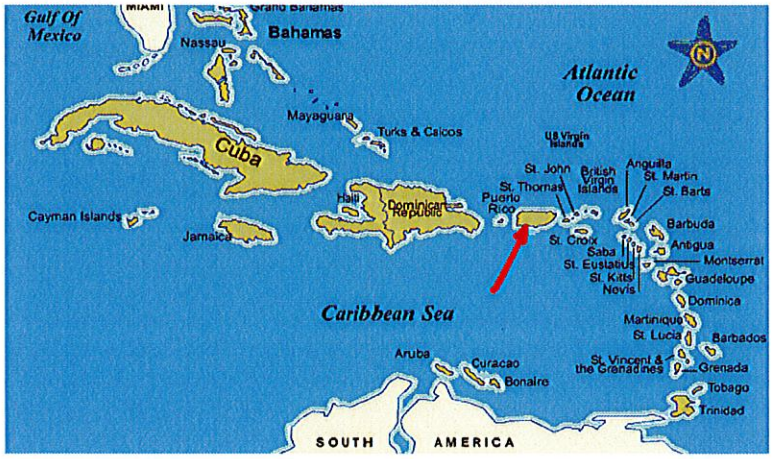
Although the incidence of Atlantic tsunamis is low, the threat should be taken seriously because millions of people live in low-elevation locations around the rim of the Atlantic basin. (Orlando Sentinel, 2011)

Fortunately for U.S. residents, the threat to the American mainland is not as dramatic as that facing the Caribbean islands. Florida's east coast, scientists say, would likely be spared from major tsunami damage should a quake occur near Puerto Rico, because the Bahamas would block most of the wave energy. (Williams, 2005)

Tsunami Risk for Florida's East Coast

1. **Puerto Rico Trench** - Florida's greatest risk of a tsunami would originate from the Puerto Rico Trench, which is the deepest part of the Atlantic Ocean, with water depths exceeding 8,400 meters. Its depth is comparable to the deep trenches in the Pacific Ocean. Trenches in the Pacific are located in places where one tectonic plate subducts or slides under another one. The Puerto Rico Trench, in contrast, is located at a boundary between two plates that slide past each other with only a small component of subduction. The trench is less deep where the component of subduction is larger. The unusually deep sea floor is not limited to the trench, but also extends farther south toward Puerto Rico. The Puerto Rico Trench is also associated with the most negative gravity anomaly on earth, -380 milliGal, which indicates the presence of an active downward force. Finally, a thick limestone platform, which was originally deposited in flat layers near sea level, is now tilted northward at a uniform angle. Its northward edge is at a depth of 4,200 m, and its southern edge can be found on land in Puerto Rico at an elevation of a few hundred meters. Many tectonic models have been proposed to explain this geologically fascinating, tectonically active region; however, none have gained acceptance, and the region remains poorly understood, largely because its underwater location makes it difficult to study.

   Puerto Rico, the Virgin Islands to its east, and eastern Hispaniola to its west, are located on an active plate boundary zone between the North American plate and the northeast corner of the Caribbean plate. The Caribbean plate is roughly rectangular, and it slides eastward at about 2 centimeters per year relative to the North American plate. Motion along its northern boundary (in the plate boundary zone region) is dominantly strike-slip (a geological fault in which an adjacent surface moves horizontally), with a small component of shortening.



   In contrast, on its eastern boundary, the Caribbean overrides the North American plate, creating the island arc of the Lesser Antilles with its active volcanoes. (Uriten Brink, n.d.)

2. **Cumbre Vieja Volcano in Canary Islands** - The Canary Islands are a volcanic island-arc chain located in the eastern Atlantic Ocean, just west of the Moroccan coastline. La Palma is the western-most and the youngest of the Canary Islands, and is volcanically active with three large volcanoes. It is home to the most active volcano of the Canaries, Cumbre Vieja, which last erupted in 1949 and 1971. It is here that some researchers point to as a possible ticking time bomb for large tsunami creation in the Atlantic Ocean.

3. **Lisbon, Portugal** - In the 1700s, an earthquake in Lisbon, Portugal, triggered a tsunami that did hit the U.S. coast. Based on computer models, a repeat of that event could send a tsunami of near 3 meters (10 feet) to Florida. Coastal officials would evacuate the beach and up to 300 feet beyond the dunes, but they estimate they would have more than eight hours of lead time. (Arcas, 2011)

The National Weather Service estimates that St. Lucie County will receive a two-to- eight-hour advance warning before a tsunami detected at its origin arrives, depending on origin. Persons deemed at risk on the barrier island (tsunami hazard/evacuation zone) must be evacuated/re-located within this time frame, either by evacuating beyond the designated Tsunami Hazard Zone or through vertical evacuation. Vertical evacuation is an option for persons residing on the ground floors of buildings located on our barrier island that choose not to evacuate. The option is to move upward to the 3rd+ floor (only an option if they are in a modern/solid/concrete building).

Computer modeling for a tsunami originating from the Puerto Rico trench would likely inundate St. Lucie County's beaches to the dune line. Considering this threat level, all persons swimming or surfing in the ocean and persons on the beach would need to be evacuated from the area.

Modeling results from a tsunami triggered by a large Portugal earthquake suggests more significant tsunami impacts locally. In this case, ocean water may breach the dune line in some locations and reach US Highway 1. In this scenario, an evacuation would be ordered for all persons east of US Highway 1.

Communications and Coordination

St. Lucie County's 24-Hour E911 Communications Center is located at the St. Lucie County Emergency Operations Center. The E911 Communications Center has the following capabilities:

- 24-hour operations
- Warning reception capability
- Warning communication/dissemination capability
- Ability and authority to activate local warning systems

They have the capability of receiving NWS tsunami information and to provide local reports and advice after normal business hours.

Activation/Coordination of Emergency Operations Center

The St. Lucie County Emergency Operations Center would be activated and staffed during tsunami events to execute the E911 Communications Center's tsunami warning functions. All EOC functions would be in accordance with the Comprehensive Emergency Management Plan and would include the following tsunami-related roles:

- Activate EOC based on predicted tsunami events (Tsunami Watch/Tsunami Warning/Tsunami Advisory).
- Staff EOC by all emergency support function primary representatives
- Coordinate warning reception/dissemination
- Communicate with adjacent EOCs/Public Safety Answering Points (PSAPs), Warning Points and local NWS office.

Warning Reception

The E911 Communications Center and EOC have multiple ways to receive NWS weather alerts, including Tsunami Warnings. Our threat recognition system is tested on a daily basis and includes the following elements:

- NOAA Weather Radio receiver with tone alert.
- Emergency Management Network (EMNET) - a satellite-based emergency messaging system serving state and municipal government emergency operation centers and local National Weather Service offices.
- National Weather Service telephone notification, provided to the EOC when a potential weather/tsunami event may impact St. Lucie County.
- Direct link to NWS office – amateur or VHF radio and participation with the NWSChat.
- Radio/TV via Emergency Alert System – Local radio, TV or cable TV.

Warning Dissemination

The E911 Communications Center and EOC have multiple ways to disseminate emergency alerts, including Tsunami Warnings. Our goal is to communicate the threat to as much of the population as possible. Our warning dissemination system is tested regularly and includes the following elements:

- NOAA Weather Radio – A campaign was held in 2016 to educate citizens on the potential lifesaving benefits of an all-hazard NOAA Weather Radio. Utilizing grant funds, we purchased a cache of radios (with SAME capability) to use as raffle prizes at disaster preparedness events. NOAA Weather Radios were distributed by emergency management and can be found in the following facilities:
  - 24-hour E911 Communications Center
  - Emergency Operations Center
  - All municipal administrative offices
  - School District
  - Courthouse
  - Public libraries
  - Hospitals – St. Lucie Medical Center, Lawnwood Medical Center, and Martin Health System
  - All schools
  - All health care facilities (nursing homes and assisted living facilities)
- Television audio/video overrides
- St. Lucie County Emergency Management's Alert St. Lucie, which provides subscribers emergency alerts via landline phone, cell phone and e-mail.
- Alert St. Lucie messages are provided to several distribution lists including the Special Needs Registry.
- Audible notification/alert provided by county and municipal law enforcement/fire rescue officials in the form of public address system announcements from county/municipal public safety vehicles.
- County Government Channel – Used to display protection and recovery actions during an emergency. Available to cable subscribers only.
- Internet web page – St. Lucie County has a website that provides updates on emergency conditions as well as assistance with disaster planning and recommended protective actions.
- The St. Lucie County Sheriff's Office helicopter has the ability to provide notification of Tsunami Warning/Advisory via a public address system for those within the ocean and on the beaches.

Exercising Tsunami Plan

Annually, St. Lucie County Emergency Management will participate in the National Tsunami Exercise or a local Tsunami Exercise. The exercise will involve partners

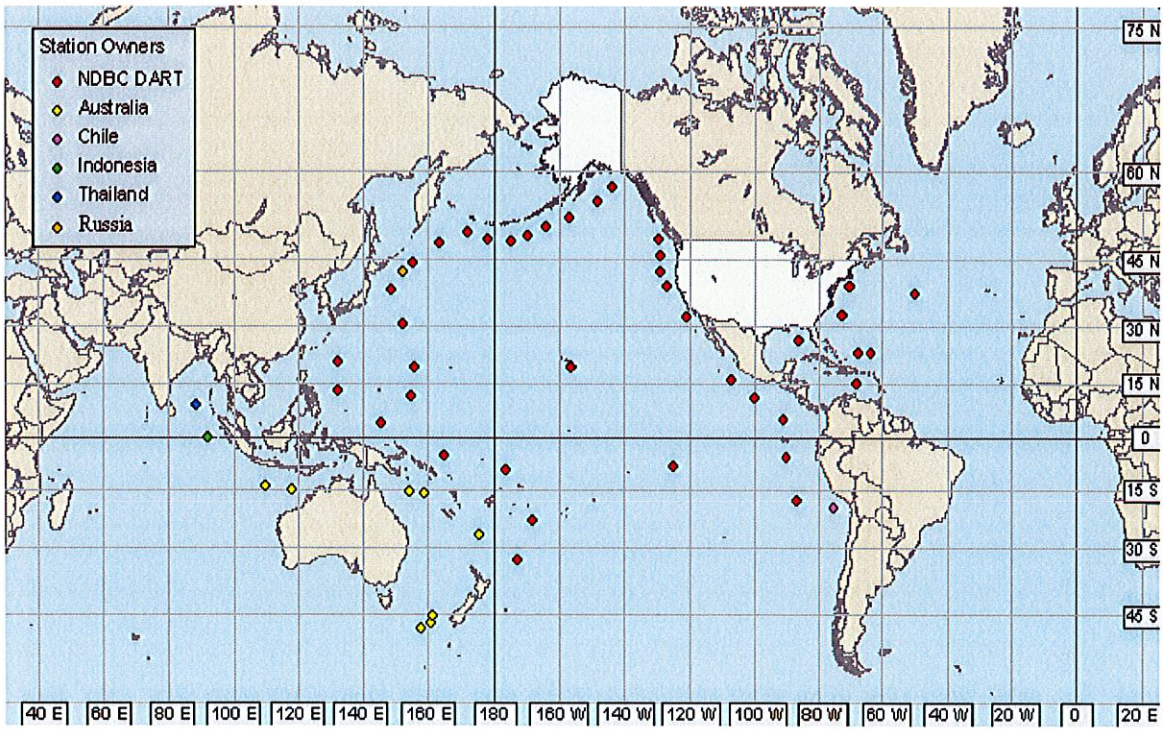
such as law enforcement, Fire Rescue, public works, recreation, municipal agencies, National Weather Service, etc. to ensure a high level of tsunami awareness and readiness in the event a Tsunami Watch/Warning/Advisory is issued for the local coastline.

Tsunami Detection and Warnings for the United States

On December 26, 2004, a powerful submarine earthquake struck near Sumatra, Indonesia and an ensuing tsunami devastated communities around the northern rim of the Indian Ocean. The National Oceanic and Atmospheric Administration (NOAA) reported that an estimated 170,000 people lost their lives. After the dual disaster, some Members of Congress were soon on record as supporting an international effort to build a regional tsunami detection and warning network for the Indian Ocean where no such system existed prior to the disaster. Some lawmakers called for establishing an expanded tsunami detection and warning network to monitor the U.S. Atlantic coast, the Gulf of Mexico, and the Caribbean Sea. They noted that although the risks may be small, the consequences of a tsunami for the U.S. Atlantic Coast justified such expenditures. (Morrissey, 2008)

To ensure early detection of tsunamis and to acquire data critical to real-time forecasts, NOAA has placed Deep-ocean Assessment and Reporting of Tsunami (DART®) stations at sites in regions with a history of generating destructive tsunamis. NOAA completed the original 6-buoy operational array in 2001 and expanded to a full network of 39 stations in March, 2008. (NOAA, n.d.)

Current DART Buoy Locations



There are two Tsunami Warning Centers that are operated by NOAA in the United States and their function is to monitor seismological and tidal stations throughout the Pacific and Atlantic Basins to evaluate potentially tsunamigenic earthquakes and disseminate Tsunami Warning information. Their locations are:

- The West Coast and Alaska Tsunami Warning Center in Palmer (ATWC), Alaska has responsibility for the following areas:
    - Alaska south to California
    - U.S. Gulf of Mexico and Atlantic Coast
    - Puerto Rico and U.S. Virgin Islands
- The Pacific Tsunami Warning Center (PTWC) in Ewa Beach, Hawaii has responsibility for the following areas:
    - Hawaii
    - A national/international warning center for tsunamis that pose a Pacific-wide threat.
    - Caribbean (except Puerto Rico and U.S. Virgin Islands)

Tsunami Watch/Warning Process

- The Alaska Tsunami Warning Center (ATWC) issues Tsunami Warnings/Advisories for U.S. East Coast coastal locations close to the earthquake for magnitude 6.5 to 7.5 events, and for larger coastal regions if the magnitude is 7.6 to 7.8. For magnitude 7.9 or greater earthquakes anywhere within the Atlantic, a Tsunami Watch/Warning/Advisory may be issued for the US east coast.
- NWS Office in Melbourne, Florida receives Tsunami Watch/Warning/Advisory from the ATWC via immediate electronic bulletin and email.
- If the potential tsunami impact area includes the east-central Florida coast, NWS Melbourne will issue a Tsunami Watch/Warning/Advisory to trigger the Emergency Alert System (EAS), including activating All Hazards NOAA Weather Radios.
- NWS Melbourne will also notify east central Florida coastal county E911 Communications Centers and emergency management offices by telephone.
- NWS Melbourne will then issue hourly "Special Weather Statements" to include local details concerning potential tsunami impacts (expected time of arrival, potential impacts, protective actions, and evacuation information from public safety officials).

Tsunami Warning and Response Plan

Although it is highly unlikely that a tsunami will impact Florida, it is not impossible. Floridians may also travel to locations where tsunamis are more likely. It is vital to know (and instruct children) that if the ocean suddenly recedes from the shore do not stand and stare. It is necessary to immediately move inland away from the shore and go to the highest location possible which may mean up the stairs of a substantial building.

The purpose of this plan is to:

1. Establish warning procedures for residents in a risk area
2. Establish evacuation procedures in response to a Tsunami Watch/Warning/Advisory from the National Weather Service
3. Establish search and rescue procedures
4. Establish procedures for dealing with a potential mass casualty event
5. Coordinate disaster recovery
6. Establish public outreach and educating the public of the potential for a tsunami

Notification Procedure

Once we receive notification from the Melbourne National Weather Service office to the St. Lucie County E911 Communications Center that a Tsunami Watch/Warning/Advisory is in effect, the following notifications will take place:

1. State Watch Office
2. County Administrator
3. St. Lucie County Fire District
4. St. Lucie County Sheriff's Office
5. Hazard zone notifications (via PA system "Route Alerting", Activation of FirstCall emergency notification system, bull-horn, radio and television announcements)
6. St. Lucie County School District – superintendent
7. Municipalities of Fort Pierce, Port Saint Lucie and Saint Lucie Village
8. Emergency Support Function primary representatives

Emergency Operations Center Activation

A Tsunami Watch/Warning/Advisory for St. Lucie County would be an activation trigger for staffing our Emergency Operations Center (EOC). The initial level of activation would be Level II – partial activation, but may promptly be escalated to a Level I depending on the size, scope, and complexity of the impact of the incident. All emergency support function primary representatives and Emergency Services administrative staff would be called to staff the EOC. The Public Information lines would be established and all documentation procedures would begin. An initial briefing would be held by the

Emergency Operations Manager to discuss what is known up to that point. A policy level meeting would be held by the Emergency Operations Manager. Plans and procedures from the Comprehensive Emergency Management Plan would be implemented.

Local Evacuation

In the unlikely event that a tsunami was to affect the east coast of Florida it would likely originate from a long distance. The first wave would take two hours or more to reach our beaches, and more likely four to eight hours. Successive tsunami waves would then likely continue for many hours (~12 hours) and the first wave usually will not be the most significant one. The triggering earthquake would like be too far way for residents to feel and there would be plenty of time for an official warning and evacuation to safety.

The magnitude of the seismic event and origin of the tsunami determines the subsequent risk to St. Lucie County. The following evacuation areas have been designated and are dependent upon the earthquake magnitude and origin:

- An earthquake of magnitude 7.9 or less near Puerto Rico could trigger a tsunami that would require an evacuation within St. Lucie County for those persons in the ocean (surfers, swimmers, etc.), on the beaches, and possibly up to US 1. Evacuation orders for this scenario would be for those persons near the immediate coast to move inland beyond the Tsunami Hazard Zone or evacuate at least 15 feet vertically (3rd floor or higher within a modern, secure building) prior to the arrival of tsunami waves.

- An earthquake of magnitude 7.9 or greater near Portugal would likely trigger a tsunami that would have a more significant impact to the St. Lucie County coast. In this case, ocean water may breach the dune line in some locations and even reach US Highway 1. Evacuation orders for this scenario would be for those persons in all areas from US Highway 1 to the ocean to move inland beyond the Tsunami Hazard Zone or evacuate at least 15 feet vertically (3rd floor or higher within a modern, secure building) prior to the arrival of tsunami waves.These evacuation areas may be modified for expected conditions depending on the characteristics of the tsunami. Any sheltering or other emergency operations as a result of a tsunami will be in accordance with the St. Lucie County Comprehensive Emergency Management Plan. Evacuations for a threatening tsunami are likely to be short term (12 hours or less).

All persons in the announced evacuation order have the following options:

- Evacuate the designated risk area (areas east of US Highway 1) following the recommended evacuation routes and/or seek shelter in one of the following locations:
  - Home of friend or relative
  - Commercial building (mall, department store, movie theater, etc.)

- Shelter openings, St. Lucie County Emergency Management will announce this area to the public at the time of a Tsunami Warning.

- Vertical evacuation. Vertical evacuation consists of the evacuation of persons from an entire area, floor, or wing of a building to a higher floor or wing. The National Weather Service has determined that 15 feet (3rd floor or higher of a modern, secure building) is the minimum acceptable level for vertical evacuation within the Tsunami Hazard Zone.

Plans for vertical evacuation of barrier island residents and visitors would only be effective if designated structures are designed to withstand the velocity and impact loads of tsunami inundation. Since no studies have been conducted to evaluate the level of protection current structures provide, vertical evacuation is only recommended from a near-source tsunami when public notification may not be possible (unlikely for St. Lucie County); or, when only a few hours or minutes of warning is available.

All St. Lucie County residents will receive notifications over NOAA weather radio, local television and radio, and from public safety officials via bull-horn announcements that the local area has been put into an official Tsunami Watch/Warning/Advisory.

Post-Tsunami Actions

If our area is impacted by a tsunami, evacuation orders will remain until a minimum of two hours after arrival of the last wave or upon an ALL CLEAR announcement from Emergency Management. The following actions will occur before issuance of an ALL CLEAR:

- After a two-hour safety period, secure damaged areas from re-entry by non-residents and property owners, emergency responders, and the press.
- Initiate windshield damage assessment.
- Request St. Lucie County Health Department to inspect damaged areas to ensure the area is safe for residents.
- Upon approval by the Health Department that areas are safe for resident re-entry, allow residents, property owners, responders, the press, and other authorized individuals to enter area.
- Based on damage, consider Declaration of Emergency or Disaster.
- Establish response priorities and mutual aid requirements.
- Coordinate press releases with ESF #14 (Public Information).
- Coordinate FEMA/State disaster recovery programs, if available.

Tsunami EOC Activation Checklist

SITUATION	ACTION	RESPONSIBILITY	STATUS
Tsunami Information Statement issued (Watch, Warning or Advisory has been issued for any portion of the Atlantic beyond St. Lucie County).	Contact National Weather Service Melbourne (321-255-0212) for additional information/confirmation. Also, inform NWS Melbourne of any significant public safety actions for inclusion within NWS tsunami updates (public/media).	EM Staff	
	Determine response actions, to include alerts and notification, EOC activation level, possible evacuations of the Tsunami Hazard Zone.	EM Staff	
Tsunami Watch/Advisory has been issued or upgraded from Information Statement, to include St. Lucie County.	Contact National Weather Service Melbourne (321-255-0212) for additional information/confirmation. Also, inform NWS Melbourne of any significant public safety actions for inclusion within NWS tsunami updates (public/media).	EM Staff	
	Determine response actions, to include alerts and notification, EOC activation level, possible evacuations of the Tsunami Hazard Zone.	EM Staff	
	Prepare to order/enact evacuation of the Tsunami Hazard Zone if the Tsunami Watch is upgraded to a Tsunami Warning or Tsunami Advisory.	Emergency Operations Manager	
	Monitor Tsunami threat status and modify response as necessary.	EM Staff	
	Brief executive/policy group (county administrator, county commissioners, county department heads).	Emergency Operations Manager	
	Brief ESF #14 (PIO) and place public information operators on stand-by.	Emergency Operations Manager ESF #5	
	Decide on level of EOC activation (partial or full, based on situation)	Emergency Operations Manager	

SITUATION	ACTION	RESPONSIBILITY	STATUS
	Using conference call list, initiate conference calls to brief and coordinate. Participants include, but are not limited to: • Law enforcement • School District • Municipal government • Dept. of Health • Recreation Dept./lifeguards	Emergency Operations Manager	
	Notify Emergency Support Function (ESF) primary representatives of possible EOC activation.	EM Staff	
	Launch A/V equipment in EOC	EM Staff	
	Launch E-Team and create an Incident.	EM Staff	
	Notify State E911 Communications Center if EOC is activated.	EM Staff	
Tsunami Warning issued, to include St. Lucie County	Contact National Weather Service Melbourne (321-255-0212) for additional information/confirmation. Also, inform NWS Melbourne of any significant public safety actions for inclusion within NWS tsunami updates (public/media).	EM Staff	
	Determine response actions, to include alerts and notification, EOC activation level, possible evacuations of the Tsunami Hazard Zone.	EM Staff	
	Initiate Level II EOC activation by recalling all ESF primary representatives.	ESF #5 (Information & Planning)	

SITUATION	ACTION	RESPONSIBILITY	STATUS
	Enact evacuation plans by notifying and enforcing evacuation of those in the ocean, on the beaches, and within the Tsunami Hazard Zone. Assistance with evacuation notifications will include, but not be limited to, the following methods: • Lifeguards • ESF #14 (PIO) • Public address system (SLCSO helicopter, law enforcement, fire rescue, lifeguards, etc.) via roving vehicle through neighborhoods within the Tsunami Hazard Zone • NOAA Weather Radio • County website and social media (FaceBook, Twitter, etc.) • Cable TV override • Emergency Alert System • Government TV Channel • Local news agencies • Radio • Emergency alert via e-mail subscriber list	Emergency Operations Manager	
	Prepare a "*Draft*" local Declaration of Emergency for the Board's signature and request a state Declaration of Emergency, if needed.	ESF #5 (Information & Planning)	
	Coordinate all public information activities including: • Establishing a Joint Information Center (JIC) • Distributing public notification/warning to the public, along with recommended protection actions.	ESF #14 (PIO)	
	• Coordinating interviews with the press.		
	Coordinate with ESF #1 (School District): • Possible opening of using public school as a convenience evacuation site. • Stand-by of school buses for transportation assistance.	Emergency Operations Manager ESF #1	
	Prepare and send emergency alert message FirstCall.	Emergency Operations Manager	
	Notify law enforcement to clear the roadways (within their jurisdiction) of pedestrians and vehicles.	Emergency Operations Manager ESF #16	

SITUATION	ACTION	RESPONSIBILITY	STATUS
	Secure a safe perimeter from the Tsunami Hazard Zone and manage crowd control.	ESF #16	
	Notify/brief emergency response personnel for possible recall.	Emergency Operations Manager	
	Place ESF #6 (Mass Care) and ESF #11 (Salvation Army) on alert for possible opening and maintaining shelter services, including: feeding, first-aid, disaster welfare inquiry services for displaced residents and visitors, etc.	EM staff ESF #6 ESF #11	
	Coordinate road closures with law enforcement.	Emergency Operations Manager ESF #16 (Law Enforcement)	
	Prepare regular Situation Reports/Incident Action Plans for distribution to FDEM.	ESF #5 (Information & Planning)	
	Coordinate animal rescue operations.	ESF #17 (Animal Care)	
	Implement emergency utility cutoff as needed.	ESF #3 (Public Works) ESF #12 (Utilities)	
	Coordinate with hospitals and clinics.	ESF #8 (Public Health)	
	Assist with evacuation routes and traffic control points.	ESF #3 (Public Works)	
Damage Assessment	Determine status of damage, injuries, and fatalities before issuing all-clear.	• Fire Rescue • Law Enforcement • Emergency Mgt. • Public Works • Damage assessment teams	
	Coordinate clearing debris from roads and over-all debris management.	ESF #3 (Public Works)	
	Coordinate evaluation of and response to environmental issues (hazardous materials or	ESF #10 (Environment	
	Coordinate the evaluation and response to public health threats (water, broken sewer	ESF #8 (Public Health)	
	Conduct damage assessment and reconnaissance of public infrastructure, safety	ESF #3 (Public Works)	

SITUATION	ACTION	RESPONSIBILITY	STATUS
All-Clear	Coordinate "All-Clear" issuance and public announcements, including notifying all agencies previously alerted.	EM Director ESF #14	
	Debrief policy group	EM Director EM Coordinator	
	Demobilize EOC	EM Director EM Coordinator	
Re-Entry	Closed areas will reopen by issuing public safety announcements.	EM Director ESF #14	
Disaster Assistance	Coordinate disaster assistance if available. • Public Assistance • Individual Assistance • Small Business Administration (SBA) Disaster Loan Assistance	EM Staff	
	Coordinate recovery activities with state and federal relief agencies.	EM Staff	
	Arrange for emergency housing as necessary.	ESF #6 (Mass Care)	
Post-Event	Coordinate de-briefing and hot wash for compilation of After Action Report.	Emergency Operations Manager	

APPENDIX A - DEFINITIONS

Appendix A
Acronyms

ASFPM	Association of State Floodplain Managers
BFE	Base Flood Elevation
BOAF	Building Officials Association of Florida
CBRA	Coastal Barrier Resources Act
CDBG	Community Development Block Grant
CEMP	Comprehensive Emergency Management Plan
CHHA	Coastal High Hazard Area
COOP	Continuity of Operations Plan
CRS	Community Rating System
DEP	Department of Environmental Protection
DEM	St. Lucie County Division of Emergency Management
DMA2K	Disaster Mitigation Act of 2000
DOC	Department of Commerce
DOH-SLC	Department of Health in St. Lucie County
DRI	Disaster Recovery Initiative
EDA	Economic Development Administration
EHS	Extremely Hazardous Substance
EMAP	Emergency Management Accreditation Program
EMPA	Emergency Management and Preparedness Assistance
EOC	Emergency Operations Center (St. Lucie County)
EPA	Environmental Protection Agency
EPCRA	Emergency Preparedness and Community Right to Know Act
EPZ	Emergency Planning Zone
ESF	Emergency Support Function
F.A.C.	Florida Administrative Code
FCMP	Florida Coastal Management Program
FDBPR	Florida Department of Business and Professional Regulation
FDEP	Florida Department of Environmental Protection
FDEM	Florida Division of Emergency Management
FDEO	Florida Department of Economic Opportunity
FDOC	Florida Department of Corrections
FDOE	Florida Department of Education
FDOI	Florida Department of Insurance
FDOMS	Florida Department of Management Services
FDOS	Florida Department of State
FDOT	Florida Department of Transportation
FEC	Florida East Coast Railroad
FEMA	Federal Emergency Management Agency
FIND	Florida Inland Navigation District
FIRM	Flood Insurance Rate Map
FMA	Flood Mitigation Assistance
FPL	Florida Power & Light

F.S.	Florida Statutes
HI	Heat Index
HUD	United States Department of Housing and Urban Development
IBHS	Institute of Business and Home Safety
ICS	Incident Command System
LDR	Local Development Review
LEPC	Local Emergency Planning Committee
LMS	Local Mitigation Strategy
LOD	Letter of Dispute
MPO	Metropolitan Planning Organization
NCDC	National Climatic Data Center
NFIP	National Flood Insurance Program
NFPA	National Fire Protection Administration
NLSI	National Lightning Safety Institute
NOAA	National Oceanic and Atmospheric Administration
NRT	National Response Team
NWS	National Weather Service
PAGs	Protective Action Guidelines
PCCIP	President's Commission on Critical Infrastructure Protection
PDM	Pre-Disaster Mitigation
PDR	Purchase of Development Rights
PHSW	Public Health, Safety, and Welfare
PPL	Project Prioritization List
PSLEOC	Port St. Lucie Emergency Operations Center
RC	Red Cross
RUS	Rural Utilities Service
SEOC	State Emergency Operations Center
SERC	State Emergency Response Commission
SFWMD	South Florida Water Management District
SHIP	State Housing Initiative Partnership
STP	Surface Transportation Program
TCRPC	Treasure Coast Regional Planning Council
TDR	Transfer of Development Rights
TIP	Transportation Improvement Plan
TYLCV	Tomato Yellow Leaf Curl Virus
USC	United States Code
USD	Urban Service District
USCG	United States Coast Guard
USDA	United States Department of Agriculture
USDOI	United States Department of the Interior
USFA	United States Fire Administration
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

DEFINITIONS

Base Flood: A term used in the National Flood Insurance Program to indicate the minimum size flood to be used by a community as a basis for its floodplain management regulations; presently required by regulation to be that flood which has a one-percent chance of being equaled or exceeded in any given year. Also known as a 100-year flood or one-percent chance flood.

Base Flood Elevation: The elevation for which there is a one-percent change in any given year that flood levels will equal or exceed it. The BFE is determined by statistical analysis for each local area and designated on the Flood Insurance Rate Map. It is also known as the *100-Year Flood.*

Building Code: The regulations adopted by a local governing body setting forth standards for the construction, addition, modification, and repair of buildings and other structures for the purpose of protecting the health, safety, and general welfare of the public.

Coastal High Hazard Area: An area of special flood hazard, extending from offshore to the inland limit of a primary frontal dune, along an open coast and any other area subject to high velocity wave action from storms or seismic sources.

Continuity of Operations Plan (COOP): Continuity of Operations, as defined in the National Security Presidential Directive-51/Homeland Security Presidential Directive-20 (NSPD-51/HSPD-20) and the National Continuity Policy Implementation Plan (NCPIP), is an effort within individual executive departments and agencies to ensure that Primary Mission Essential Functions (PMEFs) continue to be performed during a wide range of emergencies, including localized acts of nature, accidents and technological or attack-related emergencies.

Community Rating System (CRS): Recognizes and encourages community floodplain management activities that exceed the minimum NFIP standards. Depending upon the level of participation, flood insurance premium rates for policyholders can be reduced up to 45%. Implementing some CRS activities can help projects qualify for certain other federal assistance.

Critical Facilities: Those facilities essential to the health, safety and welfare of the population whose statutory purpose is to provide physical and mental health care and services. The services are necessary in the event of local, state and federal emergencies; and/or natural disasters; and, in time of evacuation, examples are: primary care centers; trauma units; emergency units; hospitals; infirmaries; mental health facilities and nursing homes.

Damage Assessment: The process utilized to determine the magnitude of damage and the unmet needs of individuals, businesses, the public sector, and the community caused by a disaster or emergency event.

Elevation: The raising of a structure to place it above flood waters on an extended support structure.

Eligible Community: A community for which the Administrator has authorized the sale of flood insurance under the National Flood Insurance Program.

Emergency: Absent a Presidential declared emergency, any incident(s), human-caused or natural, that requires responsive action to protect life or property. Under the Robert T. Stafford Disaster Relief and Emergency Assistance Act, an emergency means any occasion or instance for which, in the determination of the President, Federal assistance is needed to supplement State and local efforts and capabilities to save lives and to protect property and public health and safety, or to lessen or avert the threat of a catastrophe in any part of the United States.

Emergency Operations Center (EOC): The protected site from which civil government officials (municipal, County, State, and Federal) exercise centralized direction and control in an emergency. Operating from an EOC is a basic emergency management concept.

For effective emergency response, all activities must be centrally directed and coordinated. The EOC also services as a Resource Center and coordination point for additional field assistance. It provides executive directives and liaison to State and Federal governments, and considers and mandates protective actions.

Emergency Planning & Community Right-To-Know Act (EPCRA): Legislation requiring that chemical information be made available to the community and the public.

Executive Orders 11988 and 11990: The requirements to avoid direct or indirect support of support of floodplain development and to minimize harm to floodplains and wetlands. Federal decision makers are obligated to comply with these orders, accomplished through an eight-step decision making process.

Executive Order 12699: Requires that new construction of Federal buildings must comply with appropriate seismic design and construction standards.

Exercise: Maneuver or simulated emergency condition involving planning, preparation, and Execution; carried out for the purpose of testing, evaluating, planning, developing, training, and/or demonstrating emergency management systems and individual components and capabilities, to identify areas of strength and weakness for improvement of an emergency operations plan (EOP).

Existing Construction: As used in reference to the National Flood/Insurance Program, any structure already existing or on which construction or substantial improvement was started prior to the effective date of a community's floodplain management regulations.

Facility: Any publicly or privately owned building, works, system or equipment, built or manufactured, or an improved and maintained natural feature. Land use for agricultural purposes is not a facility. This includes any publicly owned flood control, navigation, irrigation, reclamation, public power, sewage treatment and collection, water supply and distribution, watershed development, or airport facility; and non-Federal-aid street, road, or highway; and any other public building, structure including those used for educational, recreational, or cultural purposes, or any park.

Federal Emergency Management Agency (FEMA): This agency was created in 1979 to provide a single point of single point of accountability for all Federal activities related to disaster mitigation and emergency preparedness, response, and recovery.

Federal Hazard Mitigation Officer: The FEMA employee responsible for representing the agency for each declaration in carrying out the overall responsibilities for hazard mitigation and for Subpart M, including coordinating post-disaster hazard mitigation actions with other agencies of government at all levels.

Federal Insurance Administration: The government unit, a part of FEMA that administers the National Flood Insurance Program.

Flood Elevation Determination: A determination by the administrator of the water surface elevations of the base flood, that is, the flood level that has a one percent or greater change or occurrence in any given year.

Flood Hazard Boundary Map: The official map of a community that shows the boundaries of the floodplain and special flood hazard areas that have been designated. It is prepared by FEMA, using the best flood data available at the time a community enters the emergency phase of the NFIP. It is superseded by the FIRM after a more detailed study has been completed.

Flood Insurance: The insurance coverage provided under the National Flood Insurance Program.

Flood Insurance Rate Map (FIRM): A zone identified on a Flood Insurance Rate Map (FIRM) as subject to a specified degree of flood, mudslide (mudflow), or flood-related erosion hazards, to which a particular set of actuarial rates and floodplain management requirements applies.

Flood Insurance Study: A study, funded by FEMA, FIA, and carried out by any of variety of agencies and consultants to delineate the special flood hazard areas, base flood elevations, and NFIP actuarial insurance rate zones. The study is based on detailed site surveys and analysis of site-specific hydrologic characteristics.

Flood Roofing: Any combination of structural and nonstructural additions, changes, or adjustments to properties and structures that reduce or eliminate flood damage to lands, water, and sanitary facilities, structures, and contents of buildings.

Florida Department of Emergency Management (FDEM): Has the lead role in coordinating State resources to support local government unless the scope of the emergency warrants a higher degree of State involvement. This may occur when emergencies involve multi-jurisdictional hazards, when local governments believe the emergency is beyond the capabilities of local resources, or when the Governor determines there is an overriding concern for the safety of the public. For these situations, the Governor can designate the primary responsibility for emergency response to the state by issuing an Executive Order under the provisions of Section 252.36, Florida

Statutes assistance programs.

Florida Department of Economic Opportunity (FDEO): The State's land planning agency. It is comprised of a number of divisions, including the Bureau of Community Planning and Development. The DEO is responsible for reviewing and approving counties' Comprehensive Growth Management Plans. Additionally, if questions are posed over Land Development Regulations, the DEO will review the item to determine the appropriate application of the regulation.

Disaster Mitigation Act of 2000 (DMA2K): Public Law 106-390 provides the legal basis for FEMA mitigation planning requirements for State, local and Indian Tribal governments as a condition of mitigation grant assistance. It requires a State mitigation plan is continued as a condition of disaster assistance, adding incentives for increased coordination and integration of mitigation activities at the State level through the establishment of requirements for two different levels of state plans. DMA 2000 also established a new requirement for local mitigation plans and authorized up to 7 percent of HMGP funds available to a State for development of State, local, and Indian Tribal mitigation plans.

Department of Commerce (DOC): The mission of the Department is to create the conditions for economic growth and opportunity.

Department of Health -St. Lucie County (DOH-SLC): St. Lucie County Health Department is part of the Region Five Domestic Security Task Force. In cooperation with law enforcement and fire service partners, it addresses hazardous events which may impact the county.

Disaster Recovery Initiative (DRI): Provides assistance to households following a natural disaster as declared by the President of the United States or Governor of the State of Florida. DRI funds may be used for items such as, but not limited to, purchase of emergency supplies, weatherproofing damaged homes, interim repairs, insurance deductible payment, security deposit, rental assistance, and other activities approved by Florida Housing Financial Corporation.

Division of Emergency Management (DEM): The St. Lucie County Division of Emergency Management has the responsibility for the planning, training and exercising of all government and non-government agencies integral to a coordinated response to all disasters.

Emergency Management Accreditation Program (EMAP): Emergency Management Accreditation Program is an independent non-profit organization that establishes credible standards applied in a peer review accreditation process in hopes of enhancing emergency management programs.

Emergency Management and Preparedness Assistance (EMPA): Emergency Management Competitive Grant Program offered by the Florida Division of Emergency Management that provides base Funding for County Emergency Management divisions, departments or agencies.

Emergency Operations Center (EOC): A central command and control facility responsible for

carrying out the principles of emergency management, or disaster management functions during an emergency, and ensuring the continuity of operation of a company, political subdivision or other organization.

Economic Development Administration (EDA): Plays a critical role in fostering regional economic development efforts in communities across the nation. Through strategic investments that foster job creation and attract private investment, EDA supports development in economically distressed areas of the United States.

Extremely Hazardous Substance (EHS): Refers to substances identified by the US Environmental Protection Agency as extremely dangerous to human, animal, aquatic populations and the environment.

Hazard Mitigation Assistance Program: Provides a limited amount of funding to States to cover or to assist in covering the cost of preparing a pre-disaster hazard mitigation plan, one or more components of such a plan, or a related activity that will contribute to reducing vulnerability to hazards either throughout the State or for a selected area within the State.

Hazard Mitigation Grant Program: Authorized under Section 404 of the Stafford Act for hazard provides funding mitigation projects that are cost effective and complement existing post-disaster mitigation programs and activities by providing funding for beneficial mitigation measures that are not funded through other programs.

Hazard Mitigation Plan: The plan resulting from a systematic evaluation of the nature the nature and extent of vulnerability to the effects of natural hazards present in society that includes the actions needed to minimize future vulnerability to hazards.

HazMat: Hazardous Materials: any substance or material in a particular form or quantity that the Secretary of Transportation finds may pose an unreasonable risk to health, safety, and property, or any substance or material in a quantity or form that may be harmful to humans, animals, crops, water systems, or other elements of the environment if accidentally released. Substances so designated may include explosives, solids, combustible solids, poisons, oxidizing for corrosive materials, and flammable gases. Defined via rule making process, under authority of PL 93-633.

Hazards Analysis: The procedure for identifying potential sources of a hazardous materials release, determining the vulnerability of an area to a hazardous materials release, and comparing hazards to determine risks to a community.

Incident Command System (ICS): A standardized on-scene emergency management construct specifically designed to provide for the adoption of an integrated organizational structure that reflects the complexity and demands of single or multiple incidents, without being hindered by jurisdictional boundaries. ICS is the combination of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure, designed to aid in the management of resources during incidents. It is used for all kinds of emergencies and is applicable to small as well as large and complex incidents. ICS is used by various jurisdictions and functional agencies, both public and private, to organize field-level incident management operations.

Individual Assistance: Supplementary Federal Assistance provided under the Stafford Act to individuals and families adversely affected by a major disaster or an emergency. Such assistance may be provided directly by the Federal Government or through State or local governments of disaster relief organizations.

Local Hazard Mitigation Officer: The representative of local government who serves on the Hazard Mitigation Survey Team or the Interagency Hazard Mitigation Team and who is the primary point of contact with FEMA, other federal agencies, and the State in the planning and implementation of post disaster hazard mitigation activities.

Major Disaster: As defined under the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5122), a major disaster is any natural catastrophe (including any hurricane, tornado, storm, high water, wind-driven water, tidal wave, tsunami, earthquake, volcanic eruption, landslide, mudslide, snowstorm, or drought), or, regardless of cause, any fire, flood, or explosion, in any part of the United States, which in the determination of the President causes damage of sufficient severity and magnitude to warrant major disaster assistance under this Act to supplement the efforts and available resources of States, tribes, local governments, and disaster relief organizations in alleviating the damage, loss, hardship, or suffering caused thereby.

Mitigation: The activities designed to reduce or eliminate risks to persons or property or to lessen the actual or potential effects or consequences of an incident. Mitigation measures may be implemented prior to, during, or after an incident. Mitigation measures are often informed by lessons learned from prior incidents. Mitigation involves ongoing actions to reduce exposure to, probability of, or potential loss from hazards. Measures may include zoning and building codes, floodplain buyouts, and analysis of hazard- related data to determine where it is safe to build or locate temporary facilities. Mitigation can include efforts to educate governments, businesses, and the public on measures they can take to reduce loss and injury.

National Flood Insurance Program (NFIP): The Federal program, created by an act of Congress in 1968 that makes flood insurance available in communities that enact satisfactory floodplain management regulations.

One-Hundred (100) Year Flood: The flood elevation that has a one-percent chance of being equaled or exceeded in any given year. It is also known as the base flood elevation.

Preparedness: The range of deliberate, critical tasks and activities necessary to build, sustain, and improve the operational capability to prevent, protect against, respond to, and recover from domestic incidents. Preparedness is a continuous process.
Preparedness involves efforts at all levels of government and between government and private-sector and nongovernmental organizations to identify threats, determine vulnerabilities, and identify required resources. Within the NIMS, preparedness is operationally focused on establishing guidelines, protocols, and standards for planning, training and exercises, personnel qualification and certification, equipment certification, and publication management.

Prevention: Actions to avoid an incident or to intervene to stop an incident from occurring. Prevention involves actions to protect lives and property. It involves applying intelligence and other information to a range of activities that may include such countermeasures as deterrence operations; heightened inspections; improved surveillance and security operations; investigations to determine the full nature and source of the threat; public health and agricultural surveillance and testing processes; immunizations, isolation, or quarantine; and, as appropriate, specific law enforcement operations aimed at deterring, preempting, interdicting, or disrupting illegal activity and apprehending potential perpetrators and bringing them to justice.

Recovery: The development, coordination, and execution of service- and site-restoration plans; the reconstitution of government operations and services; individual, private- sector, nongovernmental, and public-assistance programs to provide housing and to promote restoration; long-term care and treatment of affected persons; additional measures for social, political, environmental, and economic restoration; evaluation of the incident to identify lessons learned; post incident reporting; and development of initiatives to mitigate the effects of future incidents.

Retrofitting: Flood proofing measures taken on an existing structure.

Risk: A measure of the probability that damage to life, property, and/or the environment will occur if a hazard manifests itself; this measure includes the severity of anticipated consequences to people.

Risk Analysis: Assesses probability of damage (or injury) and actual damage (or injury) that might occur, in light of the hazard analysis and vulnerability analysis. Some planners may choose to analyze worst-case scenarios.

Risk Area: An area considered likely to be affected by a natural or technological hazard. Risk areas are based on recommended isolation distances, identifiable land features, etc.

Risk Management: Refers to a decision making process that involves such considerations as risk assessment, technological feasibility, economic information about costs and benefits, statutory requirements, public concerns, and other factors.

Stafford Act: Robert T. Stafford Disaster Relief and Emergency Assistance Act, PL 100-1 07, signed into law November 3, 1988; amended the Disaster Relief Act of 1974, PL 93-288.

Standard Flood Insurance Policy: The flood insurance policy issued by the Federal Insurance Administrator, or an insurer pursuant to an arrangement with the administrator pursuant to federal statutes and regulations.

State Hazard Mitigation Officer: The representative of State government who serves on the Hazard Mitigation Survey Team and Interagency Hazard Mitigation Team and who is the primary point of contact with FEMA, other Federal agencies, and local units of government in the planning and implementation of post-disaster mitigation activities.

Terrorism: Under the Homeland Security Act of 2002, terrorism is defined as activity that

APPENDIX E - PROJECT PRIORITIZED LIST (PPL) AND ELIMINATED PROJECTS LIST

St. Lucie County Local Mitigation Strategy
Project Prioritized List

Date: 20210707

Potential Funding Source Key: HMGP - Hazard Mitigation Grant Program; FMA - Flood Mitigation Assistance; PDM - Pre-Disaster Mitigation; CDBG-MIT: Community Development Block Grant - Mitigation

Grand Total of Projects $ 519,530,654.90

Rank	Score	PROJECT #	Municipality/Applicant	Project Title	Hazard Mitigated	Jurisdictions Benefited	Timeframe for Completion	Potentiial Funding Source	Estimated Total Project Cost ($)	Estimated Federal Share ($)	Status	Notes/Reason
1	112.5	**SLCFD2019-1**	SLC Fire District	**Fire Station Bay Door Improvements**	Flooding, Epidemic, Wind Event, Hazardous Materials Accident, Wellfield/Surface, Terrorism/Sabotage, Wildfire, Drought, Radiological Incident, Transportation System Accident	**All**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$450,000.00	$337,500.00	**In Progress**	Updated by SLCFD on 06/24/2020
2	112.3	**SLCSB2020-1**	SLC School Board	**St. Lucie County Shelter Air-Conditioning & Emergency Circuits**	Flooding, Wind Event, Wildfire, Radiological Incident, Transportation System Accident	**All**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$4,250,000.00	$3,187,500.00	**New**	
3	111.3	**SLCFD2019-3**	SLC Fire District	**Fire Station 13 Roof Improvement**	Flooding, Epidemic, Wind Event, Hazardous Materials Accident, Wellfield/Surface, Terrorism/Sabotage, Wildfire, Drought, Radiological Incident, Transportation System Accident	**All**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$37,830.00	$28,372.50	**In Progress**	Updated by SLCFD on 06/24/2020
4	111.3	**SLCFD2019-2**	SLC Fire District	**Fire Station 1 Emergency Generator**	Flooding, Epidemic, Wind Event, Hazardous Materials Accident, Wellfield/Surface, Terrorism/Sabotage, Wildfire, Drought, Radiological Incident, Transportation System Accident	**All**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$55,000.00	$41,250.00	**In Progress**	Updated by SLCFD on 06/24/2020
5	110.5	**SLCFD2019-5**	SLC Fire District	**Fire Station 7 Rebuild**	Flooding, Epidemic, Wind Event, Hazardous Materials Accident, Wellfield/Surface, Terrorism/Sabotage, Wildfire, Drought, Radiological Incident, Transportation System Accident	**All**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$3,000,000.00	$2,250,000.00	**Not Started**	
6	110.5	**SLCFD2019-4**	SLC Fire District	**Fire Station 2 Roof Improvement**	Flooding, Epidemic, Wind Event, Hazardous Materials Accident, Wellfield/Surface, Terrorism/Sabotage, Wildfire, Drought, Radiological Incident, Transportation System Accident	**All**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$37,830.00	$28,372.50	**Not Started**	
7	110.2	**FPE2020-1**	City of FP Engineering	**Virginia Avenue Canal Bank Stabilization**	Flooding	**All**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$4,600,000.00	$3,450,000.00	**New**	
8	107.7	**SLCPW2020-16**	St. Lucie County Public Works	**Fiber Optic Cable Countywide Infrastructure-City of Fort Pierce Police Department, SLC FENN Center, and SLC Administrative Offices**	Wind Event, Hazardous Materials Accident or Wellfield/Surface, Radiological Incident, Power/Communication Failure, Transportation System Accident	**All**	2-3 Years	**HMGP; PDM; FMA; State mitigation grants**	$1,167,383.56	$875,537.67	**New**	
9	107.4	**SLCPW2020-15**	St. Lucie County Public Works	**Fiber Optic Cable Countywide Infrastructure-SLC Fairgrounds, SLC Emergency Operations Center, and SLC Administrative Offices**	Wind Event, Hazardous Materials Accident, Wellfield/Surface Radiological Incident, Power/Communication Failure, Transportation System Accident	**All**	2-3 Years	**HMGP; PDM; FMA; State mitigation grants**	$4,607,796.70	$3,455,847.53	**New**	
10	106.9	**SLCPW2020-17**	St. Lucie County Public Works	**Fiber Optic Cable Countywide Infrastructure-St. Lucie County Courthouse, City of Fort Pierce Administrative Offices**	Wind Event, Hazardous Materials Accident, Wellfield/Surface, Radiological Incident, Power/Communication Failure, Transportation System Accident	**All**	2-3 Years	**HMGP; PDM; FMA; State mitigation grants**	$1,573,507.04	$1,180,130.28	**New**	
11	106.5	**PSLEM2020-1**	City of PSL Emergency Management	**Installation of a new generator for City of PSL EOC**	All	**All**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$881,550.00	$661,162.50	**New**	
12	104.8	**SLCPW2020-13**	St. Lucie County Public Works	**Fiber Optic Cable Countywide Infrastructure-County Information Technology & Bunker (SLC Back-up EOC Location) on Rock Road to SLC Administration**	Wind Event, Hazardous Materials Accident, Wellfield/Surface, Radiological Incident, Power/Communication Failure, Transportation System Accident	**All**	2-3 Years	**HMGP; PDM; FMA; State mitigation grants**	$2,165,048.48	$1,623,786.36	**New**	

St. Lucie County Local Mitigation Strategy
Project Prioritized List

Date: 20210707

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Grand Total of Projects $ 519,530,654.90

Rank	Score	PROJECT #	Municipality/Applicant	Project Title	Hazard Mitigated	Jurisdictions Benefited	Timeframe for Completion	Potentiial Funding Source	Estimated Total Project Cost ($)	Estimated Federal Share ($)	Status	Notes/Reason
13	102.6	**SLCPW2020-11**	St. Lucie County Public Works	**Fiber Optic Cable Countywide Infrastructure- TCIA, Customs, SLCSO Williams Substation, SLC Administrative Offices**	Wind Event, Hazardous Materials Accident, Wellfield/Surface, Radiological Incident, Power/Communication Failure, Transportation System Accident	**Fort Pierce, St. Lucie Village, Unincorporated St. Lucie County**	2-3 Years	**HMGP; PDM; FMA; State mitigation grants**	$2,832,070.80	$2,124,053.10	**New**	
14	102.2	**SLCPW2020-12**	St. Lucie County Public Works	**Fier Optic Cable Countywide Infrastructure- SLC Sheriff's Office and SLC Administartive Offices**	Wind Event, Hazardous Materials Accident, Wellfield/Surface, Radiological Incident, Power/Communication Failure, Transportation System Accident	**Fort Pierce, St. Lucie Village, Unincorporated St. Lucie County**	2-3 Years	**HMGP; PDM; FMA; State mitigation grants**	$2,431,899.68	$1,823,924.76	**New**	
15	99.5	**SLCPW2020-8**	St. Lucie County Public Works	**Upgrading Traffic Signal Systems- Prima Vista Corridor- Riomar Drive, Naranja Avenue, Floresta Drive, Airoso Boulevard**	Wind Event, Hazardous Materials Accident, Wellfield/Surface, Transportation System Accident	**Fort Pierce, Port St. Lucie, Unincorporated St. Lucie County**	2-3 Years	**CDBG-MIT; State mitigation grants**	$3,319,788.00	$2,489,841.00	**New**	
16	99.3	**SLCUT2016-1**	St. Lucie County Utilities	**Lakewood Park Lift Station Generator**	Wind Event, Flooding, Terrorism/Sabotage, Hazardous Materials Accident, Power/Communications Failure, Transportation System Accident, Civil Disturbance, Extreme Temperature	**Unincorporated St. Lucie County**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$50,000.00	$37,500.00	**Not Started**	
17	98.6	**SLCPW2020-9**	St. Lucie County Public Works	**Upgrading Traffic Signal Systems- Midway Road Corridor- Glades Cut Off Road**	Wind Event, Hazardous Materials Accident, Wellfield/Surface, Transportation System Accident	**Fort Pierce and Unincorporated St. Lucie County**	2-3 Years	**CDBG-MIT; State mitigation grants**	$847,947.00	$635,960.25	**New**	
18	97.9	**SLCPW2020-3**	St. Lucie County Public Works	**Midway Road Turnpike Interchange**	Wind Event, Hazardous Materials Accident, Wellfield/Surface, Transportation System Accident	**All**	3-4 Years	**CDBG-MIT; State mitigation grants**	$41,955,726.00	$31,466,794.50	**New**	
19	97.7	**SLCPW2020-10**	St. Lucie County Public Works	**Upgrading Traffic Signal Systems- Edwards Road Corridor (Sunrise Boulevard and Selvitz Road)**	Wind Event, Hazardous Materials Accident, Wellfield/Surface, Transportation System Accident	**Fort Pierce and Unincorporated St. Lucie County**	2-3 Years	**CDBG-MIT; State mitigation grants**	$1,671,894.00	$1,253,920.50	**New**	
20	97.7	**PSLEM2020-2**	City of PSL Emergency Management	**Mobile Command Post for EM & PD**	Flooding, Epidemic, Wind Event, Hazardous Materials Accident, Wellfield/Surface, Terrorism/Sabotage, Wildfire, Drought, Radiological Incident, Power/Communication Failure, Transportation System Accident	**All**	< 2 Years	**CDBG-MIT; State mitigation grants**	$320,365.00	$240,273.75	**New**	
21	96.9	**SLCPW2020-14**	St. Lucie County Public Works	**Fiber Optic Cable Countywide Infrastructure- Kings Highway- SR-70 to Indrio Road**	Wind Event, Hazardous Materials Accident, Wellfield/Surface, Radiological Incident, Power/Communication Failure, Transportation System Accident	**Fort Pierce and Unincorporated St. Lucie County**	2-3 Years	**HMGP; PDM; FMA; State mitigation grants**	$2,159,664.64	$1,619,748.48	**New**	
22	95.8	**TCFB2020-1**	Treasure Coast Food Bank	**Treasure Coast Food Bank Distrubution Center Improvement**	Flooding, Epidemic, Wind Event, Hazardous Materials Accident, Wellfield/Surface, Wildfire, Water Contamination, Drought, Radiological Incident	**All**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$2,184,000.00	$1,638,000.00	**New**	
23	95.8	**PSLPW2019-2**	City of PSL Public Works	**E-3 Canal Bank Stabilization Improvements**	Flooding, Water Contamination, Erosion	**Port St. Lucie and Unincorporated St. Lucie County**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$7,000,000.00	$5,250,000.00	**Not Started**	
24	95.5	**PSLPW2019-1**	City of PSL Public Works	**Public Works Complex Retrofits**	Flooding, Wind Event, Hazardous Materials Accident, Wellfield/Surface, Power/Communication Failure	**Port St. Lucie and Unincorporated St. Lucie County**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$6,000,000.00	$4,500,000.00	**Not Started**	

St. Lucie County Local Mitigation Strategy
Project Prioritized List

Date: 20210707

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25	95.5	**SLCPW2020-5**	St. Lucie County Public Works	**Upgrading Traffic Signal Systems- South 25th Street Corridor- Cortez Boulevard, Edwards Road, Forest Grove School, Cobra Pride Way, Bell Avenue**	Wind Event, Hazardous Materials Accident, Wellfield/Surface, Transportation System Accident	**Fort Pierce and Unincorporated St. Lucie County**	2-3 Years	**CDBG-MIT; State mitigation grants**	$4,143,735.00	$3,107,801.25	**New**	
26	95.4	**SLCPW2020-6**	St. Lucie County Public Works	**Upgrading Traffic Signal Systems- North 25th Street Corridor- St. Lucie Boulevard, Juanita Avenue**	Wind Event, Hazardous Materials Accident, Wellfield/Surface, Transportation System Accident	**Fort Pierce, St. Lucie Village, Unincorporated St. Lucie County**	2-3 Years	**CDBG-MIT; State mitigation grants**	$1,671,894.00	$1,253,920.50	**New**	
27	95.4	**SLCPW2020-2**	St. Lucie County Public Works	**Midway Road Widening- Glades Cut Off Road to Jenkins Road**	Wind Event, Hazardous Materials Accident, Wellfield/Surface, Transportation System Accident	**Fort Pierce, Port St. Lucie, Unincorporated St. Lucie County**	3-4 Years	**HMGP; PDM; FMA; State mitigation grants**	$43,809,986.00	$32,857,489.50	**New**	
28	94.5	**PSLEM2019-1**	City of PSL Emergency Management	**Installation of a New Industrial Diesel 1600 kW Generator to support City Hall Municipal Complex 'Building B' (and all EOC Operations)**	Flooding, Epidemic, Wind Event, Hazardous Materials Accident, Wellfield/Surface Terrorism/Sabotage, Wildfire, Water Contamination, Drought, Radiological Incident, Power/Communication Failure, Transportation System Accident	**Port St. Lucie**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$1,281,945.00	$961,458.75	**Not Started**	
29	93.5	**FP2019-1**	City of Ft. Pierce Stormwater Division	**Edwards Road Canal Bank Stabilization**	Flooding, Wind Event, Erosion, Transportation System Accident	**Fort Pierce and Unincorporated St. Lucie County**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$2,099,150.00	$1,574,362.50	**Not Started**	
30	92.4	**TCFB2020-2**	Treasure Coast Food Bank	**Treasure Coast Food Bank Food Distribution Center**	Flooding, Epidemic, Wind Event, Hazardous Materials Accident, Wellfield/Surface, Wildfire, Water Contamination, Drought, Radiological Incident	**All**	2-3 Years	**HMGP; PDM; FMA; State mitigation grants**	$14,759,000.00	$11,069,250.00	**New**	
31	92.0	**PSLPW2020-1**	City of PSL Public Works	**Tiffany Pump Station Outfall Channel Retrofit**	Flooding, Water Contamination, Erosion	**Port St. Lucie**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$1,509,690.00	$1,132,267.50	**New**	
32	91.7	**PSLUT2020-2**	City of PSL Utilities	**Generator Raplacement for Prineville Lime Softening Plant**	Wind Event, Water Contamination, Drought	**Port St. Lucie and Unincorporated St. Lucie County**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$175,000.00	$131,250.00	**New**	
33	91.5	**SLCPW2020-7**	St. Lucie County Public Works	**Upgrading Traffic Signal Systems- Orange Avenue Corridor- Hartman Road, I-95 NB Ramp, I-95 SB Ramp**	Wind Event, Hazardous Materials Accident, Wellfield/Surface, Transportation System Accident	**Fort Pierce, St. Lucie Village, Unincorporated St. Lucie County**	2-3 Years	**CDBG-MIT; State mitigation grants**	$2,495,841.00	$1,871,880.75	**New**	
34	91.5	**SLCPW2020-1**	St. Lucie County Public Works	**Jenkins Road Extension Midway Road to Orange Avenue**	Wind Event, Hazardous Materials Accident, Wellfield/Surface, Transportation System Accident	**All**	4+ Years	**HMGP; PDM; FMA; State mitigation grants**	$106,239,832.00	$79,679,874.00	**New**	
35	90.8	**PSLPW2019-6**	City of PSL Public Works	**Kingsway/Oakridge Basin Improvements**	Flooding, Water Contamination, Erosion	**Port St. Lucie and Unincorporated St. Lucie County**	2-3 Years	**HMGP; PDM; FMA; State mitigation grants**	$7,373,000.00	$5,529,750.00	**Not Started**	
36	89.8	**PSLPW2019-4**	City of PSL Public Works	**E-8 Canal Retrofit Improvements**	Flooding, Water Contamination, Erosion	**Port St. Lucie and Unincorporated St. Lucie County**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$2,000,000.00	$1,500,000.00	**Not Started**	
37	89.5	**PSLPW2020-2**	City of PSL Public Works	**Airoso Boulevard Drainage Improvements**	Flooding, Water Contamination, Erosion	**Port St. Lucie**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$1,146,000.00	$859,500.00	**New**	
38	89.3	**PSLPW2019-7**	City of PSL Public Works	**Elkcam Basin Improvements**	Flooding, Water Contamination, Erosion	**Port St. Lucie and Unincorporated St. Lucie County**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$7,669,000.00	$5,751,750.00	**Not Started**	

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39	88.5	**PSLEM2020-3**	City of PSL Emergency Management	**All Terrain Rescue & Response Vehicle "Bearcat" for PD**	Flooding, Epidemic, Wind Event, Hazardous Materials Accident, Wellfield/Surface, Terrorism/Sabotage, Radiological Incident	**All**	< 2 Years	**CDBG-MIT; State mitigation grants**	$285,689.00	$214,266.75	**New**	
40	87.8	**PSLPW2019-3**	City of PSL Public Works	**D-11 Canal Retrofit Improvements**	Flooding, Wind Event, Water Contamination, Erosion	**Port St. Lucie and Unincorporated St. Lucie County**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$3,422,000.00	$2,566,500.00	**Not Started**	
41	87.8	**PSLPW2019-10**	City of PSL Public Works	**Lansdowne Basin Improvements**	Flooding, Water Contamination, Erosion	**Port St. Lucie and Unincorporated St. Lucie County**	3-4 Years	**HMGP; PDM; FMA; State mitigation grants**	$1,076,000.00	$807,000.00	**Not Started**	
42	87.7	**SLCPW2020-4**	St. Lucie County Public Works	**St. Lucie Boulevard Extension Kings Highway to I-95**	Wind Event, Hazardous Materials Accident, Wellfield/Surface, Radiological Incident, Transportation System Incident	**Fort Pierce, St. Lucie Village, Unincorporated St. Lucie County**	4+ Years	**HMGP; PDM; FMA; State mitigation grants**	$50,126,200.00	$37,594,650.00	**New**	
43	87.7	**PSL2018-2**	City of Port St. Lucie Utilities	**Generator for City Hall**	Wind Event, Flooding, Terrorism/Sabotage, Power/Communication Failure, Extreme Temperature, Thunderstorm/Lightning	**Port St. Lucie**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$750,000.00	$562,500.00	**Not Started**	
44	87.3	**PSL2018-3**	City of Port St. Lucie Emergency Management	**PSL EOC Fiber Installation**	Wind Event, Flooding, Terrorism/Sabotage, Hazardous Materials Accident or Wellfield/Surface Water Contamination, Radiological Incident	**Port St. Lucie and Unincorporated St. Lucie County**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$1,437,935.00	$1,078,451.25	**Not Started**	
45	87.3	**PSLPW2019-5**	City of PSL Public Works	**Crosspoint Basin Improvements**	Flooding, Water Contamination, Erosion	**Port St. Lucie and Unincorporated St. Lucie County**	2-3 Years	**HMGP; PDM; FMA; State mitigation grants**	$2,204,000.00	$1,653,000.00	**Not Started**	
46	86.8	**PSLPW2019-9**	City of PSL Public Works	**Control Structure Improvements**	Flooding, Water Contamination, Erosion	**Port St. Lucie and Unincorporated St. Lucie County**	2-3 Years	**HMGP; PDM; FMA; State mitigation grants**	$7,424,992.00	$5,568,744.00	**Not Started**	
47	86.3	**PSLEM2020-5**	City of PSL Emergency Management	**Utilities Storage Building Hardening (Walton Road)**	Flooding, Wind Event, Water Contamination, Power/Communication Failure	**Port St. Lucie**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$445,600.00	$334,200.00	**New**	
48	84.6	**SLCWQ2020-1**	St. Lucie County Water Quality	**Stormwater Management Master Plan**	Flooding, Wind Event, Hazardous Materials Accident, Wellfield/Surface, Wildfire, Water Contamination, Erosion, Drought	**All**	2-3 Years	**HMGP; PDM; FMA; State mitigation grants**	$2,500,000.00	$1,875,000.00	**New**	
49	84.0	**PSLUT2019-1**	City of PSL Utilities	**Lift Station Portable Generators**	Flooding, Epidemic, Wind Event, Water Contamination, Power/Communication Failure	**Port St. Lucie and Unincorporated St. Lucie County**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$232,000.00	$174,000.00	**Not Started**	
50	83.6	**SLCUT2016-2**	St. Lucie County Utilities	**Backup Generator at Main Lift Station #1**	Wind Event, Flooding, Terrorism/Sabotage, Hazardous Materials Accident or Wellfield/Surface, Power/Communication Failure, Transportation System Accident, Civil Distrurbance, Thunderstorm/Lightning	**Unincorporated St. Lucie County**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$50,000.00	$37,500.00	**Not Started**	
51	82.7	**SLCUT2016-9**	St. Lucie County Utilities	**Backup Generator and Well at HEW WTP**	Wind Event, Flooding, Terrorism/Sabotage, Hazardous Materials Accident or Wellfield/Surface Water Contamination, Power/Communication Failure, Thunderstorm/Lightning	**Unincorporated St. Lucie County**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$50,000.00	$37,500.00	**Not Started**	

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52	82.6	**COFP2018-1**	City of Ft. Pierce Stormwater Division	**Storm Drain Replacement Avenue Q between 14-17th St**	Flooding	**Fort Pierce**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$700,269.00	$525,201.75	**Not Started**	
53	82.3	**PSLEM2020-4**	City of PSL Emergency Management	**Emergency Response Vehicle-F250 XL Super Duty**	All	**All**	< 2 Years	**CDBG-MIT; State mitigation grants**	$37,357.00	$28,017.75	**New**	
54	81.1	**PSLEM2020-6**	City of PSL Emergency Management	**All Terrain Risk/Threat Assessment/Search & Rescue Vehicles**	Flooding, Wind Event, Terrorism/Sabotage, Wildfire	**Port St. Lucie and Unincorporated St. Lucie County**	< 2 Years	**CDBG-MIT; State mitigation grants**	$15,216.00	$11,412.00	**New**	
55	80.9	**SLCUT2016-8**	St. Lucie County Utilities	**Bryn Mawr Master Lift Station Upgrade**	Wind Event, Flooding, Terrorism/Sabotage, Hazardous Materials Accident or Wellfield Surface/Water Contamination, Power/Communication Failure, Transportation System Accident, Civil Disturbance, Thunderstorm/Lightning	**Unincorporated St. Lucie County**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$220,000.00	$165,000.00	**Not Started**	
56	80.4	**SLCUT2016-5**	St. Lucie County Utilities	**Emergency Generator at Master Pump Station #4**	Wind Event, Flooding, Terrorism/Sabotage, Hazardous Materials Accident or Wellfield Surface/Water Contamination, Power/Communication Failure, Transportation System Accident, Civil Disturbance, Thunderstorm/Lightning	**Unincorporated St. Lucie County**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$130,734.00	$98,050.50	**Not Started**	
57	80.4	**SLCUT2016-3**	St. Lucie County Utilities	**Emergency Generator at Master Pump Station #2**	Wind Event, Flooding, Terrorism/Sabotage, Hazardous Materials Accident or Wellfield Surface/Water Contamination, Power/Communication Failure, Transportation System Accident, Civil Disturbance, Thunderstorm/Lightning	**Unincorporated St. Lucie County**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$148,564.00	$111,423.00	**Not Started**	
58	80.0	**SLCUT2016-4**	St. Lucie County Utilities	**Emergency Generator at Master Pump Station #3**	Wind Event, Flooding, Terrorism/Sabotage, Hazardous Materials Accident or Wellfield Surface/Water Contamination, Power/Communication Failure, Transportation System Accident, Civil Disturbance, Thunderstorm/Lightning	**Unincorporated St. Lucie County**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$137,416.00	$103,062.00	**Not Started**	
59	79.1	**SLCUT2016-6**	St. Lucie County Utilities	**Emergency Generator at Master Pump Station #5**	Wind Event, Flooding, Terrorism/Sabotage, Hazardous Materials Accident or Wellfield Surface/Water Contamination, Power/Communication Failure, Transportation System Accident, Civil Disturbance, Thunderstorm/Lightning	**Unincorporated St. Lucie County**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$95,376.00	$71,532.00	**Not Started**	

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60	79.1	**SLCUT2016-7**	St. Lucie County Utilities	**Emergency Generator at Master Pump Station #6**	Wind Event, Flooding, Terrorism/Sabotage, Hazardous Materials Accident or Wellfield Surface/Water Contamination, Power/Communication Failure, Transportation System Accident, Civil Disturbance, Thunderstorm/Lightning	**Unincorporated St. Lucie County**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$109,934.00	$82,450.50	**Not Started**	
61	77.6	**COFP2016-2**	City of Ft. Pierce Engineering	**17th Street Reconstruction**	Flooding	**Fort Pierce**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$1,500,000.00	$1,125,000.00	**In Progress**	Updated by FPE on 06/24/2020
62	76.9	**SLCFD2016-1**	St. Lucie County Fire District	**Rebuild Fire Station 5**	Wind Event	**Port St. Lucie**	3-4 Years	**HMGP; PDM; FMA; State mitigation grants**	$2,400,000.00	$1,800,000.00	**Not Started**	
63	76.7	**NSLRWCD2016-6**	North St. Lucie Water Control District	**Gordy Structure Shaft & Telemetry**	Wind Event, Flooding, Erosion, Thunderstorm/Lightning	**Fort Pierce and Unincorporated St. Lucie County**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$250,000.00	$187,500.00	**Not Started**	
64	76.0	**PSL2016-9**	City of Port St. Lucie Public Works	**Elkcam-Kingsway Basin Improvements**	Hurricane, Transportation, Flooding, Thunderstorm, Erosion	**Port St. Lucie**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$276,000.00	$207,000.00	**Not Started**	
65	76.0	**PSL2016-13**	City of Port St. Lucie Public Works	**Kingsway Basin Improvements**	Hurricane, Transportation, Flooding, Thunderstorm, Erosion	**Port St. Lucie**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$1,020,000.00	$765,000.00	**Not Started**	
66	75.9	**PSLUT2020-1**	City of PSL Utilities	**Low Pressure Grinder Electrical Panel Retrofits Phase 2**	Epidemic, Wind Event, Hazardous Materials Accident, Wellfield/Surface, Water Contamination, Power/Communication Failure	**Port St. Lucie and Unincorporated St. Lucie County**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$1,200,000.00	$900,000.00	**New**	
67	75.8	**PSL2016-26**	City of Port St. Lucie Public Works	**Thanksgiving/Academy Basin Improvements**	Hurricane, Transportation, Flooding, Thunderstorm, Erosion	**Port St. Lucie**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$1,570,487.00	$1,177,865.25	**Not Started**	
68	75.8	**PSL2016-25**	City of Port St. Lucie Public Works	**Streamlet Basin Improvements**	Hurricane, Transportation, Flooding, Thunderstorm, Erosion	**Port St. Lucie**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$523,000.00	$392,250.00	**Not Started**	
69	75.3	**NSLRWCD2016-5**	North St. Lucie Water Control District	**Ten Mile Creek Fitting Structure**	Wind Event, Flooding, Erosion, Thunderstorm/Lightning	**Fort Pierce and Unincorporated St. Lucie County**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$187,500.00	$140,625.00	**Not Started**	
70	74.6	**PSLPW2019-11**	City of PSL Public Works	**Monterrey/Cameo Basin Improvements**	Flooding, Water Contamination, Erosion	**Port St. Lucie and Unincorporated St. Lucie County**	3-4 Years	**HMGP; PDM; FMA; State mitigation grants**	$1,131,496.00	$848,622.00	**Not Started**	
71	73.8	**NSLRWCD2016-2**	North St. Lucie Water Control District	**C-71/Ten Mile Creek General Clearing & Grading**	Wind Event, Flooding, Erosion, Thunderstorm/Lightning	**Fort Pierce and Unincorporated St. Lucie County**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$70,000.00	$52,500.00	**Not Started**	
72	73.3	**PSL2016-3**	City of Port St. Lucie Public Works	**E-14 Canal Retrofit Improvements**	Hurricane, Transportation, Flooding, Thunderstorm, Erosion	**Port St. Lucie**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$8,760,816.00	$6,570,612.00	**Not Started**	
73	73.1	**FPUA2016-4**	Ft. Pierce Utility Authority	**Water Plant Electrical Feed**	Wind Event, Power/Communication Failure	**Fort Pierce**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$69,000.00	$51,750.00	**Not Started**	
74	72.6	**SLC2018-1**	St. Lucie County Public Works	**Lakewood Park Canal Outfall Capacity Increase**	Flooding	**Unincorporated St. Lucie County**	2-3 Years	**HMGP; PDM; FMA; State mitigation grants**	$2,000,000.00	$1,500,000.00	**Not Started**	
75	71.4	**ITP2020-1**	The Inner Truth Project	**Mobile Crisis Unit**	All	**All**	4+ Years	**CDBG-MIT; State mitigation grants**	$35,000.00	$26,250.00	**New**	
76	71.2	**SLCER2020-1**	St. Lucie County Environmental Resource Department	**St. Lucie Resiliency Planning**	Flooding, Wildfire, Water Contamination, Erosion, Drought	**All**	4+ Years	**HMGP; PDM; FMA; State mitigation grants**	$1,500,000.00	$1,125,000.00	**New**	
77	71.1	**PSL2018-4**	City of Port St. Lucie Public Works	**Low Pressure Grinder Replacement**	Wind Event, Hazardous Materials Accident or Wellfield/Surface Water Contamination, Power/Communication Failure, Thunderstorm/Lightning	**Port St. Lucie and Unincorporated St. Lucie County**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$1,000,000.00	$750,000.00	**Not Started**	

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78	71.0	**PSL2016-27**	City of Port St. Lucie Public Works	**Wildfire Mitigation**	Drought, Extreme Temperature, Transportation, thunderstorm, Lightning, Wildland Fire	**Port St. Lucie**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$300,000.00	$225,000.00	**Not Started**	
79	70.9	**SLCPW2016-7**	St. Lucie County Public Works	**San Lucie Plaza Project**	Flooding, Erosion	**Fort Pierce and Unincorporated St. Lucie County**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$12,500,000.00	$9,375,000.00	**Not Started**	
80	70.4	**SLCPW2016-9**	St. Lucie County Public Works	**Sunland Gardens Stormwater Scope**	Flooding, Hazardous Materials or Wellfield/Surface Water Contamination, Erosion	**Fort Pierce and Unincorporated St. Lucie County**	4+ Years	**HMGP; PDM; FMA; State mitigation grants**	$25,000.00	$18,750.00	**Not Started**	
81	70.2	**FPUA2016-1**	Ft. Pierce Utility Authority	**Force Main Protection-Indian River Lagoon**	Wind Event, Epidemic, Hazardous Materials or Wellfield/Surface Water Contamination	**Fort Pierce and Unincorporated St. Lucie County**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$250,000.00	$187,500.00	**Not Started**	
82	70.0	**NSLRWCD2016-3**	North St. Lucie Water Control District	**C-53 Enhance Flood Protection**	Wind Event, Flooding, Erosion, Thunderstorm/Lightning	**Fort Pierce and Unincorporated St. Lucie County**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$150,000.00	$112,500.00	**Not Started**	
83	70.0	**NSLRWCD2016-4**	North St. Lucie Water Control District	**C-33 enhance Flood Protection**	Wind Event, Flooding, Erosion, Thunderstorm/Lightning	**Fort Pierce and Unincorporated St. Lucie County**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$85,000.00	$63,750.00	**Not Started**	
84	70.0	**COFP2016-5**	City of Ft. Pierce Engineering	**Six (6) four wheel drive vehicles**	Wind Event, Flooding, Thunderstorm/Lightning	**Fort Pierce**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$185,000.00	$138,750.00	**Not Started**	
85	69.1	**FPFWCD2016-1**	Ft. Pierce Farms Water Control District	**Canal 1 / Taylor Creek**	Wind Event, Flooding, Erosion, Thunderstorm/Lightning	**Fort Pierce and Unincorporated St. Lucie County**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$250,000.00	$187,500.00	**Not Started**	
86	68.9	**NSLRWCD2016-1**	North St. Lucie Water Control District	**C-22 Drainage and Flood Protection**	Wind Event, Flooding, Erosion, Thunderstorm/Lightning	**Fort Pierce and Unincorporated St. Lucie County**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$1,000,000.00	$750,000.00	**Not Started**	
87	66.2	**SLCPW2016-1**	St. Lucie County Public Works	**Stormwater Master Plan for Carlton Road**	Flooding and Drought	**Unincorporated St. Lucie County**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$500,000.00	$375,000.00	**Not Started**	
88	64.2	**FPUA2016-3**	Ft. Pierce Utility Authority	**Wastewater Plant Diffuser Pipe**	Wind Event, Epidemic	**Fort Pierce and Unincorporated St. Lucie County**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$250,000.00	$187,500.00	**Not Started**	
89	63.8	**PSLUT2016-1**	Port St. Lucie Utilities	**Storm Shutter on Prineville Water Treatment Plant**	Wind Event	**Port St. Lucie**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$350,000.00	$262,500.00	**Not Started**	
90	63.6	**COFP2016-4**	City of Ft. Pierce Engineering	**Moores Creek Linear Park Phase II**	Flooding	**Fort Pierce**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$9,300,000.00	$6,975,000.00	**Not Started**	
91	63.1	**NSLRWCD2018-2**	North St. Lucie Water Control District	**Canal 29 Control Structure Replacement**	Wind Event, Flooding, Erosion, Thunderstorm/Lightning	**Fort Pierce and Unincorporated St. Lucie County**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$339,500.00	$254,625.00	**Not Started**	
92	62.2	**SLCPW2016-10**	St. Lucie County Public Works	**7th Street Canal Basic**	Flooding, Hazardous Materials Accident or Wellfield/Surface Water Contamination, Transportation System Accident	**Fort Pierce and Unincorporated St. Lucie County**	3-4 Years	**HMGP; PDM; FMA; State mitigation grants**	$2,000,000.00	$1,500,000.00	**Not Started**	
93	61.6	**COFP2016-1**	City of Ft. Pierce Engineering	**Stormwater Master Plan**	Flooding	**Fort Pierce**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$185,000.00	$138,750.00	**Not Started**	
94	61.1	**SLCPW2016-6**	St. Lucie County Public Works	**Flood attenuation and water quality Improvement**	Flooding, Hazardous Materials Accident or Wellfield/Surface Water Contamination, Transportation System Accident	**Unincorporated St. Lucie County**	3-4 Years	**HMGP; PDM; FMA; State mitigation grants**	$6,250,000.00	$4,687,500.00	**Not Started**	
95	60.7	**SLCPW2016-2**	St. Lucie County Public Works	**Final Phase of Paradise Park**	Flooding, Hazardous Materials Accident or Wellfield/Surface Water Contamination	**Unincorporated St. Lucie County**	3-4 Years	**HMGP; PDM; FMA; State mitigation grants**	$2,500,000.00	$1,875,000.00	**Not Started**	
96	60.7	**SLCPW2016-5**	St. Lucie County Public Works	**Canal NO. 54 at Orange west of Pulitzer**	Flooding, Transportation System Accident	**Unincorporated St. Lucie County**	3-4 Years	**HMGP; PDM; FMA; State mitigation grants**	$1,000,000.00	$750,000.00	**Not Started**	
97	58.9	**NSLRWCD2018-1**	North St. Lucie Water Control District	**Australian Pine Removal on Canal 57**	Wind Event, Flooding, Erosion, Thunderstorm/Lightning	**Fort Pierce and Unincorporated St. Lucie County**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$55,200.00	$41,400.00	**Not Started**	

St. Lucie County Local Mitigation Strategy
Project Prioritized List

Date: 20210707

Potential Funding Source Key: HMGP - Hazard Mitigation Grant Program; FMA - Flood Mitigation Assistance; PDM - Pre-Disaster Mitigation; CDBG-MIT: Community Development Block Grant - Mitigation

Grand Total of Projects $ 519,530,654.90

Rank	Score	PROJECT #	Municipality/Applicant	Project Title	Hazard Mitigated	Jurisdictions Benefited	Timeframe for Completion	Potentiial Funding Source	Estimated Total Project Cost ($)	Estimated Federal Share ($)	Status	Notes/Reason
98	58.9	**FPUA2016-2**	Ft. Pierce Utility Authority	**S. Hutchinson Island Wastewater Plant**	Wind Event, Epidemic, Hazardous Materials or Wellfield/Surface Water Contamination, Societal Alienation	**Fort Pierce**	3-4 Years	**HMGP; PDM; FMA; State mitigation grants**	$81,000,000.00	$60,750,000.00	**Not Started**	
99	58.7	**SLCPW2016-3**	St. Lucie County Public Works	**Phase 3 - East Street - Indian River Estates Drainage**	Flooding, Hazardous Materials Accident or Wellfield/Surface Water Contamination, Transportation System Accident	**Unincorporated St. Lucie County**	3-4 Years	**HMGP; PDM; FMA; State mitigation grants**	$250,000.00	$187,500.00	**Not Started**	
100	57.8	**SLCPW2016-4**	St. Lucie County Public Works	**Merritt Ditch Improvement**	Flooding, Transportation System Accident, Erosion	**Unincorporated St. Lucie County**	3-4 Years	**HMGP; PDM; FMA; State mitigation grants**	$250,000.00	$187,500.00	**Not Started**	
101	54.7	**SLCPW2016-8**	St. Lucie County Public Works	**Harmony Heights Storm Water Quality**	Flooding, Hazardous Materials Accident or Wellfield/Surface Water Contamination, Erosion	**Fort Pierce and Unincorporated St. Lucie County**	4+ Years	**HMGP; PDM; FMA; State mitigation grants**	$15,000,000.00	$11,250,000.00	**Not Started**	
102	52.0	**COFP2018-2**	City of Ft. Pierce Engineering	**Repetitive Loss Property Acquisition 3017 S 8th St**	Flooding	**Fort Pierce**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$490,000.00	$367,500.00	**In Progress**	Updated by FPE on 06/24/2020

St. Lucie County Local Mitigation Strategy
Comprehensive Eliminated Project List

Date: 20210623

Potential Funding Source Key: HMGP - Hazard Mitigation Grant Program; FMA - Flood Mitigation Assistance; PDM - Pre-Disaster Mitigation; CDBG-MIT: Community Development Block Grant - Mitigation

Grand Total of Projects **$17,164,500.00**

Rank	Score	PROJECT #	Municipality/Applicant	Project Title	Hazard Mitigated	Jurisdictions Benefited	Timeframe for Completion	Potentiial Funding Source	Cost ($)	Status	Reason	Notes
1	**113.8**	**SLCSB2016-1**	School Board	**School District Office Bldg, Flood Proofing**	Wind Event, Flooding, Epidemic, Power/Communication Failure, Civil Distrurbance, Economic Collapse	**All**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$2,600,000.00	**Removed**	**Move/Sell of Administrative Property**	As Requested by SLCSB on 06/24/2020
2	**111.8**	**SLCFD2019-6**	SLC Fire District	**Fire Station 10, 11, 12 Window Improvements**	Flooding, Epidemic, Wind Event, Hazardous Materials Accident, Wellfield/Surface, Terrorism/Sabotage, Wildfire, Drought, Radiological Incident, Transportation System Accident	**All**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$34,500.00	**Completed**	**N/A**	Confirmed by SLCFD on 06/24/2020
3	**86.3**	**PSLPW2019-8**	City of PSL Public Works	**Prima Vista/Lakehurst**	Flooding, Water Contamination, Erosion	**Port St. Lucie and Unincorporated St. Lucie County**	2-3 Years	**HMGP; PDM; FMA; State mitigation grants**	$6,943,000.00	**Removed**		As Requested by PSLPW on 06/24/2020
4	**73.8**	**PSL2016-14**	City of Port St. Lucie	**Lakehurst Basin Improvements**	Hurricane, Transportation, Flooding, Thunderstorm, Erosion	**Port St. Lucie**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$2,132,000.00	**Removed**		As Requested by PSLPW on 06/24/2020
5	**73.8**	**PSL2016-21**	City of Port St. Lucie	**Ocean Breeze 1 Basin Improvements**	Hurricane, Transportation, Flooding, Thunderstorm, Erosion	**Port St. Lucie**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$3,655,000.00	**Removed**		As Requested by PSLPW on 06/24/2020
6	**58.4**	**COFP2016-3**	City of Fort Pierce	**Mayflower Canal**	Flooding	**Fort Pierce**	< 2 Years	**HMGP; PDM; FMA; State mitigation grants**	$1,800,000.00	**Completed**	**N/A**	Confirmed by FPE on 06/24/2020

Date: 20200706

Completed Projects From the PPL

Grand Total of Projects $ 1,834,500.00

Score	PROJECT #	Municipality/Applicant	Project Description	Hazard Mitigated	Jurisdictions Benefited	Timeframe for Completion	Potentiial Funding Source	Cost ($)	Status	Notes
111.8	SLCFD2019-6	SLC Fire District	Fire Station 10,11, 12 Window Improvements	Flooding, Epidemic, Wind Event, Hazardous Materials Accident, Wellfield/Surface, Terrorism/Sabotage, Wildfire, Drought, Radiological Incident, Transportation System Accident	All	< 2 Years	HMGP; PDM; FMA; State mitigation grants	$34,500.00	Completed	Confirmed by SLCFD on 06/24/2020
58.4	COFP2016-3	City of Fort Pierce	Mayflower Canal	Flooding	Fort Pierce	< 2 Years	HMGP; PDM; FMA; State mitigation grants	$1,800,000.00	Completed	Confirmed by FPE on 06/24/2020

Date: 20200706

Projects Removed from the PPL

Grand Total of Projects $ 15,330,000.00

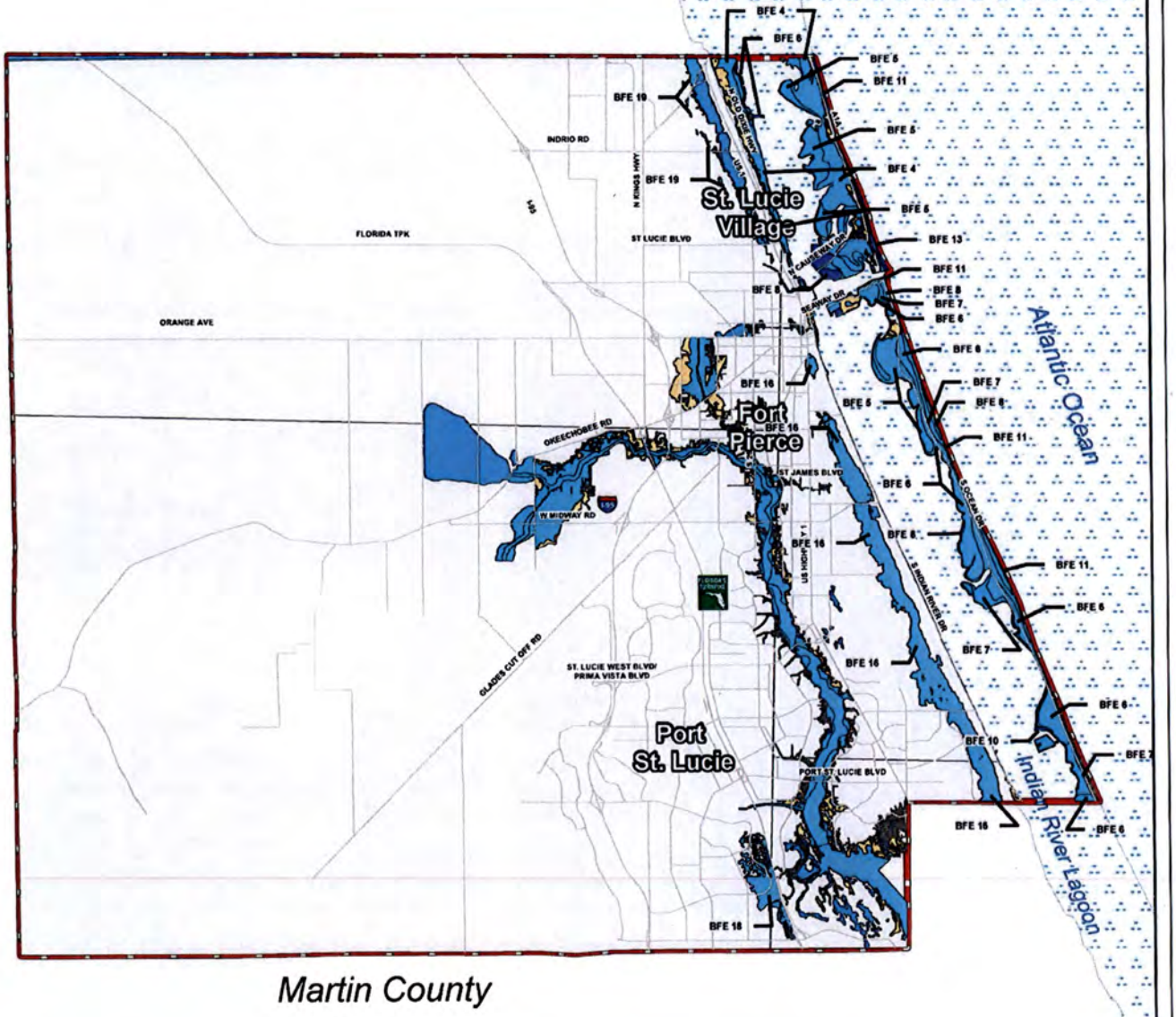
Score	PROJECT #	Municipality/Applicant	Project Description	Hazard Mitigated	Jurisdictions Benefited	Timeframe for Completion	Potentiial Funding Source	Cost ($)	Status	Reason	Notes
113.8	SLCSB2016-1	School Board	School District Office Bldg, Flood Proofing	Wind Event, Flooding, Epidemic, Power/Communication Failure, Civil Distrurbance, Economic Collapse	All	< 2 Years	HMGP; PDM; FMA; State mitigation grants	$2,600,000.00	Removed	Move/Sell of Administrative Property	As Requested by SLCSB on 06/24/2020
86.3	PSLPW2019-8	City of PSL Public Works	Prima Vista/Lakehurst	Flooding, Water Contamination, Erosion	Port St. Lucie and Unincorporated St. Lucie County	2-3 Years	HMGP; PDM; FMA; State mitigation grants	$6,943,000.00	Removed		As Requested by PSLPW on 06/24/2020
73.8	PSL2016-21	City of Port St. Lucie	Ocean Breeze 1 Basin Improvements	Hurricane, Transportation, Flooding, Thunderstorm, Erosion	Port St. Lucie	< 2 Years	HMGP; PDM; FMA; State mitigation grants	$3,655,000.00	Removed		As Requested by PSLPW on 06/24/2020
73.8	PSL2016-14	City of Port St. Lucie	Lakehurst Basin Improvements	Hurricane, Transportation, Flooding, Thunderstorm, Erosion	Port St. Lucie	< 2 Years	HMGP; PDM; FMA; State mitigation grants	$2,132,000.00	Removed		As Requested by PSLPW on 06/24/2020

APPENDIX G - TABLE AND FIGURES

Existing Flood Zones Map (2018 EAR)

FLU-5

To be replaced



Map: FLU-5

St. Lucie County
2018 Comprehensive Plan
Flood Zones Map

Effective Date: 2/15/2012

N
W E
S

0 2.25 4.5 Miles

Legend

County Boundary

Flood Zone: A, AE, AH, AO, VE, X, X-Shaded

Print Date: 7/23/2018

Source: FEMA 2017

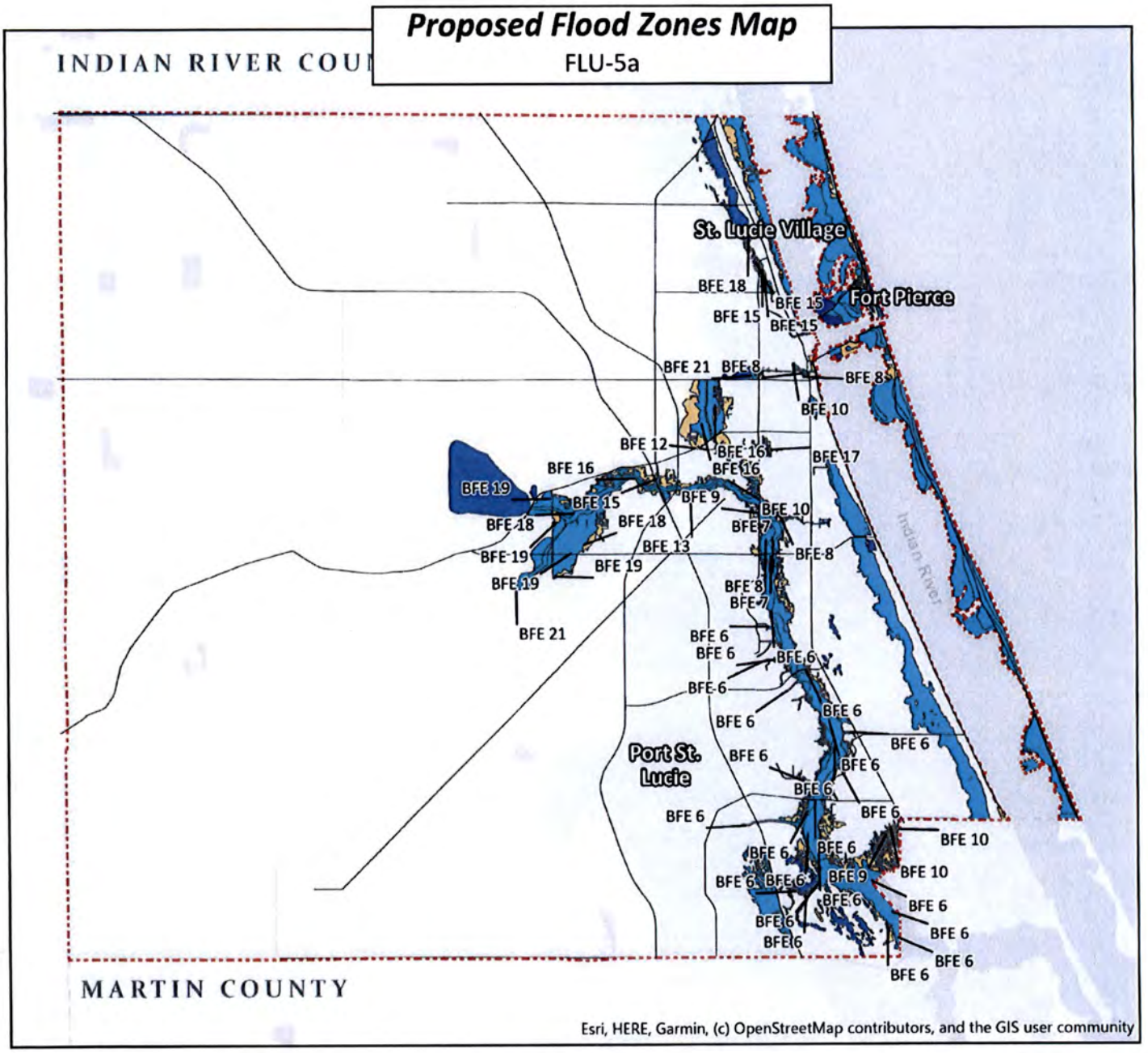
GIS

Calvin, Giordano & Associates, Inc.

EXHIBIT "A"

tabbies

Appendix G



Source: Florida Geographic Data Library
https://www.fgdl.org/

Effective: 2/16/2012
Updated: June 2018

St. Lucie County
2018 Comprehensive Plan
Flood Zones Map

Map: FLU-5a

Print Date: 11/5/2019

County Boundary

Flood Hazard Areas

A
AE
AH
AO
VE
X

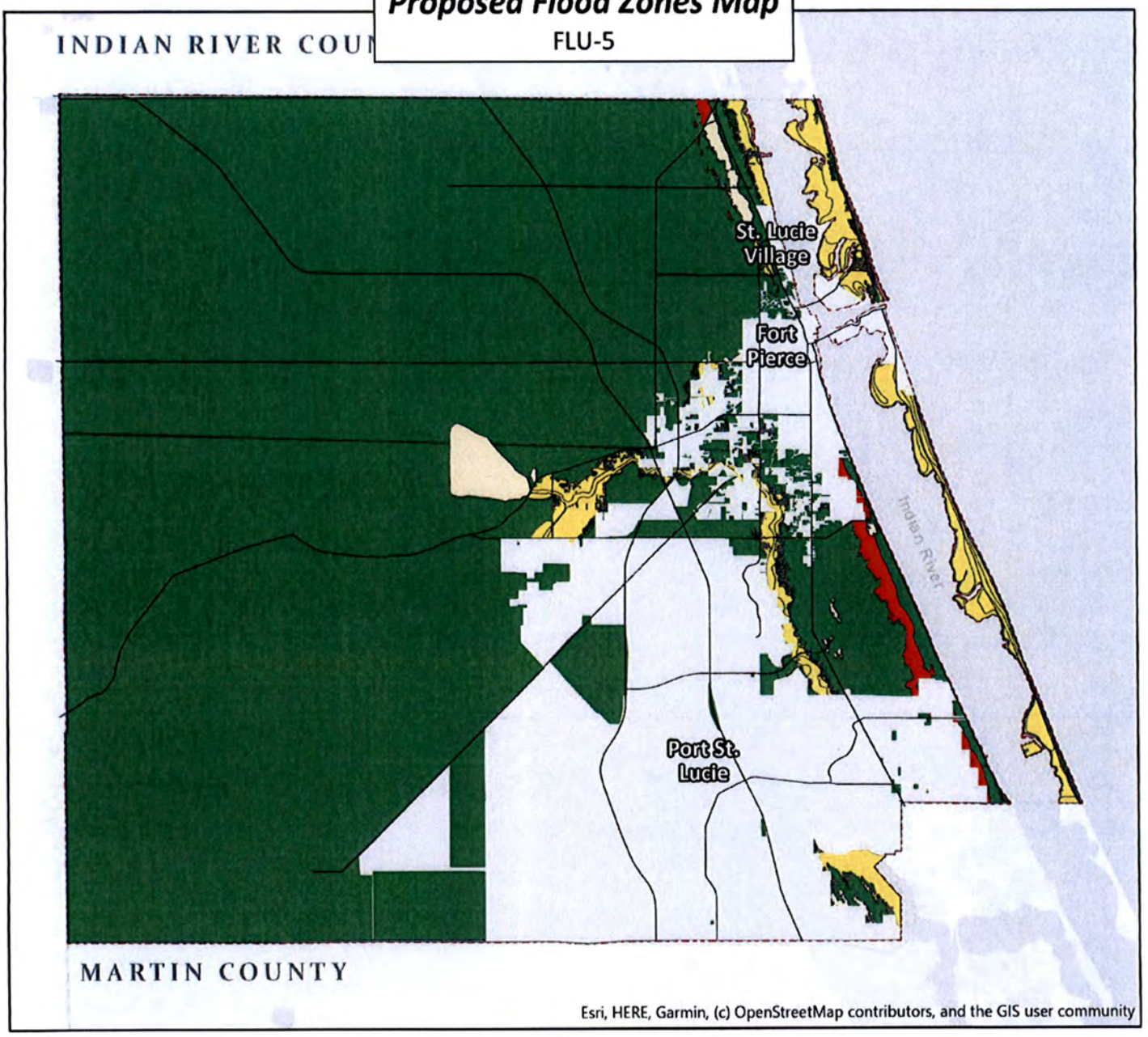
N
W
E
S

Miles
0 3 5

Appendix G

Proposed Flood Zones Map

FLU-5



Source: Florida Geographic Data Library
https://www.fgdl.org/

Effective: 2/16/2012
Updated: June 2018

St. Lucie County
2018 Comprehensive Plan
Flood Zones

Map: FLU-5

County Boundary — Major Roads

Municipalities

Flood Zones

A

AE
AH
AO
VE
X500
X

N
W
E
S

Miles
0 3 5

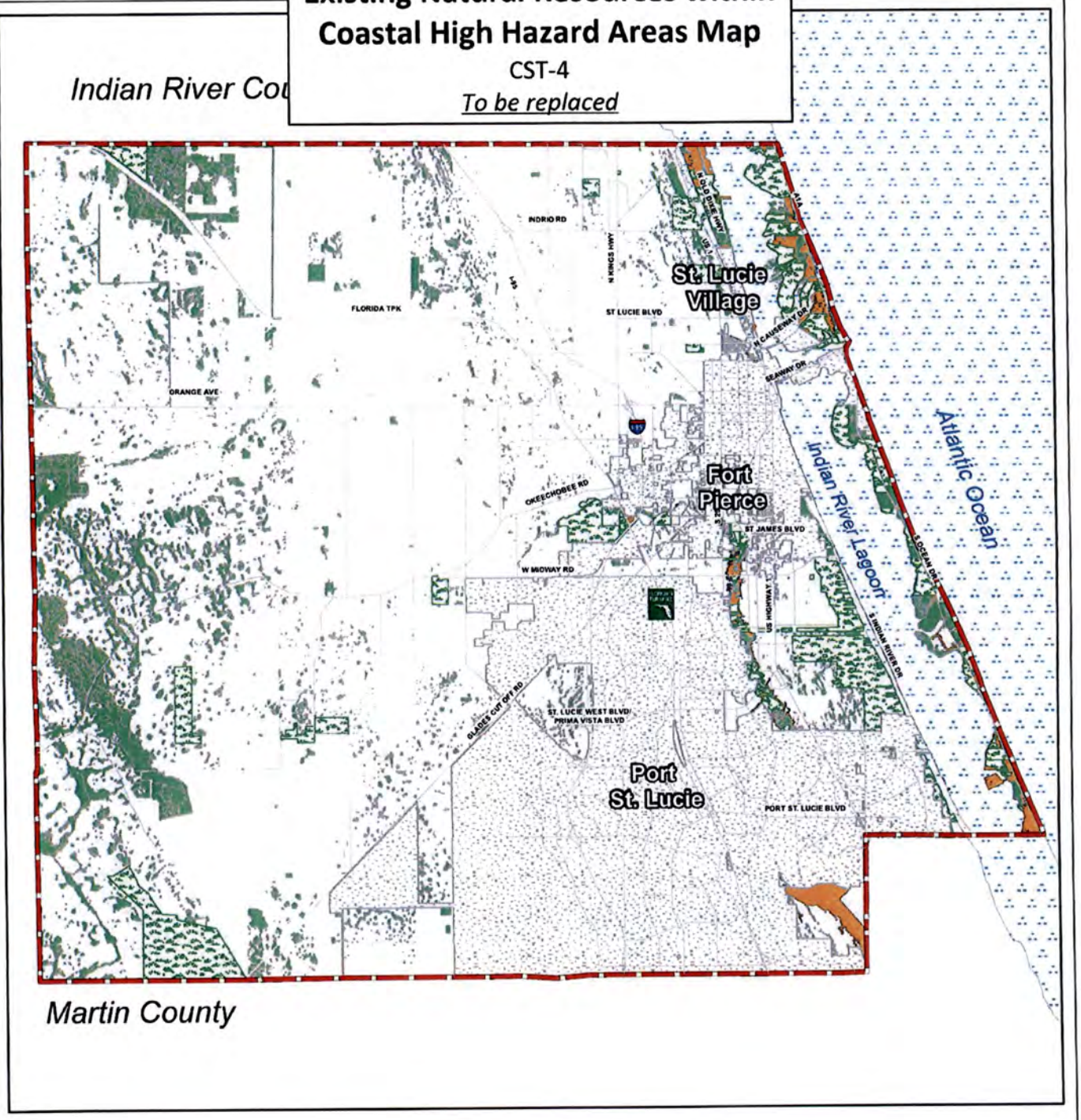
ST. LUCIE COUNTY FLORIDA

Print Date: 11/5/2019

Existing Natural Resources within Coastal High Hazard Areas Map

CST-4

To be replaced



Map: CST-4

St. Lucie County
2018 Comprehensive Plan
Natural Resources within
Coastal High Hazard Area Map

Legend
- County Boundary
- Municipalities
- Parks and Preserves
- Wetland
- Coastal High Hazard Area
- Water

N
W E
S

0 2.25 4.5 Miles

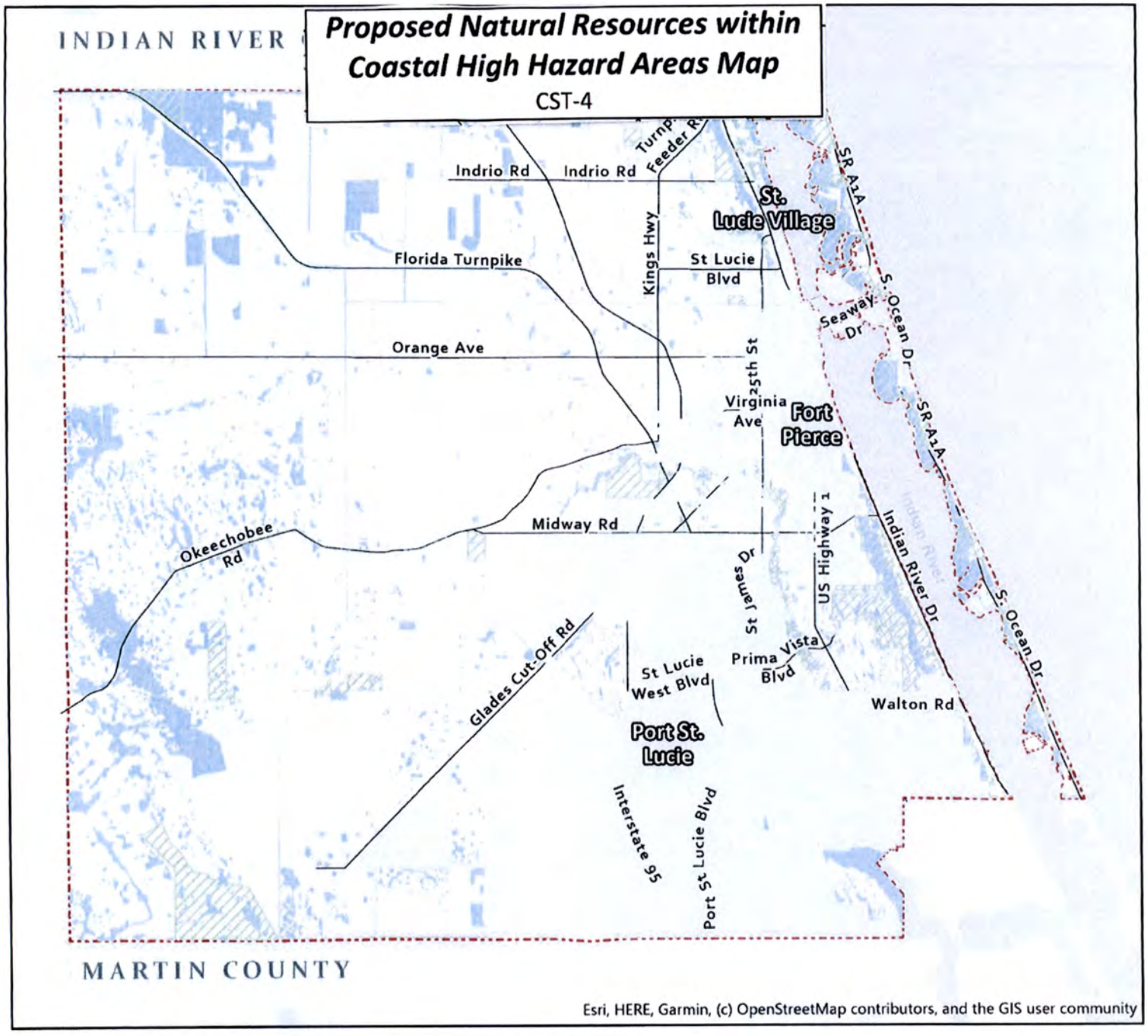
ST. LUCIE COUNTY FLORIDA

Print Date: 7/24/2018

Source: St. Lucie County

GIS

Calvin, Giordano & Associates, Inc.



Source: Florida Division of Emergency Management
Sea, Lake, and Overland Surges from Hurricanes (SLOSH) computerized storm surge model.

https://maps.floridadisaster.org/data/

St. Lucie County
2018 Comprehensive Plan
Natural Resources within
Coastal High Hazard Areas

Map: CST-4

County Boundary
Municipalities
Parks and Preserves
Wetlands
Category 1 Storm Surge Zones

N
W E
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0 3 5 Miles

ST. LUCIE COUNTY FLORIDA

Print Date: 1/8/2020

ORDINANCE NO. 2020-005
FILE NO: TLDC-11201925636

AN ORDINANCE OF THE ST. LUCIE COUNTY BOARD OF COUNTY COMMISSIONERS AMENDING THE TEXT OF THE LAND DEVELOPMENT CODE, SECTION 6.05.00 – FLOODPLAIN MANAGEMENT TO UPDATE THE FLOOD INSURANCE RATE MAPS; PROVIDING FOR FILING WITH THE DEPARTMENT OF STATE; PROVIDING AN EFFECTIVE DATE; PROVIDING FOR ADOPTION; AND PROVIDING FOR CODIFICATION.

WHEREAS, Section 125.01, Florida Statutes, authorizes the Board of County Commissioners to establish programs providing for the health, safety and general welfare of the residents of St. Lucie County; and,

WHEREAS, St. Lucie County participates in the National Flood Insurance Program and the St. Lucie County Board of County Commissioners desires to continue to meet the requirements of Title 44 Code of Federal Regulations, Sections 59 and 60, necessary for such participation; and

WHEREAS, the Federal Emergency Management Agency has revised and reissued the Flood Insurance Study for St. Lucie County, Florida and Incorporated Area, with an effective date of February 19, 2020; and

WHEREAS, the St. Lucie County Board of County Commissioners has determined that it is in the public interest to amend the Land Development Code, Chapter VI – Resource Protection Standards, Section 6.05.00 – Floodplain Management, to identify the effective date of the revised Flood Insurance Study and Flood Insurance Rate Maps.

1. On January 9, 1990, the Board of County Commissioners of St. Lucie County, Florida, adopted the St. Lucie County Comprehensive Plan.

2. The Board of County Commissioners as the governing body of St. Lucie County having jurisdiction over this application pursuant to Chapter 163, Florida Statues, is authorized and empowered to consider amendments to the adopted Comprehensive Plan of St. Lucie County.

3. On November 21, 2019, the St. Lucie County Planning and Zoning acting as the Local Planning Agency held a public hearing, of which due notice was published in the St. Lucie

JOSEPH E. SMITH, CLERK OF THE CIRCUIT COURT
SAINT LUCIE COUNTY
FILE # 4674245 02/13/2020 11:09:35 AM
OR BOOK 4382 PAGE 1150 - 1153 Doc Type: ORDN
RECORDING: $35.50

Added language is <u>underlined</u>.
Deleted language is ~~struck through~~.

Appendix G

News Tribune, and recommended approval/denial of the proposed amendment to the Board of County Commissioners.

4. On December 3, 2019, the Board of County Commissioners of St. Lucie County, Florida held the first of two required public hearing, of which due notice was placed in the St. Lucie News Tribune and approved transmittal to the Department of Economic Opportunity division of Community Planning.

5. On February 4, 2020, the Board of County Commissioners of St. Lucie County, Florida held a public hearing, of which due notice was placed on the St. Lucie News Tribune, and deemed the adoption of the amendments to the Comprehensive Plan

NOW, THEREFORE, BE IT ORDAINED by the St. Lucie County Board of County Commissioners that the following amendments is hereby adopted.

PART A. CHAPTER VI – RESOURCE PROTECTION STANDARDS IS HEREBY AMENDED BY AMENDING SECTION 6.05.00 - FLOODPLAIN MANANEMENT AS FOLLOWS:

Sec. 6-05.02.B Basis for Establishing Flood Hazard Areas. The Flood Insurance Study for St. Lucie County, Florida and Incorporated Areas dated February 19, 2020 ~~February 16, 2012~~, and all subsequent amendments and revisions, and the accompanying Flood Insurance Rate Maps (FIRM), and all subsequent amendments and revisions to such maps, are adopted by reference as part of this ordinance and shall serve as the minimum basis for establishing flood hazard areas. Studies and maps that establish flood hazard areas are on file at the Planning and Development Department located at 2300 Virginia Avenue, Fort Pierce, FL 34982.

PART B. APPLICABILITY.

For the purposes of jurisdictional applicability, this Ordinance shall apply in all unincorporated areas of St. Lucie County. This Ordinance shall apply to all applications for development, including building permit applications and subdivision proposals, submitted on or after the effective date of this ordinance.

PART C. INCLUSION INTO THE CODE OF ORDINANCES.

It is the intent of the St. Lucie County Board of County Commissioners that the provisions of the Ordinance shall become and be made a part of the St. Lucie County Land Development Code, and that the sections of this Ordinance may be renumbered or relettered and the word "ordinance" may be changed to "section," "article," "regulation," or such other appropriate word or phrase in order to accomplish such intentions.

Added language is underlined.
Deleted language is ~~struck through~~.

PART D. SEVERABILITY.

If any provision of this Ordinance or the application thereof to any person or circumstance is held invalid, it is the intent of the District that the invalidity shall not affect other provisions or applications of the Ordinance which can be given effect without the invalid provision or application, and to this end the provisions of this Ordinance are declared severable.

PART E FILING WITH THE DEPARTMENT OF STATE.

The Clerk is hereby directed forthwith to send a certified copy of this ordinance to the Bureau of Administrative Code and Laws, Department of State, the Capitol, Tallahassee, Florida 32304.

PART F. EFFECTIVE DATE.

This Ordinance shall take effect upon filing of a certified copy of this Ordinance with the Department of State.

PART G. ADOPTION.

After motion and second, the vote on this ordinance was as follows:

Chair Cathy Townsend	AYE
Vice Chair Chris Dzadovsky	AYE
Commissioner Sean Mitchell	AYE
Commissioner Linda Bartz	AYE
Commissioner Frannie Hutchinson	AYE

PART I. CODIFICATION.

Provisions of this Ordinance shall be incorporated in the Code of Ordinances of St. Lucie County, Florida, and the word "ordinance" may be changed to "section," "article," or other appropriate word, and the sections of this ordinance may be renumbered or relettered to accomplish such intention; provided, however, that Parts E through J shall not be codified.

Added language is <u>underlined</u>.
Deleted language is ~~struck through~~.

PASSED AND DULY ADOPTED this 4th day of February 4, 2020.

ATTEST:

Deputy Clerk

BOARD OF COUNTY COMMISSIONERS
ST. LUCIE COUNTY, FLORIDA

BY: _____
Chair

APPROVED AS TO FORM AND CORRECTNESS:

BY: _____
County Attorney

Added language is underlined.
Deleted language is ~~struck through~~.

FLORIDA DEPARTMENT of STATE

RON DESANTIS
Governor

LAUREL M. LEE
Secretary of State

February 12, 2020

RECEIVED
FEB 13 2020
COUNTY ATTORNEY

Honorable Joseph E. Smith
Clerk of the Circuit Court
St. Lucie County
2300 Virginia Avenue
Fort Pierce, Florida 34982

Attention: Ms. Alice Sennott

Dear Mr. Smith:

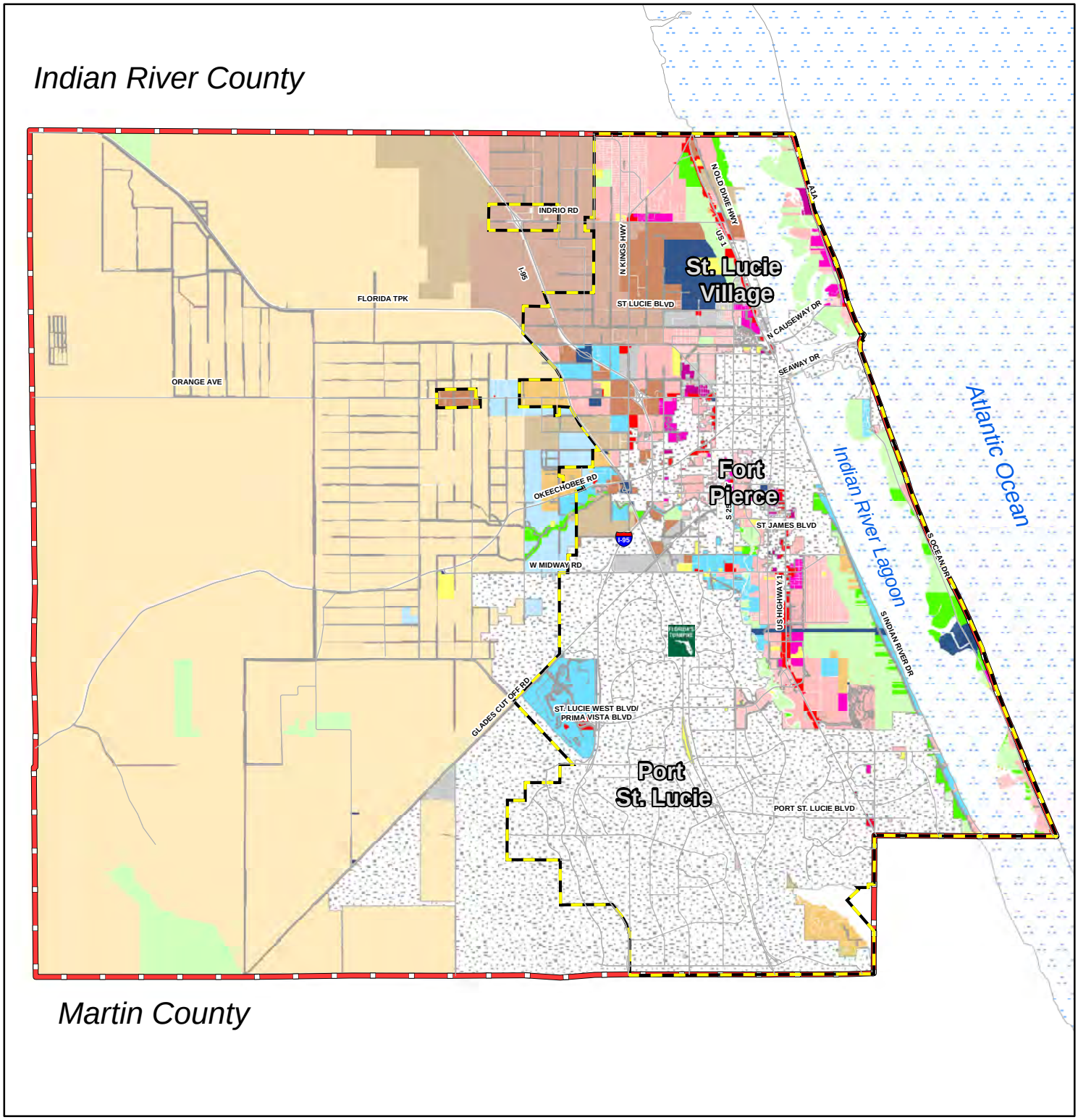
Pursuant to the provisions of Section 125.66, Florida Statutes, this will acknowledge receipt of your electronic copy of St. Lucie County Ordinance No. 20-005, which was filed in this office on February 12, 2020.

Sincerely,

Ernest L. Reddick
Program Administrator

ELR/lb

R. A. Gray Building • 500 South Bronough Street • Tallahassee, Florida 32399-0250
Telephone: (850) 245-6270
www.dos.state.fl.us



Map: FLU-1

St. Lucie County
2018 Comprehensive Plan
Future Land Use 2040 Map

N
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S

Legend

- Urban Service Boundary
- County Boundary
- Municipalities

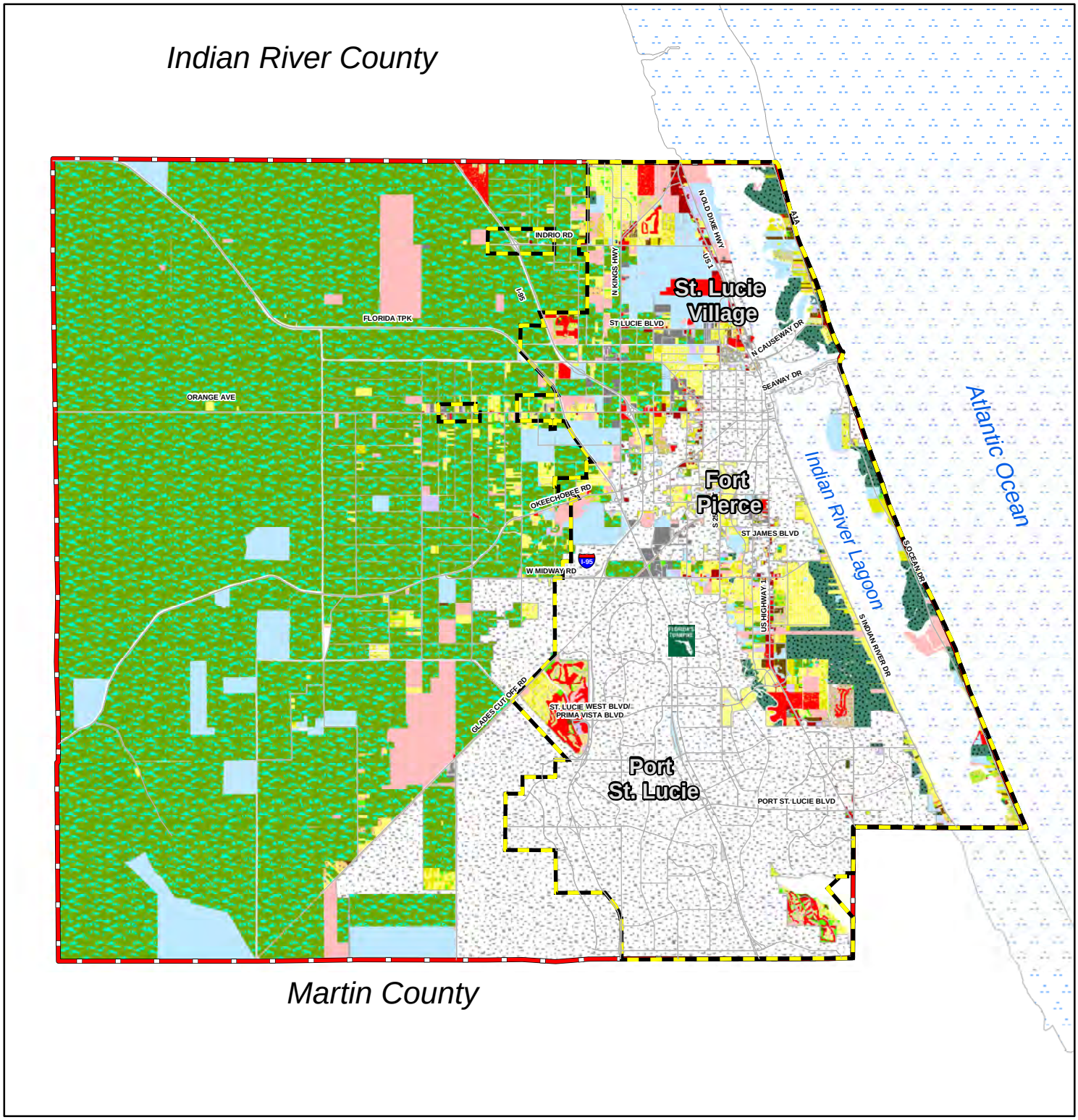
Future Land Use

- AG-5, Agriculture-5
- AG-2.5, Agriculture-2.5
- RE, Residential Estate
- RS, Residential Suburban
- RU, Residential Urban
- RM, Residential Medium
- RH, Residential High
- R/C, Residential/Conservation
- CPUB, Conservation-Public
- COM, Commercial
- IND, Industrial
- P/F, Public Facilities
- T/U, Transportation/Utilities
- MXD, Mixed Use Development
- H, Historic
- SD, Special District
- TVC, Towns, Villages & Countryside
- ROW, Right of Way
- SUBM, Submerged Lands
- SPIS, Spoil Islands

0 2.25 4.5 Miles

Print Date: 7/23/2018

Source:St Lucie County



Map: FLU-2

St. Lucie County
2018 Comprehensive Plan
Existing Land Use Map

Legend

- Urban Service Boundary
- County Boundary
- Municipalities

Existing Land Use

- Agriculture
- Commercial
- Commercial Vacant
- Conservation/Recreation
- Government
- Industrial
- Light Industrial
- Institutional
- Miscellaneous
- Residential Mobile Homes
- Residential Multi-Family
- Residential Single Family
- Residential Vacant
- Other
- Right of Way
- Water

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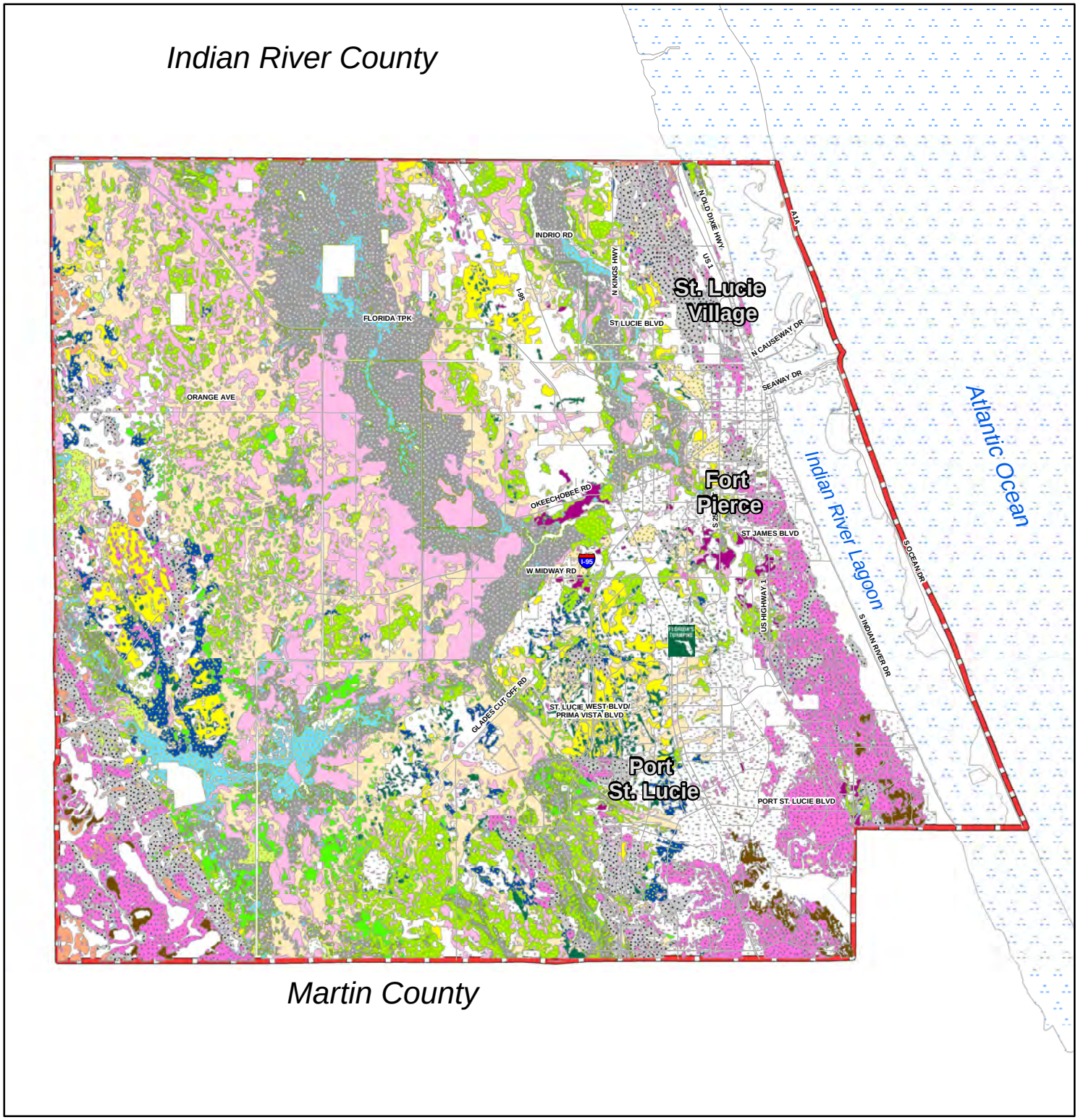
0 2.25 4.5 Miles

GIS

Calvin, Giordano & Associates, Inc.
EXCEPTIONAL SOLUTIONS

Print Date: 7/23/2018

Source: St. Lucie County



Map: FLU-3A

St. Lucie County
2018 Comprehensive Plan
Soils Map

Legend

- County Boundary
- Municipalities
- ANCLOTE SAND
- CHOBEE LOAMY SNAD
- EAUGALLIE FINE SAND
- FLORIDANA SAND
- HILOLO LOAMY SAND
- JUPITER FINE SAND
- LAWNWOOD AND MYAKKA SANDS
- MALABAR FINE SAND
- MYAKKA FINE SAND
- OLDSMAR SAND
- PEPPER AND EAUGALLIE SANDS
- PINEDA SNAD
- POPLE SAND
- RIVIERA SAND
- SALERNO AND PUNTA SANDS
- SUSANNA AND WAUCHULA SANDS
- TANTILE AND POMONA SANDS
- WABASSO SAND
- WAVELAND AND IMMOKOLEE FINE SANDS
- WINDER SAND

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0 2.25 4.5 Miles

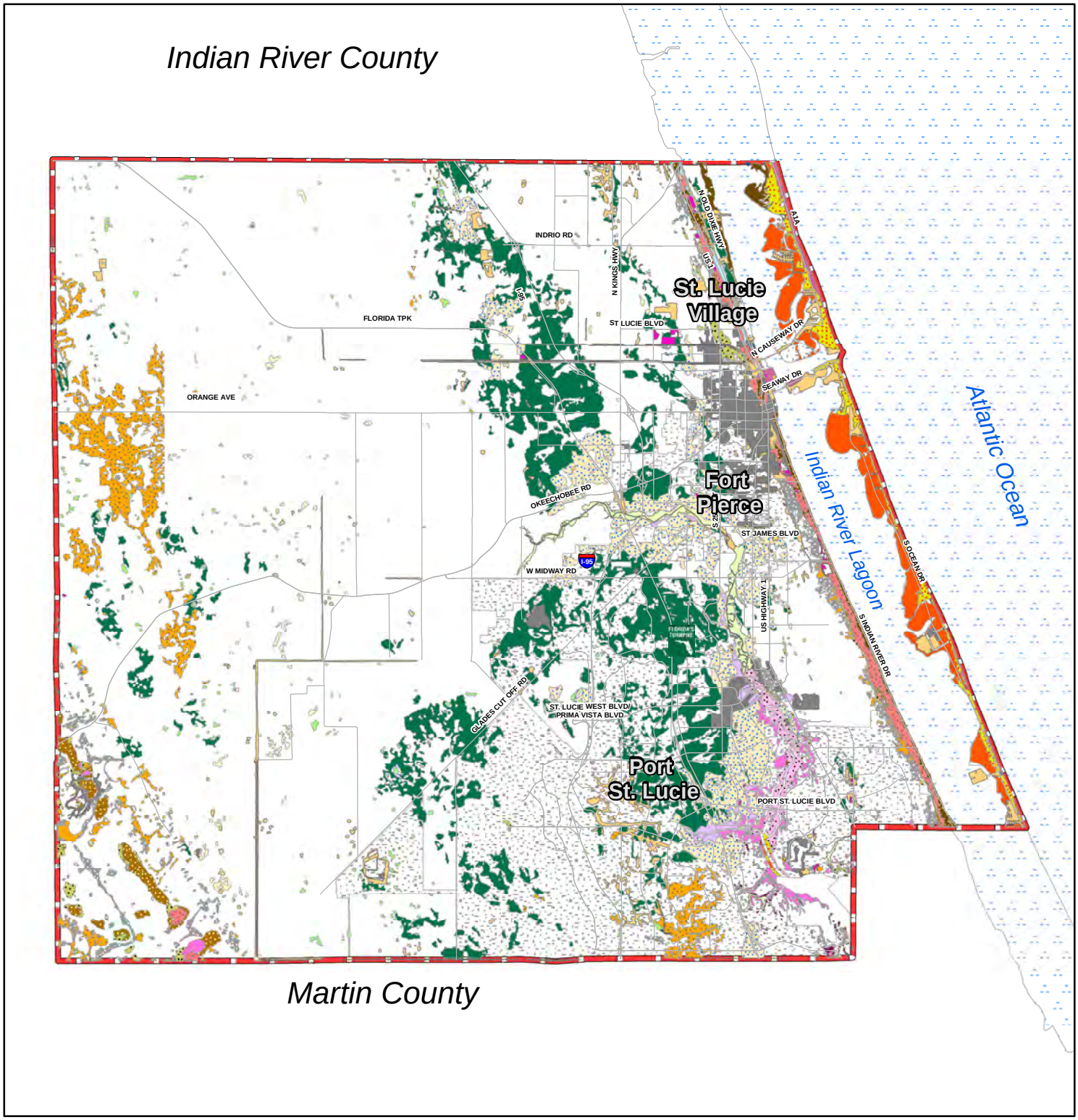
ST. LUCIE COUNTY FLORIDA

Print Date: 7/23/2018

Source: USDA-Natural Resource Conservation Service, SSURGO 2017

GIS Produced and maintained by the CGA Geographic Information Systems Services

Calvin, Giordano & Associates, Inc. EXCEPTIONAL SOLUTIONS



Map: FLU-3B

St. Lucie County
2018 Comprehensive Plan
Soils Map

Legend

- County Boundary
- Municipalities

ANKONA AND FARMTON SANDS	HOBE SAND	PARKWOOD FINE SAND
ARCHBOLD SAND	HONTOON MUCK	PENDARVIS AND POMELLO SANDS
ARENTS	JONATHAN SAND	PITS
ASTATULA SAND	KALIGA MUCK	QUARTZIPSAMMENTS
BASINGER SAND	KESSON	SAMSULA MUCK
CANAVERAL FINE SAND	MANATEE LOAMY FINE SAND	SATELLITE SAND
CANOVA MUCK	MCKEE SANDY CLAY LOAM	ST. JOHNS FINE SAND
ELECTRA FINE SAND	NETTLES AND OLDSMAR SANDS	ST. LUCIE SAND
FLUVAQUENTS	OKEELANTA MUCK	TERRA CEIA MUCK
GATOR AND TEQUESTA MUCKS	PALM BEACH SAND	URBAN IAND
HALLANDALE SAND	PAOLA SAND	VALKARIA FINE SAND

N
W E
S

0 2.25 4.5 Miles

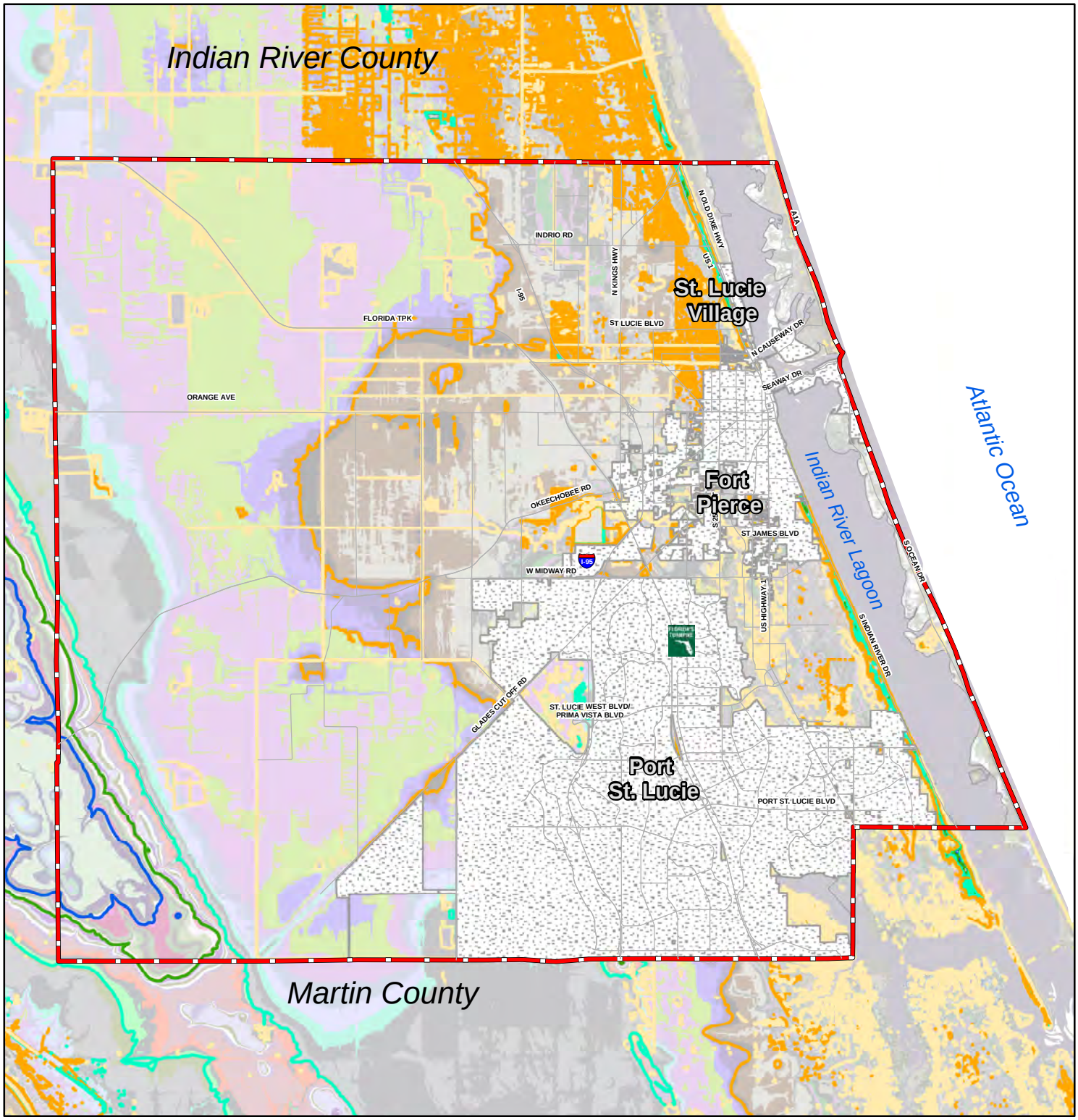
ST. LUCIE COUNTY FLORIDA

Print Date: 7/23/2018

Source: USDA-Natural Resource Conservation Service, SSURGO 2017

GIS Produced and maintained by the CGA Geographic Information Systems Services

Calvin, Giordano & Associates, Inc. EXCEPTIONAL SOLUTIONS



Map: FLU-4

St. Lucie County
2018 Comprehensive Plan
Topography Map

N
W E
S

Legend

- County Boundary
- Municipalities

Contour

- 10 Feet
- 20 Feet
- 30 Feet
- 40 Feet
- 50 Feet
- County Boundary

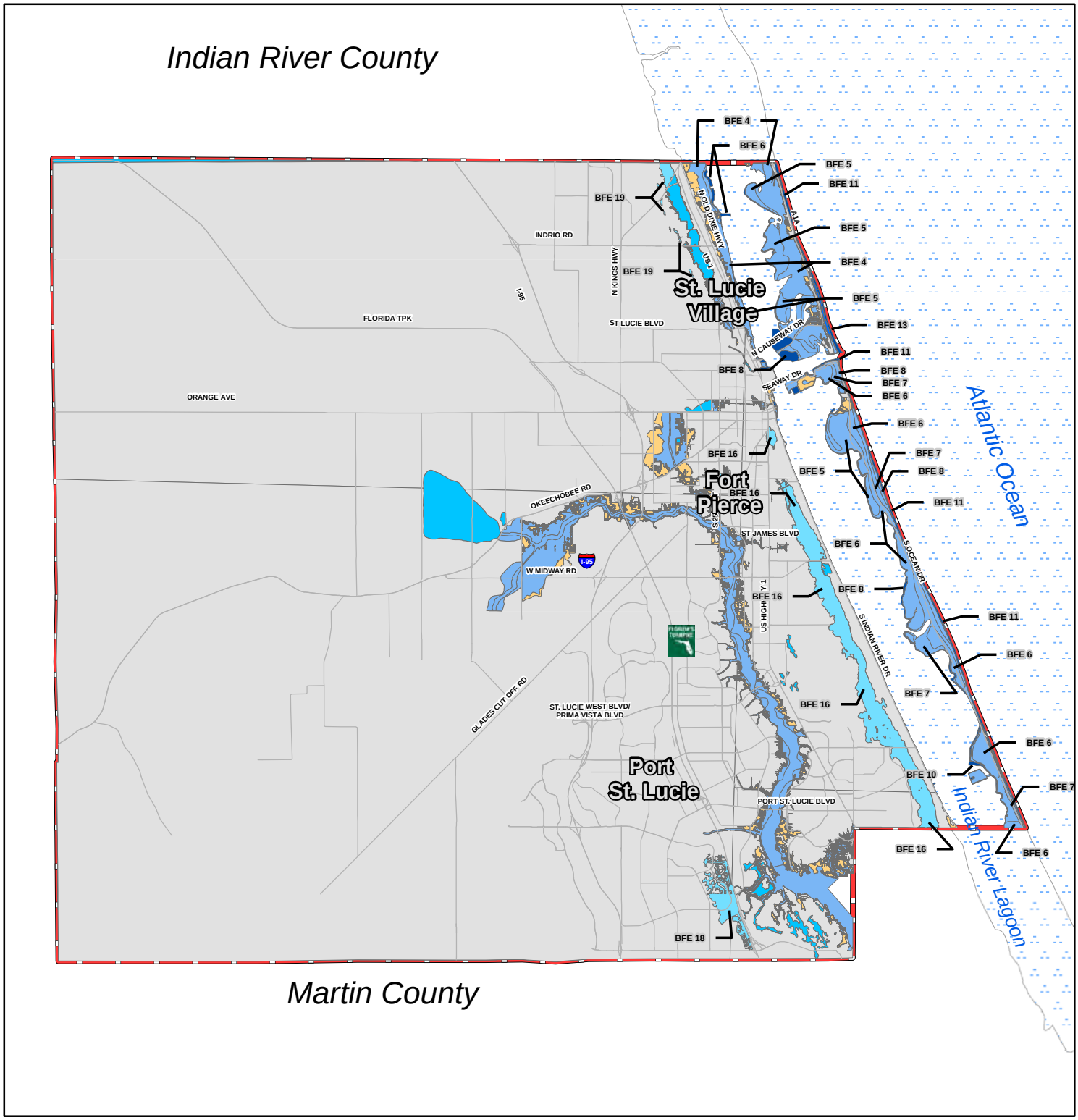
0 2.25 4.5 Miles

Print Date: 7/23/2018

Source: Florida Digital Elevation Model (DEM), 2013

Produced and maintained by the CGA Geographic Information Systems Services

Calvin, Giordano & Associates, Inc. EXCEPTIONAL SOLUTIONS



Map: FLU-5

St. Lucie County
2018 Comprehensive Plan
Flood Zones Map

Effective Date: 2/15/2012

N
W E
S

Miles
0 2.25 4.5

Legend

County Boundary

Flood Zone

A
AE
AH
AO
VE
X
X-Shaded

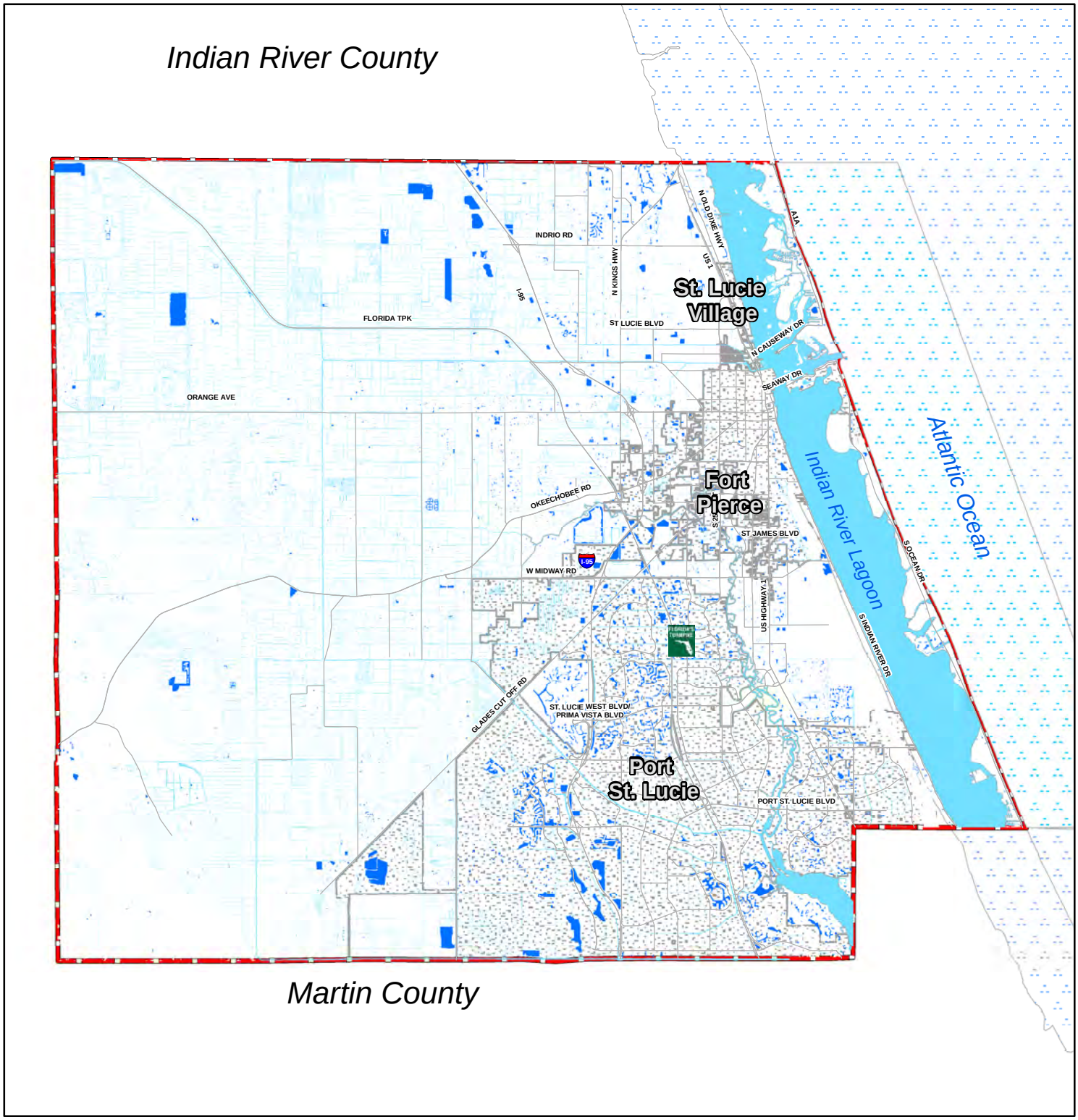
ST. LUCIE COUNTY FLORIDA

Print Date: 7/23/2018

Source: FEMA 2017

GIS Produced and maintained by the CGA Geographic Information Systems Services

Calvin, Giordano & Associates, Inc. EXCEPTIONAL SOLUTIONS



Map: FLU-6

St. Lucie County
2018 Comprehensive Plan
Water Bodies Map

N
W E
S

Legend

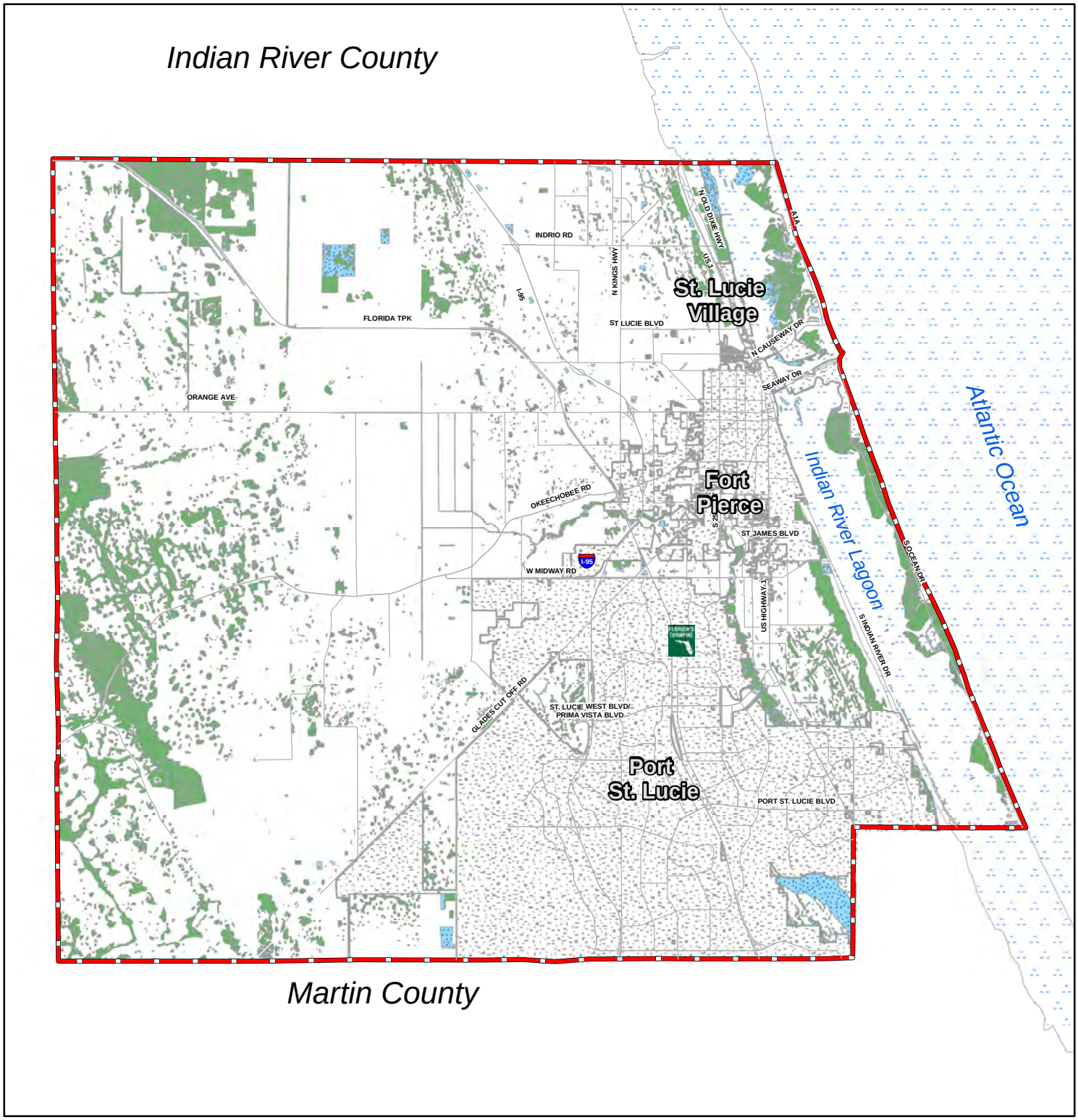
- County Boundary
- Municipalities
- Canals, Creeks, & Rivers
- Lakes
- Ocean

0 2.25 4.5 Miles

Print Date: 7/23/2018

Source: St. Lucie County

Calvin, Giordano & Associates, Inc.



Map: FLU-7

St. Lucie County
2018 Comprehensive Plan
Wetlands Map

N
W E
S

Legend

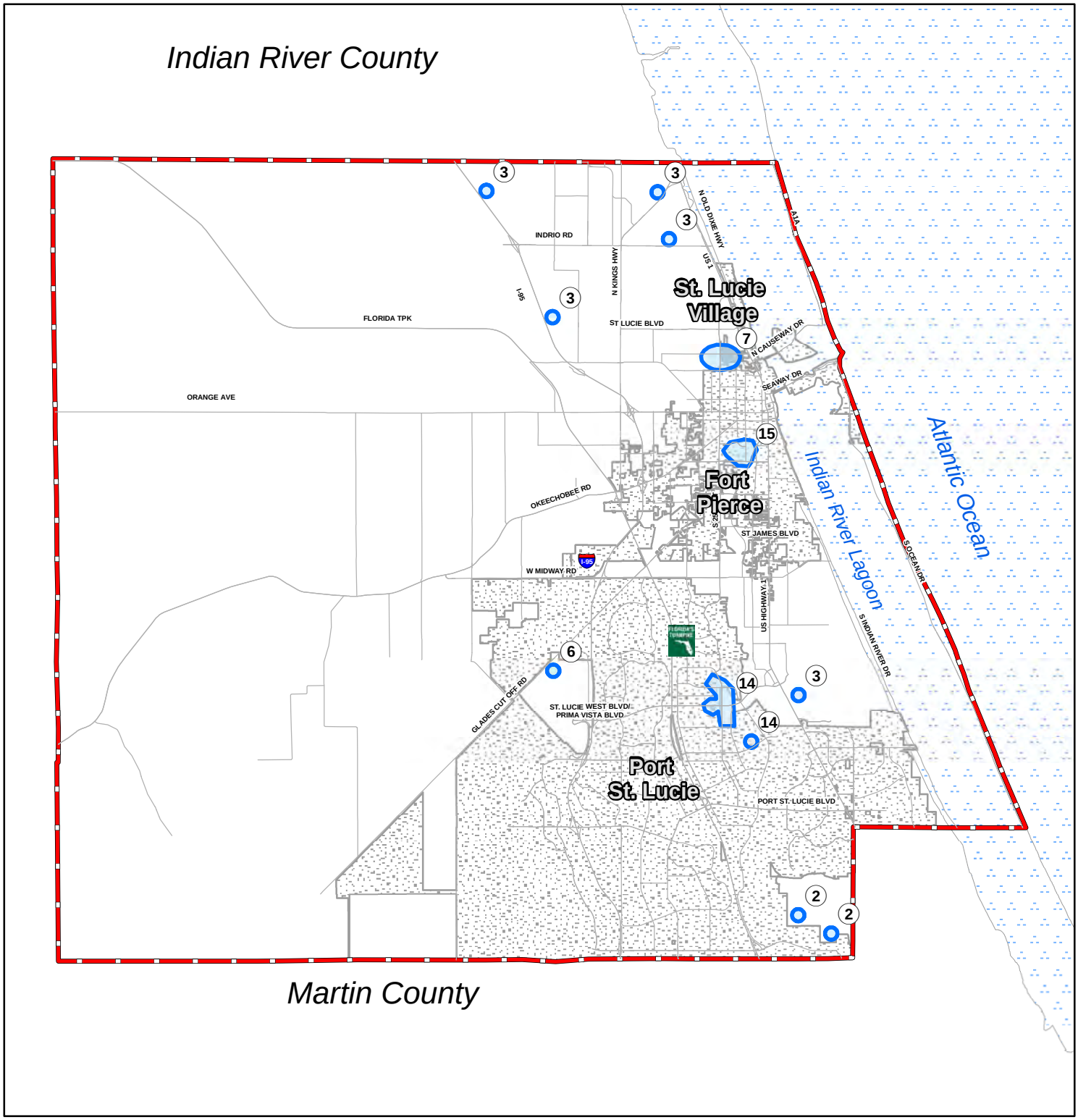
- County Boundary
- Open Water
- Municipalities
- Wetland

0 2.25 4.5 Miles

Print Date: 7/23/2018

Source: St. Lucie County

Appendix G



Map: FLU-8

St. Lucie County
2018 Comprehensive Plan
Wellfields Map

N
W E
S

Miles
0 2.25 4.5

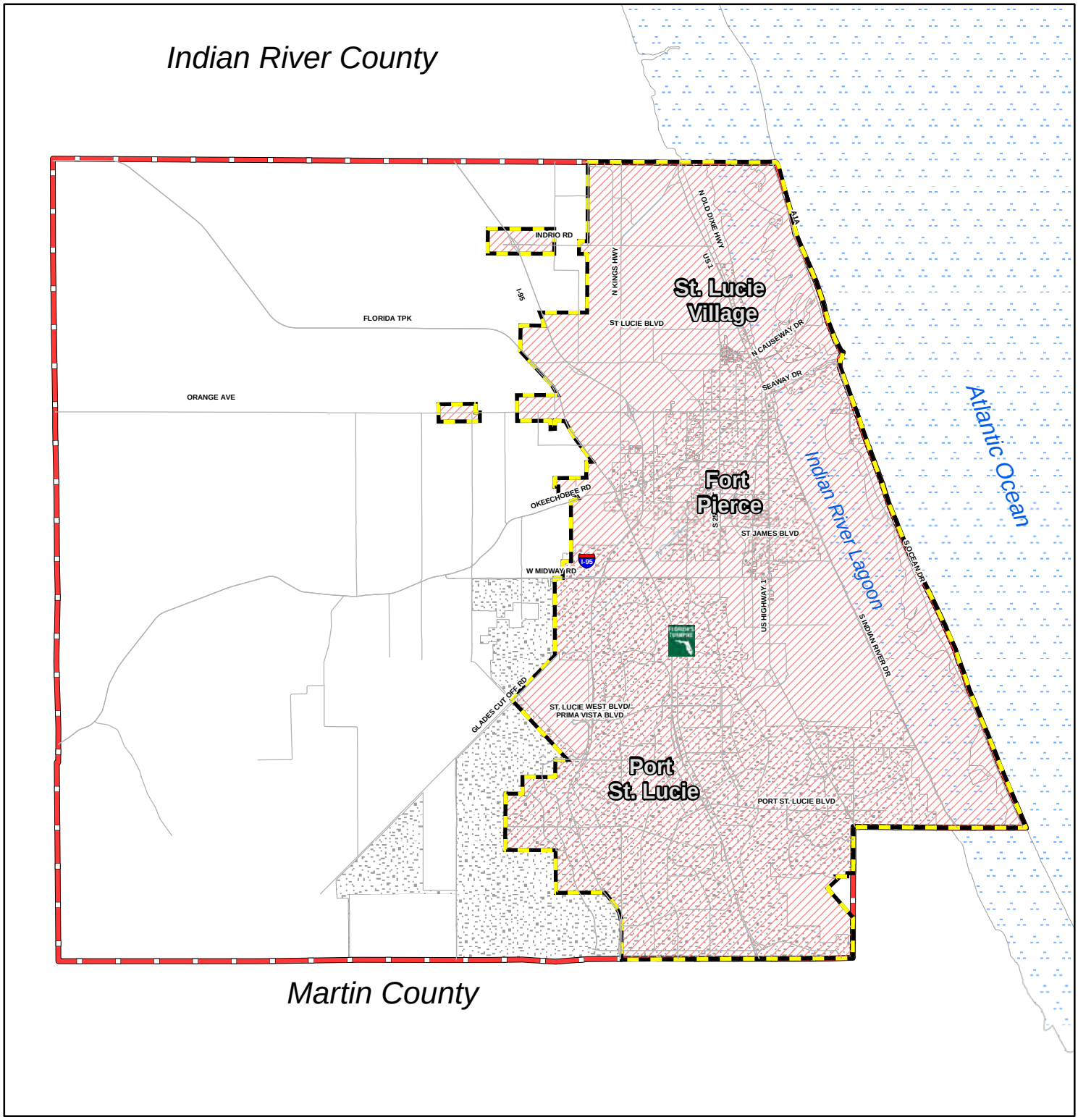
Legend

- County Boundary
- Wellfield Area
- Municipalities
- (1) Well Count

Print Date: 7/23/2018

Source: St. Lucie County

Calvin, Giordano & Associates, Inc.
EXCEPTIONAL SOLUTIONS



Map: FLU-9

St. Lucie County
2018 Comprehensive Plan
Urban Service Boundary Map

N
W E
S

Legend
Urban Service Boundary
Municipalities
County Boundary

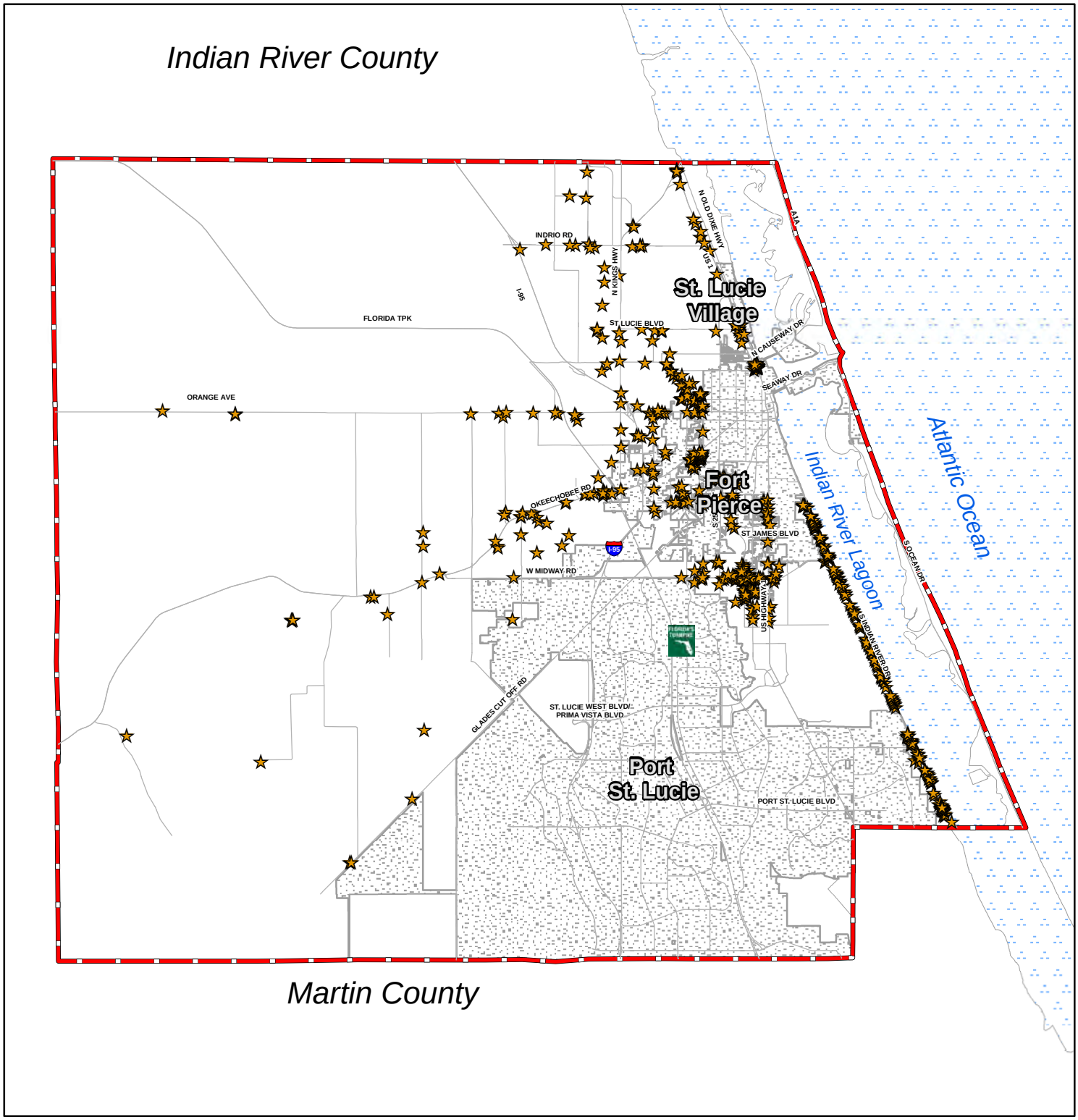
Miles
0 2.25 4.5

Print Date: 7/23/2018

Source: St. Lucie County

Produced and maintained by the CGA Geographic Information Systems Services

Calvin, Giordano & Associates, Inc.
EXCEPTIONAL SOLUTIONS



Map: FLU-10

St. Lucie County
2018 Comprehensive Plan
Historic Structures Map
Potential Local Designation

N
W E
S

Legend

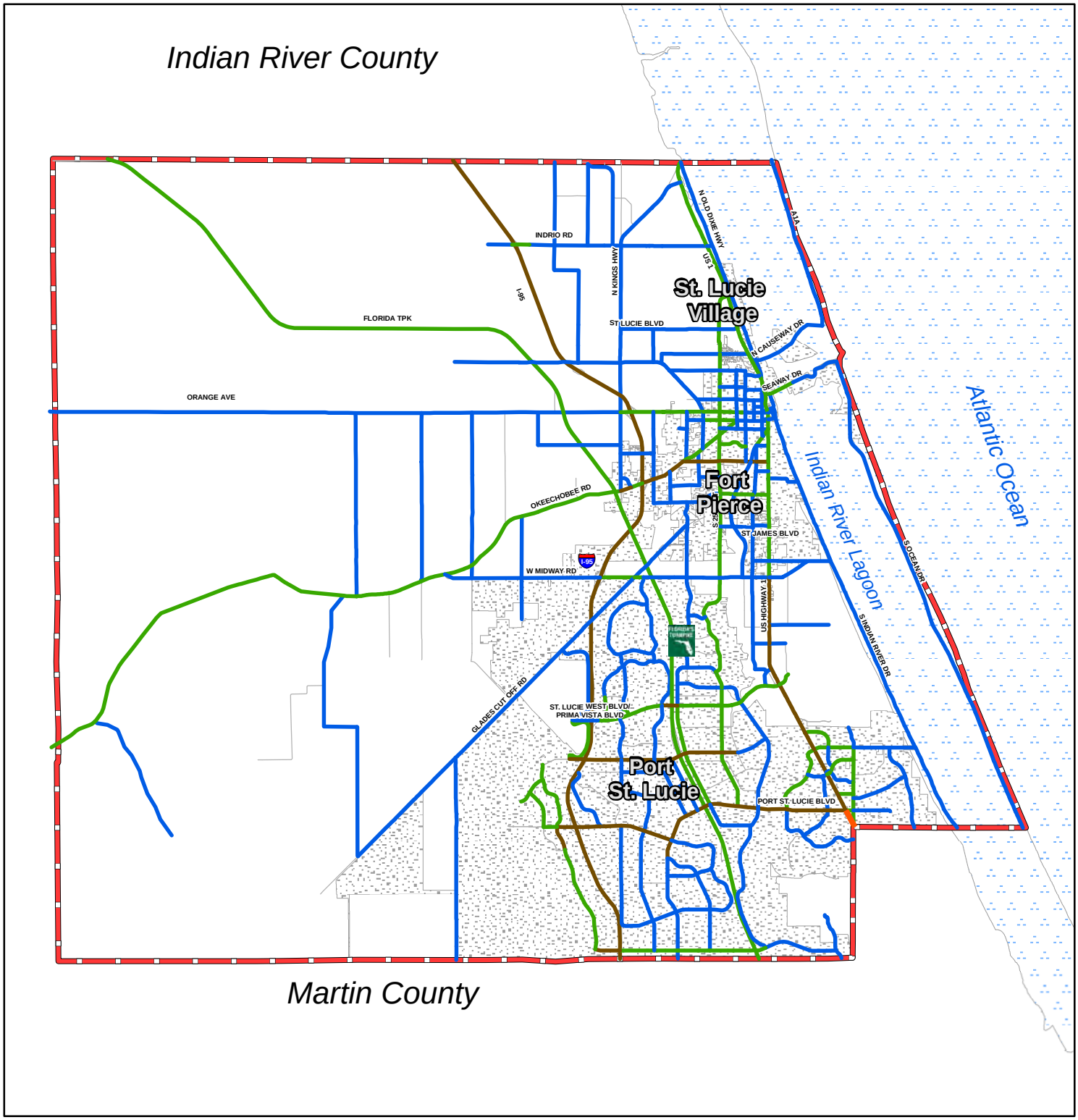
- County Boundary
- Municipalities
- Historic Structures

0 2.25 4.5 Miles

Print Date: 7/23/2018

Source: St. Lucie County

Calvin, Giordano & Associates, Inc.
EXCEPTIONAL SOLUTIONS



Map: TRN-1

St. Lucie County
2018 Comprehensive Plan
Number of Lanes Map

N
W E
S

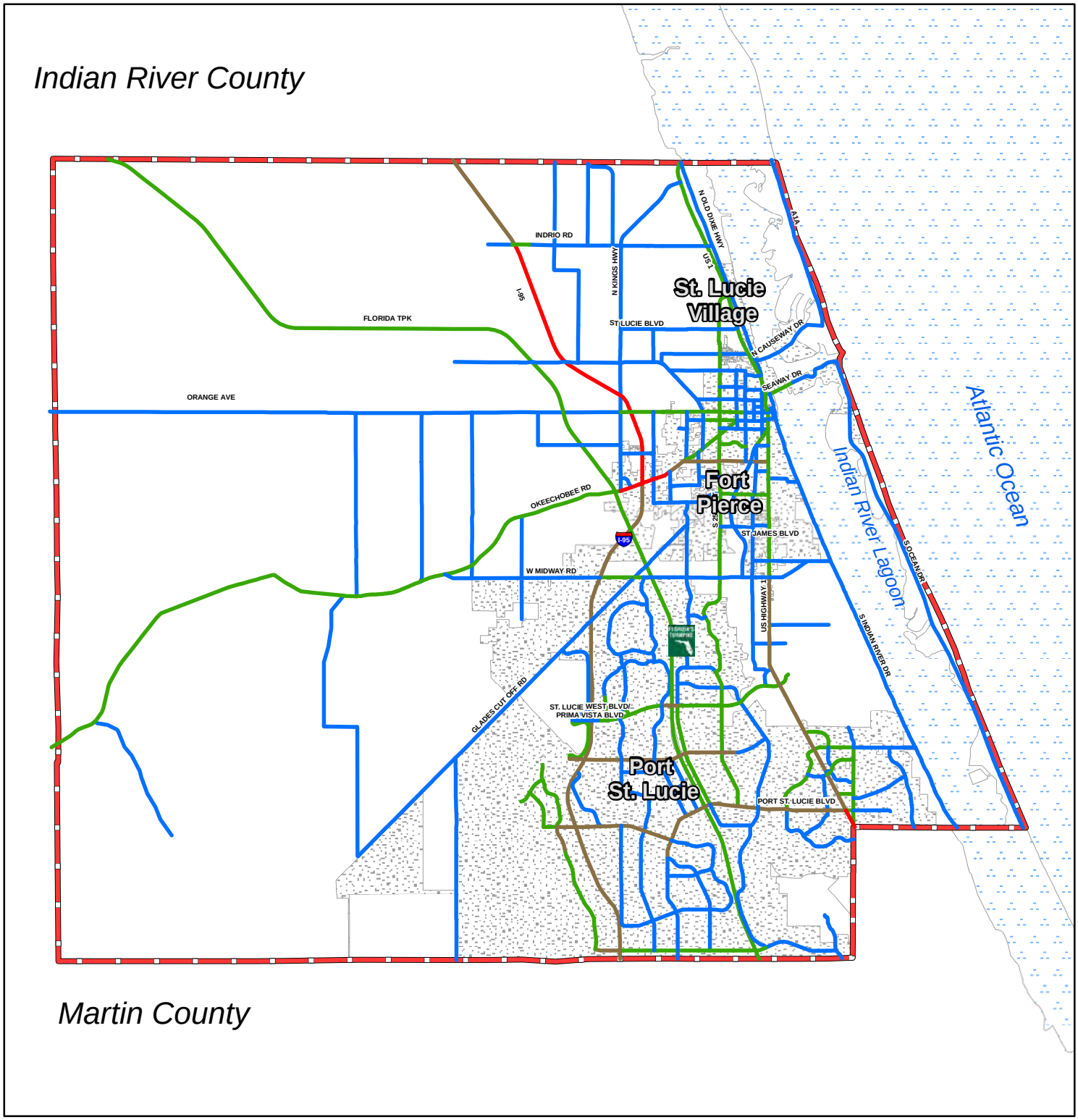
Legend

County Boundary
Municipalities
Existing # of Lanes
2
4
6
8

0 2.25 4.5 Miles

Print Date: 7/23/2018

Source: St. Lucie County



Map: TRN-2

St. Lucie County
2018 Comprehensive Plan
Future (2040) Number of Lanes Map

N
W E
S

Legend

County Boundary
Municipalities

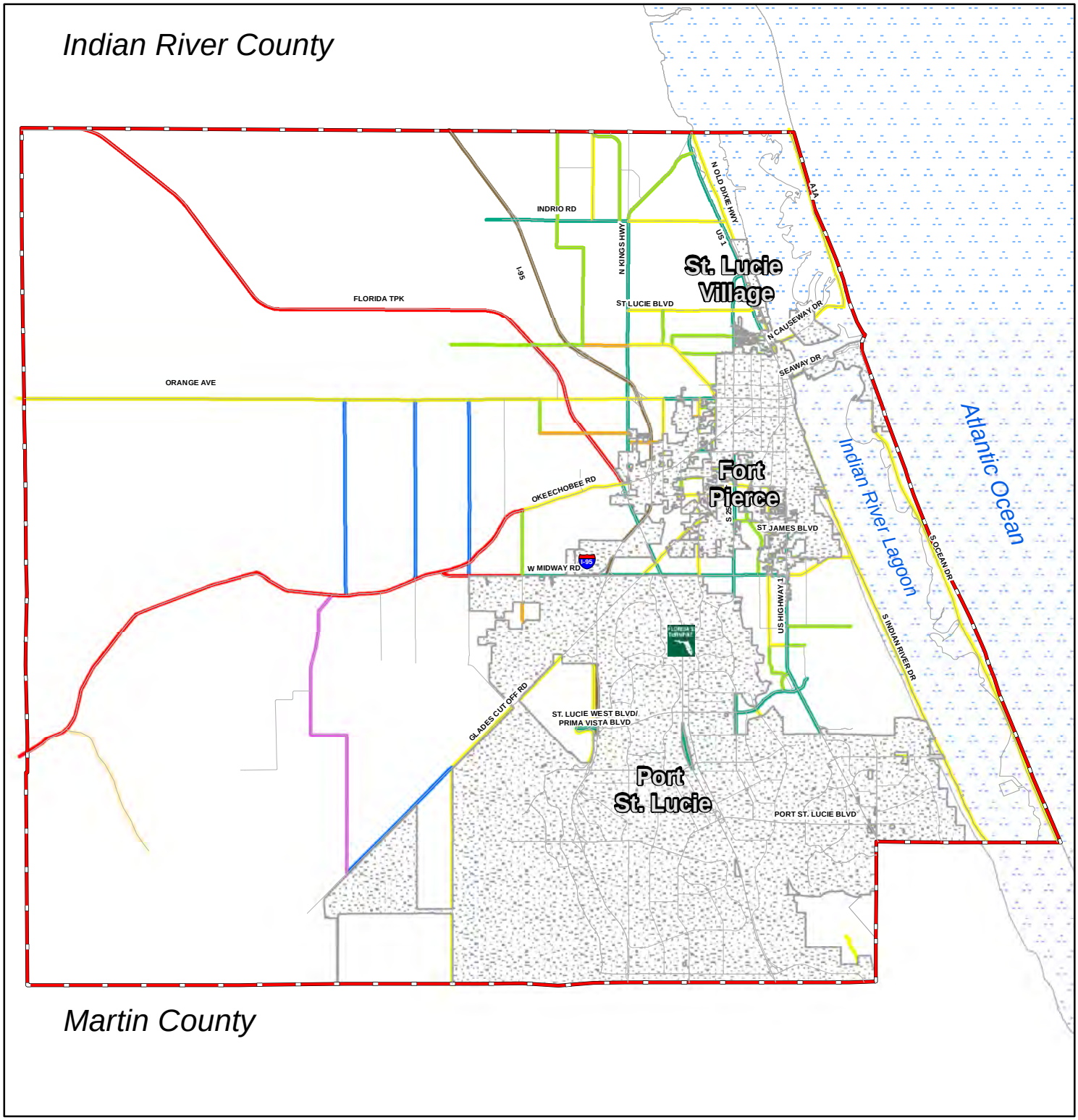
Future Number of Lanes

2
4
6
8

Miles
0 2.25 4.5

Print Date: 7/23/2018

Source:St Lucie County



St. Lucie County
2018 Comprehensive Plan
Exisiting & Future
Functional Classification Map
(2040)

Map: TRN-3

N
W E
S

Legend

County Boundary
Municipalities

Functional Classification

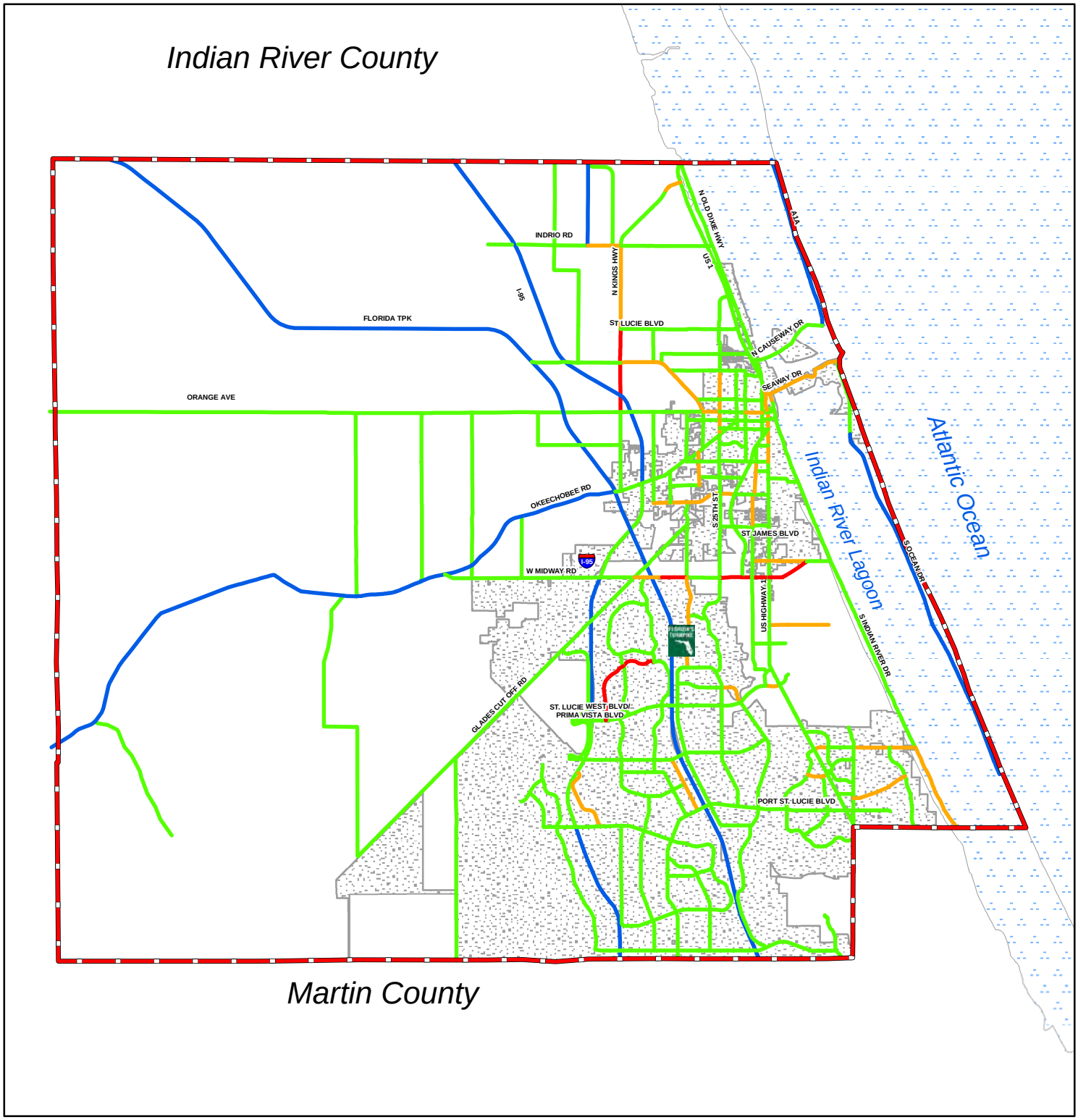
- Minor Collector
- Rural Local
- Rural Major Collector; RuralMajor Collector
- Rural Minor Arterial
- Rural Principal Arterial; RuralPrincipal Arterial
- Urban Collector; Urban Collector/Urban Local
- Urban Local
- Urban Minor Arterial; Urban Minor Arterial
- Urban Principal Arterial
- Urban Principal Arterial-Interstate

Miles
0 2.25 4.5

Print Date: 7/24/2018

Source: St. Lucie County

Calvin, Giordano & Associates, Inc.
EXCEPTIONAL SOLUTIONS



Map: TRN-4

St. Lucie County
2018 Comprehensive Plan
Existing Level of Service Map

Legend

- County Boundary
- Municipalities

LOS

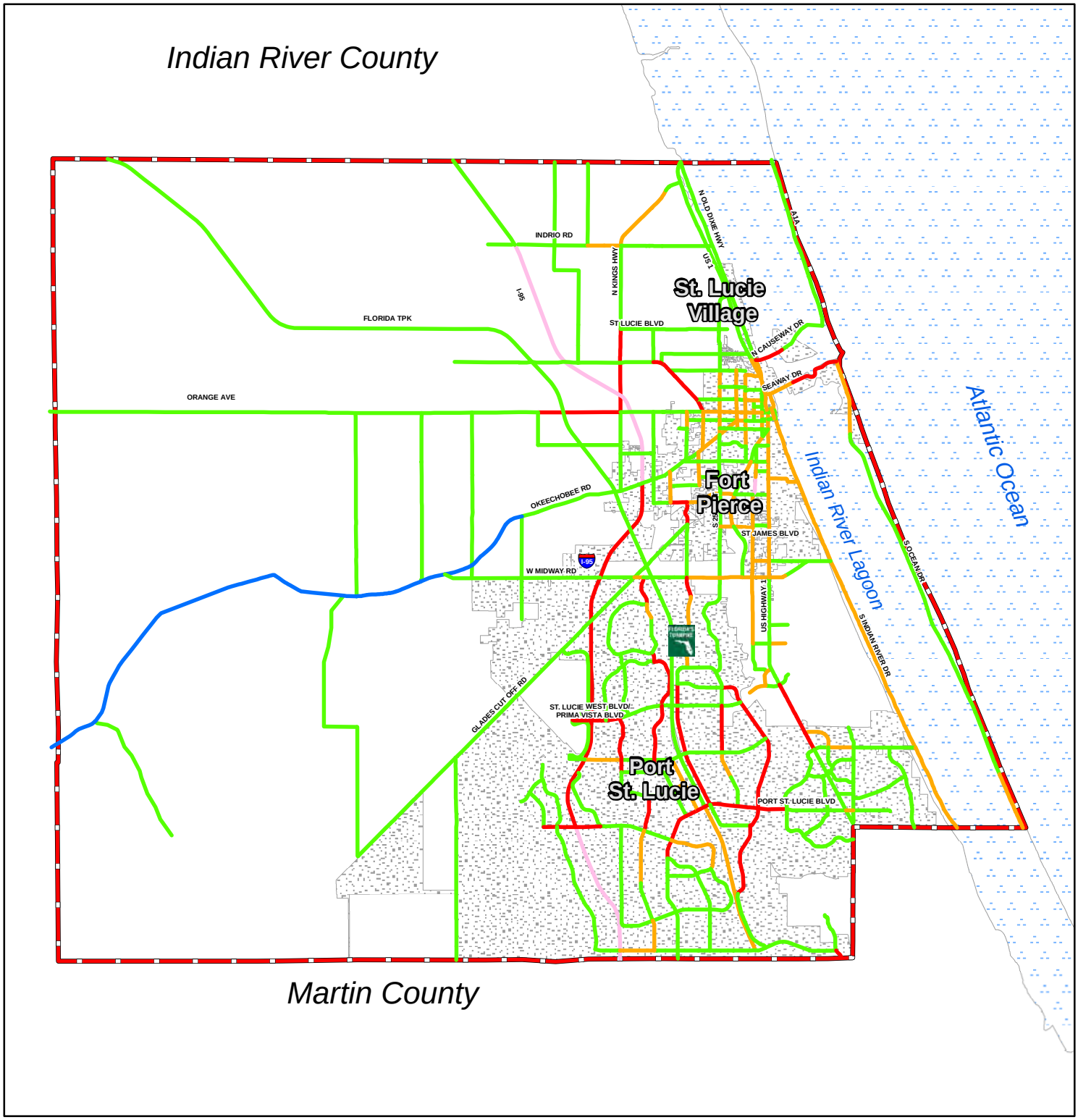
- B
- C
- D
- F

N
W E
S

0 2.25 4.5 Miles

Print Date: 7/24/2018

Source: FDOT District IV



Map: TRN-5

St. Lucie County
2018 Comprehensive Plan
2040 Future Level of Service Map

Legend

- County Boundary
- Municipalities

LOS (2040)

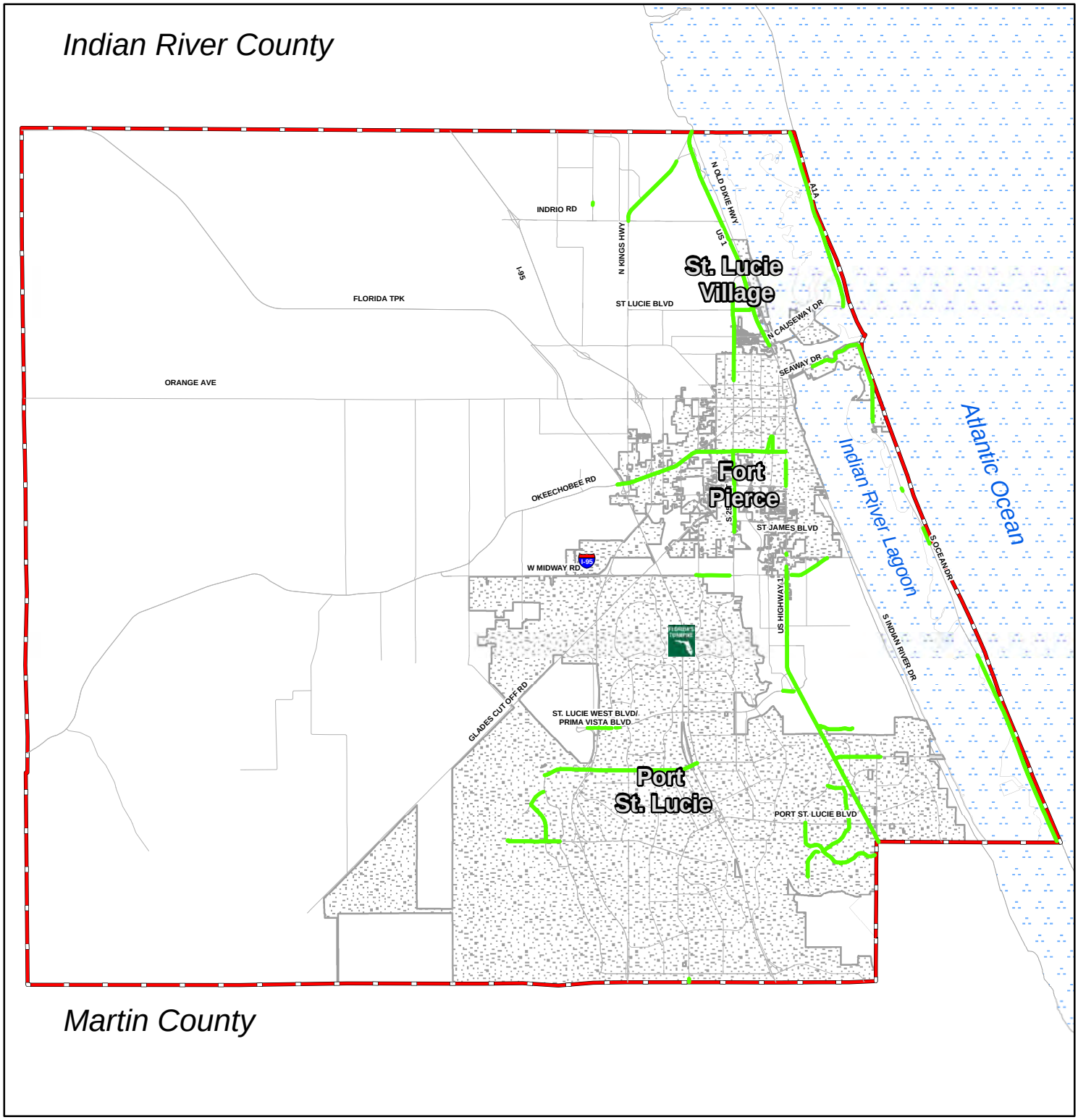
- B
- C
- D
- E
- F

N
W E
S

0 2.25 4.5 Miles

Print Date: 7/24/2018

Source: FDOT District IV



St. Lucie County
2018 Comprehensive Plan
Exisiting Bike Lanes Map

Map: TRN-6

N
W E
S

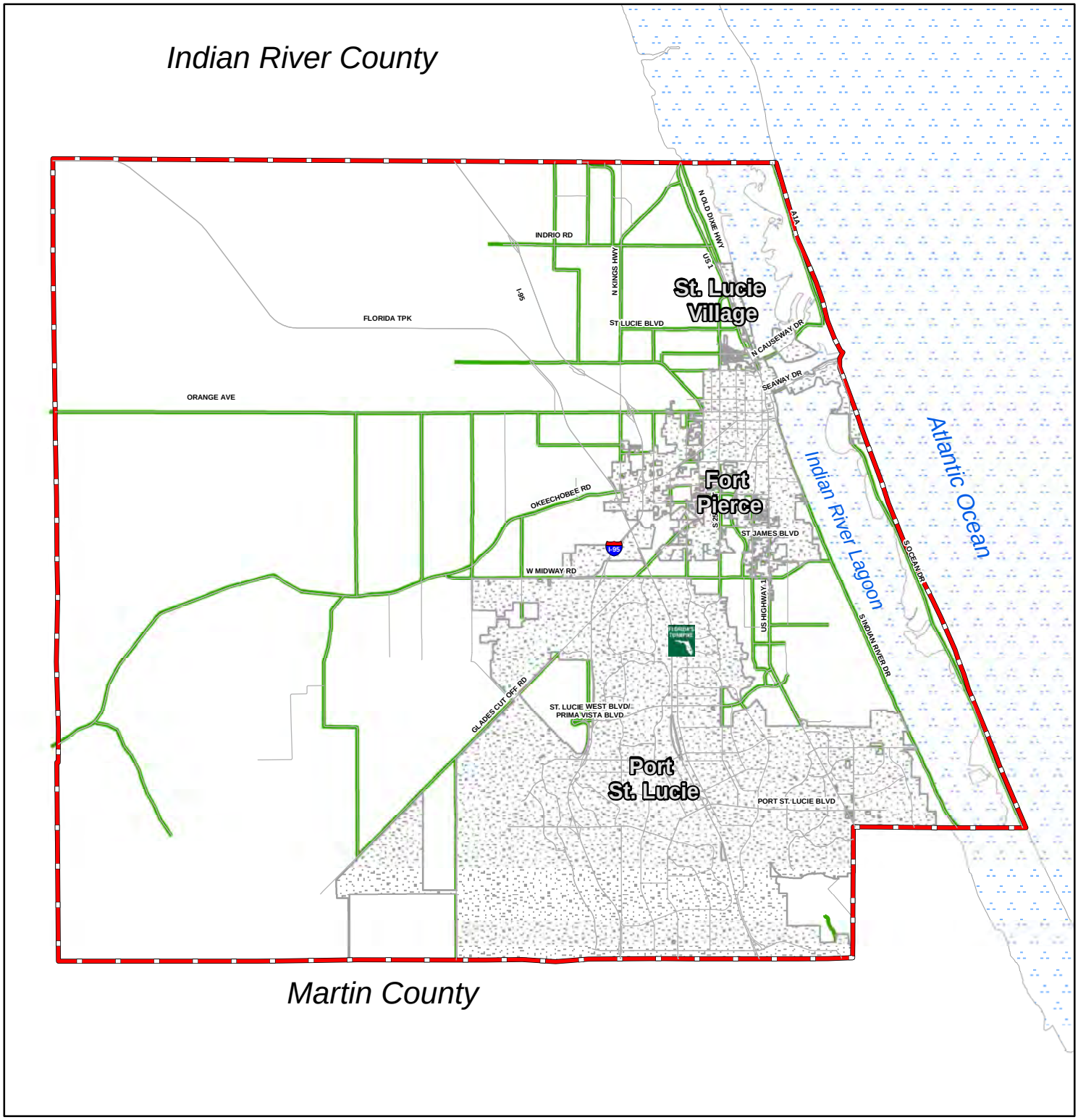
Miles
0 2.25 4.5

Legend
- Existing Bike Lanes
- County Boundary
- Municipalities

Print Date: 7/23/2018

Source: St. Lucie County

Appendix G



Map: TRN-7

St. Lucie County
2018 Comprehensive Plan
Future Bike Lanes Map

N
W E
S

Legend

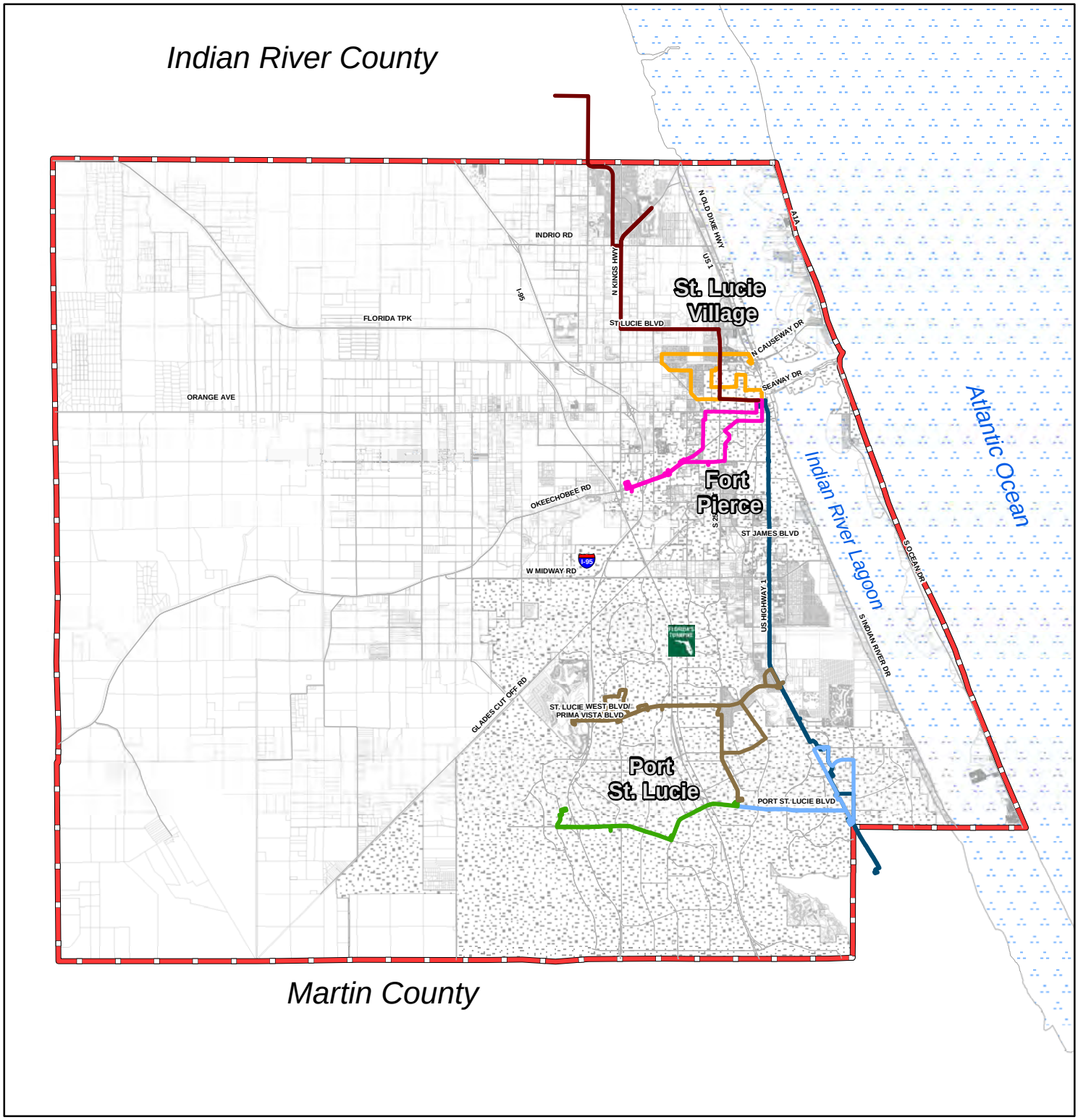
- County Boundary
- Municipalities
- Future Bike Lanes

0 2.25 4.5 Miles

Print Date: 7/23/2018

Source: St. Lucie County

Appendix G



Map: TRN-8

St. Lucie County
2018 Comprehensive Plan
Exisiting Transit Map

N
W E
S

Legend

- County Boundary
- Municipalities

Route

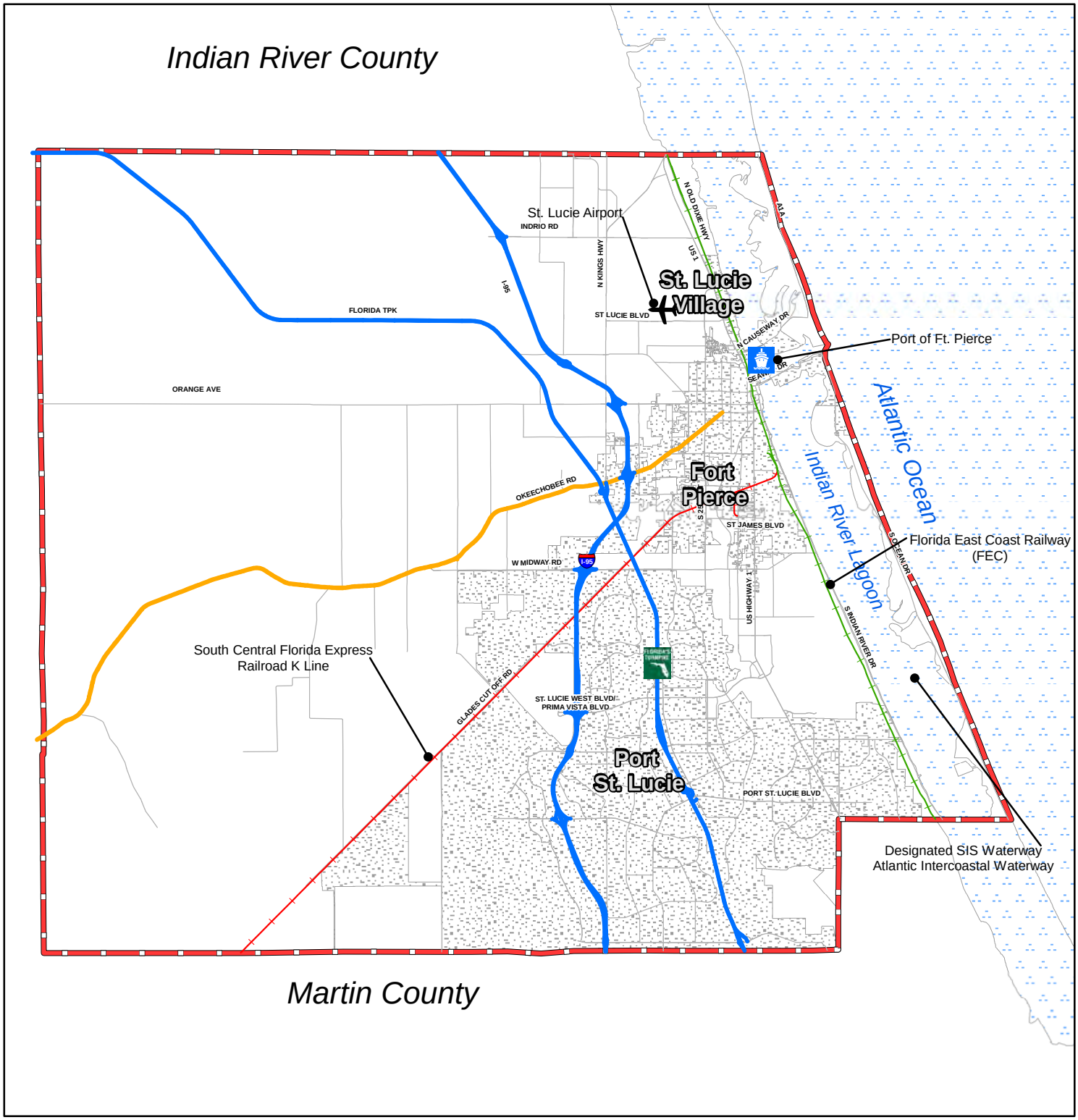
- PSL Trolley
- TCC Route 1
- TCC Route 2
- TCC Route 3
- PSL Blvd Route
- SLW Prima Vista Route
- Indian River County Connector

Miles
0 2.25 4.5

Print Date: 7/23/2018

Source: St. Lucie County

Calvin, Giordano & Associates, Inc.
EXCEPTIONAL SOLUTIONS



Map: TRN-9

St. Lucie County
2018 Comprehensive Plan
Exisiting and Future (2040)
Transportation System Map

N
W E
S

Miles
0 2.25 4.5

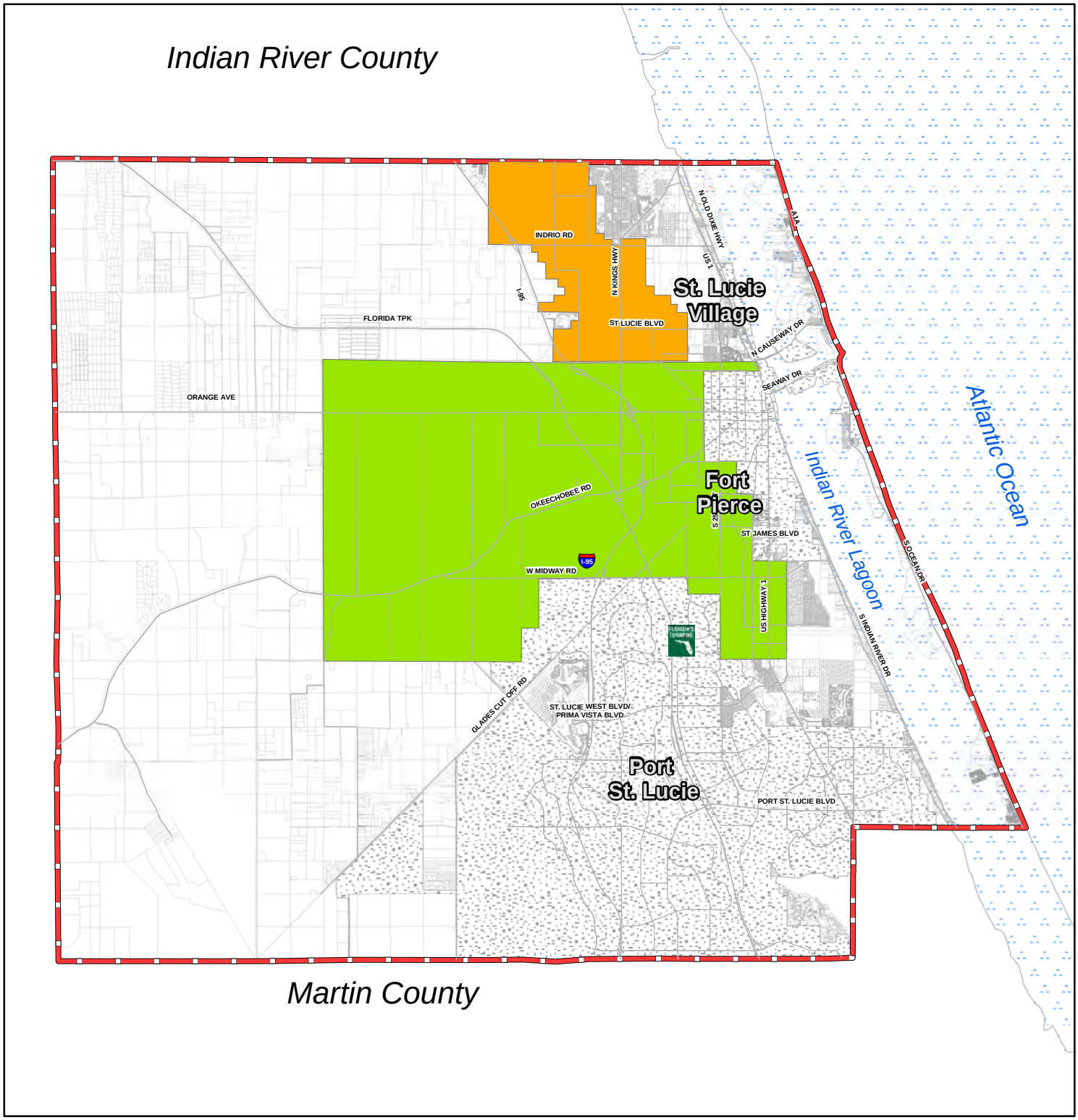
Legend

- County Boundary
- Municipalities
- Designated SIS Highway
- Emerging SIS Highway
- Designated SIS Rail
- Emerging SIS Rail

Print Date: 7/23/2018

Source: St. Lucie County & ArcGIS Online

Calvin, Giordano & Associates, Inc.



Map: INF-1

St. Lucie County
2018 Comprehensive Plan
Drainage Districts Map

N
W E
S

Miles
0 2.25 4.5

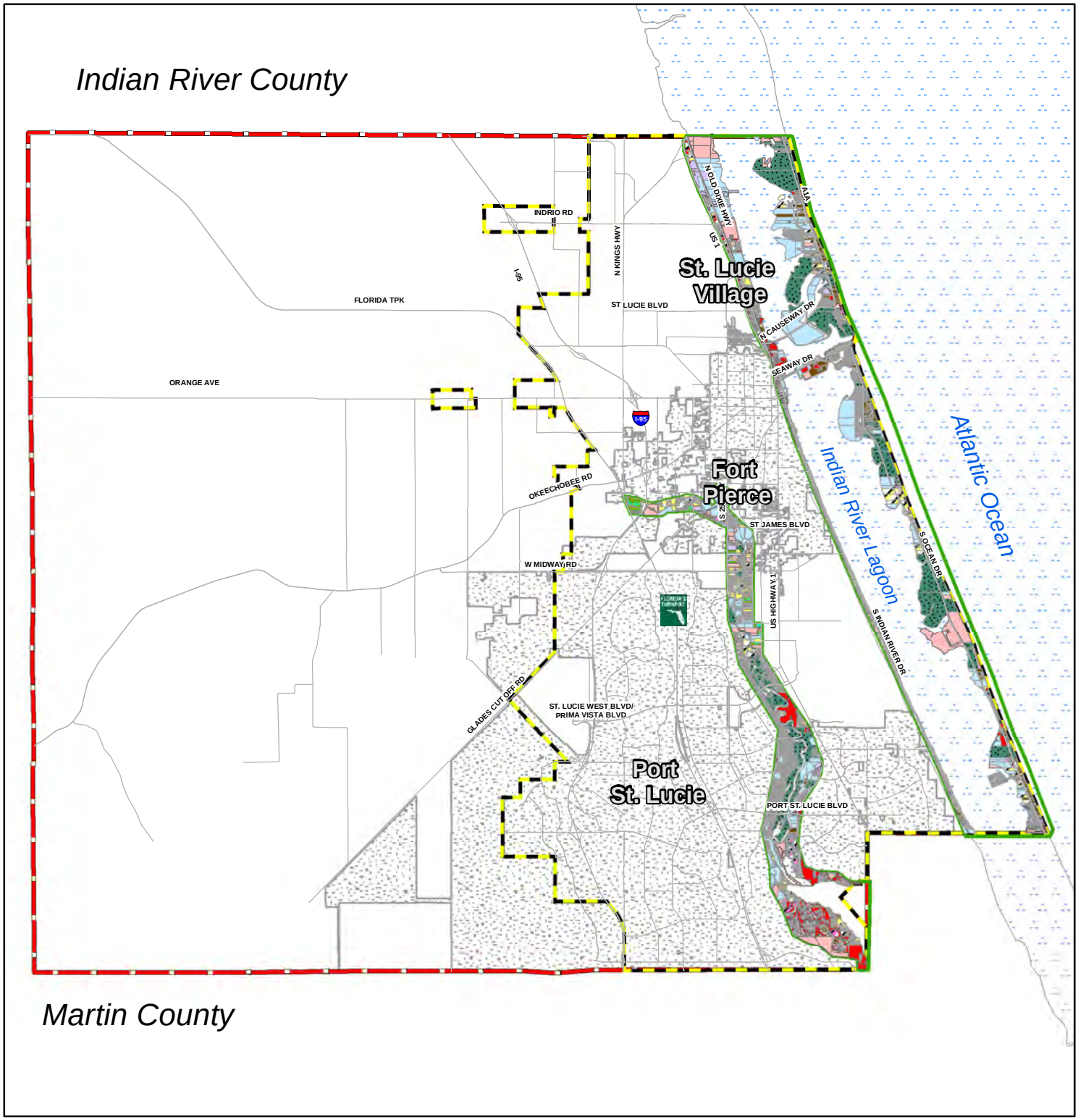
Legend

- County Boundary
- Municipalities
- Fort Pierce Farms WCD
- North St. Lucie River WCD

Print Date: 7/23/2018

Source: St. Lucie County

Calvin, Giordano & Associates, Inc.
EXCEPTIONAL SOLUTIONS



Map: CST-1

St. Lucie County
2018 Comprehensive Plan
Coastal Plannig Area Map

N
W E
S

Legend

- County Boundary
- Coastal Planning Area
- Urban Service Boundary
- Municipalities
- Water

Existing Land Use

- Agriculture
- Commercial
- Commercial Vacant
- Conservation/Recreation
- Government
- Industrial
- Light Industrial
- Institutional
- Miscellaneous
- Residential Mobile Homes
- Residential Multi-Family
- Residential Single Family
- Residential Vacant
- Other
- Right of Way

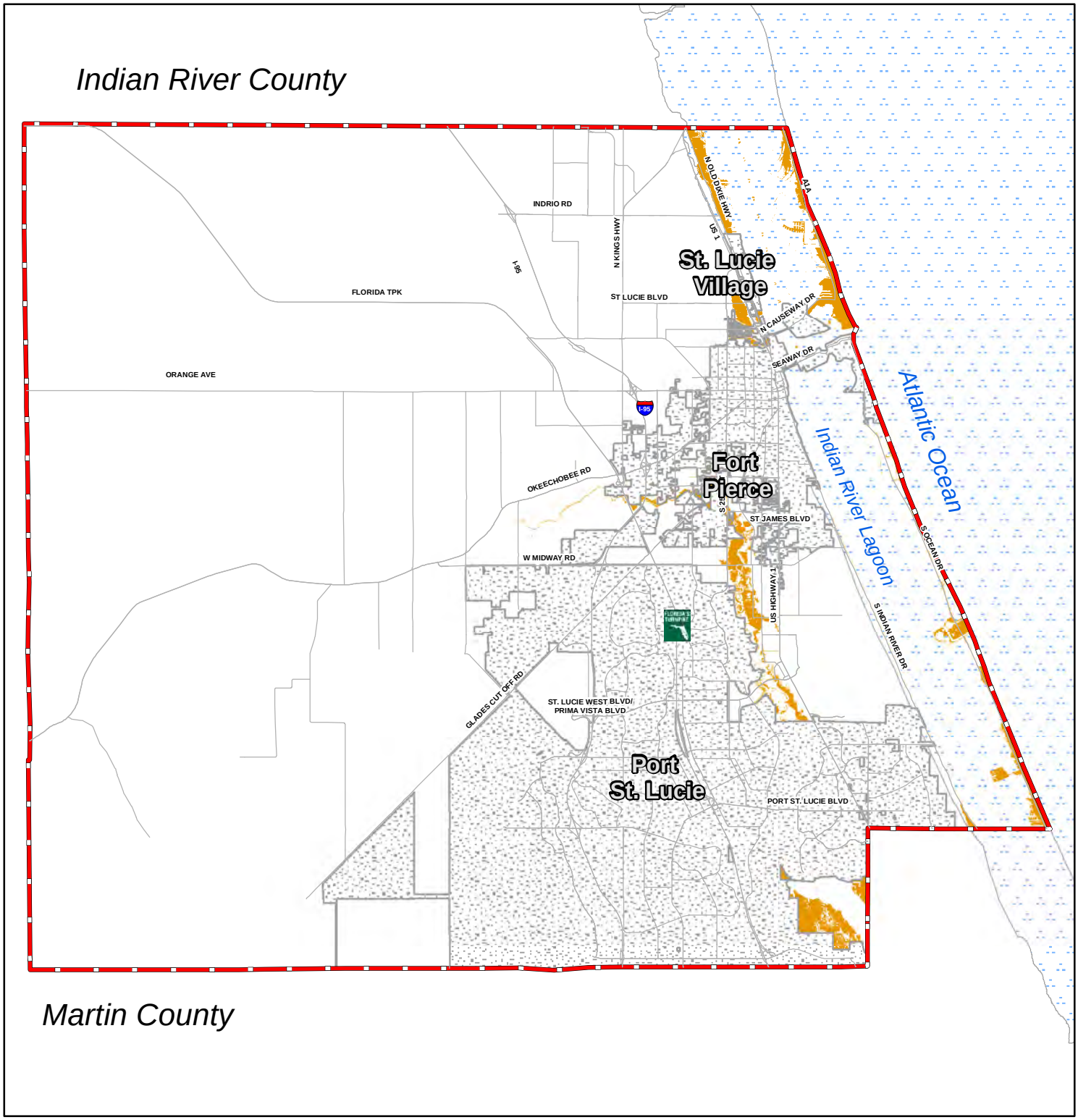
Miles
0 2.25 4.5

Produced and maintained by the CGA Geographic Information Systems Services

Calvin, Giordano & Associates, Inc. EXCEPTIONAL SOLUTIONS

Print Date: 7/24/2018

Source: St. Lucie County



Map: CST-2

St. Lucie County
2018 Comprehensive Plan
Coastal High Hazard Area Map

N
W E
S

Legend
- County Boundary
- Municipalities
- CoastalHighHazard
- Water

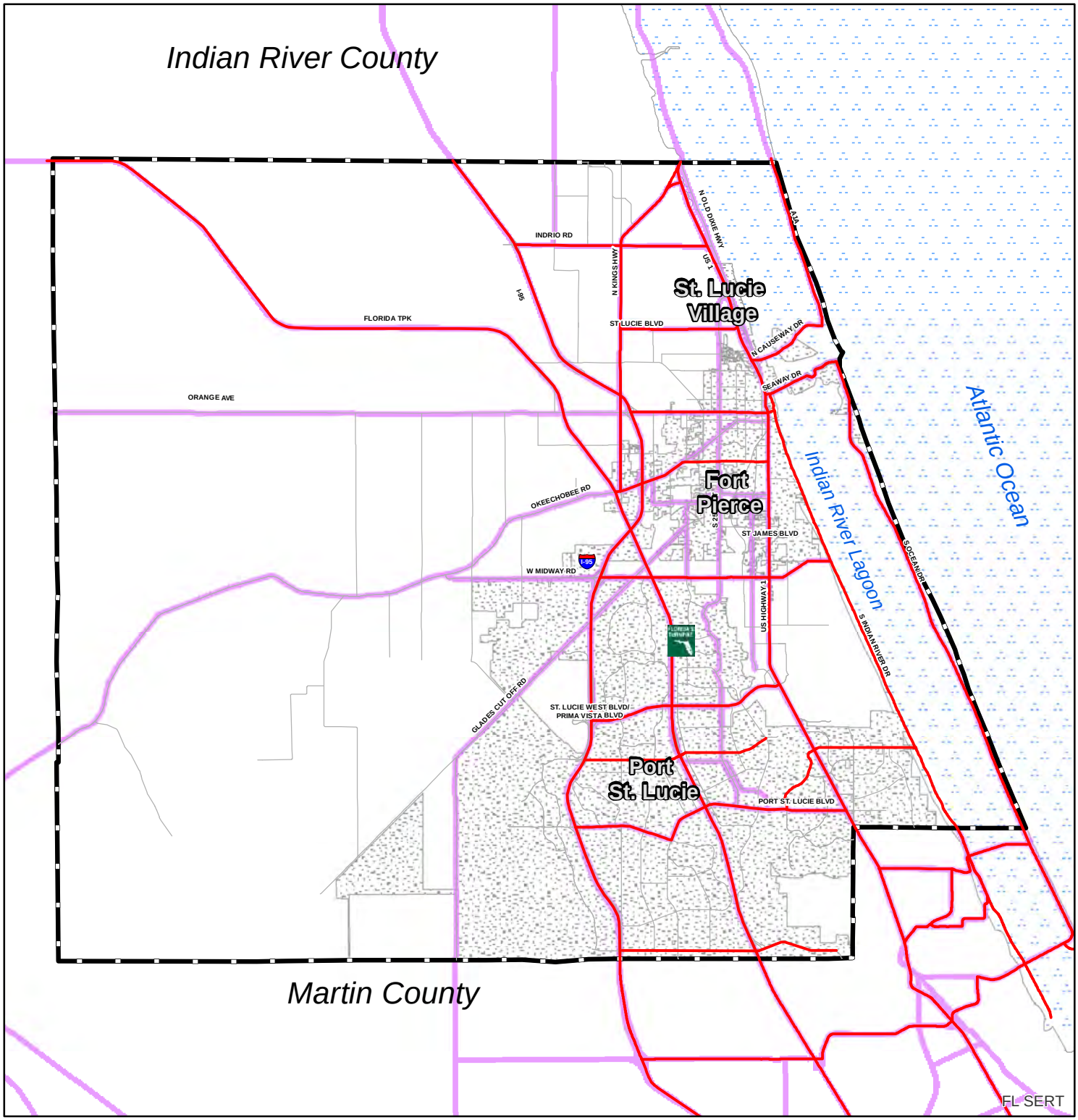
0 2.25 4.5 Miles

Print Date: 11/29/2018

Source: FL DEM, 2018

Produced and maintained by the CGA Geographic Information Systems Services

Calvin, Giordano & Associates, Inc. EXCEPTIONAL SOLUTIONS



Map: CST-3

St. Lucie County
2018 Comprehensive Plan
Evacuation Routes Map

N
W E
S

Miles
0 2.25 4.5

Legend

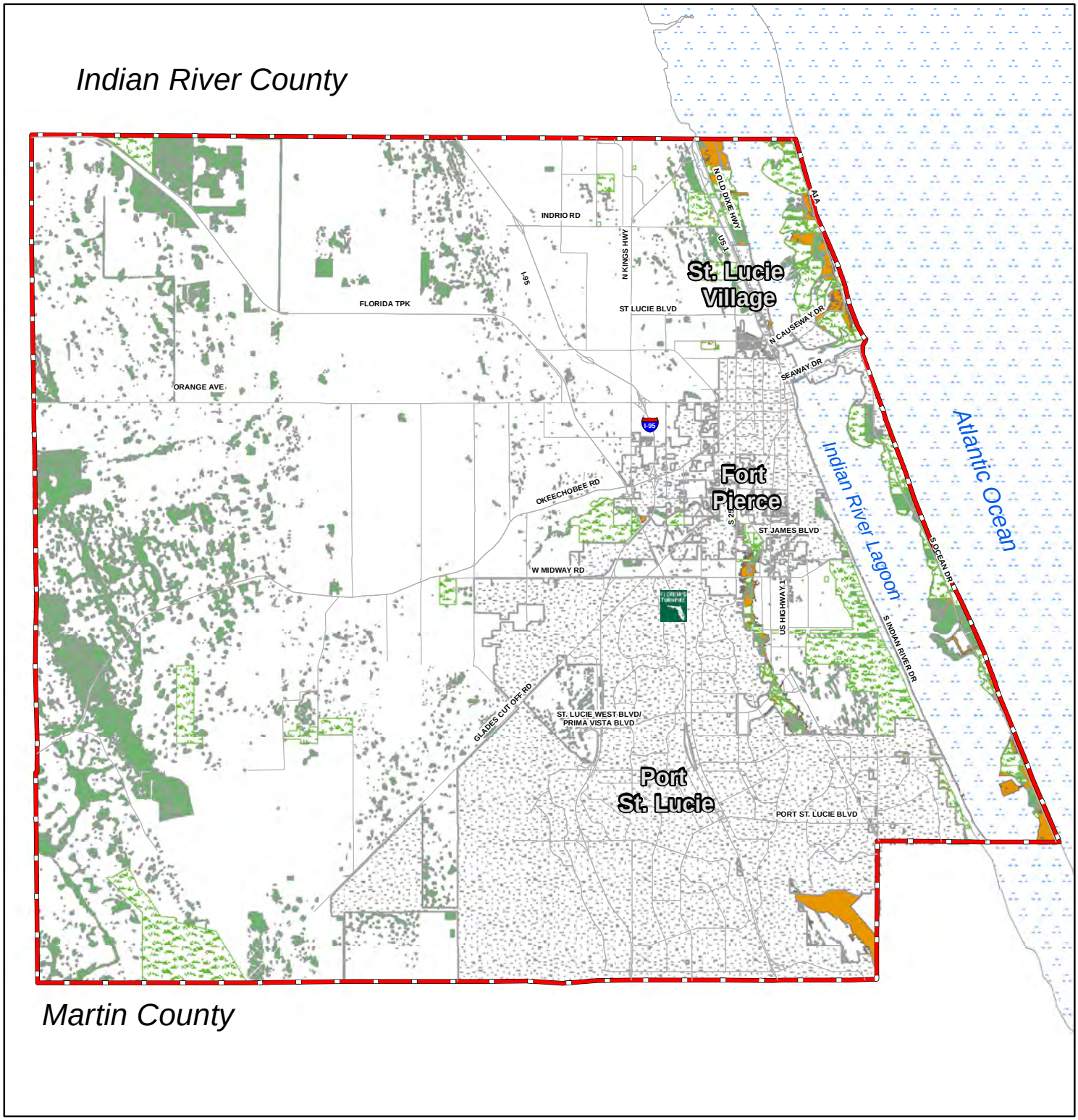
- County Boundary
- Municipalities
- Evacuation Routes (per St. Lucie County)
- Evacuation Routes (per Florida SERT)

Print Date: 7/24/2018

Source: St. Lucie County & Florida SERT

GIS Produced and maintained by the CGA Geographic Information Systems Services

Calvin, Giordano & Associates, Inc. EXCEPTIONAL SOLUTIONS



Map: CST-4

St. Lucie County
2018 Comprehensive Plan
Natural Resources within
Coastal High Hazard Area Map

Legend
- County Boundary
- Municipalities
- Parks and Preserves
- Wetland
- Coastal High Hazard Area
- Water

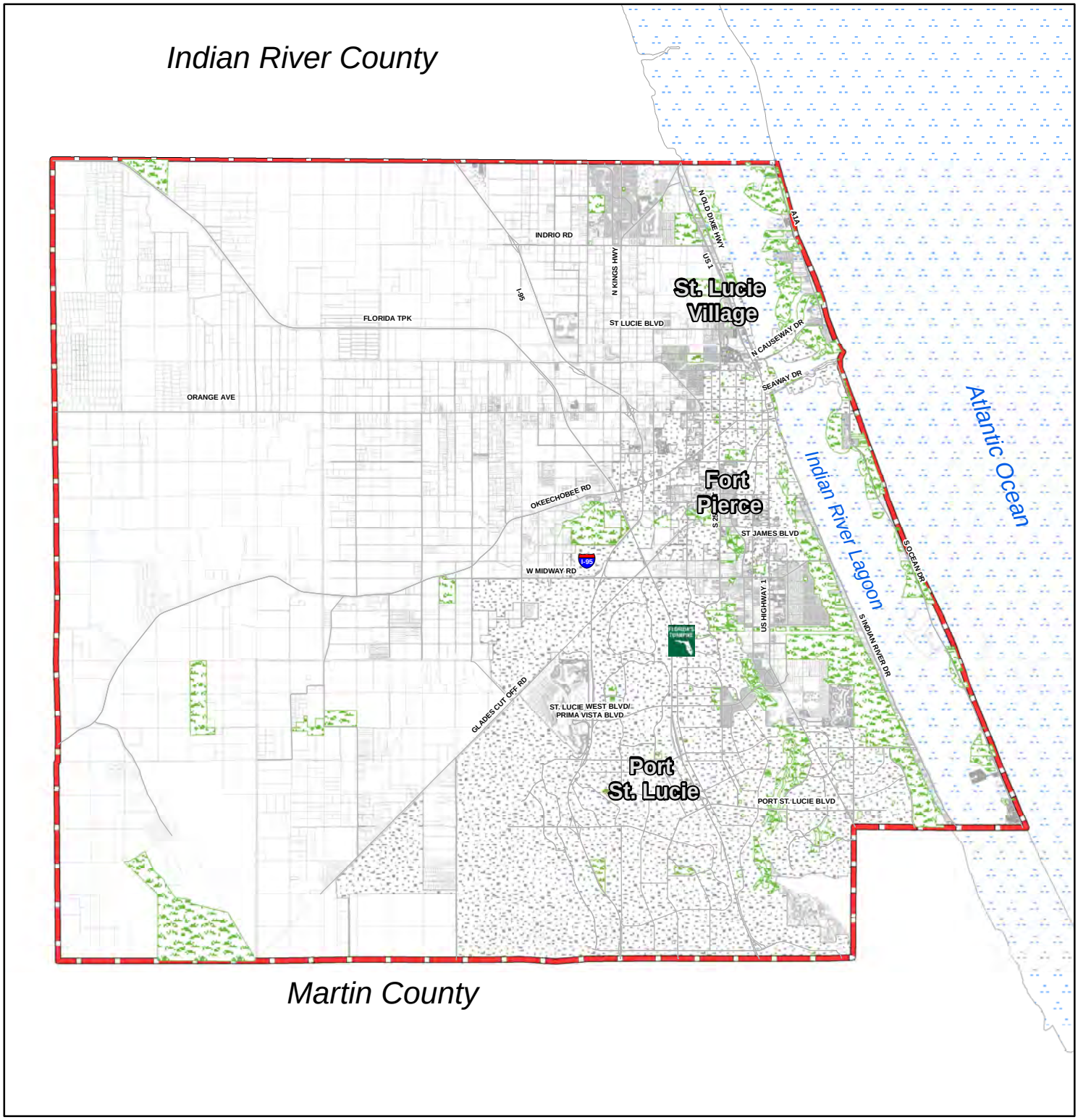
N
W E
S

0 2.25 4.5 Miles

Print Date: 7/24/2018

Source: St. Lucie County

Appendix G



Map: Rec-1

St. Lucie County
2018 Comprehensive Plan
Parks and Recreation Map

N
W E
S

Miles
0 2.25 4.5

Legend
County Boundary
Parks and Preserves
Municipalities

Print Date: 7/23/2018

Source: St. Lucie County

GIS Produced and maintained by the CGA Geographic Information Systems Services

Calvin, Giordano & Associates, Inc.
EXCEPTIONAL SOLUTIONS

FUTURE LAND USE ELEMENT
GOALS, OBJECTIVES AND POLICIES

Goal 1.1: Ensure the highest quality living environment possible, through a mixture of land uses reflecting the needs and desires of the local residents and how they want their community to develop. The goal shall be implemented by strictly enforced building, zoning and development codes based on objectives and policies that will enhance St. Lucie County's natural and man-made resources while minimizing any damage or threat of degradation to the health, safety and welfare of the county's citizens, native wildlife and environment, through incompatible land uses.

Objective 1.1.1: *Land Use*. Maintain the Future Land Use Map land with the following use designations to portray the future development patterns of St. Lucie County.

Policy 1.1.1.1 - The following land use designations/intensities, as indicated on the Future Land Use Maps are provided as the pattern for the future development of the area within unincorporated St. Lucie County.

Future Land Use Designation		Residential Density	Max Height[4] (For Buildings)	Max Lot Coverage (For Buildings)
AG-5	Agriculture-5	1 du/5 acres (0.2 du/1 acre)	-	-
AG-2.5	Agriculture-2.5	1 du/2.5 acres (0.4 du/1 acre)	-	-
RE	Residential Estate	1 du/a acre	-	-
RS	Residential Suburban	2 du/1 acre	-	-
RU	Residential Urban	5 du/1 acre	-	-
RM	Residential Medium	9 du/ 1 acre	-	-
RH	Residential High	15 du/ 1 acre	-	-
R/C	Residential/Conservation	1 du/5 acres (0.2 du/1 acre)	-	-
Cpub	Conservation-Public	0 du[1]	20 ft	5-10%
COM	Commercial	0 du[1,5]	60 ft[3]	40—50%
IND	Industrial	0 du[1]	80 ft	40—50%
P/F	Public Facilities	0 du[1]	80 ft	40—50%
T/U	Transportation/Utilities	0 du[1]	40 ft[6]	40—50%
MXD	Mixed Use Development	0.2-15 du/acre[2,5]	80 ft	40—50%
H	Historic	0 du[1]	40 ft	40—50%
SD	Special District	0.2-15 du/acre	80 ft	40—50%
TVC	Towns, Villages, & Countryside	Variable pursuant to special areas plan. See TVC Element Goals, Objectives, and Policies. 1-9 du/acre	-	-

Notes:	
1	Residential uses permitted under specific conditions only. Refer to Zoning/Land Development Code for special restrictions in individual zoning districts.
2	Maximum Densities subject to compliance with intensity with intensity plans for each mixed use area, as set forth in Policy 1.1.87.4
3	For motel or hotel uses, the building spacing formula as identified in the Land Development Code shall be used to establish maximum building height, unless otherwise stipulated in the Hutchinson Island Building Height Overlay Zone section of the Land Development Code, or unless otherwise restricted by Code or Ordinance of the County.
4	Unless otherwise stipulated in the Hutchinson Island Height Overlay Zone section in the Land Development Code
5	Motels/hotels shall be allowed up to 36 units/acre.
6	The height of the Treasure Coast Airport shall be regulated by the Airport Zone Height Limitations established in Section 4.00.03, of the Land Development Code, as reviewed and approved by the Federal Aviation Administration (FAA).

Policy 1.1.1.2 - The County's land use categories shall be described as follows:

A. Agricultural-5 (AG-5)
The AG-5 land use designation is intended for those areas of the County outside of the planned urban service area which are associated with agricultural and agricultural-related activities. These areas are recognized for first being appropriate for the production of citrus, cash crops, or ranching activities. These areas are acknowledged as potentially suitable for limited residential and nonresidential development under the following criteria:

- All residential and nonresidential development must be in accordance with applicable standards and restrictions as set forth in the Land Development Code;
- All residential development proposals in excess of forty-five (45) units must be approved through the Planned Development (PD) process as provided for in the Land Development Code;
- Any activity other than crop or food product related production, including combinations of properties/uses, in excess of 200 acres should identify appropriate mechanisms for funding the operation and maintenance of necessary infrastructure. Any utility infrastructure shall be consistent with the Infrastructure Element.
- Residential densities are set at a maximum of 0.20 units per gross acre (one unit per 5 gross acres).

B. Agricultural-2.5 (AG-2.5)
The AG-2.5 land use designation is intended for those areas of the County outside of the planned urban service area which are associated with agricultural and agricultural-related activities. These areas are recognized for first being appropriate for the production of citrus, cash crops, or ranching activities. These areas are acknowledged as potentially suitable for limited residential and nonresidential development under the following criteria:

- All residential and nonresidential development must be in accordance with applicable standards and restrictions as set forth in the Land Development Code;
- All residential development proposals in excess of forty-five (45) units must be approved through the Planned Development (PD) process as provided for in the Land Development Code;
- Any activity other than crop or food product related production, including combinations of properties/uses, in excess of 200 acres should identify appropriate mechanisms for funding the operation and maintenance of necessary infrastructure. Any utility infrastructure shall be consistent with the Infrastructure Element.
- Residential densities are set at a maximum of 0.40 units per gross acre (one unit per 2.5 gross acres).

C. Residential Estate (RE)
The Residential Estate (RE) land use category is intended to act as a transitional area between the agricultural areas and the more intense residential areas in the eastern portion of the County. This category is found predominantly along the western edge of the urban form, but is also appropriate for areas of special environmental concern such as along the North Fork of the St. Lucie River and the Indian River Lagoon.

The RE designation is intended for large lot, single-family detached residential dwellings, at a density of one unit per gross acre. These areas are not required to be served with central utilities, however when at all practical, service connections should be provided.

The RE designation is acknowledged as potentially suitable for limited residential and nonresidential development under the following criteria:

- All residential and nonresidential development must be in accordance with applicable standards and restrictions as set forth in the Land Development Code;
- All residential development proposals in excess of eight units must be approved through the Planned Development (PD) process as provided for in the Land Development Code;
- Residential densities are set at a maximum of one (1) unit per one gross acre.

D. Residential Suburban (RS)

The Residential Suburban (RS) land use category is intended to act as a transitional area between the agricultural areas and the more intense residential areas in the eastern portion of the County. This category is found predominantly along the western edge of the urban form, but is also appropriate for areas of special environmental concern such as along the North Fork of the St. Lucie River and the Indian River Lagoon.

The RS designation is intended for large lot, single-family detached residential dwellings, at a density of one (1) to two (2) units per gross acre. These areas are not required to be served with central utilities; however when at all practical, service connections should be required.

Limited nonresidential uses may be appropriate, in accordance with applicable standards and restrictions as set forth in the Land Development Code.

E. Residential Urban (RU)

The Residential Urban (RU) classification is the predominant residential land use category in the County. This residential land use category provides for a maximum density of five (5) dwelling units per gross acre. The RU designation is generally found between the identified urban service areas and the transitional RS areas. These properties need to be serviced with central water and wastewater services. These services may be provided by either a public utility or through private on-site facilities, as would be permitted in accordance with all applicable regulations. New development in the RU areas can occur using traditional single-family or multifamily zoning designations or through the planned unit development process.

Limited nonresidential uses may be appropriate, in accordance with applicable standards and restrictions as set forth in the Land Development Code.

F. Residential Medium (RM)

The Residential Medium (RM) land use category is to be applied to those areas that are within, or planned to be within, areas of central community services. A maximum residential density of nine (9) dwelling units per gross acre is permitted under this land use designation. If required, the actual density is subject to the satisfactory completion of the rezoning process, which would include complete review of the physical suitability of the property for development at the proposed intensity.

Limited nonresidential uses may be appropriate, in accordance with applicable standards

and restrictions as set forth in the Land Development Code.

Medium density residential land uses can act as a transition between the lower intensity RU areas and the more intense land use designations. Zoning applications within the RM land use area include single-family, multifamily, or PD zoning.

G. Residential High (RH)
Areas designated Residential High (RH) are intended to accommodate high density development, not to exceed 15 dwelling units per gross acre. In order to develop at this intensity, it must be possible to connect into a central water and wastewater service facility, and the subject property must be located in an area of the County which has available all urban services and facilities including fire protection, police, recreation, roadways, and schools.

Limited nonresidential uses may be appropriate, in accordance with applicable standards and restrictions as set forth in the Land Development Code.

H. Mixed Use Development (MXD)
The intent of the Mixed Use Development (MXD) designation is to identify those areas where innovative land use concepts are encouraged. Application of this district should be with prudence, and should be only to those areas where traditional land use classifications do not afford the desired flexibility and community input in land use planning necessary to address local concerns. Candidates for this district include all I-95 interchange areas, the Treasure Coast International Airport, Community Development Districts created pursuant to Chapter 190, Florida Statutes and areas of special or unique environmental consideration that may not be appropriate for traditional land use designations.

Uses within the areas classified as Mixed Use should be segregated as to intensity and indicated in the form of a concept master plan which is to be included as a part of the land use designation process. The following criteria, in addition to those as cited in Objective 1.1.7 (PUD, PNRD & PMUD), are to be used in the development of Mixed Use areas:

- Unless otherwise compliant with the identified intensity classification, any change in zoning shall be to the Planned Unit Development (PUD), Planned Non-Residential Development (PNRD) or Planned Mixed Use Development (PMUD), as described in the St. Lucie County Land Development Code. Those properties with compatible existing zoning designations are encouraged to develop under the PUD, PNRD or PMUD regulations.
- Residential development shall be regulated by the intensity district in which it is to take place. In no case should gross residential density exceed 15 du/ac.
- All uses shall be compatible with adjacent land uses.

I. Special District (SD)
The intent of the Special District (SD) designation is to identify those areas where specific uses or combinations of uses are anticipated. SD designated areas include previously approved Community Development Districts, areas for which a site specific development plan or concept has been granted, or areas which by their location have specific issues and concerns for their development.

Residential densities within an area designated as a Special District are limited to what the current land use designation authorizes. Any increase over the present designation may be considered only through the Plan Amendment process.

J. Commercial (COM)
The Commercial (COM) land use designation is applicable to areas of future commercial development, in addition to those existing developed commercial areas. Future commercial areas should be located at points of high transportation access, with specific action taken to prevent the development of new linear commercial strips.

Although this plan supports the location of higher intensity commercial uses at the intersection of arterial roadways, it should not be interpreted to mean that every intersection should be designated for commercial activities. Unless otherwise designated on the future land use maps, applications for commercial use should be done in conjunction with a detailed review of the impacts of such development on adjacent property, specifically noting what, if any, negative neighborhood impacts could result from a map amendment.

The Commercial (COM) designation is intended to accommodate all commercial zoning districts as identified under St. Lucie County's Land Development Code. Office and general retail uses are considered the principal uses within the COM designated areas.

K. Industrial (IND)
This land use designation is applied to specific areas of the County identified as suitable for industrial use. This land use designation is intended to be implemented through both the heavy and light industrial zoning districts, with the specific criteria for zoning application as provided for under the policies of the Future Land Use Element.

Areas designated for Industrial activities must have available all necessary services and facilities prior to development, supplied by either public or private sources as permitted. In addition, developments proposing to incorporate heavy industrial uses will be required to be adequately buffered from any adjacent use that would be incompatible.

Limited nonresidential uses may be appropriate, in accordance with applicable standards and restrictions as set forth in the Land Development Code.

L. Public Facilities (P/F)
The Public Facilities (P/F) land use designation is applied to properties used for such activities as education and places of worship. This designation may also be applied to other public uses such as jails and administrative buildings.

M. Transportation/Utilities (T/U)
The purpose of this district is to recognize the Transportation or Utility use of property. This designation may be applied as appropriate subject to review of the specific application and intended use of the property.

The Transportation/Utilities (T/U) land use designation has been applied principally to four areas:

1) Treasure Coast International Airport;
2) The St. Lucie County Landfill;
3) The St. Lucie Power Plant site located on South Hutchinson Island; and,
4) The Florida Power and Light-Midway switching station along West Midway Road.

N. Historic (H)
The Historic (H) land use designation is applied to properties of historic significance as identified by the national historic register, the State of Florida or local designation.

O. Conservation
The Conservation land use designation has been divided into two future land use categories: Residential/Conservation (R/C) and Conservation-Public (Cpub). These designations are intended to identify areas of the County which exhibit unique or special environmental characteristics, and may be either publicly or privately held. The designations are described in more detail below.

1. *Residential/Conservation (R/C):* The Residential/Conservation category is intended to identify those privately controlled lands that contain unique vegetation or have characteristics which warrant special attention prior to their being developed. The Residential/Conservation designation is not intended to prevent development activities. Instead, its purpose is to identify those areas that, due to special environmental or other unique constraints, location, property configuration, or topography should be more closely examined before final development approvals are authorized.

Areas designated Residential/Conservation carry a development potential of 0.20 dwelling units per gross acre (one dwelling unit per five gross acres). Areas within the R/C designation should be developed using the following criteria:

- The development is supplied with central water and sewer service; unless otherwise permitted by the appropriate authority.
- Any development within an area designated R/C should, as a requirement for building permit approval, demonstrate compliance with all applicable environmental protection regulations as set forth in the Land Development Code for St. Lucie County.
- Any residential development proposal in excess of ten (10) acres, or involving more than eight (8) units, should be reviewed under the Planned Development regulations as set forth in the Land Development Code for St. Lucie County.

2. *Conservation-Public (Cpub):* Areas designated Conservation-Public are those lands which exhibit unique environmental characteristics and are owned by federal, state, regional, or local public agencies. They are intended solely for preservation and/or recreational use. No residential or commercial development may occur other than that typically related to park service and security functions.

P. Towns Villages and Countryside (TVC). Areas designated TVC must follow the policies of the TVC Element in this Comprehensive Plan and the TVC Overlay Zone requirements in the Land Development Code. The purpose of the TVC land use designation is to accommodate future growth within the Special Area Plan for North St. Lucie County in the existing, undeveloped rural areas with a planning strategy that will ensure a settlement pattern that is sustainable, predictable, protects and enhances the rural environment and improves the citizens' quality of life. The TVC requires a sustainable settlement pattern characterized by a mix of uses, building types and income levels within a compact pedestrian friendly environment that accommodates multiple modes of transportation and preserves open space. This land use category is appropriate for areas that have been analyzed in a Special Area Plan, created with a high degree of citizen participation.

Policy 1.1.1.3 – The Future Land Use Map establishes the proposed long-range distribution and general use of property within the county. The following table shall be used to determine consistency of future land use designations and zoning districts to identify compatible zoning districts. Any zoning district that is not consistent with the Future Land Use designation according to the Consistency Matrix, shall not be applied for, permitted, or approved; without a corresponding proposed future land use map amendment request.

Zoning Districts	FUTURE LAND USE CATEGORIES																
	AG-5	**AG-2.5**	**RE**	**RS**	**RU**	**RM**	**RH**	**R/C**	**Cpub**	**COM**	**IND**	**P/F**	**MXD**	**SD**	**H**	**T/U**	**TVC**
AG-5 *Agriculture-5*	X	X	X	X				X				X	X				
AG-2.5 *Agriculture-2.5*		X	X	X								X	X				
AG-1 *Agricultural - 1*			X	X	X	X							X				
R/C *Residential/ Conservation*			X	X	X	X	X	X					X				X
AR-1 *Agricultural, Residential - 1*			X	X	X	X							X				
RE-1 *Residential, Estate - 1*			X	X	X	X							X				
RE-2 *Residential, Estate - 2*				X	X	X	X						X				
RS-2 *Residential, Single-Family - 2*				X	X	X	X						X				
RS-3 *Residential, Single-Family - 3*					X	X	X						X				
RS-4 *Residential, Single-Family - 4*					X	X	X						X				
RM-5 *Residential, Multi-Family - 5*					X	X	X						X				
RMH-5 *Residential, Mobile home - 5*					X	X	X						X				
RM-7 *Residential, Multi-Family - 7*						X	X						X				
RM-9 *Residential, Multi-Family - 9*						X	x						X				
RM-11 *Residential, Multi-Family - 11*							X						X				
RM-15 *Residential, Multi-Family - 15*							X						X				
CN *Commercial, Neighborhood*	X	X	X	X	X	X	X			X			X				X
CO *Commercial, Office*	X	X	X	X	X	X	X			X			X				X
CG *Commercial, General*										X	X		X				X
CR *Commercial, Resort*										X			X				
IL *Industrial, Light*											X		X				X
IH *Industrial, Heavy*											X		X				X

IX ***Industrial, Extraction***	X	X	X	X	X	X	X		X	X	X	X	X				
U ***Utilities***	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
I ***Institutional***	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X
RF ***Religious Facilities***	X	X	X	X	X	X	X	X		X		X	X		X		
PCS ***Planned Country Subdivision***																	X
PUD ***Planned Unit Development***	X	X	X	X	X	X	X	X				X	X	X	X		X
PNRD ***Planned Non-Residential Development***	X	X	X	X	X	X	X	X		X	X	X	X	X	X		
PMUD ***Planned Mixed Use Development***	X	X	X	X	X	X	X	X		X	X	X	X	X	X		
PRW ***Planned Retail/Workplace***													X				X
PTV ***Planned Town or Village***													X				X
HIRD ***Hutchinson Island Residential District***			X	X	X	X	X	X				X	X	X	X		
RVP ***Recreational Vehicle Park***										X			X				
CPUB ***Conservation Public***	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Policy 1.1.1.4 – Notwithstanding the density limitations set forth in Policies 1.1.1.1 and 1.1.1.2 land upon which a lawfully established residential dwelling unit exists (single family residence or mobile home) shall be entitled to a density of one dwelling unit per each recognized lawfully established unit. Such lawfully-established dwelling unit(s) shall not be considered as nonconforming as to the density provisions of Policies 1.1.1.1 and 1.1.1.2 and the St. Lucie County Land Development Code.

Policy 1.1.1.5 – St. Lucie County shall review land use designations, zoning districts and consider the creation of appropriate standards for the permitting of accessory dwelling units in single-family residential or agricultural zoning districts, while maintaining the single-family character of the primary single-family dwelling unit and the neighborhood. An "accessory dwelling unit" shall mean an ancillary or secondary living unit, that has a separate kitchen, bathroom, and sleeping area, existing either within the same structure, or on the same lot, as the primary dwelling unit.

Objective 1.1.2: *Growth Management*. St. Lucie County shall manage how and where growth occurs by using sustainable development and balanced planning practices. The County shall manage the land use patterns designated on the Future Land Use Map comprehensively, consistently, and effectively to enhance the quality of life for its citizens, promote economic vitality, and accommodate projected population growth and development in an environmentally acceptable manner.

Policy 1.1.2.1 – The adopted Future Land Use Map Series and any amendments shall promote responsible growth management practices. When considering any amendment to the Future Land Use Maps of the County's Comprehensive Plan, the County

Commission shall make the following findings, supported by the other elements of this Plan, prior to taking any approval actions granting an individual amendment to the Future Land Use Maps:

1. That the property under land use amendment application is adjunct to, or within no more than one-quarter mile of the same or greater type of land use classification.
2. That the property under land use amendment consideration lies within the Five Year Capital Improvement Program of the Water and Wastewater Master Plan for St. Lucie County (or can be reasonably accommodated with an amendment to the Master Plan) or otherwise meets the requirements of Policy 1.1.5.4 [formerly Policy 1.1.5.3].

Policy 1.1.2.2 – In accordance with Florida Statutes, proposed future land use map amendments to the County's Comprehensive Plan, shall be based upon the following analyses:

1. An analysis of anticipated growth;
2. An analysis of the availability of facilities and services;
3. An analysis of the suitability of the plan amendment for its proposed use considering the character of the undeveloped land, soils, topography, natural resources, and historic resources on site;
4. An analysis of compatibility of adjacent land uses; and
5. An analysis of the need for job creation, capital improvement, and economic development that will strengthen and diversify the community's economy; and
6. A consultation with the Florida Department of Transportation when it is determined that a proposed amendment has the potential to affect facilities on the Strategic Intermodal System.

Objective 1.1.3: *Agricultural Sustainability*. Provide in the Land Development Code provisions for a compatible and coordinated land use pattern which establishes agriculture as the primary use outside of the urban service boundary and promotes retention of agricultural activities, preserves natural resources and maintains native vegetative habitats and allows new development in accordance with the Towns, Villages and Countryside Goals, Objectives and Policies for settlement outside of the urban service boundary within the Special Area Plan for North St. Lucie County.

Policy 1.1.3.1 - Require that new developments within the AG-5 and AG-2.5 future land use categories not exceed the gross densities provided in Policy 1.1.1.1, to maintain a distinct and sustainable urban – rural interface.

Policy 1.1.3.2 - Any application or petition to divide a lot or parcel of record as of January 9, 1990, in the AG-2.5 or AG-5 future land use categories, into more than forty-five (45) lots, parcels or tracts, shall be approved only through the planned development process consistent with the other Goals, Objectives and Polices of this Plan.

If two or more lots, parcels or tracts or combinations of lots parcels or tracts and portions of lots parcels or tracts which are contiguous to other lots parcels or tracts under single or common ownership interest and were of record on January 1, 1990, the lands involved shall be considered to be an undivided parcel for the purposes of this Policy, provided however, that lots, parcels or tracts separated by an ingress/egress, access or roadway easement that was of record on January 1, 1990, but specifically excluding any easement

limited to utilities, drainage or other non-access purpose, shall not be considered an undivided parcel for the purpose of this Policy.

Policy 1.1.3.3 – For any planned development project within the AG-5 and AG-2.5 future land use categories, the PUD may encompass one or more non-contiguous properties. All of the properties that are included within the PUD shall be considered together for the purpose of calculating the maximum allowable density and shall be governed by a single authorizing resolution.

Any planned development project developed within the AG-5 and AG-2.5 future land use categories in excess of 400 units shall be required to employ proven innovative planning techniques to reduce the cost of providing public services to the proposed development. Such techniques may include, but are not limited to, providing for a mix of uses consistent with the scope and scale of the development and paying appropriate impact fees or assessments to offset the cost of providing public services.

Policy 1.1.3.4 - Provide the means to manage growth within the agricultural land use categories through the orderly delivery of services concurrent with the impacts of development. It is anticipated that over time portions of the agricultural land use categories will be converted to urban uses as services are provided; however, , the physical extension of County provided central sewer and water services shall only occur consistent with the other provisions of this Plan.

Policy 1.1.3.5 - The County shall maintain a site assessment process to evaluate the potential conversion of existing or designated agricultural land uses to non-agricultural land uses in a rational and orderly manner. ~~T~~he site assessment process for a conversion shall require as a condition to such conversion that the Board of County Commissioners affirmatively find that the proposed non-agricultural use:

a. is compatible with adjacent land uses;
b. maintains the viability of continued agricultural uses on adjacent lands;
c. contains soils suitable for urban use as defined by the St. Lucie County soil survey;
d. is suitable with existing site-specific land characteristics;
e. is consistent with comprehensive development plans;
f. will have available the necessary infrastructure concurrent with the anticipated demands for development;
g. will avoid the extension of the urban services boundary to create any enclaves, pockets, or finger areas; and,
h. Could not be feasibly located on non-agricultural land.

Policy 1.1.3.6 - Provide adequate buffering and/or setbacks between agriculture and non-agricultural uses to protect such agricultural uses from adverse impacts associated with encroachment of non-agricultural development or creation of nuisances by agricultural operations, with the use of Agricultural Best Management Practices.

Policy 1.1.3.7 - The County shall consider and allow for compatible agri-tourism and eco-tourism uses within the Agricultural area. The proposed use shall not negatively impact the agricultural area or natural resources of the site and the proposed facility shall utilize design standards which consider the carrying capacity of the environmental resources, and the intensity and compatibility of the proposed use. No residential or intense commercial development may occur other than that typically related to park service and security functions. Any agri-tourism or eco-tourism facility must be consistent with the

provisions of the Coastal and Conservation Elements of this Plan.

Objective 1.1.4: *Implementing Land Development Code.* Review and amend, as required, the County's Land Development Code which support the implementation of the Future Land Use Element, and the other components of the St. Lucie County Comprehensive Plan.

Policy 1.1.4.1 - The Land Development Code shall maintain the specific and detailed provisions necessary to implement the adopted Comprehensive Plan, and which at ~~as~~ a minimum include the following:

a. Regulate the subdivision of land;
b. Regulate the use of land, air, and water consistent with all elements of the St. Lucie County Comprehensive Plan, to ensure the compatibility of adjacent land uses and provide for adequate open space;
c. Protect those areas designated for conservation purposes or that contain other special environmental habitat as identified in the Future Land Use and other elements of the St. Lucie County Comprehensive Plan;
d. Regulate areas subject to seasonal and periodic flooding and provide for drainage and stormwater management;
e. Protect potable water wellfields and aquifer recharge areas;
f. Regulate signage;
g. Provide minimum landscaping standards for all development that encourages the use and protection of native and drought tolerant species in lieu of exotic and water consumptive plants;
h. Ensure safe and convenient on-site traffic flow and vehicle parking needs;
i. Provide that development orders and development permits shall not be issued which result in a reduction of the levels of service for the affected public facilities below the level of service standards adopted in this and other elements of the St. Lucie County Comprehensive Plan;
j. Provide for procedures and time schedules for acceptance of amendments to the St. Lucie County Comprehensive Plan in accordance with the provisions of Section 163.3187, F.S.; and
k. Minimize noise and light pollution.

Objective 1.1.5: *Urban Sprawl.* Consider changes to the future land use plan based upon smart growth, energy-efficient land use patterns and discouraging the proliferation of urban sprawl.

Policy 1.1.5.1 - Consistent with other policies, encourage the location of urban land use intensities, within the defined urban service boundary and authorize density bonuses or other incentives for developments inside the urban service boundary that conform to the Settlement Principles outlined in Policy 11.1.4.2 (TVC) and provide affordable/workforce housing and/or mixed-use development. Discourage the conversion of property in the suburban areas to higher intensity urban uses except where such conversions conform to the Settlement Principles outlined in Policy 11.1.4.2. Prohibit the conversion of property in the agricultural areas to high intensity urban uses except as specifically permitted or required in the Towns, Villages and Countryside (TVC) Element or other programs designed to preserve agricultural lands as approved by the Board of County Commissioners.

Policy 1.1.5.2 - Require that new development be designed and planned in a manner which does not place an economic burden upon the services and facilities of St. Lucie

County.

Policy 1.1.5.3 - Retain an urban service area boundary to restrict the negative impacts of a sprawling low density development pattern and the fiscal burden that pattern of development has on the ability of the community to meet its service needs.

Policy 1.1.5.4 - Retain Towns, Villages, and Countryside (TVC) Element to develop North County areas along an urban-to-rural transect with a grid transportation network, interconnected greenway network, and low impact development standards.

Policy 1.1.5.5 – St. Lucie County shall follow state standards for brownfields to provide for future brownfield site identification and redevelopment as urban infill projects. The reduction of environmental hazards on existing commercial and industrial sites is vital to the reuse of these areas as sources of employment, housing, recreation, and open space areas. The reuse of industrial land is an important component of sound land use policy for productive urban purposes which help prevent the premature development of agricultural areas, open space areas, and natural areas, and reduce public costs for installing new water, sewer and highway infrastructure.

Policy 1.1.5.6 - Future land use map amendment applications that increase the number of potential dwelling units within the unincorporated county, should create a balance of land uses based upon demands of the residential population for the nonresidential needs of an area and allow the operation of real estate markets to provide adequate choices for permanent and seasonal residents and business.

Policy 1.1.5.7 – St. Lucie County shall work with FDOT, the Transportation Planning Organization, and adjacent jurisdictions to review coordinated guidelines for Transit Oriented Development (TOD), multimodal systems and design standards for compact, walkable developments.

Policy 1.1.5.8 - St. Lucie County shall continue to implement the greenway and trail conceptual plans, in coordination with the federal, state and the adjacent jurisdictions, to provide connectivity between land uses, provide for recreational uses, provide for alternative modes of transportation, and encourage energy efficiency and greenhouse gas reduction.

Policy 1.1.5.9 - The County shall continue to support dense, compact development in the Jenkins Special Area Plan corridor which creates a viable road system and supporting multi-modal facilities, and to create an innovative, mixed use neighborhood that increases the internal capture of trips and to include walkable scale and bicycle facilities that increase the variety of modes of transportation used to make internal trips built with adequate open space and recreational resources, and to protect natural resources.

Policy 1.1.5.10 – St. Lucie County shall develop, as needed, Land Development Code amendments to implement recommendations of a Green Jobs and Innovation Corridor Charrette which may include green collar job creation, green energy, energy conservation, building standards, landscaping, public meeting places and guidelines to develop the Research Park so that it will encompass the most current green technology available.

Policy 1.1.5.11 - Calculate gross residential density on lands that lie above the mean high water elevation and provide for the ability to transfer residential density from wetland and

other sensitive or unique environmental habitats to upland areas on contiguous property or non-contiguous property. The transfer of density from a portion of a parcel of land to another parcel of land, the density transferred away shall be documented via a restrictive covenant or similar legal instrument which shall not allow density to be reused by transferring density from the same parcel of land again.

Objective 1.1.6: *Urban Service Area Boundary.* In coordination with the other elements of this plan, future development within the Urban Service Area shall be directed to areas where urban and community services/facilities can be provided in the most efficient and compact manner so as to discourage the proliferation of urban sprawl.

Policy 1.1.6.1 - Urban development activities shall be restricted to that area identified as the Urban Service Area in the Future Land Use Map series or to special area plans adopted within the Towns, Villages and Countryside Element. Urban development activities are defined, for the purpose of this Policy, as any residential development activity in excess of two units to the gross acre, any non-agricultural commercial activity or any non- extractive/non-agriculturally related industrial activity.

The Urban Service Area is not intended to be a static line of development. Using the 1990 urban service boundary line as a base, an individual segment of this line may be extended or contracted only once for a distance up to 1,500 feet from that which is indicated in the Future Land Use Map series without necessitating an amendment to the Comprehensive Plan provided that the urban service area lies contiguous to an existing residential commercial or industrial land use classification; the owner of the contiguous property can ensure the provision of appropriate infrastructure and services, and the resulting change does not detrimentally impact the established character of the area surrounding the area to be included in the urban service boundary. St. Lucie County shall be responsible for maintaining an updated map indicating the location of the 1990 Urban Service Boundary, including any alterations to it and once every two years include as a part of a Comprehensive Plan Amendment process, the latest Urban Service Area Map.

Any modification of the Planned Urban Service Area Boundary beyond 1,500 feet will require a formal amendment through the Comprehensive Plan amendment process.

Policy 1.1.6.2 - Prior to the issuance of any final development order within the Urban Service Area and special area plans adopted within the Towns, Villages and Countryside Element, the County shall consider the proximity of the proposed development activity to the availability of urban and community services and facilities. Development which requires extending any of these services over or through significant distances of undeveloped land or land not already subject to the issuance of a final development order shall be discouraged until other lands that are more proximate to the existing services have been developed.

Policy 1.1.6.3 – St. Lucie County shall ensure that all development and redevelopment taking place within the unincorporated area of the County does not result in a reduction of the level-of-service requirements established and adopted by this comprehensive plan. Facilities for potable water, sanitary sewer, solid waste, drainage and transportation facilities shall be in place and available to serve new development no later than the issuance of the certificate of occupancy or its functional equivalent. If facility improvements are needed to ensure that the adopted level-of-service standards are achieved and maintained, prior to commencement of construction, a developer is required to enter into

a binding and legally enforceable commitment with the County to assure construction or improvement of the facility. [163.3180, F.S]

Policy 1.1.6.4 - All new subdivision and site plan development projects that are proposed to take place within the unincorporated area of the County for which water/sanitary sewer service can be provided to the project as identified in the Infrastructure Element, the project shall be required to provide a dry-line water/sanitary sewer distribution/collection system, and provide for connection to such available water/sanitary sewer service as such service becomes available. The standard for construction of these systems shall be included as a part of the County's Land Development Code or Utility Extension Policy Regulations.

Policy 1.1.6.5 - Within the Urban Service Area and special area plans adopted within the Towns, Villages and Countryside Element, where regional water and wastewater utility service is not currently available or planned to be made available within the Five Year Schedule of Capital Improvements, the County shall not allow for non-residential development, or residential development in excess of two (2) dwelling units per acre unless the following factors are met:

a) The proposed development bears the entire fiscal impact of providing its own on-site water and wastewater services; and,
b) The developer agrees to connect to a regional water and wastewater system when such system becomes available to the site with none of the cost for connecting to the regional system being passed on to the regional system.
c) At the election of the duty authorized water/wastewater utility in St. Lucie County in whose service territory the proposed development is located, providing on-site water and wastewater service facilities for ownership and operation of the utility service.

Policy 1.1.6.6 - The County shall not at public expense construct any new roadways which will extend public facilities to areas not presently served within the Urban Service Area unless such areas are immediately contiguous to existing non-residential or residential urban developments (those areas having density in excess of two (2) dwelling units per acre) or which have been identified by the Transportation Planning Organization as part of its area roadway network to meet area-wide transportation needs.

Policy 1.1.6.7 - No non-agricultural development shall be permitted outside of the Urban Service Area that does not address all of its community infrastructure impacts, both on-site and off-site. All development outside the Urban Service Area shall pay the entire cost of its fiscal impacts on public facilities and services.

Policy 1.1.6.8 - As provided for under Policy 1.1.6.2, construction of new residential development at densities greater than two (2) units per acre shall only be permitted when central or on-site water and central or on-site wastewater systems are available or will be provided concurrent with the impacts of development, consistent with the adopted levels of service found in the plan.

Policy 1.1.6.9 - Existing development will be required to connect to central water and sewer systems when such facilities are made available in accordance with applicable Rules and Regulations and payment of utility fees.

Policy 1.1.6.10 - All new subdivision and site plan development projects that are proposed

to take place within the approved service area of any duly authorized water/wastewater utility in St. Lucie County, shall be required to provide a "dry-line" central water and wastewater distribution/collection system, and provide for the connection to centralized systems as they become available in accordance with applicable Rules and Regulations and payment of utility fees. The standards for construction of these systems shall be included as a part of the County's Land Development Code, or the Rules and Regulations of the duly authorized water/wastewater utility.

Policy 1.1.6.11- Local utility services (i.e., electric substations, wastewater lift stations, telecommunication sites and other small scale utility service operations) necessary to provide for the utility service needs of the neighborhood area, may be approved without the need to amend the Future Land Use Element so long as the property on which the activity is to take place is less than ten (10) acres in total area. Zoning compliance and review procedures for the local utility services are to be as described in the County's Land Development Code.

Policy 1.1.6.12 - Require that new development be designed and planned in a manner which does not shift the economic impact of new development to existing taxpayers, services and facilities of St. Lucie County. Economic impact shall be determined based upon the goals, objectives, and policies of this Comprehensive Plan and applicable county regulations.

Objective 1.1.7: *Historic Resources*. St. Lucie County shall require, through the County's Land Development Code, the protection of historically significant structures, facilities and locations within the unincorporated areas of the County, as identified by the State of Florida or the National Register of Historic Places.

Policy 1.1.7.1 - St. Lucie County shall continue, with the assistance of the State of Florida and the St. Lucie County Historical Commission, to identify significant historic resources within the unincorporated areas which are in need of protection and develop management and restoration plans as appropriate.

Policy 1.1.7.2 - Historic resources shall be protected through designation as historic sites by the State or the County.

Policy 1.1.7.3 - St. Lucie County shall maintain specific actions as prescribed by the Division of Historic Resources of the Florida Department of State, which are to be followed in the event historically significant facilities are discovered through or threatened by the land development process. The County shall evaluate alterations to locally designated historic structures to ensure consistency with the U.S. Department of the Interior's "Standards for Rehabilitation."

Policy 1.1.7.4 - Adaptive reuse of historic structures shall be given priority over activities that would harm or otherwise destroy the historic value of such resources.

Policy 1.1.7.5 - St. Lucie County shall continue to protect historic structures by enforcing the St. Lucie County Land Development Code.

Policy 1.1.7.6 - St. Lucie County shall maintain and update, as necessary an inventory and map of all archaeological and historical resources within the County.

Objective 1.1.8: *Planned Developments.* The County shall cContinue to support and encourage innovative land use development patterns including planned developments through the adequate provision in the County's Land Development Code including Planned Unit Developments (PUD), Planned Non-Residential Development (PNRD) and the Planned Mixed Use Development (PMUD) zoning designations.

Policy 1.1.8.1 – The County shall continue to encourage the use of planned development techniques to conserve open space and environmentally sensitive areas, through the County's Land Development Code which shall include:

a. Minimum acreage requirements necessary to support a viable mixed use community providing sufficient design flexibility to allow innovation and creativity in all forms of planned unit developments;
b. Minimum open space ratios of 35 percent in all planned developments and including assurances that such areas will remain as open space to protect existing native habitat, to provide for minimum setback needs from adjacent uses, and to provide active and passive recreational as well as visual amenities;
c. Provisions ensuring the long term preservation of remaining open spaces;
d. A mixed use district combining residential, commercial, recreational, educational, and other income producing uses providing significant functional and physical integration among uses;
e. Minimum standards for the provision of on-site shopping, job opportunities and internal trip capture; and,
f. Specific requirements to provide efficient, centralized infrastructure (potable water and sanitary sewer). Include specific restrictions on the use of septic tanks, individual wells, and package plants in planned unit developments.
g. Development consistent with the Towns, Villages and Countryside Element and the Transfer of Development Rights Program outlined under Objective 11.1.7.

Policy 1.1.8.2 – The County shall eEncourage the use of the Planned Mixed Use Development (PMUD) zoning designation which permits both residential and non-residential development within a single planned development.

Policy 1.1.8.3 – The County shall cContinue to support and implement the mixed use activity areas as indicated in the Sub-area Mixed Use Activity Area Plans as depicted by name in this Element.

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Policy 1.1.8.4 - The following use density and intensity standards shall be used for the purpose of this plan for the Mixed Use activity areas:

1. *High* Intensity development areas may include the following types of land uses:	
Residential	5 to 15 du/acres
Institutional	1.5 FAR *
Professional Service/Office	1.5 FAR *
General Commercial	1.0 FAR *
Public Service/Utility	0.5 FAR *
Industrial	0.75 FAR *
* FAR = Floor Area Ratio	
2. *Medium* Intensity development areas may include the following types of land uses:	
Residential	5 to 9 du/acres
Institutional	1.0 FAR *
Professional Service/Office	1.0 FAR *
General Commercial	0.75 FAR *
Public Service/Utility	0.25 FAR *
Industrial	0.5 FAR *
* FAR = Floor Area Ratio	
3. *Low* Intensity development areas may include the following types of uses:	
Residential	not to exceed 5 du/acres
Institutional	0.5 FAR *
Professional Service/Office	0.5 FAR *
General Commercial	0.5 FAR *
Public Service/Utility	0.25 FAR *
Industrial	0.5 FAR
* FAR = Floor Area Ratio	
4. Specific Use Areas: Areas with special or unique local character may be included within the Mixed Use Designation. These areas, because of conditions unique or peculiar to them alone, have been limited to specific activities and zoning options as set forth in the activity area plans described in Policy 1.1.8.3. Any zoning application not consistent with this policy must be accompanied by a corresponding Comprehensive Plan Amendment indicating the change in intensity classification.	
Application of the Specific Use Area designation is to be made to those areas recognized by the County as suitable for alternative land use as the full spectrum of community services become available. This designation would serve to prevent the unplanned or premature development of such areas until all services were provided for and are consistent with the Future Land Use development philosophy of St. Lucie County.	
The terminology used in the Specific Use designation identifies the type of permitted activity, maximum zoning density or maximum zoning intensity. Each Mixed Use Activity area will identify the type of Special Use areas in the legends of each area.	
Industrial and Professional Service/Office uses may receive an intensity bonus of up to 100% of the FAR, within specific use areas served by Strategic Intermodal System (SIS) facilities operating at or above the adopted level of service (LOS) and with available water service and wastewater service.	

Objective 1.1.9: *Residential Areas.* Property owners' investments, their quality of life and the single-family neighborhood, as a defined residential area, shall be protected from the encroachment of commercial and/or other inappropriate land uses through consistent and predictable application of the Land Development Code.

Policy 1.1.9.1 - All new subdivisions, planned unit developments and site development plans shall be designed to include an efficient system of internal traffic circulation that

does not require internal trips or trips of short duration to be forced onto the major roadway network. Connections to new and existing subdivisions shall be encouraged.

Policy 1.1.9.2 - All new subdivisions shall be designed so that all individual lots have direct access to the internal street system, and that any lot or property along the periphery of the development is to be buffered from any major roadway and incompatible land uses.

Policy 1.1.9.3 - Continue to implement the county-wide right-of-way protection regulation and Right-of-Way Dedication Ordinance.

Policy 1.1.9.4 - Limited development of commercial/non-residential uses, that are not located within a special area plan adopted within the Towns, Villages and Countryside Element, will be allowed within areas classified for residential use, provided that these activities are compatible with the adjacent land uses and meet the following standards:

a) Intent of the commercial use is to provide easily accessible, convenience-type uses to immediately surrounding residents;
b) Conversion of the petitioned property would not promote any strip commercial use of land;
c) Use is compatible with surrounding land uses and is provided with adequate screening and buffering of any adjacent residential property;
d) The property for which the commercial designation is sought does not exceed 10 acres.

Objective 1.1.10: *Commercial Areas.* St. Lucie County shall provide for the establishment of commercial zoning districts where various types of commercial retail, including commercial uses for retail trade, office and service activities and general commercial uses for highway-oriented sales and services; light industrial service uses; and hotel uses may be permitted at intensities which are consistent and compatible with the surrounding community and the natural environment.

Policy 1.1.10.1 - The implementation of the County's Land Development Code the Commercial General (CG) zoning district shall include:

a) New Commercial General (CG) property shall have available to it at the time of any zoning change central water services, or have an executed service agreement for the provision of central water services necessary for both domestic and fire protection purposes.
b) New Commercial General (CG) property shall not be located within 300 feet of any Aquatic Preserve or other specially designated aquatic habitat or a Category I Wetland as described in the Conservation Element of this Plan.
c) New Commercial General (CG) areas shall have immediate access to the regional transportation network.
d) New Commercial General (CG) property shall have a minimum lot size of one (1) acre, unless the property is being added to another existing commercially (general) zoned property.

Policy 1.1.10.2 - Require effective visual and light diffusion barriers between residential and non-residential uses. Standards and requirements for such barriers are to be included in the landscaping and screening regulations of the St. Lucie County Land Development Code.

Policy 1.1.10.3 – Eliminate future scattered and highway strip commercial development

(linear pattern of commercial retail uses along road corridors) by providing for the consolidation of access points, installation of landscaping, incorporation of pedestrian access, adherence to the community architectural standards and encouraging the development of commercial centers or nodes consistent with the Future Land Use Map. The County may require a market study to validate land use requests for additional highway strip commercial development.

Policy 1.1.10.4 - Restrict strip commercial development to those traffic corridors where such development patterns now exist. The depth of these commercial areas should average 600 feet, with the exceptions to be found at points of arterial intersection.

Policy 1.1.10.5 - Interchange development activities should not include commercial activities that are designed to service a small geographic market area. Local service activities should be located near or within the neighborhoods they serve where a mix of uses is appropriate and where pedestrian and bicycle traffic can be encouraged and promoted.

Policy 1.1.10.6 - Encourage the use of existing commercial and industrial designated lands within the urban service area, through requiring a strict demonstration of service availability, before authorizing Land Use and Zoning amendments in areas not presently indicated as having such a designation.

Objective 1.1.11: *Natural Resources*. Through enforcement of the County's Land Development Code, the County shall support criteria and standards for the protection/creation of native plant communities within the County. For the purpose of this plan, Native Plant Communities shall be preserved as defined in the Treasure Coast Regional Planning Council's Regional Policy Plan, Regional Policy 10.1.2.2., "...preserved in viable condition with intact ground cover, understory and canopy."

Policy 1.1.11.1 - St. Lucie County shall protect and preserve both wetland and upland habitat by evaluating the following for Land Use and Zoning amendments and development proposals:

a) Size of the property on which the development activity is to take place;
b) The type quality and sensitivity of the native habitat including nesting and foraging locations found on site;
c) Methodologies to be employed in protecting and preserving native habitat;
d) The presence or occurrence of endangered or threatened species on site and methodologies to be employed to ensure their continuing presence on site or mitigation;
e) The amount of similar habitat in a state of functional preserve within the same area; and,
f) Requirements that all necessary environmental assessments be prepared by personnel having the appropriate expertise to make the necessary determinations which shall be submitted in writing to the Board of County Commissioners for review prior to their making a determination regarding any proposed development.

Policy 1.1.11~~9~~.2 - In conjunction with the implementation of Policy 1.1.11.1, the County shall allow fees in lieu of on-site preservation for the purpose of habitat acquisition/preservation. The Land Development Code criteria and standards drafted for the protection and preservation of both wetland and upland habitat shall specify criteria when fees in lieu of on-site preservation shall be allowed. The criteria shall consider

limitations of size, quality and connectivity of the proposed on-site preservation and shall provide for off-site habitat acquisition/preservation of higher quality, larger, connected sites.

Policy 1.1.11.3 - All development applications that include wetland habitat shall be consistent with all applicable Federal, State and County regulations and the goals, objectives and policies of the County's Comprehensive Plan. The most restrictive of these regulations shall be enforced.

Policy 1.1.11.4 - Enforce Land Development Code to provide that existing on-site native upland habitat be incorporated into required site plans as a part of open space areas, required landscaping or as a part of minimum yard areas so that as much of the identified habitat as is practicable is maintained.

Policy 1.1.11.5 - Enforce the Land Development Code to protect trees and upland habitat by prohibiting the premature clearing of land and the concurrent destruction of native habitats with appropriate fines and mitigation.

Policy 1.1.11.6 - Enforce the Land Development Code to protect the St. Lucie River, Five Mile Creek, and the Ten Mile Creek and the Indian River Lagoon. The Land Development Code shall define these water bodies geographically.

Policy 1.1.11.7 - The County shall require immediate (within five days of alteration) reseeding or stabilization of areas cleared for development activities. Clearing for site construction shall not commence until appropriate authorizations for such activities have been granted pursuant to the County's Tree and Habitat protection regulations.

Policy 1.1.11.8 - Enforce the County's Land Development Code which require the developer of any site to be responsible for the on-site management of runoff in a manner so that post-development runoff rates, volumes, and pollutant loads do not exceed pre-development conditions.

Policy 1.1.11.9 – The County shall continue to require new urban type developments near agricultural areas to avoid adverse impacts on the natural resources essential to production of crops and citrus.

Policy 1.1.11.10 - Enforce the County's Land Development Code which requires that extraction activities for natural resources be permitted only where compatible with existing and proposed land uses. All operations must be in accordance with all applicable regulatory permitting requirements.

Policy 1.1.11.11 - Enforce the County's Land Development Code which requires that a reclamation/restoration plan be submitted as part of the required application for an extractive use permit.

Policy 1.1.11.12 - Enforce the County's Land Development Code, which require that all new construction, reconstruction or additions to existing facilities, regardless of type, that is permitted within the identified 100 year flood zones is subject to the County's Flood Damage Protection regulations.

Policy 1.1.11.13 - The County shall require new development activities to be consistent

with the soil conditions in the area in which the activity is proposed. In those instances where soil modifications are necessary, all activities should utilize best management practices as identified by the Soil Conservation Service.

Policy 1.1.11.14 - The County shall work with other agencies to consider the financial feasibility of a plan to promote (through acquisition) or protect (through incentives), the establishment of designated wildlife corridors connecting habitat in order to allow the survival of far ranging species and prevent the isolation of natural communities. This plan is to be developed in cooperation with the Florida Fish and Wildlife Conservation Commission, the U.S. Fish and Wildlife Service, the Department of Environmental Protection, the South Florida Water Management District, Department of Agriculture and Consumer Services, the US Army Corps of Engineers and affected landowners.

Policy 1.1.11.15 – The County shall continue to support local environmental restoration, mitigation and adaptive management initiatives, including those related to Everglades restoration, including the St. Lucie River and the Indian River Lagoon; and coordinate with other state, regional and national strategic planning efforts to improve the resiliency of natural lands and systems to climate variability and hurricane intensification.

Objective 1.1.12: *Coastal Resources.* St. Lucie County shall continue to protect and manage the unique coastal resources of the County, balancing the need to provide reasonable private property use while assuring a full range of public beach access and recreational facilities for the residents of and visitors to the County.

Policy 1.1.12.1 - All proposed developments in the coastal area shall occur in a manner which protects, conserves, and enhances the natural resources of the coastal area and the environmental, social and economic benefits attributed to them. All proposed developments shall comply with the Florida Building Code, floodplain management standards set forth by FEMA, applicable regulations regarding construction seaward of the Coastal Construction Control Line and shall consider strategies to reduce potential vulnerability and provide for recovery actions which increase the resiliency of the County.

Policy 1.1.12.2 – The County shall continue to enforce the provisions of the Hutchinson Island Residential District. In accordance with the regulations of the Hutchinson Island Residential District, as described in the St. Lucie County Land Development Code, the maximum hotel/motel density may not exceed the maximum residential densities set forth through the Future Land Use designations, as determined on land above mean high water. The foregoing Policy shall not apply to the Commercial Resort (CR) zoning district.

Policy 1.1.12.3 - Future land development activities within the identified Coastal High Hazard Area shall be consistent with evacuation plans and the Coastal Management Element of the St. Lucie County Comprehensive Plan.

Policy 1.1.12.4 – The County shall explore regulatory incentives and criteria that encourage the preservation of viable water-dependent support facilities, such as public lodging establishments and boat hauling and repairing and commercial fishing facilities, and in maintaining the availability of public access to the navigable waters of the state, in accordance with Section 342.07, F.S.

Policy 1.1.12.5 – The County shall continue to pursue additional public access points to oceanic estuarine, and riverine coastal resources.

Objective 1.1.13: *Economic Sustainability.* To enhance the quality of life of St. Lucie County and promote a sound and resilient local economy, St. Lucie County shall continue to work with the interested groups and agencies to increase and broaden the County's economic base while expanding existing business and industrial opportunities.

Policy 1.1.13.1 - St. Lucie County shall actively assist to the maximum extent practical in the recruitment of clean high growth industrial activities and maintain an expedited permitting process for bona fide economic development projects, especially those within the Targeted Industry List, and for development projects located within the Foreign Trade Zone.

Policy 1.1.13.2 - In addition to any other general standard for change in zoning as may be described in the County's Land Development Code, the following specific standards shall be utilized for determining the suitability of new property(s) for designation as Heavy Industrial (IH) under the County's Land Development Code:

1. Heavy Industrial property should have available to it central water services necessary for both domestic and fire protection purposes.
2. New Heavy Industrial property shall not be located within 1,000 feet of any Aquatic Preserve, other specially designated aquatic habitat or a Category I Wetlands as described in the Conservation Element of this Plan.
3. New Heavy Industrial property should not be located within the 100 year flood plain.
4. Heavy Industrial property should have immediate access to the regional transportation network without the need to travel through residential areas.
6. New Heavy Industrial property should not be located within any cone of influence, as identified under the County's wellfield protection program.
8. Heavy Industrial development shall not contribute to the degradation of surficial water quality.

Policy 1.1.13.3 - In addition to any other general standard for change in zoning as may be described in the County's Land Development Code, the following specific standards shall be utilized for determining the suitability of new property(s) for designation as Light Industrial (IL) under the County's Land Development Code:

1. Light Industrial property should have available to it central water services necessary for both domestic and fire protection purposes.
2. New Light Industrial property should not be located within 500 feet of any Aquatic Preserve or other specially designated aquatic habitat or a Category I Wetlands as described the Conservation Element of this Plan.
3. New Light Industrial areas should have immediate access to the regional transportation network.
4. Light Industrial development shall not contribute to the degradation of surficial water quality.

Policy 1.1.13.4 – The County shall maintain procedures and incentive tools to encourage business development and assist economic development in St. Lucie County, especially for business within the Targeted Industry List. This goal shall be further implemented by developing innovative land use codes to provide an enhanced the quality of life for St. Lucie County and promote a sound, diverse and resilient local economy.

Policy 1.1.13.5 – The County shall support the expansion of agricultural activities, and

maintain a sufficient agricultural land base to increase the sustainability, expansion, and diversification of agricultural activities. The County supports local food production, in order to meet the multiple goals of reduced emissions and energy consumption, while increasing the resiliency and long term food security of the community. The development of specialty foods, farmer's market products, and food processing industries to increase and diversify the agricultural economic base shall be encouraged.

Policy 1.1.13.6 – The County shall support the expansion and recruitment of specialized and/or export-oriented manufacturing industries which provide higher wage employment opportunities and encourage the development of 'secondary' product sector industry and employment.

Policy 1.1.13.7 – To position St. Lucie County as a competitive regional industrial environment, the County supports the development of transportation improvements, including a roadway connection of Interstate 95, the Florida Turnpike to the Treasure Coast International Airport, to facilitate land, sea and air distribution opportunities.

Objective 1.1.14: *Level of Service.* Pursuant to the Land Development Code, all development orders and permits for future development and redevelopment activities shall be issued only if public facilities necessary to meet level of service standards (which are adopted as part of the Capital Improvements Element of this plan) are or will be available concurrent with the impacts of the development.

Policy 1.1.14.1 - The County shall maintain the level of service (LOS) standards for the following public facility types as required by Section 163.3180, F.S.: sanitary sewer, solid waste, drainage, and potable water. Additionally, the County shall maintain LOS for roads, and parks and recreation. The LOS standards are established in Capital Improvements Element for drainage, roadways, potable water, sanitary sewer, solid waste, park recreation and schools.

Policy 1.1.14.2 – The County shall restrict higher densities and intensities of development to urban service areas, where public facilities are available. The County shall ~~t~~Time the development of residential, commercial, and industrial land concurrently with provision of supporting community facilities, such as streets, utilities, police and fire protection service, emergency medical service, and public schools.

Policy 1.1.14.3 - Permit only those proposed locations of public facilities which:

a) maximize the efficiency of services provided;
b) minimize their cost; and
c) minimize their impacts on the natural environment.

County shall incorporate the best available data and science into its policy and planning decisions for public facilities, recognizing resiliency and the need to withstand increased storm surge and flooding in evaluating public infrastructure decisions.

Policy 1.1.14.4 - Require that all development in areas not provided or not to be provided with central water and sewer services be governed by the provisions of Chapter 64E-6, FAC., and the County's Land Development Code which regulate the installation of individual sewage disposal facilities.

Policy 1.1.14.5 - Prior to the issuance of any final development order within the Urban

Service Area and special area plans adopted within the Towns, Villages and Countryside Element, the County shall consider the proximity of the proposed development activity to the availability of urban and community services and facilities. Development which requires extending any of these services over or through significant distances of undeveloped land or land not already subject to the issuance of a final development order (unless such services will be provided on-site as set forth in Policy 1.1.6.5) shall be discouraged until other lands that are more proximate to the existing services have been developed.

Objective 1.1.15: *Intergovernmental Coordination.* The County shall continue to improve coordination with affected and appropriate governments and agencies to include their input into the development process and to mitigate potential adverse impacts of future development and redevelopment activities.

Policy 1.1.15.1 - Coordinate requests for development orders or permits, as appropriate, with the City of Fort Pierce, Port St. Lucie, St. Lucie Village, adjacent counties, special districts, the Treasure Coast Regional Planning Council, the South Florida Water Management District and state and federal agencies.

Policy 1.1.15.2 - By January 31 each year, the County shall encourage the municipalities within St. Lucie County, to develop and provide the County a Future Annexation Plan. The County shall encourage the annexation of any isolated enclave area prior to the issuance of any County building authorizations within the enclave. The County shall coordinate the review of all development proposals within the identified area of future annexation with the appropriate municipal body.

Policy 1.1.15.3 - St. Lucie County shall coordinate with municipalities, neighboring counties, regional, state, and federal government agencies, universities, not-for-profit organizations, nongovernmental organizations and private organizations to coordinate in updating and analyzing data regarding vulnerability and storm impacts, and to exchange data and develop coordinated strategies to address energy conservation and mitigation and adaptation strategies.

Policy 1.1.15.4 - St. Lucie County shall continue to collaborate with and participate in updating local comprehensive plans, regional strategic plans, disaster mitigation plans, water management plans, and transportation plans to advance strategies, programs, and other sustainable initiatives throughout the County and region, that mitigate greenhouse gas emissions, enhance evacuation routes, and protect and adapt the built and natural environments.

Policy 1.1.15.5 – The County shall develop and maintain Interlocal Agreements to jointly plan to address inter-jurisdictional impacts including fees to mitigate impacts on the entire transportation system.

Policy 1.1.15.6 – St. Lucie County shall continue to support public education and outreach programs addressing issues including but not limited to: energy efficiency, water conservation, solid waste reduction and recycling, native landscaping, air quality, greenhouse gas reduction, and adaptation and response planning.

Objective 1.1.16: *Nonconformities.* St. Lucie County shall eliminate or reduce land uses inconsistent with the provisions of the Comprehensive Plan unless otherwise referenced

through the vesting of development rights.

Policy 1.1.16.1 - St. Lucie County shall continue to implement a program to provide for the recapturing of previously approved development authorizations that have not been permitted for construction, excluding those development units or lots recognized as existing lots of record as further described in the Land Development Code.

Policy 1.1.16.2 - St. Lucie County shall continue to implement a program to provide for specific maximum time periods in which approved development units or non-residential square footage must be constructed or the approvals authorizing its construction shall terminate and the approvals be rescinded.

Policy 1.1.16.3 – The County shall work to eliminate or reduce the frequency of uses which are inconsistent with the applicable provisions of the land development regulations, zoning districts, Future Land Use designation categories and the Future Land Use Map.

Objective 1.1.17: *Airport*. The County shall maintain the Airport Overlay Zone in the Land Development Code to continue to provide for the location of only compatible uses of land within the vicinity of the Treasure Coast International Airport.

Policy 1.1.17.1 – The County shall enforce the Land Development Code which identifies those properties likely to be impacted from development activities at the Treasure Coast International Airport and specifies what special measures or activity restrictions will be necessary in the development of these properties to minimize any adverse impacts.

Policy 1.1.17.2 - The County shall enforce the Land Development Code which enacts an Airport Height Regulation Ordinance, and encourages, as appropriate, the participation of all other effected units of government in the implementation of this ordinance.

Policy 1.1.17.3 - The County shall v~~V~~erify and relocate as necessary the 65 DNL line within the Airport Master Plan.

Policy 1.1.17.4 - St. Lucie County shall ensure the compatibility of land uses within the 65 DNL line as identified in the Airport Master Plan.

Policy 1.1.17.5 - The Airport Overlay Zone shall prohibit incompatible uses such as homes, schools, nursing homes, hospitals, and libraries according to the Federal Aviation Administration (FAA) *Land Use Compatibility and Airports, a Guide for Efficient Land Use Planning* and those uses that create electrical interference with navigational signals or radio communication between aircraft and the airport; result in glare in the eyes of pilots using the airport; impair visibility in the vicinity of the airport; operate or install lights which are misleading or dangerous to aircraft operation; create bird strike hazards, or otherwise in any way endanger or interfere with the landing, takeoff, or maneuvering of aircraft intending to use the airport.

Policy 1.1.17.6 - In accord with the Part 150 Study, the County shall facilitate noise abatement and mitigation projects such as the purchase, relocation, or soundproofing of homes, and noise abatement measures, and other noise mitigation measures.

Policy 1.1.17.7- The County shall update the Land Development Code, as necessary, to provide for maintenance of up-to-date runway protection information.

Objective 1.1.18: *Educational Facilities*. Coordinate with the St. Lucie County School Board, charter schools, private schools and other educational institutions to locate future educational facilities in a manner which provides for their needs without undue negative impact on the proposed school, surrounding land uses, or public facilities.

Policy 1.1.18.1 - Future schools shall be allowable uses in all Future Land Use categories within the Urban Service Area except: Industrial (IND), Conservation - Public (Cpub), Residential/Conservation (R/C), Historic (H) and any Special District (SD) which is defined to exclude educational facilities.

Policy 1.1.18.2 - The Future Land Use designation for land on which a school is constructed or planned to be constructed shall be changed to Public Facilities (P/F) Land Use at the earliest opportunity.

Policy 1.1.18.3 - Schools shall not be located outside the Urban Service Area described in Policy 1.1.6.1 unless (a) the school is to be located on property owned by the School Board on or before January 1, 2001, or (b) it is demonstrated that the projected enrollment is primarily students which live outside of the Urban Service Area and are best served by a school also located outside of the Urban Service Area, or the school's curriculum focuses on agricultural uses consistent with those found in St. Lucie County.

Policy 1.1.18.4 - Proposed school sites shall meet the following general criteria:

a. The location of schools proximate to urban residential development and contiguous to existing school sites, and which provide potential focal points for community activities, including opportunities for shared use and co-location with other community facilities
b. The location of elementary schools proximate to and, within walking distance of the residential neighborhoods served;
c. Elementary schools should be located on local or collector streets;
d. Middle and high schools should be located near arterial streets;
e. Compatibility of the school site with present and future land uses of adjacent property considering the safety of students or the effective provision of education;
f. Whether existing schools can be expanded or renovated to support community redevelopment and revitalization, efficient use of existing infrastructure, and the discouragement of urban sprawl;
g. Site acquisition and development costs including the long term costs associated with the provision of School District and County services;
h. Safe access to and from the school site by pedestrians, bicyclists and motor vehicles;
i. Existing or planned availability of adequate public facilities and services to support the School;
j. Environmental constraints that would either preclude or render infeasible the development or significant expansion of a public school on the site;
k. Adverse impacts on archaeological or historic sites listed in the National Register of Historic Places or designated by the County as a locally significant historic or archaeological resource or listed on the Florida Master Site File or archaeological sites located within an archaeological designated zone;
l. The proposed location is consistent with the comprehensive plan, storm water management plans, or watershed management plans;
m. The proposed location is not within a velocity flood zone or floodway, as delineated on pertinent maps identified or referenced in the comprehensive plan or land

development regulations;

n. The proposed site can accommodate the required parking, circulation and queuing of vehicles; and
o. The proposed location lies outside the area regulated by Section 333.03, F.S., regarding the construction of public educational facilities in the vicinity of an airport.

Policy 1.1.18.5 – The development and siting of charter schools shall be consistent with and follow the provisions Section 1002.33, Florida Statutes.

Policy 1.1.18.6 - When considering the acquisition and establishment of public facilities such as active parks, libraries, and community centers, the C~~c~~ounty shall, to the greatest extent possible, select a location which allows for the current or future co-location with a public school.

Policy 1.1.18.7 - When selecting land for preservation, or passive parks and uses, the C~~c~~ounty shall consider the possibility of co-location with a school.

Policy 1.1.18.8 - The County shall coordinate with the St. Lucie School Board to ensure no schools are constructed within School Zones designated on the Treasure Coast International Airport School Construction Zone Map.

Goal 1.2: Recognize that land use and transportation must be considered concurrently in all planning, and to the extent feasible, modify current land use patterns to decrease dependency on the automobile in order to minimize the need for future roadway expansion, promote the use of alternate modes of transportation and reduce greenhouse gas emissions.

Objective 1.2.1: *Transportation*. The County shall c~~C~~ontinue to explore planning concepts which provide for fewer and/or shorter automobile trips to address the future needs for movement of people and goods, and which considers social, economic, energy and environmental effects including greenhouse gas emissions of the transportation system.

Policy 1.2.1.1 - Explore development patterns which allow for employment and shopping opportunities in close proximity to residential uses. The restructuring of the physical form of commercial retail uses from a linear to a nodal pattern shall be encouraged to foster more compact, clustered pedestrian and transit-oriented, mixed-use development options.

Policy 1.2.1.2 - Provide for transit stop locations within appropriate developments and explore requiring developments on or near the transit system to contribute fee-in-lieu of for build out of the system by 2020. The County shall promote increased transit usage and the provision of bicycle and pedestrian facilities.

Policy 1.2.1.3 - Support efforts to provide fixed route transit throughout the County, including light rail service.

Policy 1.2.1.4 - Explore the financial feasibility for inclusion in the St. Lucie County budget of adopting streetscape and develop design standards to promote pedestrian activity in development and redevelopment by December 2020.

Policy 1.2.1.5 - The County shall consider inclusion in the St. Lucie County budget financially feasible improvements and coordinate with the St. Lucie TPO and FDOT to implement the recommendations of the 2008 SLC Bicycle, Pedestrian, Greenways & Trails Study.

Policy 1.2.1.6 – The County shall evaluate the recommendations from the study on innovative transportation funding practices that discourage sprawl such as a mobility fee that charges all new developments with costs varying on location and vehicles miles traveled (VMT) per the Transportation Element.

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Goal 1.3: Recognize and plan for unique areas within the unincorporated county.

Objective 1.3.1: Identify areas which have common internal characteristics and require planning as contiguous areas. The Indrio Road corridor, Treasure Coast Education, Research Development Authority (TCERDA), western lands and other areas designated by the Board of County Commissioners are examples.

Policy 1.3.1.1 - Define the boundaries of appropriate planning areas.

Policy 1.3.1.2 - Prioritize the identified planning areas for order of consideration.

Policy 1.3.1.3 - Work with citizens of each area to identify issues and seek solutions which may include changes to local levels of service, available public services including roadways, future land use and zoning.

Goal 1.4: Ensure through the Comprehensive Plan the development of energy efficient land use patterns and policies that reduce greenhouse gas emissions through innovative sustainable land planning tools which discourage urban sprawl, protect native habitat, reduce automobile use, and maintain open space.

Objective 1.4.1: Create a sustainable plan for the County's western lands that will preserve and conserve a functioning network of agriculture, open space, and natural areas while providing economically viable options for agricultural landowners, now and in the future based upon the Western Lands Study.

Policy 1.4.1.1 - Explore techniques for preservation of agricultural and rural lands including additional action steps in the *Committee for a Sustainable Treasure Coast –Final Report.*

Policy 1.4.1.2 - Consider innovative partnerships between urban areas, local and regional governmental entities, and rural landowners that take advantage of the services and benefits that rural lands can provide to urban areas and the region as a whole. Examples might include compensating rural landowners to support CERP, IRL South Plan, and research on biofuels.

Policy 1.4.1.3 – Consider amending the Land Development Code to allow the transfer of development rights among other planning and development tools, to be considered for approval by the Board of County Commissioners.

Policy 1.4.1.4 - The County shall continue to support economic development activities that encourage biofuels production per the St. Lucie County Targeted Industry list.

Policy 1.4.1.5 – Consider including strategies in the Land Development Code for agricultural lands to include targeting agricultural industries and activities that:

- support bio-fuel production,
- promote agri-tourism, eco-tourism,
- promote/support local food marketing and branding, and
- promote mass stormwater farming, storage and treatment.

Objective 1.4.2: Encourage green building standards in order to reduce greenhouse gas emissions.

Policy 1.4.2.1 - In accordance with Section 255.2575, F.S. the County will continue to construct all future County buildings to meet the United States Green Building Council (USGBC) Leadership in Energy and Environmental Design (LEED) rating system or the Florida Green Building Coalition standards.

Policy 1.4.2.2 - The County shall encourage the use of the United States Green Building Council (USGBC) Leadership in Energy and Environmental Design (LEED) rating system or the Florida Green Building Coalition standards for both residential and commercial properties. The County shall explore incentives for use of green building standards in new development and redevelopment.

Policy 1.4.2.3 - Ensure the comprehensive plan and Land Development Code do not prevent the construction of electric substations within the County

Policy 1.4.2.4 –The Land Development Code shall maintain appropriate standards for use of alternate, renewable sources of energy including the use of solar panels except in environmentally sensitive areas. The standards are intended to facilitate the commercial generation and distribution of solar power and the use of on-site solar energy systems to meet the energy demands of buildings and support facilities in the unincorporated County. The County shall review the Land Development Code and consider appropriate standards for the use of other renewable sources.

Policy 1.4.2.5 - The County shall facilitate the creation of low interest loans through the Solar and Energy Loan Fund to residents and business owners to install energy efficiency and conservation measures as well as renewable energy technology.

Policy 1.4.2.6 - The County shall continue to develop specific energy conservation goals for the rehabilitation of County buildings and facilities as improvements are designed.

Objective 1.4.3: Maintain St. Lucie County Greenprint and implement specific actions as part of the Florida Green Building Council's Green Local Government certification, including:

Policy 1.4.3.1 - Utilizing Florida Friendly Landscaping™ standards, Integrated Pest Management principles, and Best Management Practices or similar/greater standard for all County owned and maintained properties.

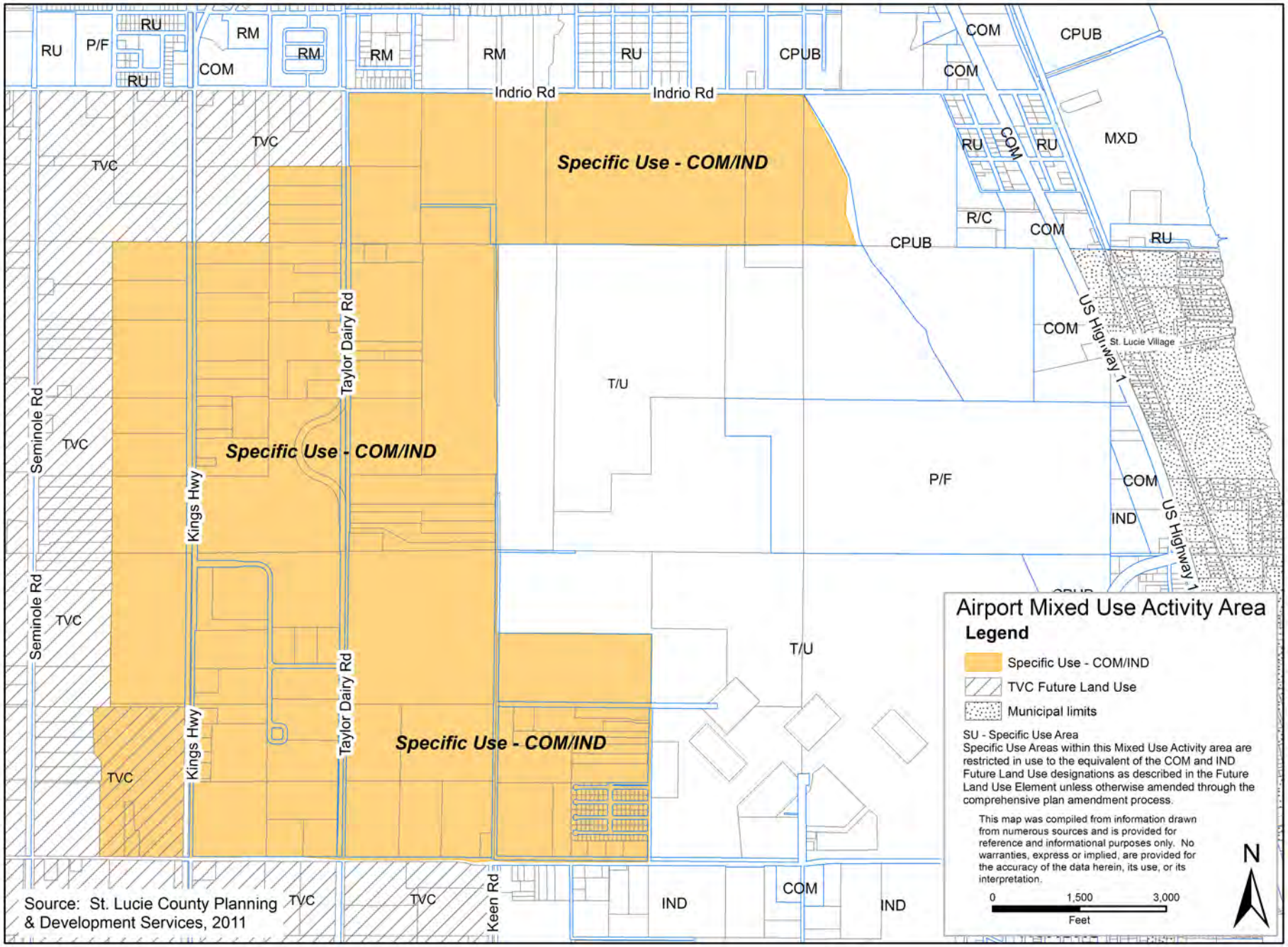
Policy 1.4.3.2 - Requiring all County facilities to have recycling programs in place.

Policy 1.4.3.3 - Adopting Environmentally Preferred Purchasing policies to the extent feasible.

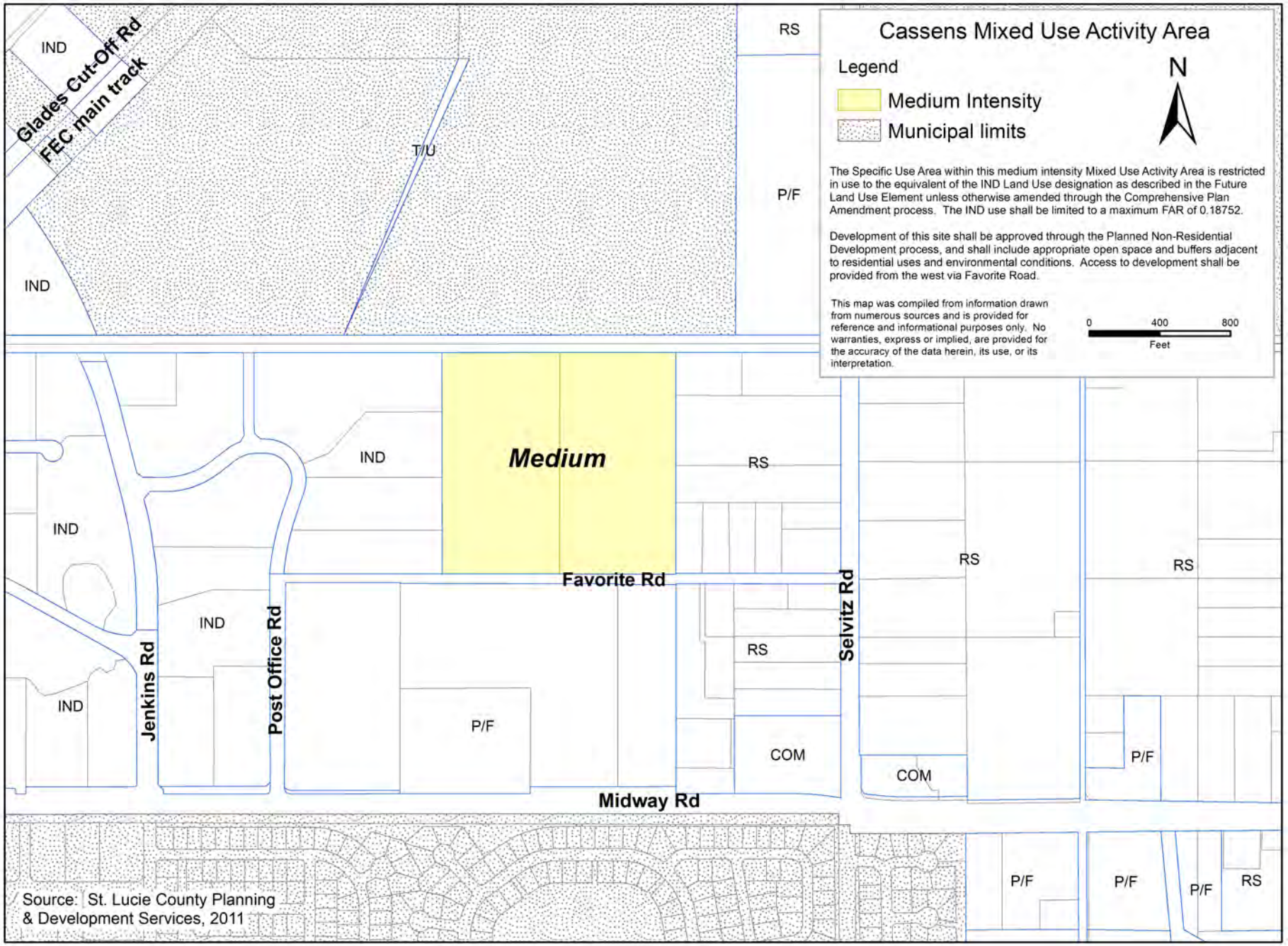
Policy 1.4.3.4 - Adopting green cleaning and green maintenance techniques such as those described by the Florida Department of Environmental Protection to the extent feasible.

The following Mixed Use Area Figures represent the mixed use activity areas described in Policy 1.1.8.3 – Sub-area Mixed Use Activity Area Plans:

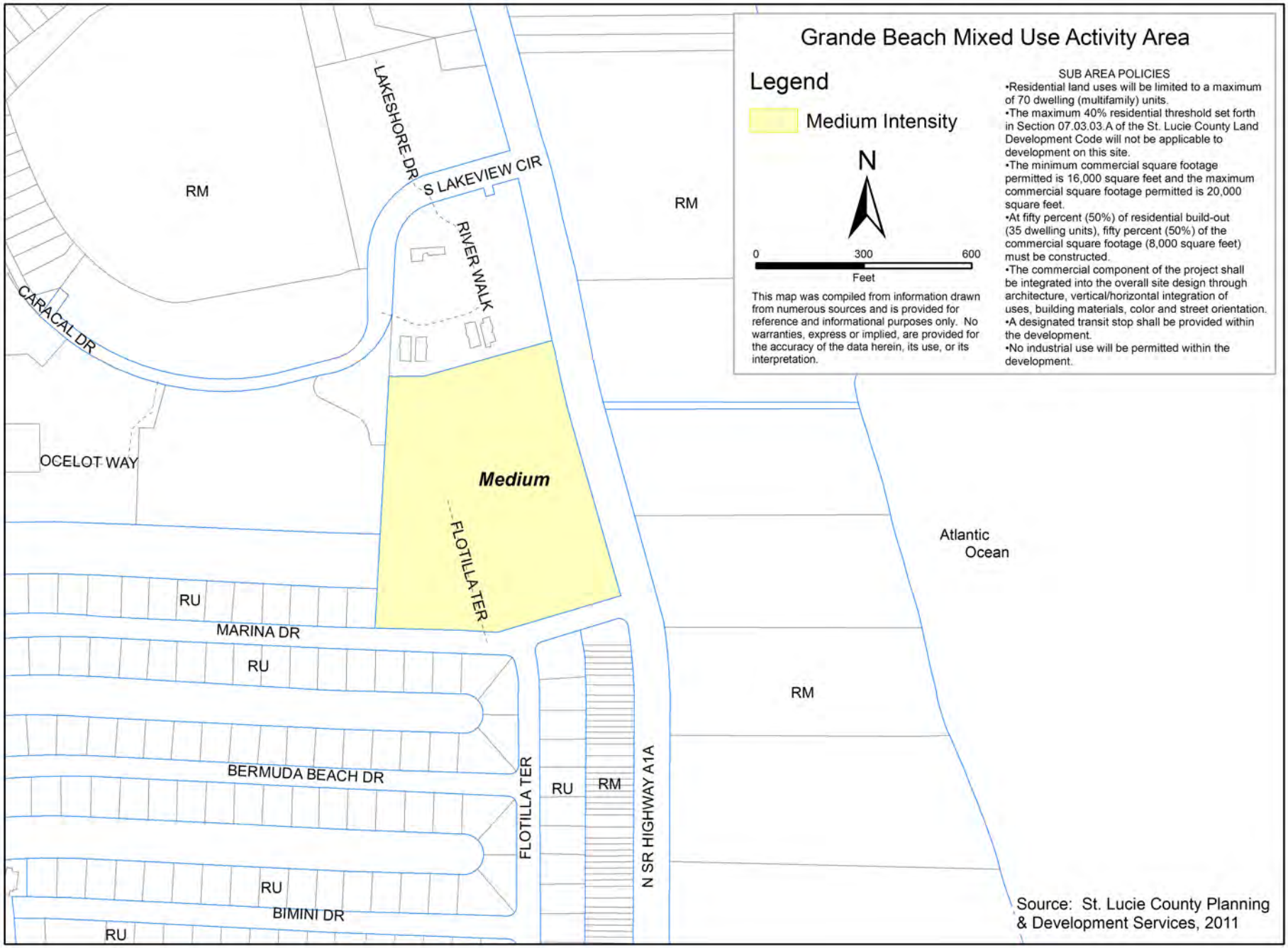
Appendix G


Airport Mixed Use Activity Area
Legend
Specific Use - COM/IND
TVC Future Land Use
Municipal limits
SU - Specific Use Area
Specific Use Areas within this Mixed Use Activity area are restricted in use to the equivalent of the COM and IND Future Land Use designations as described in the Future Land Use Element unless otherwise amended through the comprehensive plan amendment process.
This map was compiled from information drawn from numerous sources and is provided for reference and informational purposes only. No warranties, express or implied, are provided for the accuracy of the data herein, its use, or its interpretation.
0
1,500
3,000
Feet
N
Source: St. Lucie County Planning & Development Services, 2011
Specific Use - COM/IND
Specific Use - COM/IND
Specific Use - COM/IND
Indrio Rd
Indrio Rd
Taylor Dairy Rd
Taylor Dairy Rd
Kings Hwy
Kings Hwy
Seminole Rd
Seminole Rd
Keen Rd
US Highway 1
US Highway 1
St. Lucie Village
RU
P/F
RM
COM
CPUB
MXD
R/C
T/U
IND
TVC

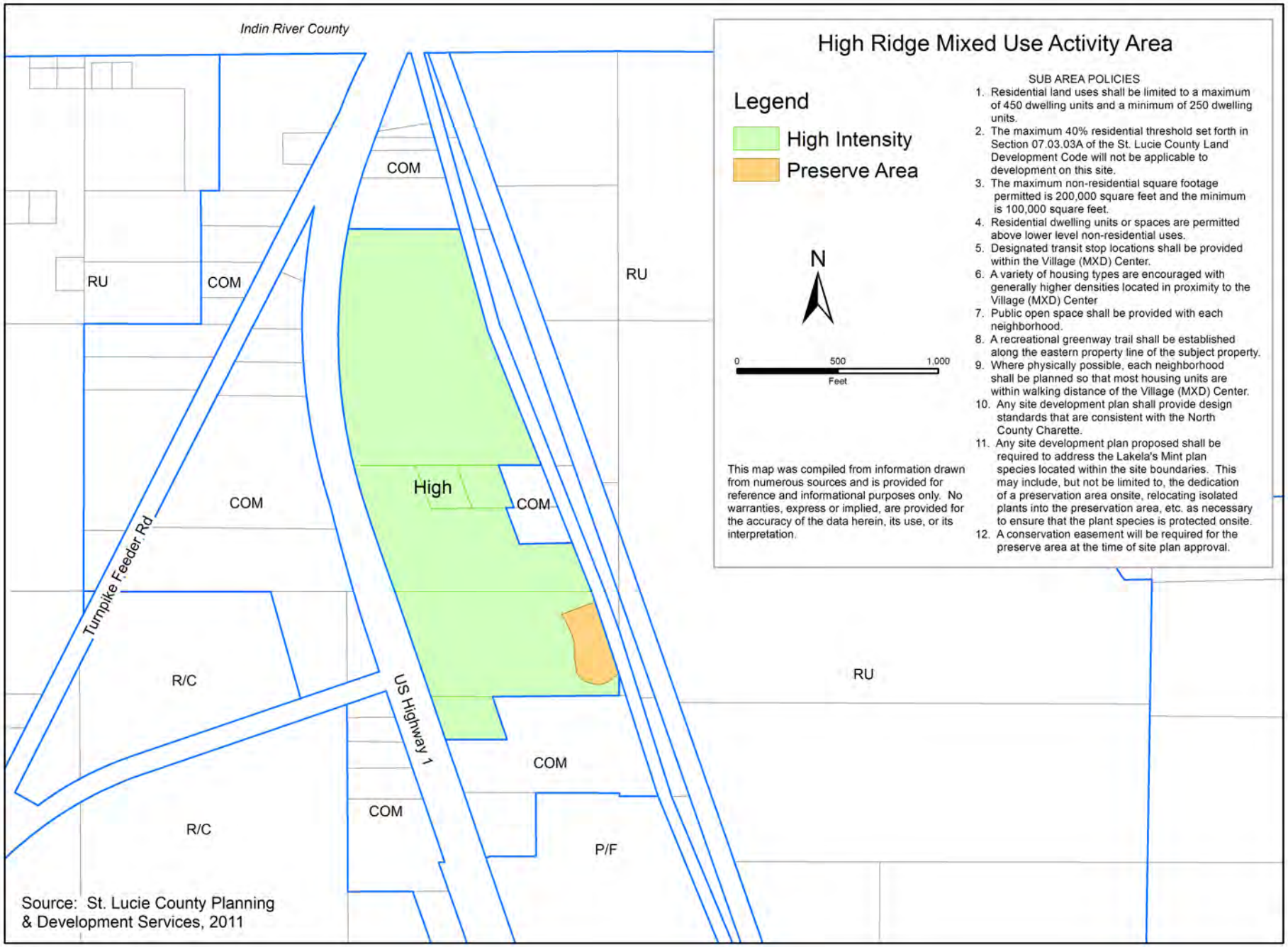
Appendix G


Cassens Mixed Use Activity Area
Legend
Medium Intensity
Municipal limits
N
The Specific Use Area within this medium intensity Mixed Use Activity Area is restricted in use to the equivalent of the IND Land Use designation as described in the Future Land Use Element unless otherwise amended through the Comprehensive Plan Amendment process. The IND use shall be limited to a maximum FAR of 0.18752.
Development of this site shall be approved through the Planned Non-Residential Development process, and shall include appropriate open space and buffers adjacent to residential uses and environmental conditions. Access to development shall be provided from the west via Favorite Road.
This map was compiled from information drawn from numerous sources and is provided for reference and informational purposes only. No warranties, express or implied, are provided for the accuracy of the data herein, its use, or its interpretation.
0
400
800
Feet
Medium
Glades Cut-Off Rd
FEC main track
Favorite Rd
Jenkins Rd
Post Office Rd
Selvitz Rd
Midway Rd
IND
RS
P/F
T/U
COM
Source: St. Lucie County Planning & Development Services, 2011

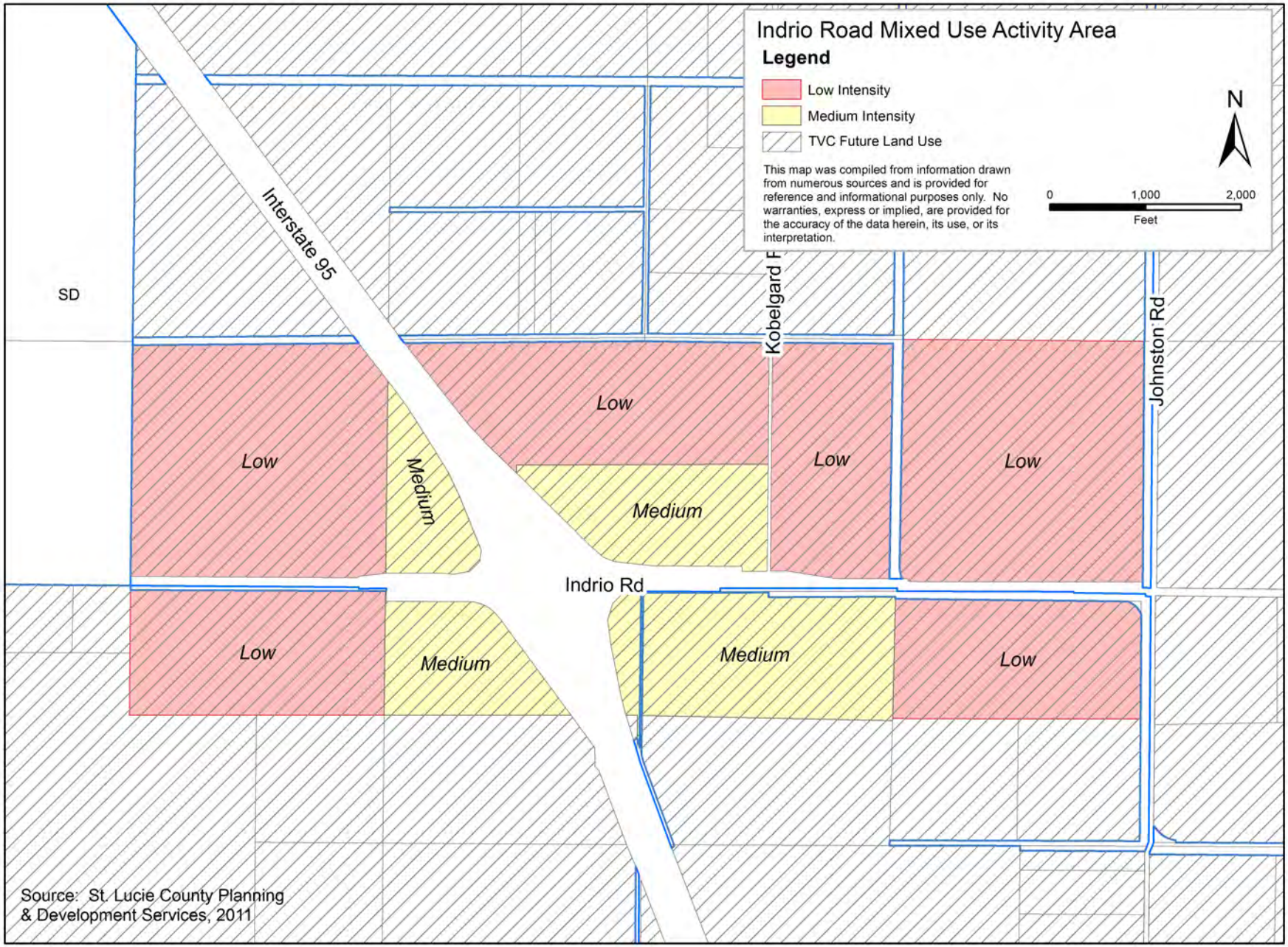
Appendix G


Grande Beach Mixed Use Activity Area
Legend
Medium Intensity
N
0
300
600
Feet
This map was compiled from information drawn from numerous sources and is provided for reference and informational purposes only. No warranties, express or implied, are provided for the accuracy of the data herein, its use, or its interpretation.
SUB AREA POLICIES
•Residential land uses will be limited to a maximum of 70 dwelling (multifamily) units.
•The maximum 40% residential threshold set forth in Section 07.03.03.A of the St. Lucie County Land Development Code will not be applicable to development on this site.
•The minimum commercial square footage permitted is 16,000 square feet and the maximum commercial square footage permitted is 20,000 square feet.
•At fifty percent (50%) of residential build-out (35 dwelling units), fifty percent (50%) of the commercial square footage (8,000 square feet) must be constructed.
•The commercial component of the project shall be integrated into the overall site design through architecture, vertical/horizontal integration of uses, building materials, color and street orientation.
•A designated transit stop shall be provided within the development.
•No industrial use will be permitted within the development.
RM
LAKESHORE DR
S LAKEVIEW CIR
RIVER WALK
CARACAL DR
OCELOT WAY
Medium
FLOTILLA TER
RU
MARINA DR
BERMUDA BEACH DR
BIMINI DR
N SR HIGHWAY A1A
Atlantic Ocean
Source: St. Lucie County Planning & Development Services, 2011

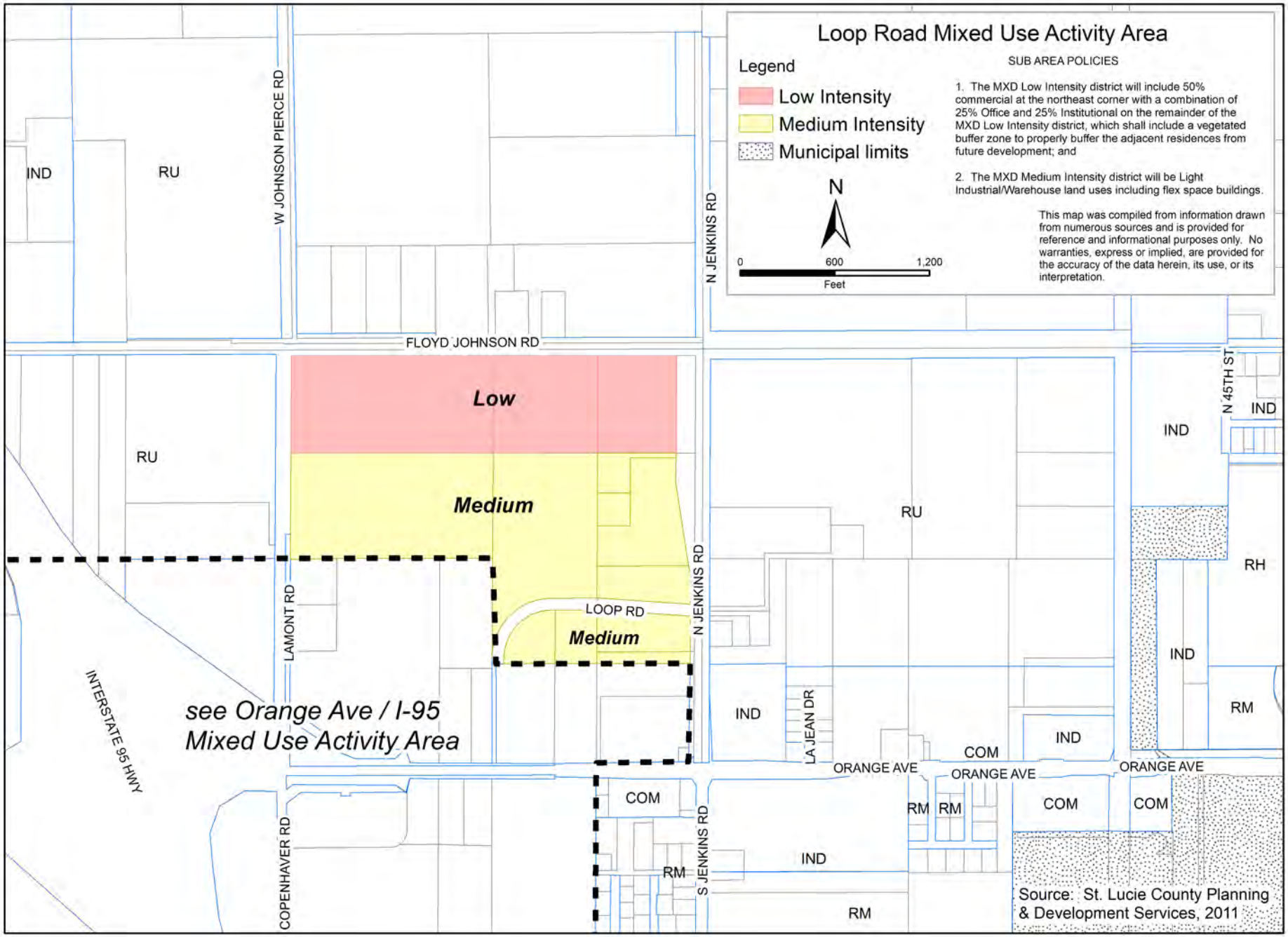
Appendix G


Indin River County
High Ridge Mixed Use Activity Area
Legend
High Intensity
Preserve Area
N
0
500
1,000
Feet
This map was compiled from information drawn from numerous sources and is provided for reference and informational purposes only. No warranties, express or implied, are provided for the accuracy of the data herein, its use, or its interpretation.
SUB AREA POLICIES
1. Residential land uses shall be limited to a maximum of 450 dwelling units and a minimum of 250 dwelling units.
2. The maximum 40% residential threshold set forth in Section 07.03.03A of the St. Lucie County Land Development Code will not be applicable to development on this site.
3. The maximum non-residential square footage permitted is 200,000 square feet and the minimum is 100,000 square feet.
4. Residential dwelling units or spaces are permitted above lower level non-residential uses.
5. Designated transit stop locations shall be provided within the Village (MXD) Center.
6. A variety of housing types are encouraged with generally higher densities located in proximity to the Village (MXD) Center
7. Public open space shall be provided with each neighborhood.
8. A recreational greenway trail shall be established along the eastern property line of the subject property.
9. Where physically possible, each neighborhood shall be planned so that most housing units are within walking distance of the Village (MXD) Center.
10. Any site development plan shall provide design standards that are consistent with the North County Charette.
11. Any site development plan proposed shall be required to address the Lakela's Mint plan species located within the site boundaries. This may include, but not be limited to, the dedication of a preservation area onsite, relocating isolated plants into the preservation area, etc. as necessary to ensure that the plant species is protected onsite.
12. A conservation easement will be required for the preserve area at the time of site plan approval.
COM
RU
COM
RU
High
COM
COM
Turnpike Feeder Rd
US Highway 1
R/C
R/C
COM
COM
P/F
RU
Source: St. Lucie County Planning & Development Services, 2011

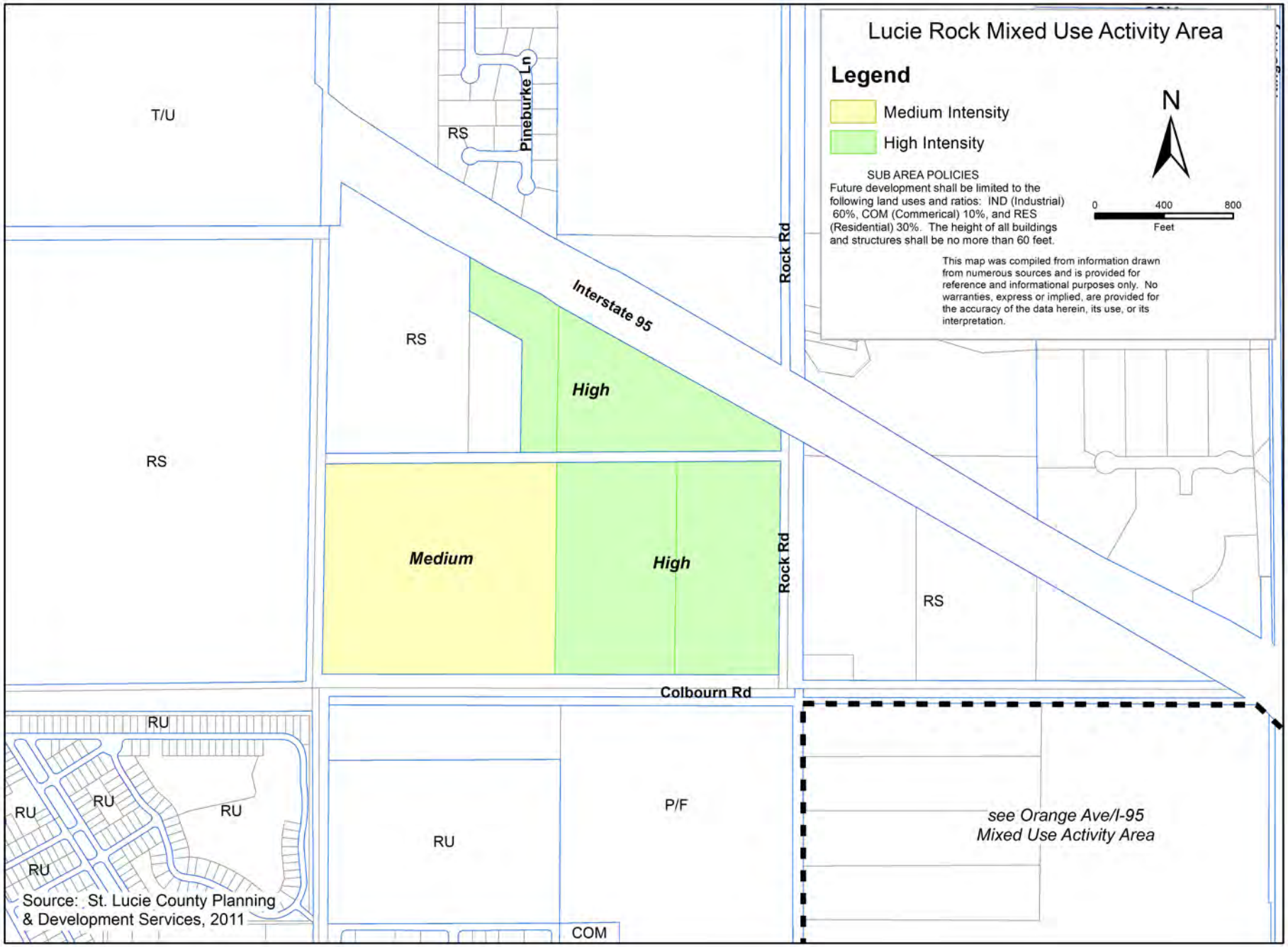
Appendix G


Indrio Road Mixed Use Activity Area
Legend
Low Intensity
Medium Intensity
TVC Future Land Use
This map was compiled from information drawn from numerous sources and is provided for reference and informational purposes only. No warranties, express or implied, are provided for the accuracy of the data herein, its use, or its interpretation.
N
0
1,000
2,000
Feet
Interstate 95
SD
Kobelgard
Johnston Rd
Indrio Rd
Low
Medium
Low
Medium
Low
Low
Low
Medium
Medium
Low
Source: St. Lucie County Planning & Development Services, 2011

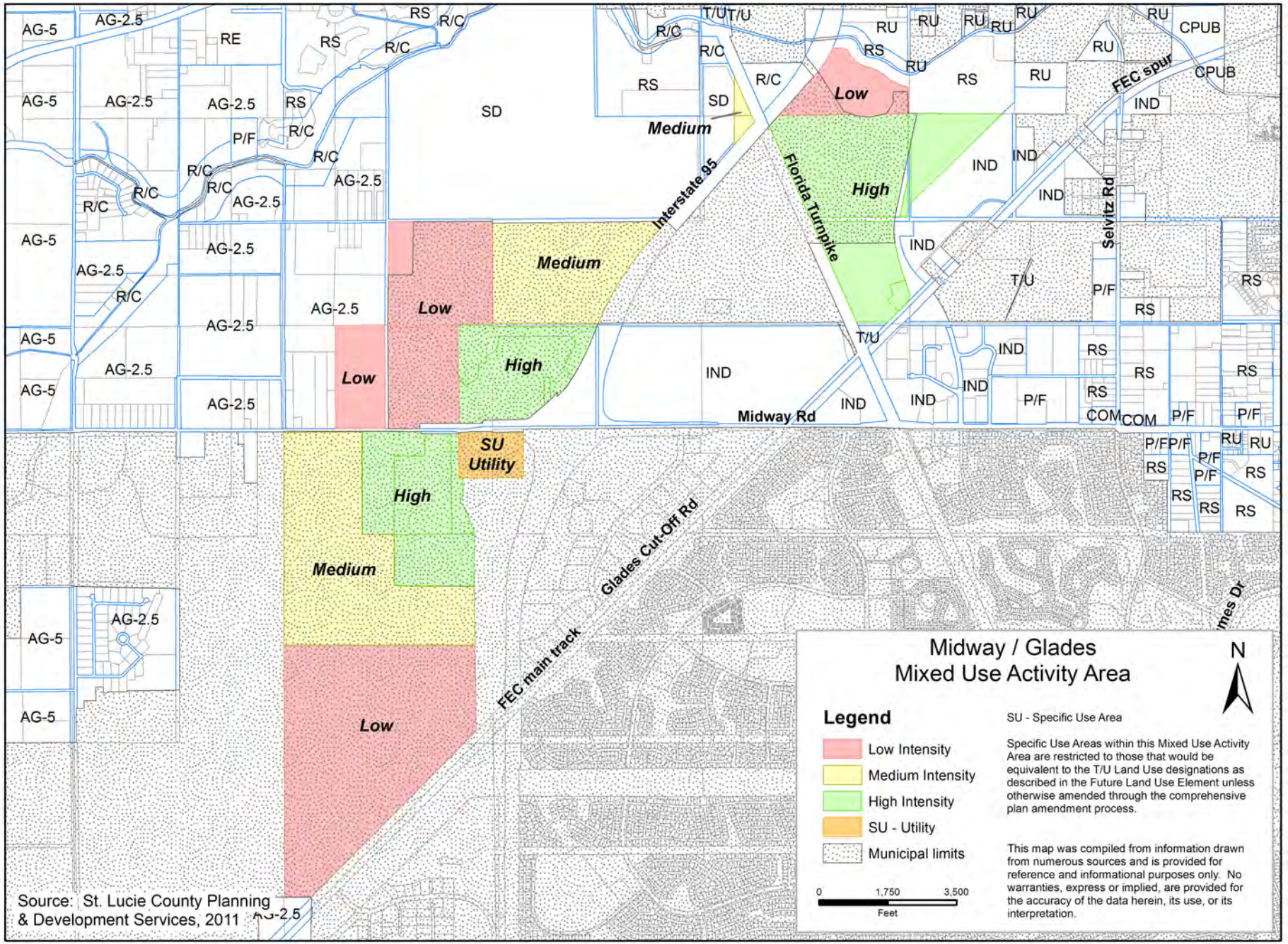
Appendix G


Loop Road Mixed Use Activity Area
Legend
Low Intensity
Medium Intensity
Municipal limits
N
0
600
1,200
Feet
SUB AREA POLICIES
1. The MXD Low Intensity district will include 50% commercial at the northeast corner with a combination of 25% Office and 25% Institutional on the remainder of the MXD Low Intensity district, which shall include a vegetated buffer zone to properly buffer the adjacent residences from future development; and
2. The MXD Medium Intensity district will be Light Industrial/Warehouse land uses including flex space buildings.
This map was compiled from information drawn from numerous sources and is provided for reference and informational purposes only. No warranties, express or implied, are provided for the accuracy of the data herein, its use, or its interpretation.
W JOHNSON PIERCE RD
N JENKINS RD
FLOYD JOHNSON RD
Low
Medium
Medium
LOOP RD
LAMONT RD
INTERSTATE 95 HWY
see Orange Ave / I-95
Mixed Use Activity Area
LA JEAN DR
ORANGE AVE
ORANGE AVE
ORANGE AVE
COPENHAVER RD
S JENKINS RD
N 45TH ST
IND
RU
RH
RM
COM
Source: St. Lucie County Planning & Development Services, 2011

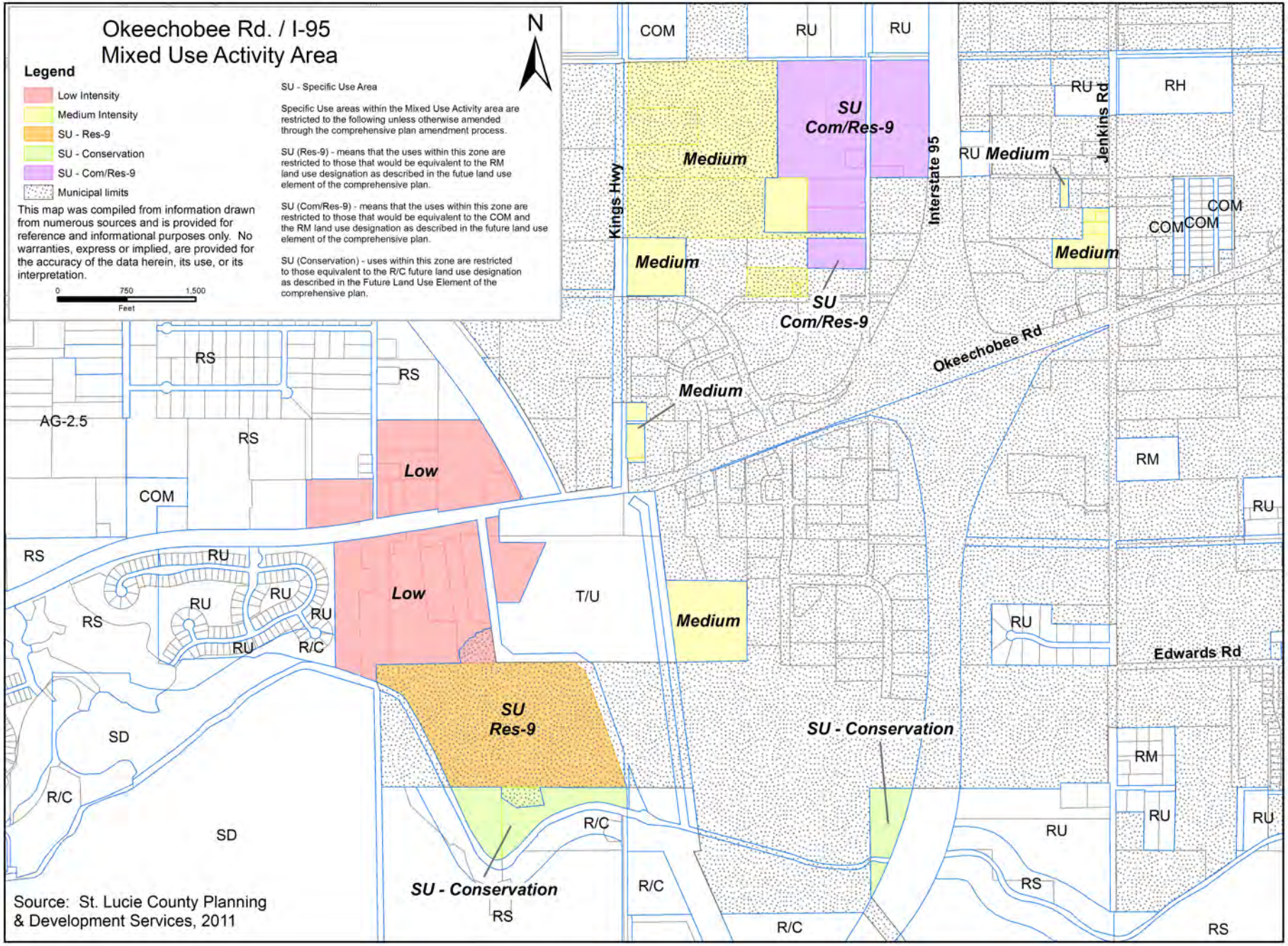
Appendix G


Lucie Rock Mixed Use Activity Area
Legend
Medium Intensity
High Intensity
SUB AREA POLICIES
Future development shall be limited to the following land uses and ratios: IND (Industrial) 60%, COM (Commerical) 10%, and RES (Residential) 30%. The height of all buildings and structures shall be no more than 60 feet.
This map was compiled from information drawn from numerous sources and is provided for reference and informational purposes only. No warranties, express or implied, are provided for the accuracy of the data herein, its use, or its interpretation.
N
0
400
800
Feet
T/U
RS
Pineburke Ln
Interstate 95
Rock Rd
High
Medium
Colbourn Rd
RU
P/F
COM
see Orange Ave/I-95
Mixed Use Activity Area
Source: St. Lucie County Planning & Development Services, 2011

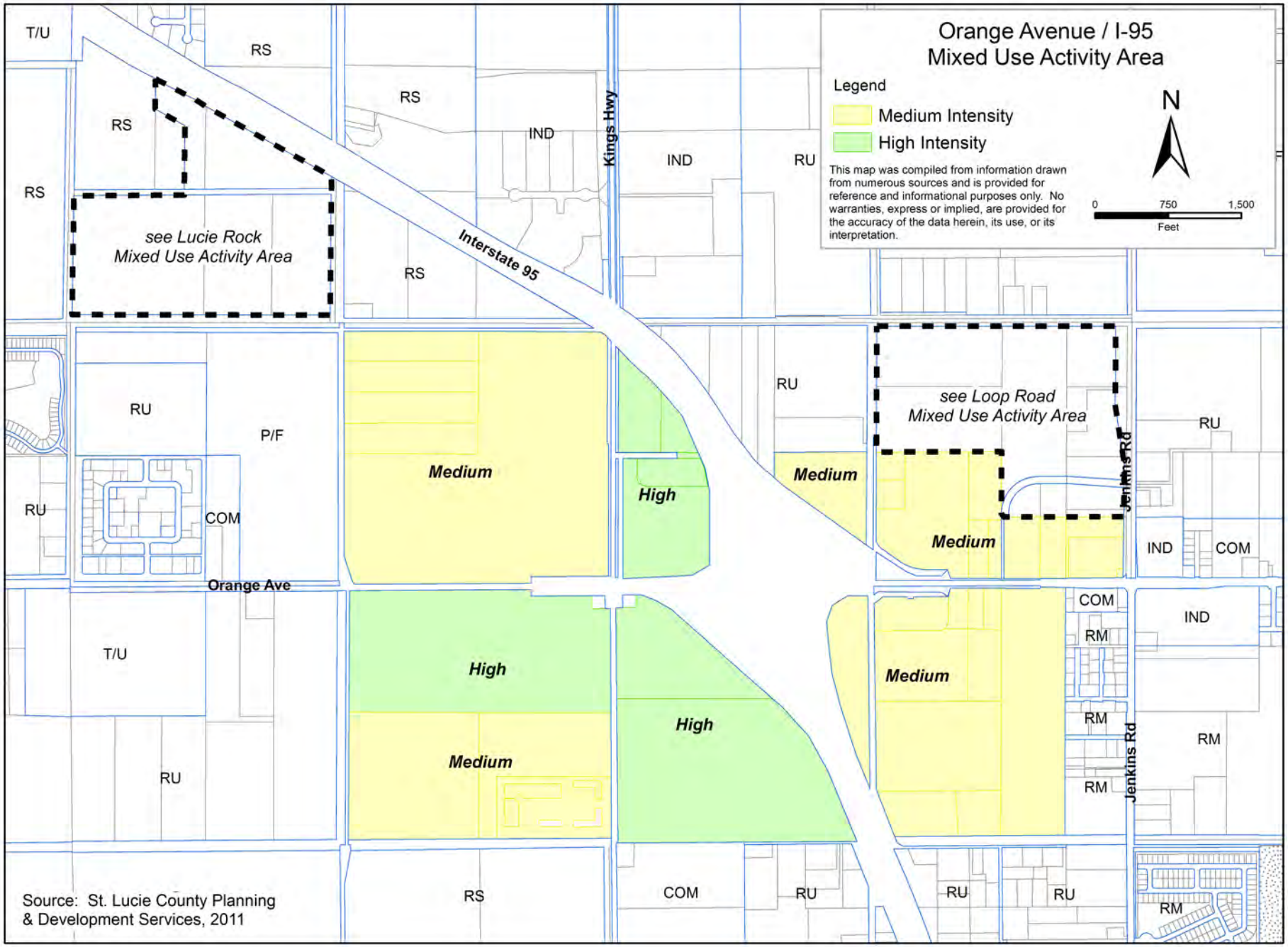
Appendix G


Midway / Glades
Mixed Use Activity Area
N
Legend
Low Intensity
Medium Intensity
High Intensity
SU - Utility
Municipal limits
SU - Specific Use Area
Specific Use Areas within this Mixed Use Activity Area are restricted to those that would be equivalent to the T/U Land Use designations as described in the Future Land Use Element unless otherwise amended through the comprehensive plan amendment process.
This map was compiled from information drawn from numerous sources and is provided for reference and informational purposes only. No warranties, express or implied, are provided for the accuracy of the data herein, its use, or its interpretation.
0
1,750
3,500
Feet
Source: St. Lucie County Planning & Development Services, 2011
Interstate 95
Florida Turnpike
FEC spur
FEC main track
Glades Cut-Off Rd
Midway Rd
Selvitz Rd
Low
Medium
High
SU Utility
AG-5
AG-2.5
RE
RS
R/C
P/F
SD
T/U
IND
RU
CPUB
COM

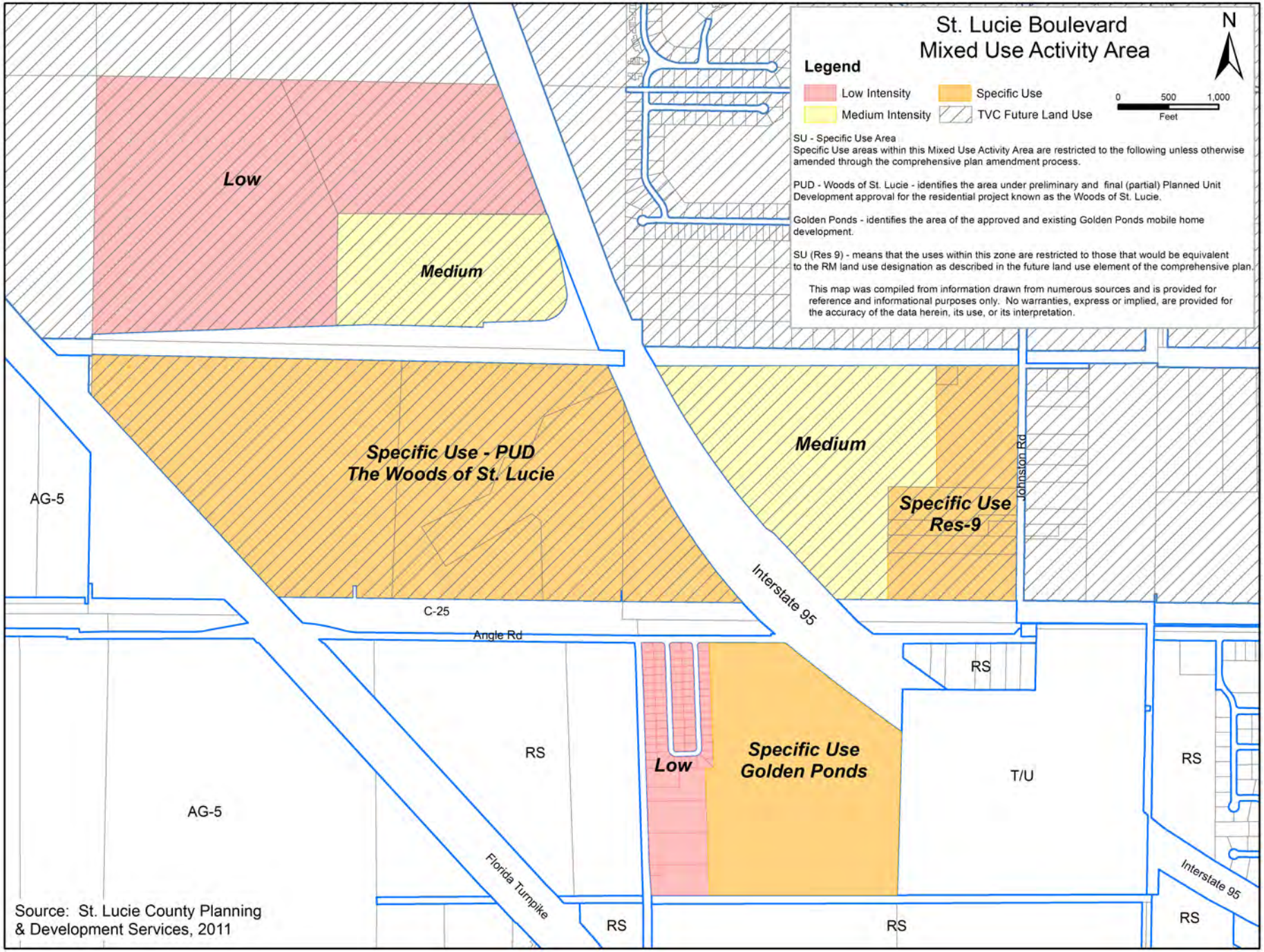
Appendix G


Okeechobee Rd. / I-95
Mixed Use Activity Area
N
Legend
Low Intensity
Medium Intensity
SU - Res-9
SU - Conservation
SU - Com/Res-9
Municipal limits
This map was compiled from information drawn from numerous sources and is provided for reference and informational purposes only. No warranties, express or implied, are provided for the accuracy of the data herein, its use, or its interpretation.
0 750 1,500
Feet
SU - Specific Use Area
Specific Use areas within the Mixed Use Activity area are restricted to the following unless otherwise amended through the comprehensive plan amendment process.
SU (Res-9) - means that the uses within this zone are restricted to those that would be equivalent to the RM land use designation as described in the futue land use element of the comprehensive plan.
SU (Com/Res-9) - means that the uses within this zone are restricted to those that would be equivalent to the COM and the RM land use designation as described in the future land use element of the comprehensive plan.
SU (Conservation) - uses within this zone are restricted to those equivalent to the R/C future land use designation as described in the Future Land Use Element of the comprehensive plan.
Source: St. Lucie County Planning & Development Services, 2011
Kings Hwy
Interstate 95
Jenkins Rd
Okeechobee Rd
Edwards Rd
SU Com/Res-9
SU Res-9
SU - Conservation
Medium
Low
COM
RU
RH
RM
RS
AG-2.5
T/U
R/C
SD

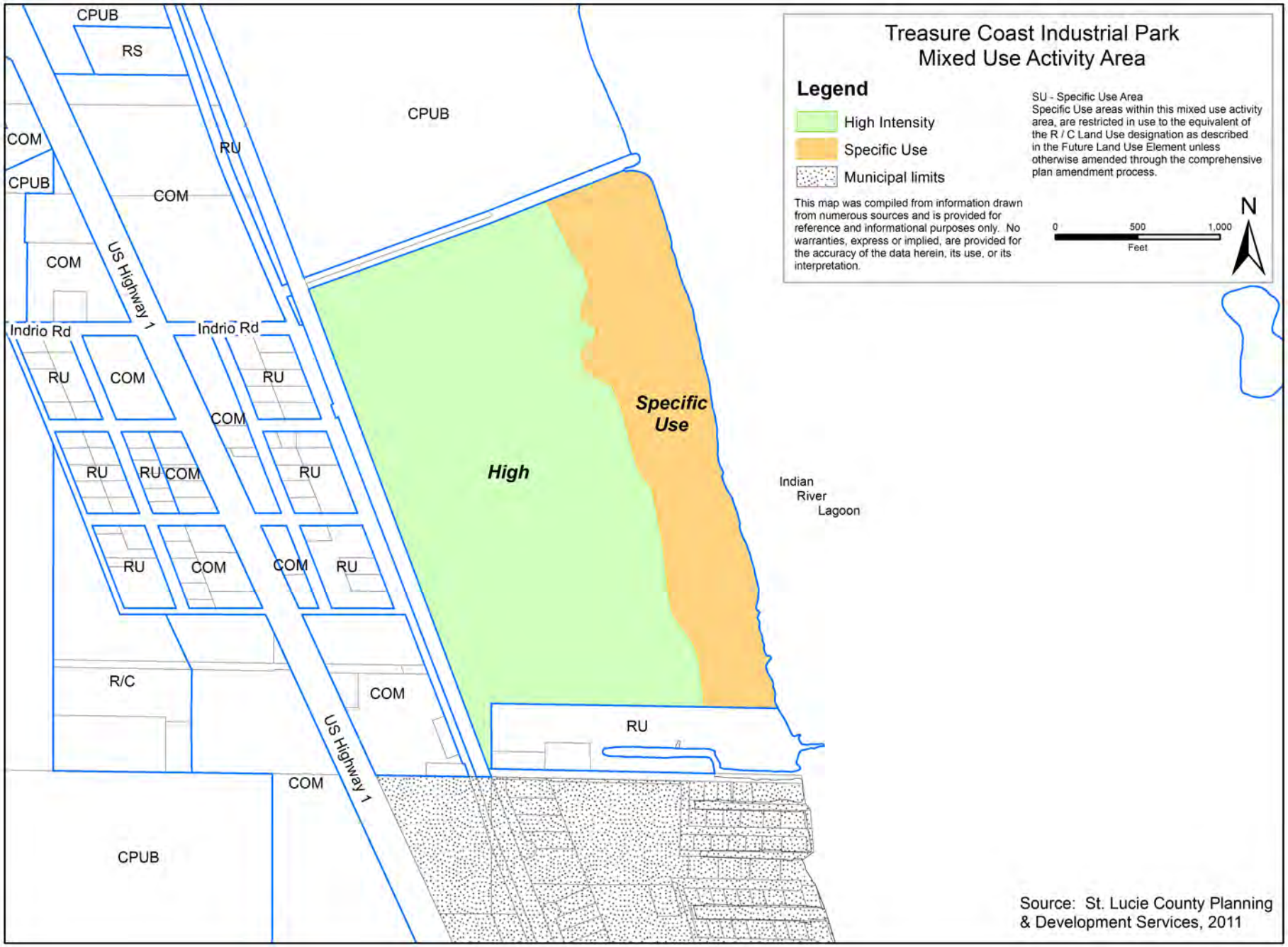
Appendix G


Orange Avenue / I-95
Mixed Use Activity Area
Legend
Medium Intensity
High Intensity
This map was compiled from information drawn from numerous sources and is provided for reference and informational purposes only. No warranties, express or implied, are provided for the accuracy of the data herein, its use, or its interpretation.
N
0
750
1,500
Feet
see Lucie Rock Mixed Use Activity Area
see Loop Road Mixed Use Activity Area
Interstate 95
Kings Hwy
Jenkins Rd
Orange Ave
Medium
High
T/U
RS
IND
RU
P/F
COM
RM
Source: St. Lucie County Planning & Development Services, 2011

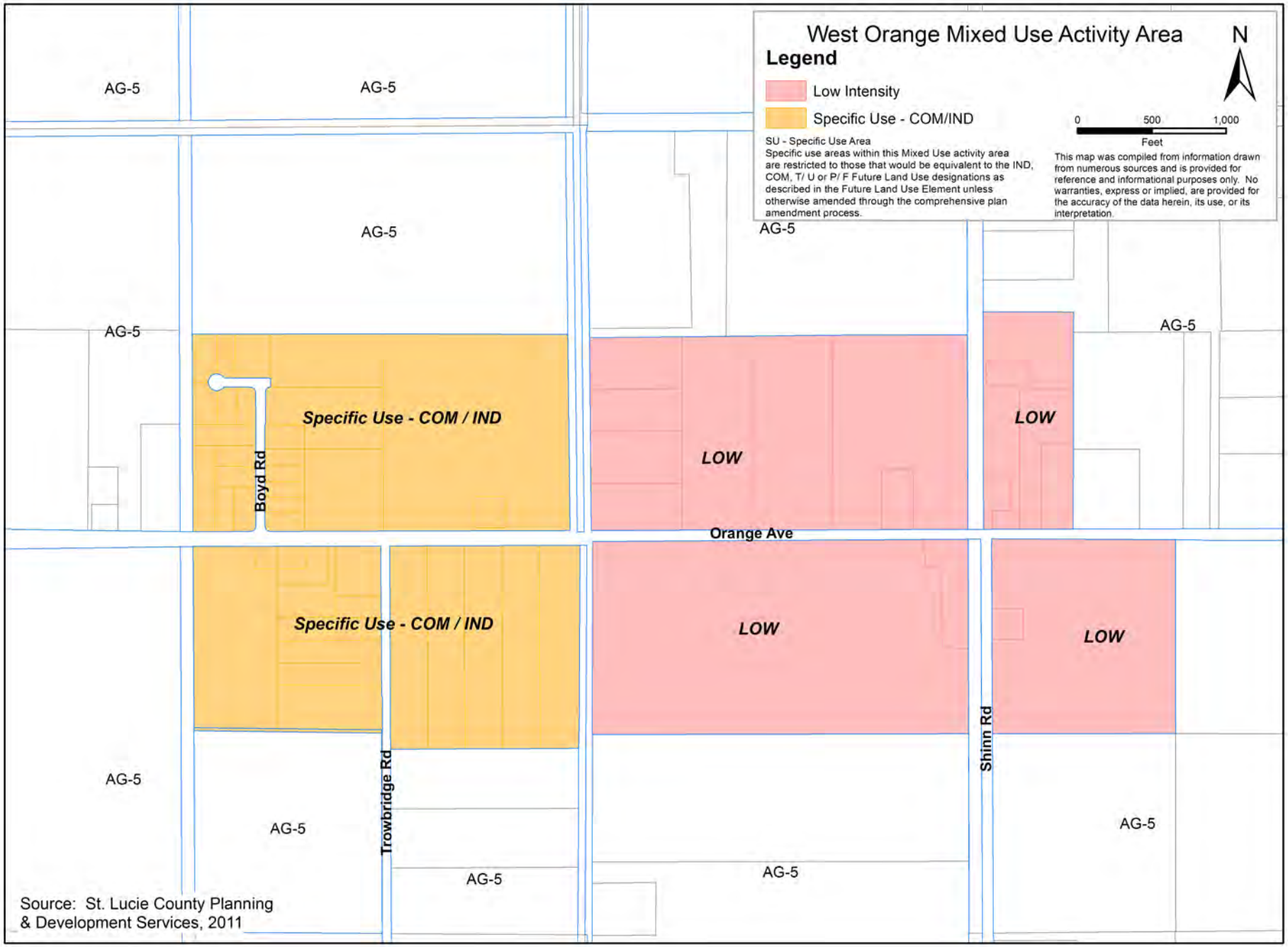
Appendix G


St. Lucie Boulevard
Mixed Use Activity Area
N
Legend
Low Intensity
Medium Intensity
Specific Use
TVC Future Land Use
0 500 1,000
Feet
SU - Specific Use Area
Specific Use areas within this Mixed Use Activity Area are restricted to the following unless otherwise amended through the comprehensive plan amendment process.
PUD - Woods of St. Lucie - identifies the area under preliminary and final (partial) Planned Unit Development approval for the residential project known as the Woods of St. Lucie.
Golden Ponds - identifies the area of the approved and existing Golden Ponds mobile home development.
SU (Res 9) - means that the uses within this zone are restricted to those that would be equivalent to the RM land use designation as described in the future land use element of the comprehensive plan.
This map was compiled from information drawn from numerous sources and is provided for reference and informational purposes only. No warranties, express or implied, are provided for the accuracy of the data herein, its use, or its interpretation.
Low
Medium
Specific Use - PUD
The Woods of St. Lucie
Medium
Specific Use
Res-9
Johnston Rd
AG-5
C-25
Angle Rd
Interstate 95
RS
Low
Specific Use
Golden Ponds
T/U
RS
AG-5
Florida Turnpike
RS
RS
Interstate 95
RS
Source: St. Lucie County Planning
& Development Services, 2011

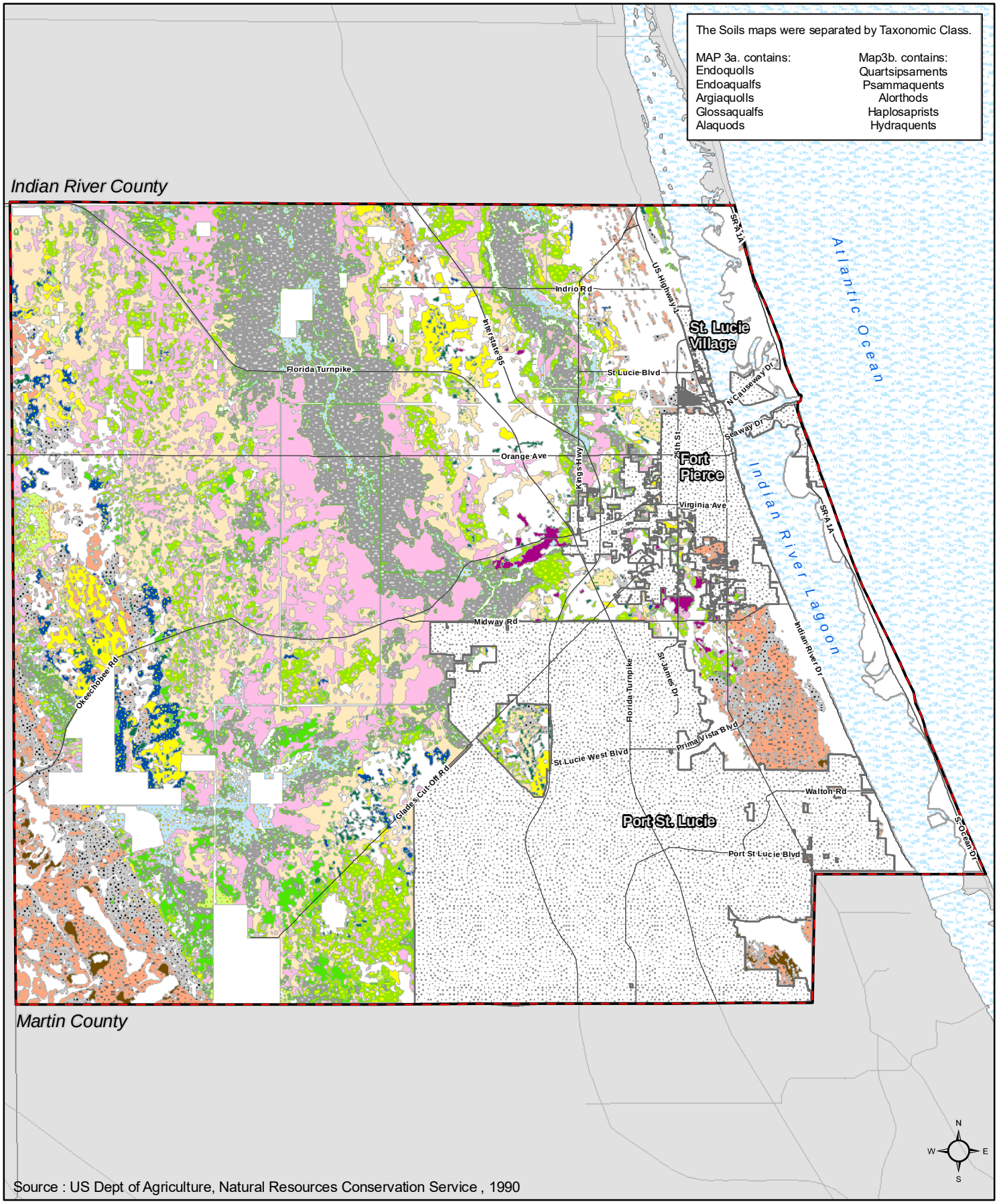
Appendix G


Treasure Coast Industrial Park
Mixed Use Activity Area
Legend
High Intensity
Specific Use
Municipal limits
SU - Specific Use Area
Specific Use areas within this mixed use activity area, are restricted in use to the equivalent of the R / C Land Use designation as described in the Future Land Use Element unless otherwise amended through the comprehensive plan amendment process.
This map was compiled from information drawn from numerous sources and is provided for reference and informational purposes only. No warranties, express or implied, are provided for the accuracy of the data herein, its use, or its interpretation.
0
500
1,000
Feet
N
CPUB
RS
COM
RU
US Highway 1
Indrio Rd
Specific Use
High
Indian River Lagoon
R/C
Source: St. Lucie County Planning & Development Services, 2011

Appendix G


West Orange Mixed Use Activity Area
N
Legend
Low Intensity
Specific Use - COM/IND
0
500
1,000
Feet
SU - Specific Use Area
Specific use areas within this Mixed Use activity area are restricted to those that would be equivalent to the IND, COM, T/ U or P/ F Future Land Use designations as described in the Future Land Use Element unless otherwise amended through the comprehensive plan amendment process.
This map was compiled from information drawn from numerous sources and is provided for reference and informational purposes only. No warranties, express or implied, are provided for the accuracy of the data herein, its use, or its interpretation.
AG-5
Specific Use - COM / IND
LOW
Boyd Rd
Orange Ave
Trowbridge Rd
Shinn Rd
Source: St. Lucie County Planning & Development Services, 2011

Appendix G



Source : US Dept of Agriculture, Natural Resources Conservation Service , 1990

Soils

Map : FLU-3a

Legend

County Boundary
Municipalities

Soil Type 1

- ANCLOTE SAND, DEPRESSIONAL
- CHOBEE LOAMY SAND, DEPRESSIONAL
- EAUGALLIE FINE SAND
- FLORIDANA SAND, DEPRESSIONAL
- HILOLO LOAMY SAND
- JUPITER FINE SAND
- LAWNWOOD AND MYAKKA SANDS
- MALABAR FINE SAND
- MYAKKA FINE SAND
- OLDSMAR SAND
- PEPPER AND EAUGALLIE SANDS
- PINEDA SAND
- POPLE SAND
- RIVIERA SAND
- SALERNO AND PUNTA SANDS
- SUSANNA AND WAUCHULA SANDS
- TANTILE AND POMONA SANDS
- WABASSO SAND
- WAVELAND AND IMMOKALEE FINE SANDS
- WINDER SAND

Miles
0 2.5 5

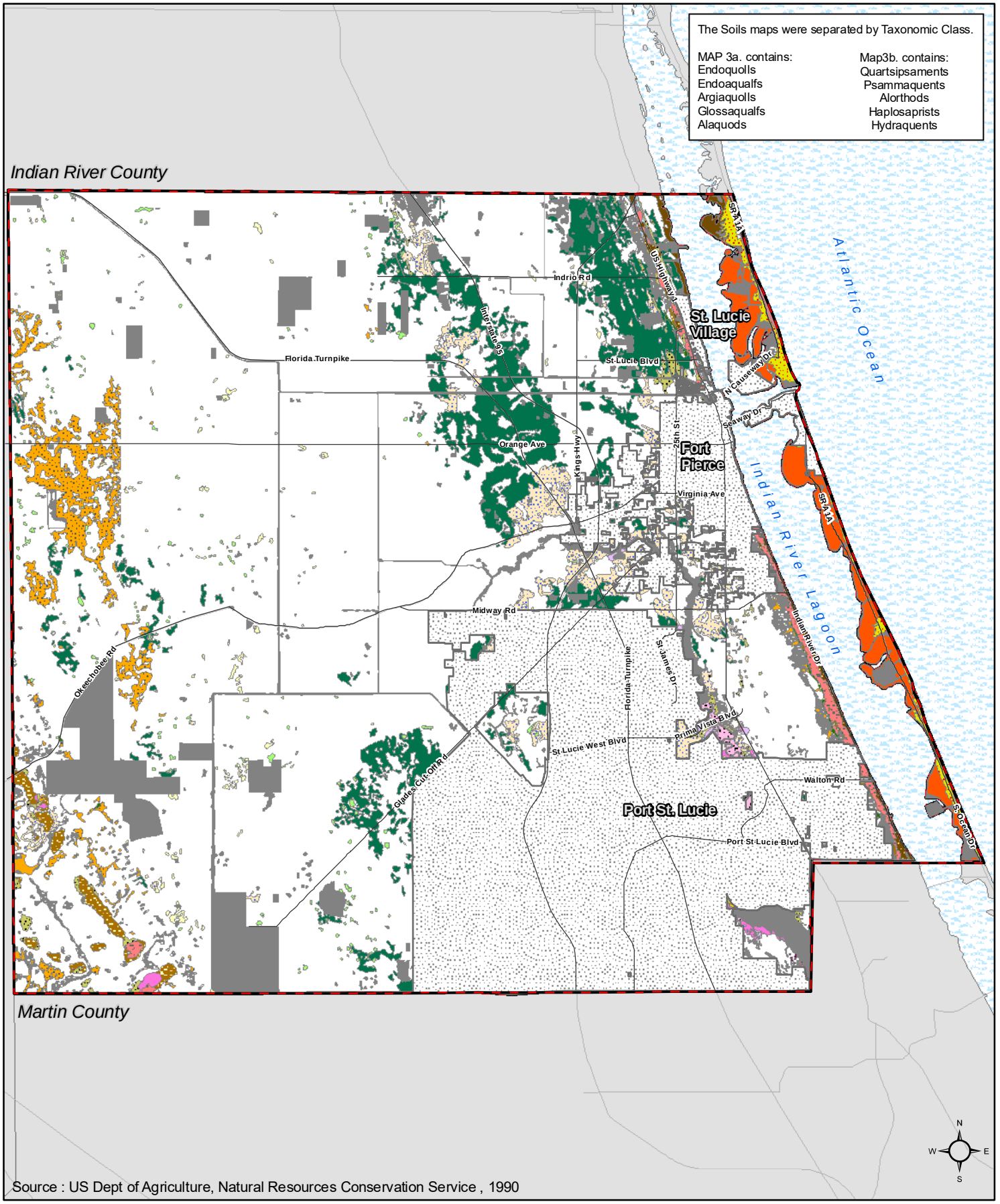
Calvin, Giordano & Associates, Inc.

Produced and maintained by the CGA Geographic Information Systems Services

Print Date : February, 2010

ST. LUCIE COUNTY FLORIDA

Appendix G



Source : US Dept of Agriculture, Natural Resources Conservation Service , 1990

ST. LUCIE COUNTY FLORIDA

Appendix G

Soils

Map : FLU-3b

Legend

County Boundary
Municipalities

Soil Type

NO SOIL DATA AVAILABLE
ANKONA AND FARMTON SANDS
ARCHBOLD SAND
ASTATULA SAND
BASINGER SAND
CANAVERAL FINE SAND
PAOLA SAND
PENDARVIS AND POMELLO SANDS
ELECTRA FINE SAND
HALLANDALE SAND
HOBE SAND
HONTOON MUCK
JONATHAN SAND
KALIGA MUCK
KEESON-TERRA CEIA COMPLEX
MCKEE SANDY CLAY LOAM
NETTLES AND OLDSMAR SANDS
PALM BEACH FINE SAND
POMPANO SAND
SAMSULA MUCK
SATELLITE SAND
ST. LUCIE SAND
TERRA CEIA MUCK

Miles
0 2.5 5

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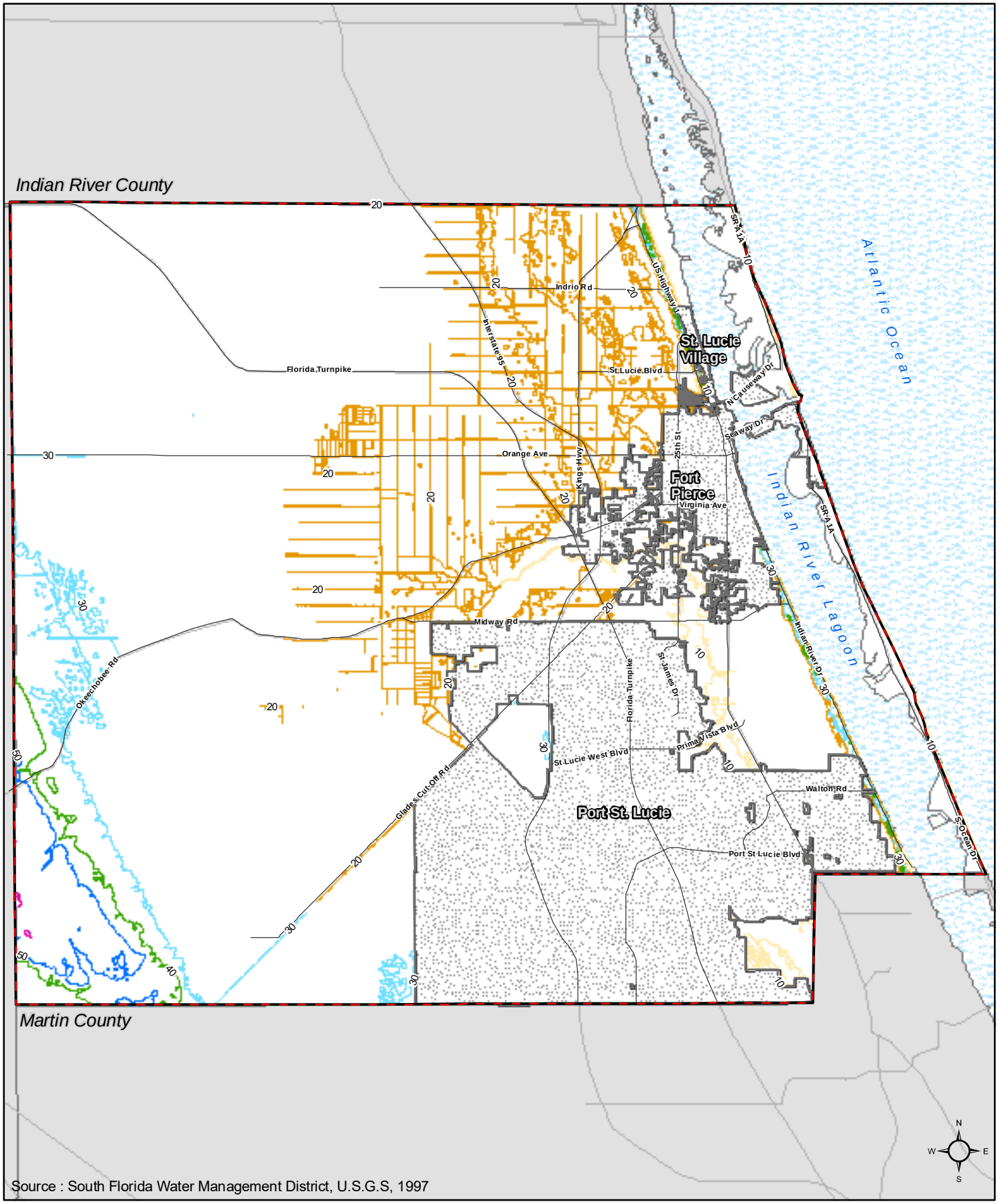
GIS

Print Date : February, 2010



Source : South Florida Water Management District, U.S.G.S, 1997

ST. LUCIE COUNTY FLORIDA

Appendix G

Topography

Map : FLU-4

Legend

- County Boundary
- Municipalities
- Streets

Topography Contours (10ft)

- 10 Feet
- 20 Feet
- 30 Feet
- 40 Feet
- 50 Feet
- 60 Feet

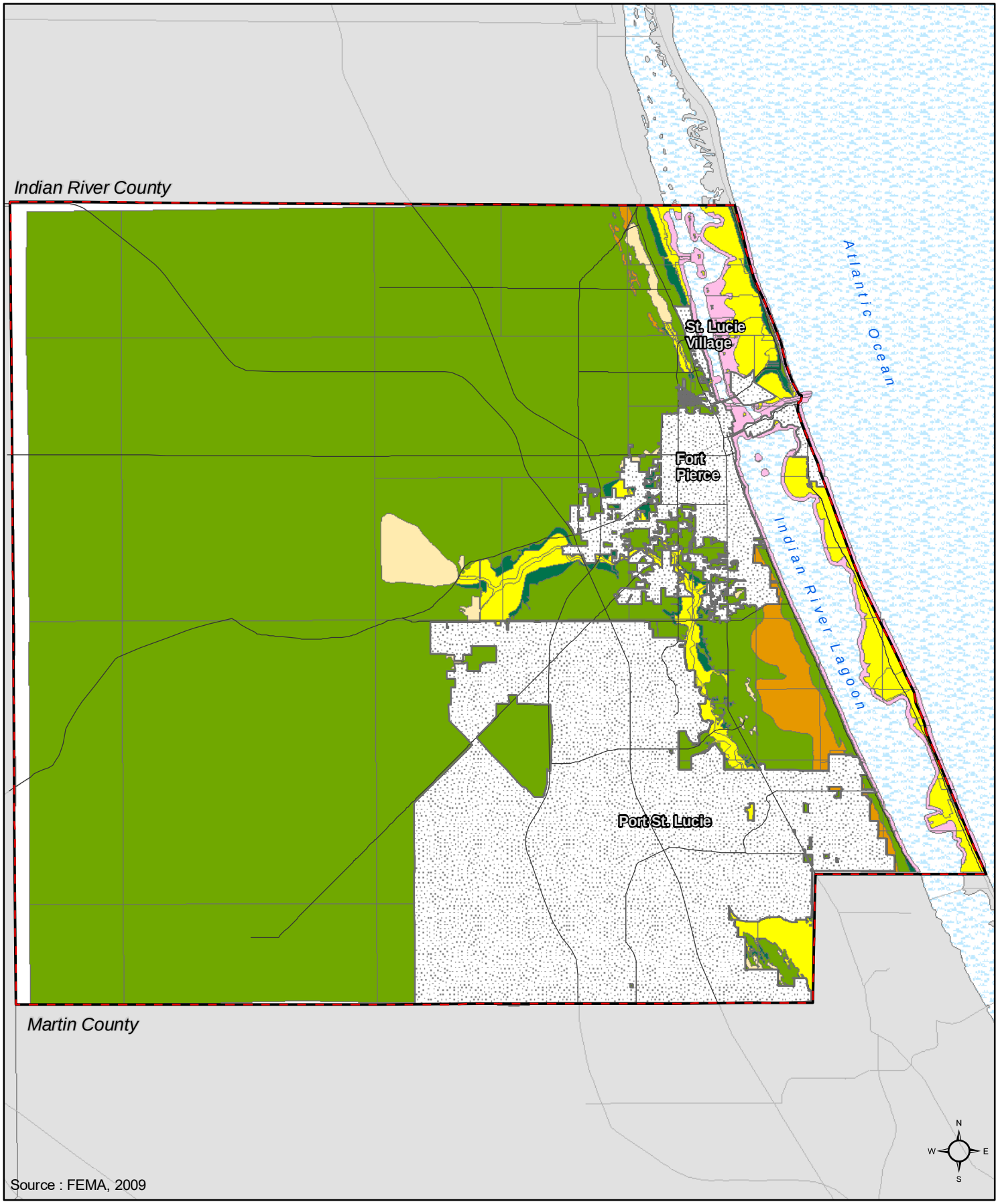
Miles

0 2.5 5

Calvin, Giordano & Associates, Inc.

GIS

Print Date : April, 2010



Source : FEMA, 2009

Flood Zones

Map : FLU-5

Legend

- County Boundary
- Municipalities
- Streets

Flood Zones

- A
- AE
- AH
- AO
- VE
- X
- X500

Miles

0 2.5 5

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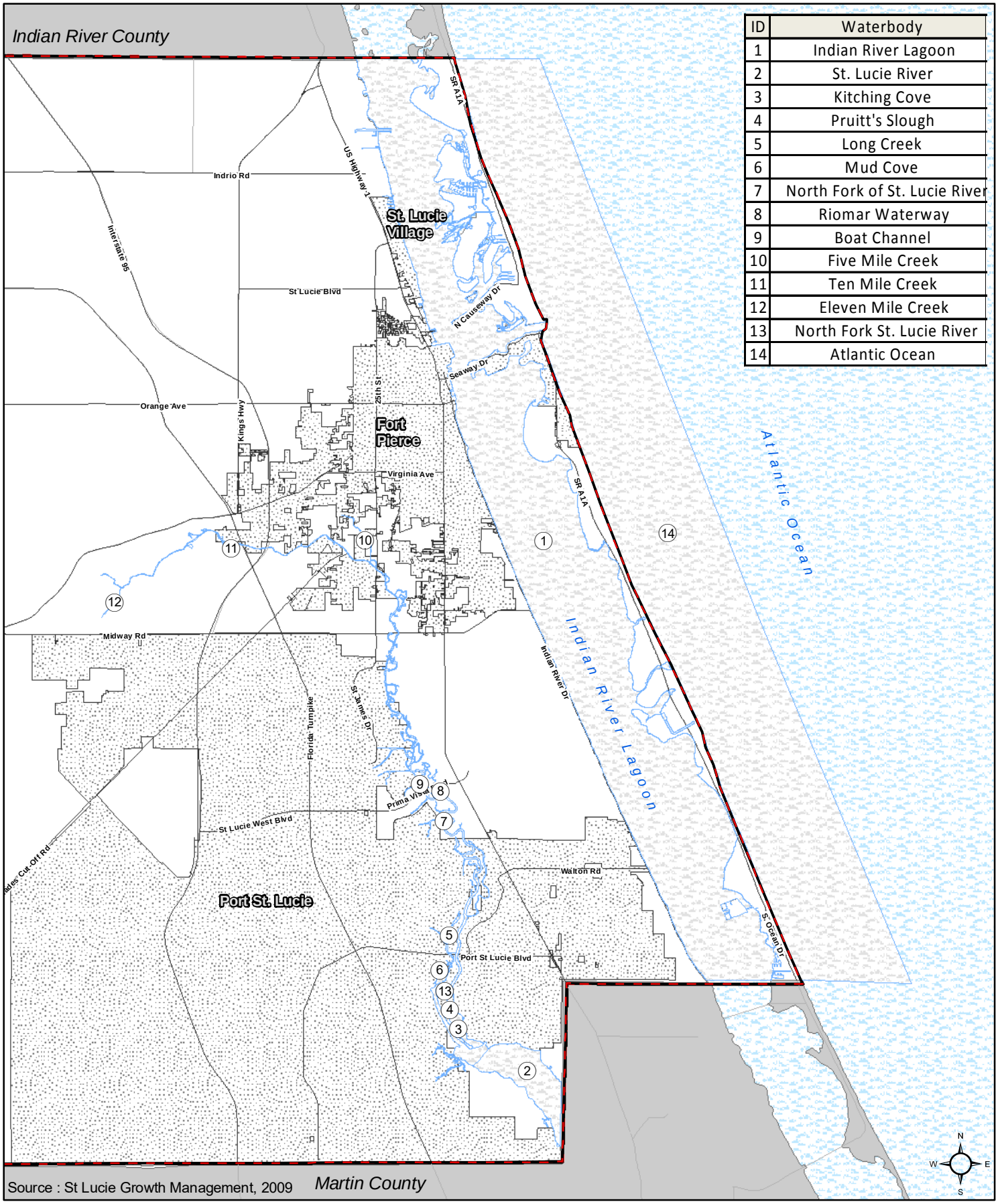
Print Date : February, 2010

ST. LUCIE COUNTY FLORIDA

Appendix G



ID	Waterbody
1	Indian River Lagoon
2	St. Lucie River
3	Kitching Cove
4	Pruitt's Slough
5	Long Creek
6	Mud Cove
7	North Fork of St. Lucie River
8	Riomar Waterway
9	Boat Channel
10	Five Mile Creek
11	Ten Mile Creek
12	Eleven Mile Creek
13	North Fork St. Lucie River
14	Atlantic Ocean

Water Bodies

Map : FLU-6

Legend

- County Boundary
- Municipalities
- Water Bodies
- Streets

0 1.5 3 Miles

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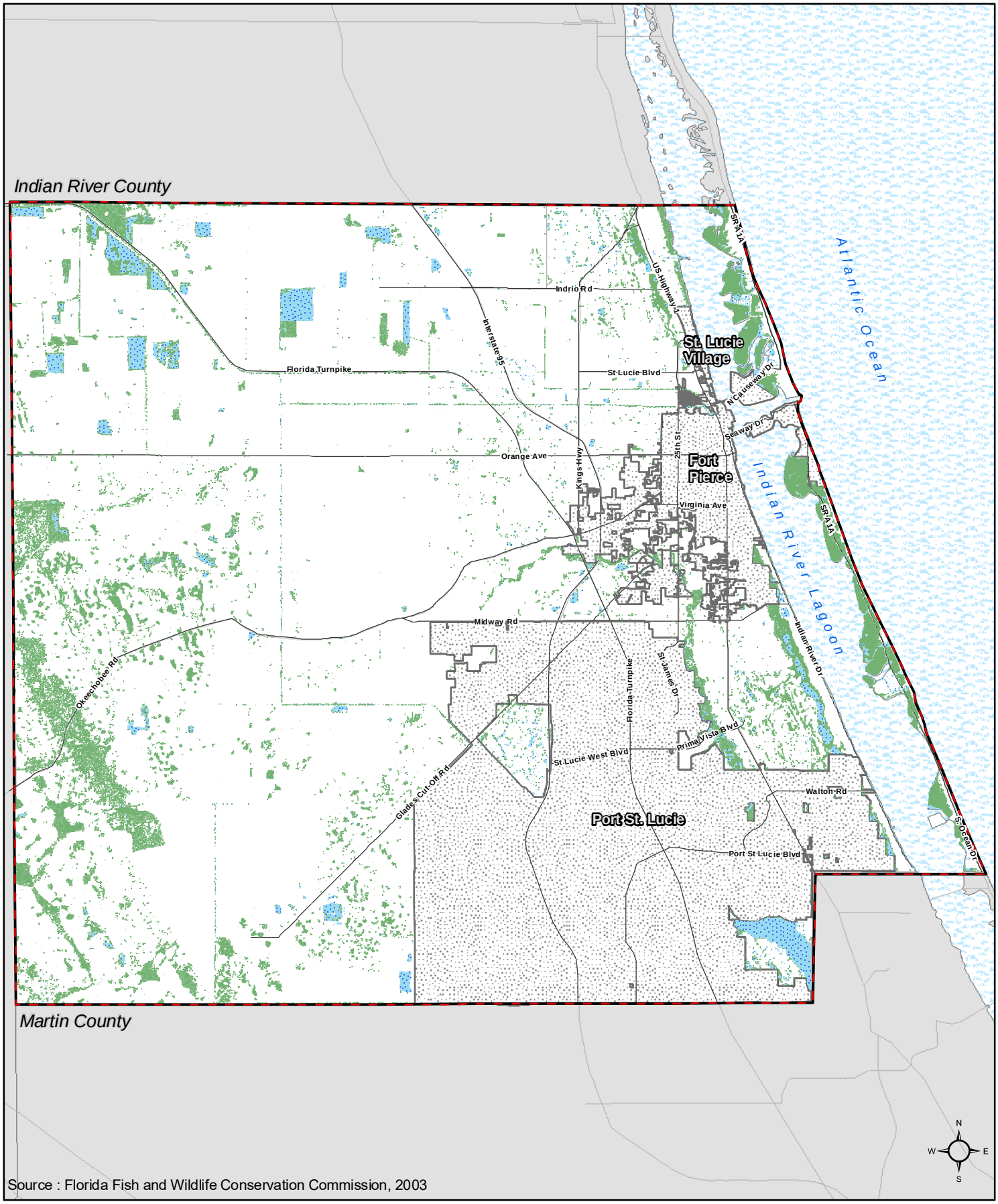
GIS

Print Date : February, 2010

ST. LUCIE COUNTY FLORIDA

Appendix G



Source : Florida Fish and Wildlife Conservation Commission, 2003

ST. LUCIE COUNTY FLORIDA

Appendix G

Wetlands

Map : FLU-7

Legend

- County Boundary
- Municipalities
- Wetlands
- Open Water

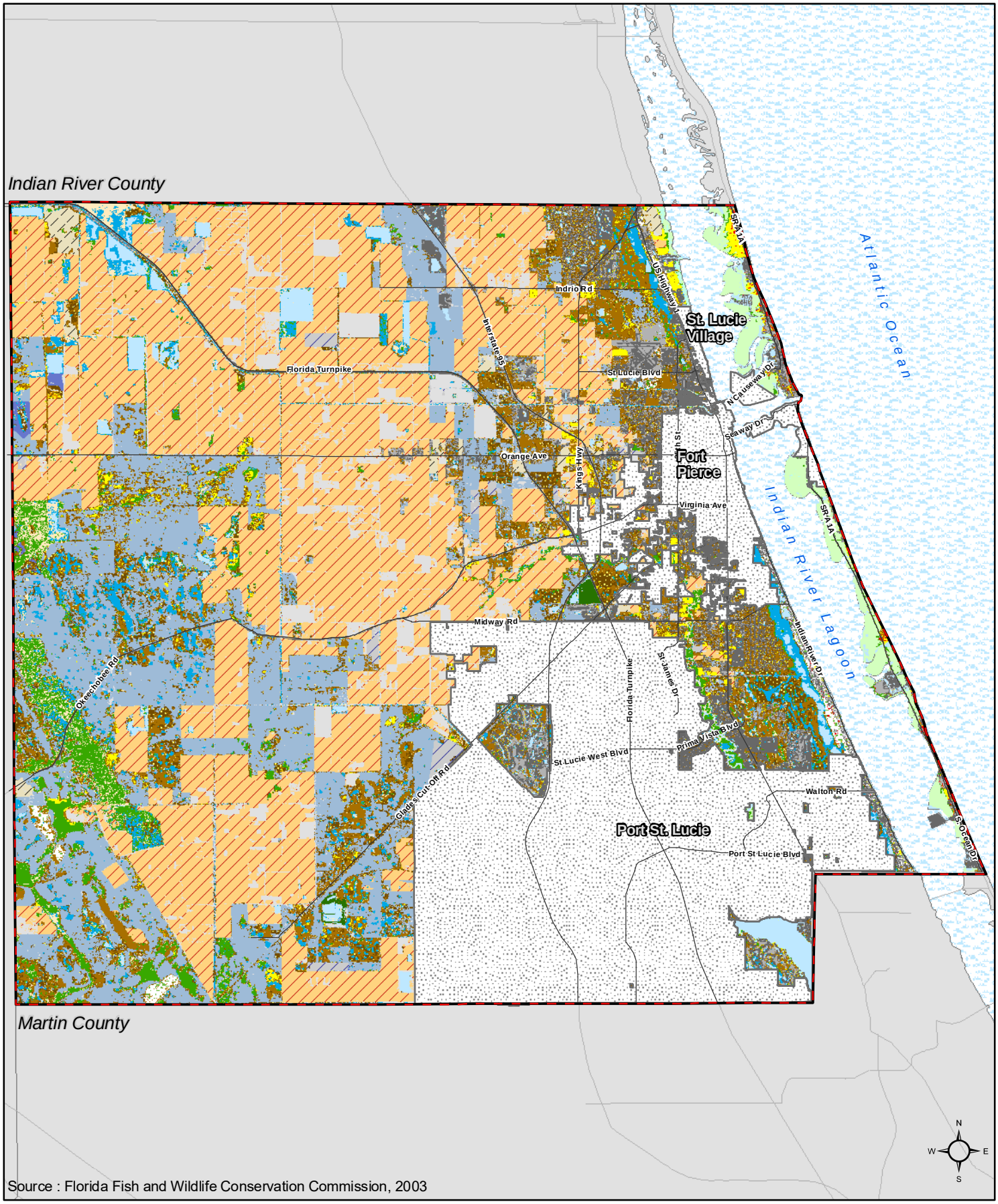
Miles

0 2.5 5

Calvin, Giordano & Associates, Inc.

GIS

Print Date : February, 2010



Source : Florida Fish and Wildlife Conservation Commission, 2003

ST. LUCIE COUNTY FLORIDA

Appendix G

Habitats

Map : FLU-8

Legend

- County Boundary
- Municipalities

Habitats

- High Impact Urban
- Low Impact Urban
- Bare Soil/Clearcut
- Coastal Beach
- Exotic Plants
- Extractive
- Mangrove Swamp
- Hardwood Swamp
- Salt Marsh
- Freshwater Marsh and Wet Prairie
- Cypress/Pine/Cabbage Palm
- Hardwood Hammocks and Forest
- Mixed Pine-Hardwood Forest
- Mixed Wetland Forest
- Pinelands
- Shrub and Brushland
- Scrub
- Other Agriculture
- Citrus
- Row/Field Crops
- Prairie/Grassland
- Improved Pasture
- Unimproved Pasture
- Open Water

Miles

0 2.5 5

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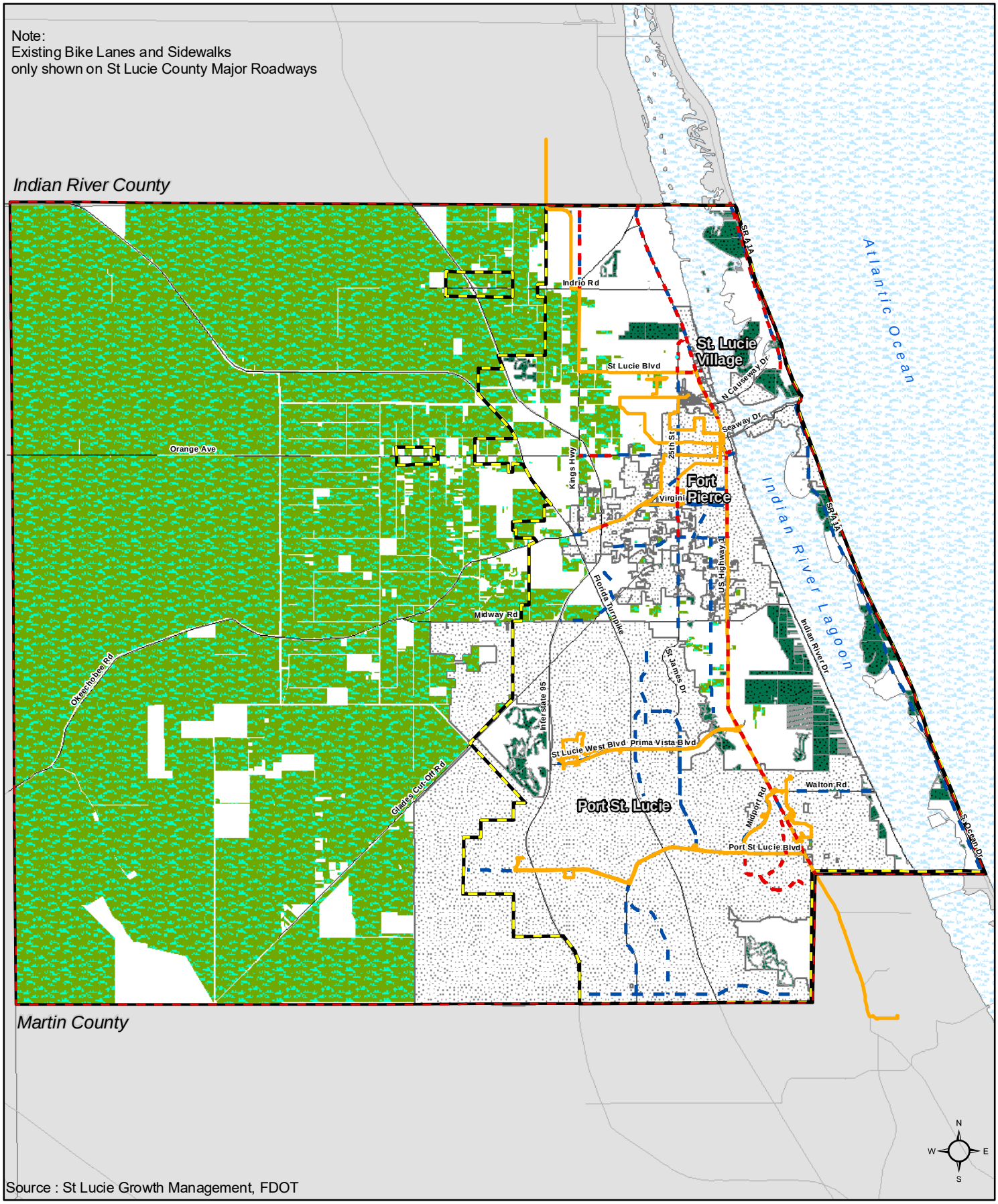
GIS

Print Date : February, 2010



ST. LUCIE COUNTY FLORIDA

Appendix G

Energy Conservation Areas and Features

Map : FLU-9

Legend

- County Boundary
- Municipalities
- Streets
- Bike Lanes
- Transit Routes
- Sidewalks/Multi-Purpose Trails
- Urban Service Boundary

Existing Land Use

- Agriculture
- Parks, Preserves and related data

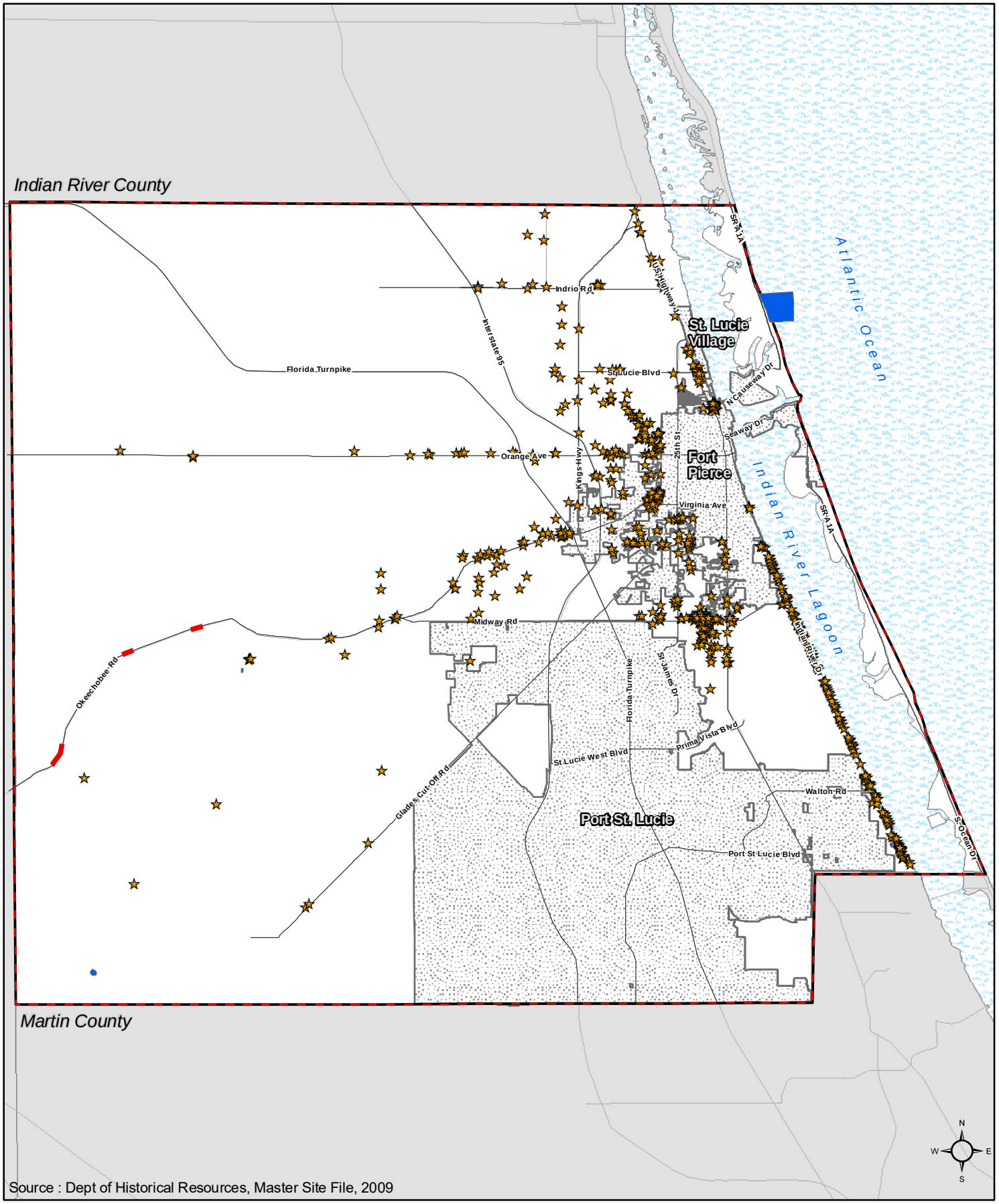
Miles

0 2.5 5

Calvin, Giordano & Associates, Inc.

GIS Produced and maintained by the CGA Geographic Information Systems Services

Print Date : February, 2010



Source : Dept of Historical Resources, Master Site File, 2009

ST. LUCIE COUNTY FLORIDA

Appendix G

Historic Sites, Structures, and Bridges

Map : FLU-10

Legend

- County Boundary
- Municipalities
- Historic Bridges
- Historic Structures
- Historic Sites

Miles

0 2.5 5

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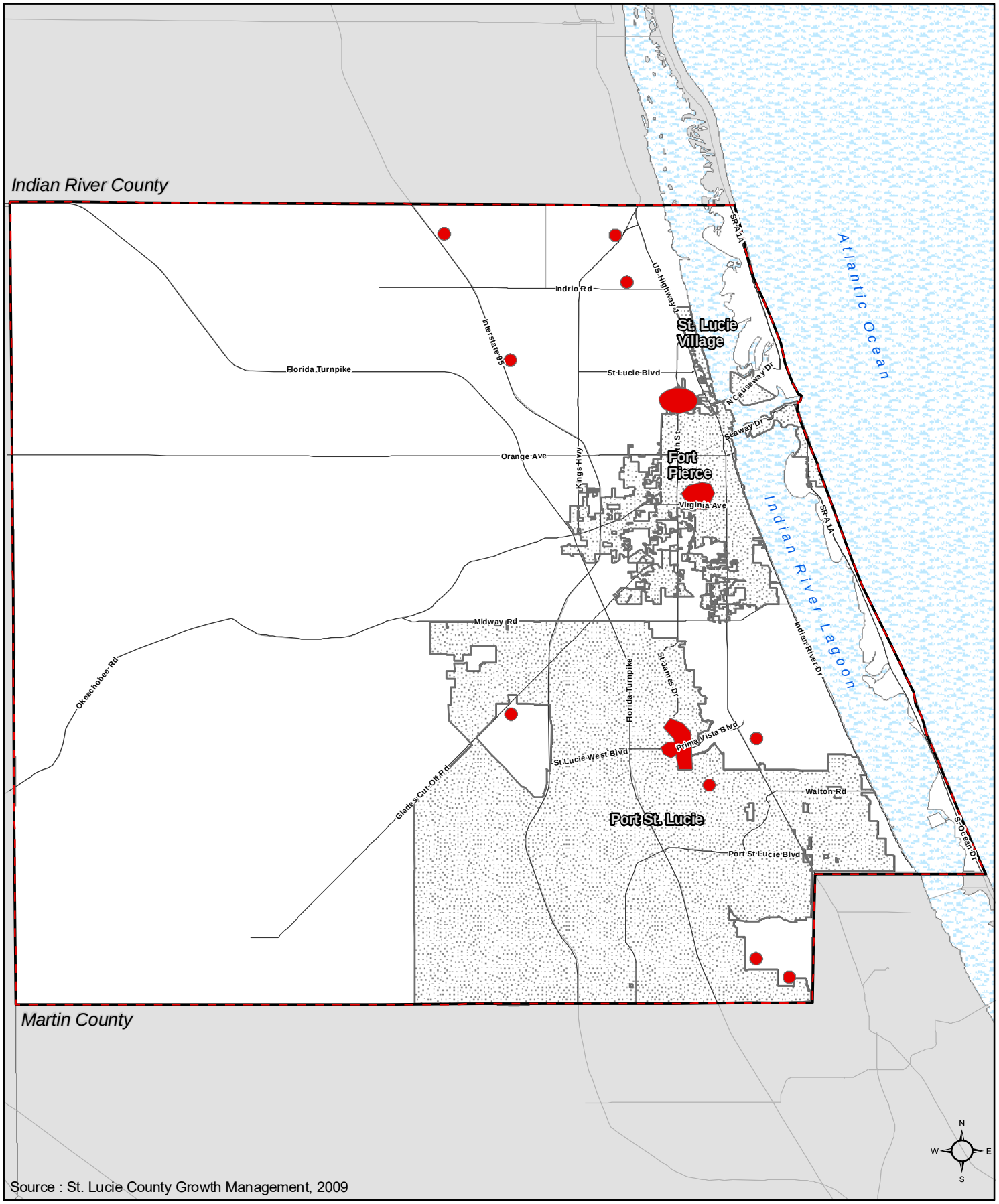
Print Date : February, 2010



ST. LUCIE COUNTY FLORIDA

Appendix G

Wellfield Protection Areas

Map : FLU-11

Legend

- County Boundary
- Municipalities
- Wellfield Protection Zones

Miles

0 2.5 5

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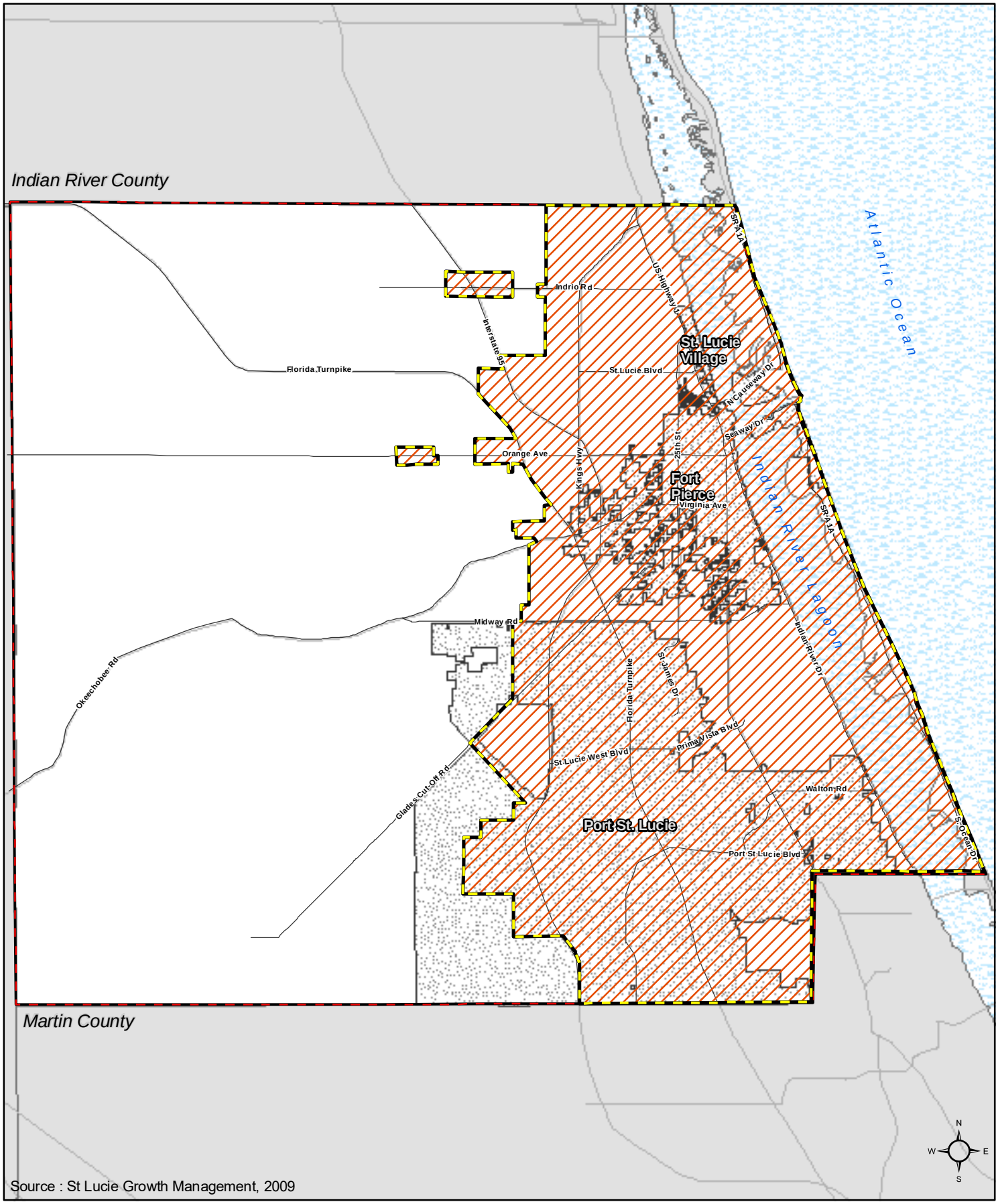
Print Date : February, 2010



Source : St Lucie Growth Management, 2009

ST. LUCIE COUNTY FLORIDA

Appendix G

Urban Service Boundary

Map : FLU-12

Legend

- County Boundary
- Streets
- Municipalities
- Urban Service Boundary

Miles

0 2.5 5

Calvin, Giordano & Associates, Inc.

GIS

Print Date : April, 2010

TRANSPORTATION ELEMENT
GOALS, OBJECTIVES AND POLICIES

Goal 2.1: Provide a safe and efficient integrated multi-modal transportation system which addresses the future needs of St. Lucie County for movement of people and goods, and which considers social, economic, energy and environmental effects including greenhouse gas emissions of the transportation system.

Objective 2.1.1: The St. Lucie County transportation system shall be reviewed in coordination with any requested changes to the Future Land Use Element or other related components of this plan. A report on the impacts to the system brought about by any proposed land use changes shall be prepared and presented to the Board of County Commissioners as part of the review of that Land Use change.

Policies 2.1.1.1 - The County shall conduct a regular review of accident data and identify above average accident locations. Prepare an annual report on high accident locations including proposed corrective measures and costs. This report will be shared with the St. Lucie County Community Traffic Safety Team, or other appropriate County board or authority, to identify potential funding sources and make changes or improvements to high accident locations.

Policy 2.1.1.2 - The County shall develop an annual report, on the level of service provided on the St. Lucie County roadway system and identify improvement needs and costs to meet the adopted levels of service (LOS). Improvement needs will be determined based on the plans and programs of the St. Lucie Transportation Planning Organization (TPO) including the Long Range Transportation Plan (LRTP), Advanced Transportation Management System (ATMS), Congestion Management Process (CMP), and Transportation Improvement Program (TIP). This report shall be made available during the summer of each annual reporting period.

Policy 2.1.1.3 - In coordination with the Florida Department of Transportation (FDOT) and the St. Lucie TPO, annually review the transportation network and define any areas that may identify LOS standards lower than the adopted level of service standards, consistent with the provisions of Section 163.3177, F.S.

Policy 2.1.1.4 -Provide comments and recommendations to the St. Lucie TPO in the development of the TIP in accordance with the TIP development cycle.

Policy 2.1.1.5 - Facilities currently operating at conditions below the adopted level of service standards shall be maintained at least at their current LOS through development order conditions for roadway improvements within the radius of influence of a proposed development. The radius of influence for a given development shall be further defined in the County's Land Development Code traffic monitoring provisions.

Policy 2.1.1.6 - Utilize the St. Lucie ATMS to maintain the signal control for all roads for which St. Lucie County has operational, maintenance and jurisdictional responsibility.

Policy 2.1.1.7 - The County recognizes that the roadway portion of the Strategic

Intermodal System (SIS) is a statewide transportation network~~s~~ that provides for high-speed and high-volume traffic movements for interstate and regional commerce and other long distance trips. The system is intended to accommodate High-Occupancy Vehicles (HOVs), express bus transit and, in some corridors, passenger rail service and as such should not be relied upon as a local circulator for trips of local origin or destination.

Policy 2.1.1.8 – The SIS shall not be relied upon as a local circulator for trips of local origin or destination within the urban service area of the county. Accordingly, the 2040 Transportation Plan, as contained in this Transportation Element, shall include the identification and development of alternative arterials/collectors within the urban service area of the County to redirect local traffic from having to use the Strategic Intermodal System (SIS).

Objective 2.1.2 - Existing and future roadway deficiencies, based on standards established in this plan, shall be mitigated through a continuous multimodal transportation improvement program when feasible. The County shall support infill development and consider multimodal transportation improvements, or reducing level of service standards, where appropriate, on constrained roadways.

Policy 2.1.2.1 - Develop and implement a Capital Improvement Program ~~(TIP)~~ (CIP) that is consistent with the goals, objectives and policies of this plan. Update this plan annually in conjunction with review of the capital improvement budget.

Policy 2.1.2.2 - Review all proposed developments for consistency with the goals, objectives, and policies of this plan and require coordination of traffic mobility plans and multimodal transportation improvements with land use, right-of-way and infrastructure plans before development approval. Traffic circulation and Mobility plans shall include the mitigation of all potential project impacts on the transportation system.

Policy 2.1.2.3 - Review access driveways and new roadway connections associated with development to assure safety and compatibility with the existing and future roadway network. Impose requirements for conformity, as condition of development approval.

Policy 2.1.2.4 - Maintain the operation of the roadway network for which St. Lucie County has operational, maintenance or jurisdictional responsibility at or above the adopted LOS standards.

Policy 2.1.2.5 - Coordinate with the St. Lucie TPO, City of Fort Pierce, Port St. Lucie, and the FDOT to implement the US-1 Corridor Retrofit Project to meet future corridor capacity needs for US-1.

Policy 2.1.2.6 - St. Lucie County adopts the following roadway level of service standards for application within the unincorporated areas of St. Lucie County, as follows:

MINIMUM LEVEL OF SERVICE STANDARDS FOR URBAN AND NON-URBAN ROADWAYS IN ST. LUCIE COUNTY

Non-SIS Facilities

Facility Type	Peak Hour/Peak Direction	Inside a Transportation Concurrency Management Area[1]	Constrained /Backlogged Facility
Non-State Roadway (Local)	D	D	Maintain[2]
Non-State Roadway (Major City/County Road)	D	E[3]	Maintain
Non-State Roadway (Arterial)	E[3]	E[3]	Maintain
Other State Roads			
Multi-Lane (Rural/Urban)			
Rural	B	N/A	N/A
Urban	D		Maintain[2]
Two-Lane (Rural/Urban)			
Rural	C	N/A	N/A
Urban	D	N/A	Maintain[2]

1.	Transportation Concurrency Management Areas are geographically compact areas designated in local government comprehensive plans where intensive development exists or is planned in a manner that will ensure an adequate level of mobility and further the achievement of identified important state planning goals and policies, including discouraging the proliferation of urban sprawl, encouraging the revitalization of existing downtowns and designated redevelopment areas protecting natural resources, protecting historic resources, maximizing the efficient use of existing public facilities, and promoting public transit, bicycling, walking and other alternatives to the single occupant automobile. Transportation concurrency management areas may be established in a comprehensive plan in accordance with with principles contained in in Section 163.3180, F.S.
2.	Maintain means continuing operating conditions at a level such that significant degradation does not occur based on conditions existing at the time of local government comprehensive plan adoption. For roadways in rural areas, transitioning urbanized areas, urban areas or communities, significant degradation means (1) an increase in average annual daily traffic volume of 5 percent below the speed, of the adopted LOS standard. For roadways in urbanized areas, significant degradation means for 100th highest hour of 5 percent below the speed, of the adopted LOS standard. For roadways in urbanized areas, for roadways parallel to exclusive transit facilities, or for intrastate roadways in transportation concurrency management areas, significant degradation means (1) an increase in average annual daily traffic volume of 10 percent above the maximum service volume, or (2) a reduction in operating speed for the peak directions in the 100th highest hour of 10 percent below the speed, of the adopted LOS standard. For other state roads in transportation concurrency management areas, significant degradation means that amount defined in the transportation mobility element. For constrained roadways meeting or exceeding the level of service standards, (maintain) does not apply until the roadway is operating below the applicable minimum level of service standard.
3.	The County wishes to maintain a LOS D or better for all roadways but recognizes that allowing a LOS E allows development to proceed while a minimum of LOS D might cause severe constraints on private development. However, a LOS D will be utilized for these roadways when establishing transportation impact fees.

SIS Facilities

SIS Roadway Corridors	Roadway Segment	LOS Standard
I-95	Martin County Line to Gatlin Boulevard	C
I-95	Gatlin Boulevard to St. Lucie Boulevard	C
I-95	St. Lucie Boulevard to Midway Road	C
I-95	Midway Road to SR 70/ Okeechobee Road	C
I-95	SR 70/ Okeechobee Road to SR 68/ Orange Avenue	D
I-95	SR 68/ Orange Avenue to SR 614/ Indrio Road	D
I-95	SR 614/ Indrio Road to Indian River County Line	C
Florida's Turnpike	Martin County Line to Becker Road	C
Florida's Turnpike	Becker Road to Port St. Lucie Boulevard	C
Florida's Turnpike	Port St. Lucie Boulevard to SR 70/ Okeechobee Road	C
Florida's Turnpike	SR 70/ Okeechobee Road to Indian River County line	B
SR 70/ Okeechobee Road	Okeechobee County Line to Carlton Road	B
SR 70/ Okeechobee Road	Carlton Road to McCarthy Road	B
SR 70/ Okeechobee Road	McCarthy Road to Florida's Turnpike	B
SR 70/ Okeechobee Road	Florida's Turnpike to I-95	C

Policy 2.1.2.7 - Designate as constrained facilities those roadways off the State Highway System in St. Lucie County which operate below acceptable levels of service and where capacity improvements are not feasible due to physical or policy barriers.

Policy 2.1.2.8 ~~.~~ When any County arterial or collector road or segment of such a road is determined to be operating one level of service below its adopted standard, the County, shall exercise one of the following options:

a. Enter into a contract that will result in the addition of capacity to the facility within six months of the determination that the facility is operating below its level of service standard, and delay issuance of development orders until the contract has been executed;
b. Enter into an enforceable development agreement that specifies that new development will provide for the upgraded facility;
c. Amend the plan to lower the level of service at the next opportunity;
d. Not issue any development permits in the impacted area. The purpose of providing for the temporary operation below the adopted level of service is to provide a reasonable period of time to restore the level of service through appropriate improvements to roads that are forecast to operate at the adopted Level of Service, but which may unexpectedly operate at a lower Level of Service. All development orders issued pursuant to this policy shall be conditioned on the attainment of the adopted Level of Service. However, this policy shall not impair the county's right to refuse to issue a development order pursuant to this policy if the Board of County Commissioners determines that the resultant lower level of service caused by the proposed development order would constitute a threat to public health or safety; or
e. Upon adoption of a ~~n~~ mobility fee, the County may consider the elimination or re-evaluation of the Level of Service standards.

Policy 2.1.2.9 - Designate roadways or roadway~~s~~ segments off the State Highway System as backlogged or constrained facilities which operate below the adopted level of

service standards. If so designated by the County, the County shall develop a program that addresses how to eliminate the backlog or constraining circumstances associated with the particular roadway or roadway segment with capacity improvements other than roadway widening.

Policy 2.1.2.10 - Continue utilizing tools such as Proportionate Fair Share and impact fees as further implemented in the LDC until new tools such as a mobility fee are available to help shift the burden for funding and constructing roadway capacity improvements away from the taxpayers towards new development.

Policy 2.1.2.11 – Consider amending the adopted LOS standards to conform with current FDOT standards for state facilities.

Objective 2.1.3 - The County shall continue to address backlogged or constrained facilities, consider mobility needs, and reduce greenhouse gas emissions through promoting increased transit usage, bicycle and pedestrian facilities, and more efficient roadways.

Policy 2.1.3.1 - In coordination with other relevant agencies, consider modification of the County's transportation concurrency system, impact fee, structure LOS standards, Proportionate Fair Share, and adequate public facilities in the LDC for the ability to implement a mobility fee structure that develops the County mobility plan, encourages multi-modal planning, promotes infill development, discourages sprawl, reduces the complexity of the current system, and strengthens the interlocal coordination of inter-jurisdictional impacts.

Policy 2.1.3.2 - The County shall consider implementing a mobility fee that charges all new developments with costs varying on location and vehicles miles traveled (VMT).

Policy 2.1.3.3 - The County shall continue seek to utilize Transportation Regional Incentive Program (TRIP) funds when made available to finance projects with regional impacts when developing the County's budget. The County shall consider the adoption of transportation demand management programs to modify peak hour travel demand, reduce the number of vehicle miles traveled per capita within the community and region and improve overall system efficiency and enhance safety.

Policy 2.1.3.4 - The County will consider inclusion in the County's budget funding for planning Transportation Demand Management (TDM) measures and related land use alternatives to reduce traffic congestion, improve levels of service, reduce single occupant automobile trips, reduce fossil fuel consumption and emissions, and reduce the need to fund, construct and maintain additional lane miles of roadway capacity within the County.

Policy 2.1.3.5 - The County shall continue supporting the implementation of the St. Lucie ATMS and Walk-Bike Network.

Policy 2.1.3.6 – In order to facilitate the construction of sidewalks as needed to infill sidewalk gaps, the County shall consider completing the following priority sidewalk areas (the list is not ordered by priority) when reviewing requests for fee-in-lieu contributions from developers:

Project	From	To	Approx. Length (miles)
Angle Road	Kings Highway	N. 53rd Street	1.26
Indrio Road	Kings Highway	Route One	2.63
Indrio Road	Route One	Old Dixie Hwy.	0.16
Juanita Avenue	N. 53rd Street	N. 25th Street	1.76
Juanita Avenue	Bridge	US1	0.17
Keen Road	Angle Road	St. Lucie Blvd.	1.0
N. Kings Hwy.	N. of I-95	Indrio Road	4.5
Oleander Ave.	Midway Road	Edwards Road	2.5
Oleander Ave.	Midway Road	Saeger Avenue	1.5
Route One	St. Lucie Blvd.	Turnpike Feeder	5.26
Selvitz Road	Edwards Road	So. of Midway Rd.	2.38
Silver Oak Drive	Easy Street	E. Midway Road	1.79
Taylor Dairy Rd.	Angle Road	St. Lucie Blvd.	1.01
Walton Road	Lennard Road	Green River	1.1
Weatherbee Rd.	US1	Oleander Ave.	0.5
St. Lucie Blvd.	Kings Highway	N. 25th Street	3.02

Objective 2.1.4: St. Lucie County shall acquire and maintain right-of-way for the roadway network based upon the right-of-way protection plan, Transportation Element and the Future Land Use Element of this plan.

Policy 2.1.4.1 - Prohibit encroachment of development and required setbacks into established present and future rights-of-way and, within the law, require dedication of right-of-way through development orders issued by the County.

Policy 2.1.4.2 - Review all proposed development plans for impact on the future land use plan and assess the capacity needs of each project as it relates to the thoroughfare right-of-way protection plan by requiring a traffic impact analysis, as further described in the County's LDC, with proposed development applications.

Policy 2.1.4.3 -Use the minimum right-of-way standards as described in the LDC to implement the thoroughfare right-of-way protection plan.

Policy 2.1.4.4 - Roadways and roadway corridors shown on the thoroughfare right-of-way protection plan, excluding those that are part of the SIS, that are outside of the urban service area of the County shall not be widened or constructed until it is demonstrated to the County that the roadway construction is required to meet the development impacts of the area. Nothing in this Policy shall be construed or otherwise interpreted as to restrict or limit the ability of the County, the State or other lawful entity, to perform routine maintenance, rehabilitation or safety improvements to any roadways or roadway corridor located outside of the urban service area.

Policy 2.1.4.5 – Review bi-annually the status of the thoroughfare right-of-way protection plan and submit any changes to that plan as necessary to address the mobility needs of the community.

Goal 2.2: Establish an integrated multimodal transportation system that meets the mobility needs resulting from future development of the County.

Objective 2.2.1: Coordinate the transportation system with the future land use map or map series and ensure that existing and proposed population densities, housing and employment patterns, and land uses are consistent with the transportation modes and services proposed to serve these areas, as identified in the Go2040 LRTP.

Policy 2.2.1.1 - Include within the LDC provisions for requiring an adequate number of motorized and bicycle on-site parking spaces for each new site development and provide for safe and efficient movement of vehicles and pedestrians within the site in conjunction with plan review and permitting.

Policy 2.2.1.2 - Review on-site traffic flow to assure adequate circulation for motorized and non-motorized vehicles and pedestrians is provided. Require signage and roadway specifications that conform to the County's adopted standards.

Policy 2.2.1.3 - The County shall continue to review the off-street parking standards to determine what modifications, if any, may be made to those standards that would effectively encourage the use of alternative transportation modes.

Policy 2.2.1.4 - The County shall include within the LDC–incentives to encourage the use of reduced parking standards in areas of the County designated for Mixed and Planned Unit developments.

Policy 2.2.1.5 - To improve accessibility for all modes of transportation and reduce environmental impacts, encourage all adjacent developments to share common driveways and provide pedestrian interconnections whenever feasible, to reduce the number of driveways on major thoroughfares and potentially reduce environmental impacts on Hutchinson Island and other environmentally sensitive areas of St. Lucie County.

Policy 2.2.1.6 – To support the enhancement of a competitive regional industrial environment with the airport and port facilities, the County will continue to review the transportation network and the future land use map to ensure the proposed population densities, housing, employment patterns, and land uses are consistent and integrate multimodal transportation systems and land, sea and air distribution opportunities.

Policy 2.2.1.7 – The County supports the expansion and recruitment of manufacturing industries, especially those within the Targeted Industry List and located within the Foreign Trade Zone, and supports the development of transportation improvements, including a roadway connection of Interstate 95, the Florida Turnpike to the Treasure Coast International Airport.

Objective 2.2.2: Update the long-range transportation needs of the County on a regular basis.

Policy 2.2.2.1: - Revise the transportation element as appropriate upon the completion of updates to the St. Lucie TPO LRTP and Treasure Coast Regional LRTP.

Goal 2.3: To develop a safe bicycle and pedestrian transportation system accessible to all major public and private facilities.

Objective 2.3.1: Identify the bicycle and pedestrian transportation system needs for St. Lucie County through the continued implementation of the St. Lucie Walk-Bike Network.

Policy 2.3.1.1 - The County shall coordinate with the FDOT, the St. Lucie TPO, the City of Fort Pierce, the Town of St. Lucie Village and the City of Port St. Lucie to implement the recommendations of the St. Lucie Walk-Bike Network as it may be updated, when funding is available, or as provided in the LDC.

Policy 2.3.1.2 - The CIP for St. Lucie County shall continue to include, and address the need for, the integration of both countywide and regional/statewide greenway and trail networks into the St. Lucie Walk-Bike Network.

Objective 2.3.2: Improve the transportation system to appropriately accommodate bicycle and pedestrian roadway design and facility requirements.

Policy 2.3.2.1 - Include within the LDC design criteria and standards to be used in addressing the needs of bicyclists and pedestrians.

Policy 2.3.2.2 - Continue to participate in St. Lucie TPO advisory committees that provide~~s~~ input and recommendations on the implementation and updates to the St. Lucie Walk-Bike Network. The St. Lucie Walk-Bike Network should provide access to major public and private facilities including parks, schools, beach accesses and major shopping facilities.

Policy 2.3.2.3 - The County shall assist in maintaining an inventory of all significant streets within the TPO area, with particular attention given to hazards, bottlenecks, and barriers to bicyclists. The County should implement the recommendations presented in the St. Lucie Walk-Bike Network when funding is made available.

Policy 2.3.2.4 - The County shall continue to identify road segments and intersections having frequent bicycle and pedestrian-related crashes and accidents.

Policy 2.3.2.5 - Continue to implement the LDC requirement that all new development inside the Urban Service Boundary provide pedestrian facilities and/or sidewalks along all major collector, arterial and local roadways adjacent to the proposed development project as necessary to support the intensity and density of development.

Policy 2.3.2.6 - Coordinate bicycle planning activities with other agencies (including FDOT) associated with bicycle planning activities in Okeechobee, Martin and Indian River Counties.

Policy 2.3.2.7 - Mobility needs shall be identified and addressed and met for each new development approval.

Policy 2.3.2.8 - The County shall continue to implement the necessary LDC amendments to require that all new land development activities include dedicated bicycle and pedestrian facilities on internal arterial and collector roadways. Complete streets should be required along all local streets as necessary to support the intensity and density of development. 'Complete streets' is a transportation policy and design approach that requires streets to be planned, designed, operated, and maintained to

enable safe, convenient and comfortable travel and access for users of all ages and abilities regardless of their mode of transportation.

Policy 2.3.2.9 - Establish bicycle and pedestrian facilities around schools, with emphasis placed upon the area encompassing schools that are not serviced by the school bus system. Prioritization for the development of these facilities will be determined by the Board of County Commissioners and should be consistent with the St. Lucie TPO Walk-Bike Network.

Policy 2.3.2.10 - Continue to provide, in association with all new road construction in the urban area, bicycle and pedestrian facilities along all arterials and collectors identified in the Comprehensive Plan.

Policy 2.3.2.11 - Continue to provide additional sidewalks, where necessary, to connect or complete either existing or proposed sidewalks in a manner that provides a complete pedestrian circulation system.

Goal 2.4: Coordinate transportation-related issues with the plans and programs of the FDOT, the Treasure Coast Regional Planning Council, the St. Lucie TPO, Florida Department of Economic Opportunity, the Hutchinson Island Resource Management Plan, the City of Port St. Lucie, the City of Fort Pierce, the Town of St. Lucie Village adjacent municipalities, adjacent counties, and other private transportation-related agencies.

Objective 2.4.1: The County shall coordinate and communicate with the agencies listed in Goal 2.4 regarding transportation activities and planned improvements which may have impacts within their respective jurisdiction and request comments as applicable.

Policy 2.4.1.1 - The County shall maintain a mailing list to ensure that all interested agencies listed above are informed of transportation related activities and improvements via copies of correspondence.

Policy 2.4.1.2 - As a part of the Capital Improvements Element update process, annually review transportation improvements planned for St. Lucie County indicating the agency responsible for the improvement and the estimated date of completion.

Policy 2.4.1.3 - Review the existing Transportation Goals, Objectives, and Policies of other agencies when revising or altering Goals, Objectives, and Policies for St. Lucie County.

Policy 2.4.1.4 - The County shall coordinate and work closely with the St. Lucie TPO, City of Port St. Lucie and the City of Fort Pierce to achieve coordinated multimodal planning to address extra-jurisdictional transportation system impacts.

Objective 2.4.2: St. Lucie County shall take actions necessary to preserve, maintain and enhance social, environmental and historic resources along the scenic corridor while minimizing any potential negative impacts on adjacent properties.

The following roadways are designated scenic by the FDOT and so recognized by St. Lucie County for preservation of their intrinsic (historical, archeological, cultural, recreational, scenic and natural) resources:

1. Atlantic Beach Boulevard / SR A1A from Indian River County south to US Highway 1
2. US Highway 1 from North Beach Causeway to Seaway Drive
3. Seaway Drive / SR A1A south to Martin County
4. Indian River Drive from Seaway Drive south to Martin County

Policy 2.4.2.1: St. Lucie County shall encourage the protection and preservation of scenic features, natural resources, and historic sites along the Indian River Lagoon - Treasure Coast Scenic Highway Corridor through implementation of Chapter 4 and Chapter 6 of the LDC.

Goal 2.5: Provide public transportation for the transportation disadvantaged population of St. Lucie County in a safe and convenient manner.

Objective 2.5.1: Address the provision of efficient public transit services based upon existing and proposed major trip generators and attractors, safe and convenient public transit terminals, land uses and accommodation of the special needs of the transportation disadvantaged in St. Lucie County.

Policy 2.5.1.1 - St. Lucie County shall, in cooperation with the St. Lucie TPO and other appropriate agencies, continue to analyze the recommendations of the St. Lucie County Transit Development Plan (TDP), to determine the future system needs, transit right-of-way needs, Level of Service standards and the capital expenses necessary for the implementation of a fixed route transit system for the area based on the community's future land use designations and projected population characteristics.

Policy 2.5.1.2 - Continue to assist the local coordinated community provider in seeking additional state and federal assistance funds in order to provide additional services.

Policy 2.5.1.3 - Continue to assist the Community Transportation Coordinator in seeking additional state and federal assistance funds in order to add vans or other vehicles to handle work trips for the transportation disadvantaged as demand increases.

Policy 2.5.1.4 - Promote the availability of transportation to all transportation disadvantaged throughout St. Lucie County through sound marketing and public information efforts.

Objective 2.5.2: Maintain coordination and communication among agencies involved in providing transportation to the transportation disadvantaged including FDOT, St. Lucie TPO, St. Lucie County, Fort Pierce, St. Lucie Village and Port St. Lucie.

Policy 2.5.2.1 - Maintain a mailing list of the agencies enumerated in Objective 2.5.2 to convey information on existing affairs and plans for future activities.

Goal 2.6: Incorporate the potential for mass transit into long range transportation needs.

Objective 2.6.1: Continue to ~~M~~onitor and evaluate the demand for transit through the implementation of the TDP.

Policy 2.6.1.1 - Continue coordination with Martin and Indian River Counties to develop

~~a~~ regional transit connections.

Policy 2.6.1.2 - Encourage the local Community Transportation Coordinator to expand paratransit services to meet the service needs of the transportation disadvantaged residents of St. Lucie County.

Policy 2.6.1.3 - In coordination with Community Transit or its successor agency, continue to identify and develop opportunities for private sector participation in funding both the coordinated transportation system and public transportation services.

Policy 2.6.1.4 - In coordination with the St. Lucie TPO and Community Transit or its successor agency, continue to search for and identify any realistic public/private partnerships in the provision of transportation disadvantaged services and public transportation services.

Policy 2.6.1.5 - Consider the feasibility of implementing the fixed bus route recommendations in the TDP.

Policy 2.6.1.6 - The County shall pursue transit funding sources through the South Florida Commuter Service, FDOT, FTA, and any additional sources outlined in the TDP ~~3~~.

Policy 2.6.1.7 - The County shall actively pursue federal funding and grants for transportation, transit, transportation demand management, transit oriented design, and other innovative strategies to meet the mobility needs of the County.

Policy 2.6.1.8 - The County shall consider improving amenities at bus stops when funding is made available to promote increase transit ridership.

Objective 2.6.2: Provide, for the protection of future mass transit, rights-of-way and exclusive mass transit corridors.

Policy 2.6.2.1 - As part of the Development Review process, review all future development plans for compatibility with transit plans in the TDP and identify those areas which have a high probability for being served by transit.

Policy 2.6.2.2 - In coordination with the St. Lucie TPO, explore in which cases and what types of incentives could be provided to encourage the use of high occupancy vehicles and alternative modes of transportation during the planning of transportation system improvements.

Policy 2.6.2.3 - When funding is made available, implement the recommendations developed in the TDP and the St. Lucie TPO LRTP with regard to the need and locations for HOV lanes and park-and-ride lots, including right-of-way considerations for all new major arterials and limited-access roads to be constructed based on future land uses, projected population distribution and the potential impact of such facilities on the transportation network.

Policy 2.6.2.4 - The County will continue to designate and provide protection for future public transportation corridors. These public transportation corridors shall be based upon

the most recent St. Lucie County TDP.

Policy 2.6.2.5 - St. Lucie County will continue to consider a coordinated and consistent policy with the Future Land Use Element to encourage the concentration of land uses, including major generators and attractors such as shopping malls, in order to promote the use of public transportation along designated future public transportation corridors.

Policy 2.6.2.6 - Continue to enforce land use, site and building design guidelines for development in future public transportation corridors to assure the accessibility of that new development to public transportation including the safe and convenient location of future public transportation terminals, such as bus stops, with appropriate bicycle/pedestrian connections.

Objective 2.6.3: St. Lucie County shall support efforts to extend passenger rail service and associated safety improvements to St. Lucie County.

Policy 2.6.3.1 - St. Lucie County shall continue to support the reestablishment of regularly scheduled passenger rail service along the east coast of Florida.

Policy 2.6.3.2 - St. Lucie County shall support the establishment of rail stations in Fort Pierce, Port St. Lucie and/or within the County's Urban Service Area.

Goal 2.7: Provide airport facilities that are adequate to meet present and future demands to operate general aviation facilities in a safe and efficient manner which will maximize ease of movement of people and goods, and to minimize conflicts with adjacent land uses and adverse environmental impacts.

Objective 2.7.1: Provide for a periodically updated Airport Master Plan that directs airport growth consistent with this Comprehensive Plan, County Policy, and adjacent land uses.

Policy 2.7.1.1 - Continue implementation of and ensure consistency with the2018 Treasure Coast International Airport Master Plan Update.

Policy 2.7.1.2 - Promote the expansion of the airport as outlined in the latest Airport Master Plan.

Policy 2.7.1.3 - The Treasure Coast International Airport shall be developed and operated in conformance with all applicable local, state, and federal regulations.

Policy 2.7.1.4 - Work to assure that the surface transportation needs of the Treasure Coast International Airport are considered in and are consistent with the goals, objectives and policies in the St. Lucie County Comprehensive Plan.

Policy 2.7.1.5 - The Master Plan for the Treasure Coast International Airport shall be updated every five to ten years when changes have occurred such as an increase in operations, land use changes, or change in type of operations or demand. The purpose of the Master Plan is to evaluate concurrency of actual airport development with the Master Plan and to determine future development concurrent with plans of the FDOT, Federal Aviation Administration (FAA), Florida Aviation System and any other plans prepared pursuant to Chapter 380, F.S.

Objective 2.7.2: All aviation facilities and related airport activity shall be located in areas that will not impede the safe and efficient operation of aviation services and service facilities.

Policy 2.7.2.1 - The St. Lucie County Comprehensive Plan, Future Land Use Element, shall delineate all existing airport locations and ensure that all adjacent areas are restricted to airport compatible land uses. The type and intensity of the adjacent land uses shall be determined based on the classification of the airport.

Airport compatible land uses are those uses which, based on the size and use of the particular airport, can coexist without major negative impacts to either the particular land use or the airport itself. In the case of "fly in" type residential subdivisions, these uses would include residential homes which under this section, would only apply to private residential airparks since there is no federal obligation for reasonable access. In the case of larger, more developed airports, these uses should be non-residential and be of a type and nature that should rely on a location adjacent to the airport for a portion of their business or be of a type and nature that would not be negatively affected by the airport operations. In no case should uses which violate federal grant assurances or any or any portion of the St. Lucie County LDC be considered airport compatible.

Policy 2.7.2.2 - St. Lucie County shall make every effort to purchase aviation easements, acquire land and residences and require compatible land uses in areas consistent with the high-noise areas as delineated in the Federal Aviation Regulations (FAR) Part 150 Study for Treasure Coast International Airport.

Policy 2.7.2.3 - St. Lucie County shall follow existing and projected noise levels as delineated in the FAR Part 150 Study completed for the Treasure Coast International Airport when considering requests for zoning changes and building permits for new construction or major reconstruction and prohibit construction of noise sensitive structures within the 65 dnl contour of the airport.

Policy 2.7.2.4 - St. Lucie County shall continue to maintain and enforce the adopted height restriction ordinance consistent with height restrictions as outlined the FAR Part 77 Study for applicable areas adjacent to the Treasure Coast International Airport. St. Lucie County shall follow this ordinance when considering requests for building permits for new construction or major reconstruction and prohibit construction of structures in violation of the height restrictions.

Policy 2.7.2.5 - St. Lucie County shall review proposed development within and surrounding the airport for compliance with the Treasure Coast International Airport Master Plan and the County's Comprehensive Plan.

Policy 2.7.2.6 - St. Lucie County shall continue to maintain and enforce, as part of its LDC, an airport overlay zoning district which will more clearly delineate restricted land uses within the airport approach paths.

Objective 2.7.3: The County shall strive to generate full use of all County-owned airport property for commercial and/or industrial use except on environmentally sensitive or "buffer" lands.

Policy 2.7.3.1 - Improve and maintain the airport's image with the establishment of an ongoing improvement program that addresses identification and directional signs, perimeter and interior/facility landscaping, facility rehabilitation, and general clean up.

Policy 2.7.3.2 - The County shall encourage the use of non-aviation-related lands or those lands identified as incompatible for commercial or industrial use at the airport for appropriate recreation and related public use consistent with federal and state safety/security regulations regarding airports.

Policy 2.7.3.3 - When applicable and funds are made available, review, revise and update as necessary the business plan for the Treasure Coast International Airport. This plan shall include a general marketing plan that will be designed to attract new and retain existing businesses at the airport.

Objective 2.7.4: All aviation facilities and related airport activities shall be located in areas which minimize adverse impacts on the environment.

Policy 2.7.4.1 - To the maximum extent feasible, aviation facilities or airport-related activities shall not be located in areas which would result in alteration, degradation or destruction of wetlands, coastal scrub habitat, the historic coastal ridge or other unique or special habitat protected by the State agencies such as the Florida Department of Environmental Protection (FDEP), South Florida Water Management District (SFWMD), and Florida Fish and Wildlife Commission.

Policy 2.7.4.2 - In the event that any wetland, coastal scrub habitat the historic coastal ridge or other unique or special habitat is degraded or destroyed, St. Lucie County shall ensure that mitigation will occur on the airport property to the maximum extent technically feasible through the restoration of degraded habitat or enhancement of functions and values provided by existing habitat consistent with requirements of State agencies such as FDEP, SFWMD, and Florida Fish and Wildlife Commission.

Policy 2.7.4.3 - All post-development runoff shall be managed consistent with SFWMD requirements.

Policy 2.7.4.4 - All aviation-related activities shall be in compliance with the ambient Air Quality Standards set forth by the Environmental Protection Agency.

Objective 2.7.5: All future development of the Treasure Coast International Airport and related aviation facilities shall be consistent with all elements of this Comprehensive Plan.

Policy 2.7.5.1 - Development at the airport including aviation, commercial, and industrial shall be consistent with all St. Lucie County codes and regulations.

Objective 2.7.6: Surface transportation to the Treasure Coast International Airport shall be coordinated with the transportation system identified in the Transportation Element of the St. Lucie County Comprehensive Plan so that levels of service are maintained.

Policy 2.7.6.1 - All access routes to the Treasure Coast International Airport will be integrated with all other modes of surface transportation so that Levels of Service, as provided elsewhere in this plan, are maintained.

Policy 2.7.6.2 - The County will coordinate intermodal management of surface and water transportation through the St. Lucie TPO to ensure the safe and efficient movement of goods and services while maintaining levels of service as provided elsewhere in this plan.

Goal 2.8: St. Lucie County shall continue to implement the Port Master Plan for the Port of Fort Pierce.

Objective 2.8.1: Continue to implement the Port Master Plan consistent with Section 163.3178(2)(a-k), Florida Statutes.

Policy 2.8.1.1 - The Port Master Plan shall address the environmental conditions of the Indian River Lagoon and its interaction with existing and proposed port activities.

Policy 2.8.1.2 - The Port Master Plan shall address all aspects of port management and operation including safety and security of commercial, industrial, recreational, and environmental activities.

Policy 2.8.1.3 - Coordinate with the City of Fort Pierce to ensure consistency with the City's Comprehensive Plan including the Port Sub Element and Coastal Management Element.

Policy 2.8.1.4 - Coordinate with the St. Lucie TPO and other appropriate local, state, and federal agencies to ensure adequate intermodal access and adequacy of public facilities and infrastructure.

Policy 2.8.1.5 - Develop funding mechanisms to implement the Port Master Plan such as a Tax Increment Financing District, Community Development Area, as well as exploring other funding mechanisms such as grants.

Policy 2.8.1.6 - Throughout the development of the Port Master Plan, ensure and encourage public participation of all affected parties through a formalized public participation process.

Policy 2.8.1.7 - Upon the completion of the Port Master Plan, make any appropriate amendments to the St. Lucie County Comprehensive Plan.

INTERGOVERNMENTAL COORDINATION ELEMENT
GOALS, OBJECTIVES AND POLICIES

Goal 8.1: Establish effective coordination measures among all pertinent public and quasi-public entities to best maintain St. Lucie County's quality of life and efficient use of resources.

Objective 8.1.1: St. Lucie County shall establish specific means of coordination with adjacent municipalities; with local, State, and Federal agencies that have permitting and regulating authority; and with quasi-public entities which provide services but lack regulatory authority in St. Lucie County; with County volunteer groups; and with interested residents who have notified the County of their interest.

Policy 8.1.1.1 - Coordinate with the Treasure Coast Regional Planning Council, the Florida Department of Economic Opportunity, and the cities of Port St. Lucie and Fort Pierce to complete the implementation of the Western Lands Study.

Policy 8.1.1.2 - Notify in writing the cities of Fort Pierce, Port St. Lucie, and St. Lucie Village of all applications for rezoning and land use amendments which are contiguous to their borders or within an area of planned annexation.

Policy 8.1.1.3 - Through the development review process, coordinate all development in the unincorporated County with local governments that are adjacent to or will be impacted by the development.

Policy 8.1.1.4 - Coordinate requests for development orders or permits, as appropriate, with adjacent counties, special districts, the Treasure Coast Regional Planning Council, the South Florida Water Management District and state and federal agencies.

Policy 8.1.1.5 - Charge County Administration with continuing responsibility for developing and enforcing an effective intergovernmental coordination program for St. Lucie County.

Policy 8.1.1.6 - Support the Treasure Coast Council of Local Governments to provide a regular formal forum in which to deal with issues unique to Martin, St. Lucie, Indian River, and Okeechobee Counties.

Policy 8.1.1.7 - Continue cooperative education programs between the County and regulatory agencies to inform the public and development community about applicable laws and regulations.

Policy 8.1.1.8 - Continue to review transportation service volumes and Levels of Service as they relate to State roads, and coordinate with the Florida Department of Transportation (FDOT) relative to State level of service standards.

Policy 8.1.1.9 - Coordinate with communities within the unincorporated area as they explore the impacts of incorporation.

Policy 8.1.1.10 - Continue working with the municipalities on an ongoing basis for the

evaluation of future development applications as well as for the adequate and cost effective provision of public services.

Policy 8.1.1.11 - The County shall continue to implement a joint planning agreement with the City of Fort Pierce on coordination of the city's annexation plans.

Policy 8.1.1.12 - Ensure that new development is in harmony with the physical, economic, and social development policies and goals of the adopted Treasure Coast Regional Policy Plan.

Policy 8.1.1.13 - The County shall cooperate with and assist the Florida Department of Environmental Protection, the U.S. Fish and Wildlife Service and the National Marine Fisheries Commission in the implementation of protective and recovery programs for protected and endangered listed species.

Policy 8.1.1.14 - The County shall support and, when appropriate, assist the conservation efforts of public and private organizations which protect and promote the protection of marine turtles and turtle nesting habitat.

Policy 8.1.1.15 - The County shall cooperate with the South Florida Water Management District to conserve water resources in emergencies and during declared water shortages.
Policy 8.1.1.16 - The County shall coordinate with the Florida Department of Environmental Protection (FDEP), the South Florida Water Management District (SFWMD), local municipalities and other appropriate agencies in alternative water supply planning efforts.

Policy 8.1.1.17 - St. Lucie County shall cooperate with the FDEP and other applicable agencies in their management programs that provide for the protection of native habitats within the County.

Policy 8.1.1.18 In cooperation with the Economic Development Council and the St. Lucie Chamber of Commerce, assist in implementation of the revised Vision for St. Lucie County.

Policy 8.1.1.19 - Encourage and support research and development opportunities and public facilities related to campus master plans with educational providers to encourage and enhance clustering of targeted industries.

Policy 8.1.1.20 - The County shall continue to work with other units of local government to provide for the reciprocal use of recreation, school and other facilities.

Policy 8.1.1.21 - St. Lucie County shall continue, with the assistance of the State of Florida and the St. Lucie County Historical Commission, to identify significant historic resources within the unincorporated areas which are in need of protection and develop management and restoration plans as appropriate.

Policy 8.1.1.22 - The County shall coordinate with the US Army Corps of Engineers on maintaining authorized channel depth.

Policy 8.1.1.23 - The County shall coordinate with the City of Fort Pierce, St. Lucie Village and the St. Lucie School Board to ensure compatibility of land uses adjacent to the Airport

and consistency with the Airport Master Plan.

Objective 8.1.2: The County shall coordinate the revision of Level of Service Standards for public facilities with any State, regional or local entity having operational and maintenance responsibility for such facilities; and coordinate on the provision of public facility improvements with the capital facility plans of any other governmental entity providing public facilities within St. Lucie County.

Policy 8.1.2.1 - Concurrency Management procedures, as outlined in the Capital Improvements Element, will continue to be implemented to ensure that required services will be available when needed.

Policy 8.1.2.2 - Use the Treasure Coast Regional Planning Council for informal mediation when conflicts with other local governments do not appear as if they would be otherwise resolved.

Policy 8.1.2.3 - Coordinate with the City of Fort Pierce, the City of Port St. Lucie, the Florida Department of Transportation, St. Lucie Transportation Planning Organization, and Martin County and Treasure Coast Regional Planning Council to implement and revise the Go2040 Long Rangeł Transportation Plan.

Policy 8.1.2.4 - Coordinate with City of Fort Pierce, the City of Port St. Lucie, the Florida Department of Transportation, St. Lucie Transportation Planning Organization, Martin County and the Martin Metropolitan Planning Organization on the Regional Transit Development Plan for the Port St. Lucie Urbanized Area.

Policy 8.1.2.5 - The County shall coordinate with pertinent State and regional agencies to identify natural area greenways and wildlife corridors to link existing public parks, preserve areas and similar public areas for conservation and habitat preservation purposes.

Policy 8.1.2.6 - The County shall coordinate with the Florida Department of Environmental Protection to connect small package plants to central water and sewer services.

Policy 8.1.2.7 - Continue to coordinate with the South Florida Water Management District on implementation of the Comprehensive Everglades Restoration (CERP)/IRL South Plan and Indian River Lagoon Surface Water Improvement Program (IRL SWIM) Plan.

Policy 8.1.2.8 - The County shall monitor and review campus master plans, particularly with regard to their probable effects on public facilities.

Policy 8.1.2.9 - The County shall coordinate with the St. Lucie County Fire District on development of level of service standards for construction of fire facilities to accommodate existing and future development.

Objective 8.1.3: The Planning and Development Services Director shall continue to be responsible for coordination of County activities with the comprehensive plans of adjacent municipalities, St. Lucie County, the adjacent counties, and other units of local government such as the School Board providing services but not having regulatory authority over the use of land.

Policy 8.1.3.1 - Continue to receive and review copies of all proposed plan or rezoning

amendments for areas adjacent to St. Lucie County boundaries.

Policy 8.1.3.2 - Continue to request liaisons regarding proposed plan or rezoning amendments with the St. Lucie County School Board, St. Lucie County Fire District, South Florida Water Management District, Treasure Coast Regional Planning Council, Fort Pierce Utilities Authority, Florida Power and Light, and adjacent local governments.

Policy 8.1.3.3 - In conjunction with other affected parties, including interested public groups, continue to evaluate existing interlocal agreements when the Capital Improvements Element is undergoing annual review to determine if current funding is proportional to services rendered.

Policy 8.1.3.4 - Continue to coordinate closely with the School Board on the location of future school locations in relation to the projected population and land use.

Policy 8.1.3.5 - Continue to support joint use agreements between the County and the School District.

Policy 8.1.3.6 - St. Lucie County in conjunction with the St. Lucie County School District shall implement the Public School Facilities Element and interlocal agreement for public schools facility planning. The Public School Facilities Element and the interlocal agreement state principles and guidelines to ensure coordination of the County's Comprehensive Plan with the plans of the School Board and describe the joint processes for collaborative planning and decision making and population projections, school siting, and the local and extension of public facilities subject to concurrency.

Objective 8.1.4: The County, through County Administration, shall continue intergovernmental coordination procedures to ensure full consideration is given to the impacts of developments proposed in the County Comprehensive Plan on other governmental entities and vice versa.

Policy 8.1.4.1 - Continue to coordinate the impacts of development and management of the St. Lucie River, Indian River Lagoon (including the Intracoastal Waterway), Savannas, and other natural resources with the South Florida Water Management District, Florida Department of Environmental Protection, Florida Fish and Wildlife Conservation Commission, and other relevant agencies.

Policy 8.1.4.2 - Continue to work with the Treasure Coast Regional Planning Council to identify regional issues and to assist in the periodic updating of the Strategic Regional Policy Plan.

Policy 8.1.4.3 - Agree to abide by regulations of the municipalities when developing within their corporate limits.

Objective 8.1.5: Update as needed planned port activities and development in coordination with the City of Fort Pierce, the Florida Inland Navigation District and the Florida Seaport Transportation and Economic Development.

Policy 8.1.5.1 - The Board of County Commissioners shall continue to coordinate with relevant governmental entities~~,~~ and interested public groups to resolve problems related, but not limited to, transportation, development and land use, natural and man-made

hazards and disasters, and protection of natural resources at the port.

Objective 8.1.6: Ensure coordination in the designation of new dredge spoil sites located within the County's jurisdiction.

Policy 8.1.6.1 - Coordinate with the Florida Inland Navigational District, Florida Department of Environmental Protection, South Florida Water Management District, U.S. Army Corps of Engineers, the City of Fort Pierce and other relevant agencies to identify and regulate all existing and future spoil dredge sites within the County.

Policy 8.1.6.2 - Resolve conflicts related to dredge spoil sites through a dispute resolution process.

Objective 8.1.7: The County shall strive to increase community resiliency through continued coordination and cooperation.

Policy 8.1.7.1 – St. Lucie County shall coordinate with municipalities, neighboring counties, regional, State, and federal government agencies, universities, not-for-profit organizations, non-governmental organizations and private organizations to coordinate the updating and analyzing data regarding vulnerability and storm impacts, and to exchange data and develop coordinated strategies to address energy conservation and mitigation and adaptation strategies.

Policy 8.1.7.2 – St. Lucie County shall continue to support public education and outreach programs addressing issues including but not limited to: energy efficiency; water conservation; solid waste reduction and recycling; native landscaping; air quality; greenhouse grass reduction; and adaptation and response planning.

Policy 8.1.7.3 – The County shall coordinate with regional agencies in the identification of modeling resources and development of adaptation strategies.

Policy 8.1.7.4 – The County shall encourage partnerships between local government agencies, universities, professionals and practitioners to foster an environment for connecting scientific research and education with practical applications that will contribute to the resiliency and adaptation within the built and natural environments.

Capital Improvements Element
Goals, Objectives and Policies

Goal 9.1: To provide public facilities necessary to achieve and maintain adopted level of service standards concurrent with demand through fiscally sound capital improvement programming and budgeting.

Objective 9.1.1: Define types of public facilities, establish standards for Level of Service for each type of public facility, and determine what capital improvements are needed in order to achieve and maintain standards (as well as to repair or replace existing public facilities).

Policy 9.1.1.1 - Public facilities means the capital improvements and systems of each of the following: roads, mass transit, stormwater management, potable water, sanitary sewer, solid waste, parks and recreation, libraries, jails, courthouse facilities, administrative facilities, mosquito control, Treasure Coast International Airport, public education and shall include land, structures, the initial furnishings and equipment, design, permitting, and construction costs.

Policy 9.1.1.2 - The County shall establish standards for Levels of Service for public facilities, as follows:

a. Category A Public Facilities are roads, stormwater management, potable water, sanitary sewer, solid waste, schools, parks and recreation facilities used for concurrency all of which are addressed in other elements of this Comprehensive Plan.

b. Category B Public Facilities are libraries, administration, mosquito control, and Treasure Coast International Airport as owned, operated or developed by St. Lucie County. Category B Public Facilities are not used for concurrency purposes as provided for in the Concurrency Management System.

Policy 9.1.1.3 - The quantity of public facilities necessary to eliminate existing deficiencies and to meet the needs of future growth shall be determined for every type of public facility by the following calculation:

$$Q = (S \times D) - E.$$

Where: Q is the quantity of public facility needed, S is the standard for Level of Service, D is the demand, such as the population, and E is the inventory of existing facilities.

The calculation will be used for existing demand in order to determine existing deficiencies. The calculation will be used for projected demand in order to determine needs of future growth. The estimates of projected demand will account for demand that is likely to occur from previously issued development orders as well as future growth. Public facilities to serve demand from previously issued development orders shall be included in "D" (demand) in the preceding calculation.

Policy 9.1.1.4 - The public facility formula will be used for current demand in order to determine existing deficiencies. The public facility formula will be used for projected

demand in order to determine needs of future growth. The estimates of projected demand will account for demand that is likely to occur from previously issued development orders as well as future growth.

Policy 9.1.1.5 - Demand that is likely to occur from previously issued development orders which require a Certificate of Capacity will be addressed by the County "reserving" capacity of public facilities for development orders that were issued by the County prior to the adoption of this Comprehensive Plan and that are determined to have vested rights for purposes of the concurrency management system.

Policy 9.1.1.6 - The County requires persons with legitimate and substantial vested rights to continue development in good faith in order to reserve capacity of public facilities. The County will not reserve capacity of public facilities for previously issued development orders that do not have vested rights for purposes of concurrency management, and/or which do not continue development in good faith.

Policy 9.1.1.7 - There are three circumstances in which the standards for Levels of Service are not the exclusive determinant of need for a public facility:

a. Calculated needs for public facilities in coastal high hazard areas are subject to all limits and conditions in Coastal Management Element of this Plan (see Policy 9.1.5.1).
b. Replacement of obsolete or worn out facilities, and repair, remodeling and renovation, will be determined by the Board of County Commissioners upon the recommendation of the County Administrator.
c. Public facilities that provide Levels of Service in excess of the standards adopted in this Plan may be constructed or acquired at any time as long as both conditions 1) and 2) and at least one of the conditions 3) through 5) are met:
    1) The facility does not make financially infeasible any public facility of the same type that is needed to achieve or maintain the standards for Levels of Service adopted in this Plan,
    2) The facility does not contradict, limit or alter the achievement of the overall goals, objectives and policies of this Plan,
    3) The excess capacity is an integral part of a capital improvement that is needed to achieve or maintain standards for Levels of Service,
    4) The excess capacity provides economies of scale making it less expensive than a comparable amount of capacity if acquired at a later date,
    5) The asset acquired is land that is environmentally sensitive, or designated by the County as necessary for conservation, recreation or protection of high hazard coastal areas.

Policy 9.1.1.8 - Capital improvement projects that increase or maintain Category A level of service standards shall be included in the regular Schedule of Capital Improvements contained in this Capital Improvements Element.

Policy 9.1.1.9 - The determination of location of improvements to expand public facilities will take into consideration projected growth patterns. Where applicable, public facility improvements will be coordinated with the capital facility plans of any other governmental entity providing public facilities within St. Lucie County.

Policy 9.1.1.10 - The following public facility improvements within a facility type are to be considered in the following order of priority, as determined by the Board of County Commissioners:

a. Replacement of obsolete or worn-out facilities, including repair, remodeling and renovation of facilities that contribute to achieving and/or maintaining Levels of Service.
b. New facilities that reduce or eliminate existing deficiencies in Levels of Service.
c. New public facilities, and improvements to existing public facilities, that eliminate public hazards not otherwise eliminated by improvements prioritized according to Subsections A. or B., above.
d. New or expanded facilities that provide the adopted Levels of Service for new development and redevelopment during the next five fiscal years, as updated by the annual review of this Capital Improvements Element. St. Lucie County may acquire land or right-of-way in advance of the need to develop a facility for new development. The location of facilities constructed pursuant to this Subsection shall conform to the Future Land Use Element, and specific project locations shall serve projected growth areas within the allowable land use categories.
e. Improvements to existing facilities, and new facilities that significantly reduce the operating cost of achieving and/or maintaining Levels of Service.
f. New facilities that exceed the adopted Levels of Service for new growth during the next five fiscal years by either:

1) Providing excess public facility capacity that may be needed by future growth beyond the next five fiscal years, or
2) Providing higher quality public facilities than are contemplated in the County's normal design criteria for such facilities.

g. Facilities not described in Subsections A. through E., above, but which the County is obligated to complete, provided that such obligation is evidenced by a written agreement the County executed prior to July 31, 1990.
h. Project evaluation may also involve additional criteria that are unique to each type of public facility, as described in other elements of this Comprehensive Plan.
i. The County shall review the best available data and science in its policy and planning decisions for public facilities, recognizing resiliency and the need to withstand increased storm surge and flooding in evaluating public infrastructure decisions.

Policy 9.1.1.11 - When any County arterial or collector road or segment of such a road is determined to be operating one Level of Service below its adopted standard, the County shall exercise one of the following.

a. Enter into a contract that will result in the addition of capacity to the facility within six months (or longer if under a Development Agreement) of the determination that the facility is operating below its Level of Service Standard, and delay issuance of development orders until the contract has been executed;
b. Enter into an enforceable development agreement that specifies that new development will provide for the upgraded facility;
c. Amend the Comprehensive Plan to lower the Level of Service at the next opportunity; or
d. Not issue any development permits in the impacted area.

The purpose of providing for the temporary operation below the adopted Level of Service is to provide a reasonable period of time to restore the Level of Service through appropriate improvements to roads that are forecast to operate at the adopted Level of

Service, but which may unexpectedly operate at a lower Level of Service. All development orders issued pursuant to this Policy shall be conditioned on the attainment of the adopted Level of Service. However, this Policy shall not impair the County's right to refuse to issue a development order pursuant to this Policy if the Board of County Commissioners determines that the resultant lower Level of Service caused by the proposed development order would constitute a threat to public health or safety.

Policy 9.1.1.12 - The standards for Levels of Service for Category A Public Facilities shall be as follows:

Drainage Level of Service Standards			
Structure/Facility	10 yr., 24 hr.	10 yr., 72 hr.	100 yr., 72 hr.
Houses/Building	<FFE[1]	<FFE	<FFE
Evacuation Routes[2]	1/2W[3]	<0.5 ft.	<1.0 ft.
Arterial Roads[4]	1/2W	<0.5 ft.	<1.0 ft.
Other Roads[5]	<0.5 ft.	<0.75 ft.	<1.5 ft.
1	Peak flood stages less than first (finished) floor elevation based on available data.		
2	Evacuation routes as defined by the County and the Treasure Coast Regional Planning Council.		
3	Flooding limited to each side of the road such that one-half of the roadway width (W) or one travel lane is not flooded.		
4	Roads with four or more travel lanes, or roads that are only access to a respective area/development (secondary evacuation routes).		
5	Other roads which are not critical for evacuation, but which will be used to estimate encroachment on FFEs.		

Non-SIS Facilities

Facility Type	Peak Hour/Peak Direction	Inside a Transportation Concurrency Management Area[1]	Constrained /Backlogged Facility
Non-State Roadway (Local)	D	D	Maintain[2]
Non-State Roadway (Major City/County Road)	D	E[3]	Maintain
Non-State Roadway (Arterial)	E[3]	E[3]	Maintain
Other State Roads			
Multi-Lane (Rural/Urban)			
Rural	B	N/A	N/A
Urban	D		Maintain[2]
Two-Lane (Rural/Urban)			
Rural	C	N/A	N/A
Urban	D	N/A	Maintain[2]

(Notes)	Level of Service Standards inside of parentheses apply to general use lanes only when exclusive through lanes exist.
1.	Transportation Concurrency Management Areas are geographically compact areas designated in local government comprehensive plans where intensive development exists or is planned in a manner that will ensure an adequate level of mobility and further the achievement of identified important state planning goals and policies, including discouraging the proliferation of urban sprawl, encouraging the revitalization of existing downtowns and designated redevelopment areas protecting natural resources, protecting historic resources, maximizing the efficient use of existing public facilities, and promoting public transit, bicycling, walking and other alternatives to the single occupant automobile.
2.	Maintain means continuing operating conditions at a level such that significant degradation does not occur based on conditions existing at the time of local government comprehensive plan adoption. For roadways in rural areas, transitioning urbanized areas, urban areas or communities, significant degradation means (1) an increase in average annual daily traffic volume of 5 percent below the speed, of the adopted LOS standard. For roadways in urbanized areas, for 100th highest hour of 5 percent below the speed, of the adopted LOS standard. For roadways in urbanized areas, for roadways parallel to exclusive transit facilities, or for intrastate roadways in transportation concurrency management areas, significant degradation means (1) an increase in average annual daily traffic volume of 10 percent above the maximum service volume, or (2) a reduction in operating speed for the peak directions in the 100th highest hour of 10 percent below the speed, of the adopted LOS standard. For other state roads in transportation concurrency management areas, significant degradation means that amount defined in the transportation mobility element. For constrained roadways meeting or exceeding the level of service standards, (maintain) does not apply until the roadway is operating below the applicable minimum level of service standard.
3.	The County wishes to maintain a LOS D or better for all roadways but recognizes that allowing a LOS E allows development to proceed while a minimum of LOS D might cause severe constraints on private development. However, a LOS D will be utilized for these roadways when establishing transportation impact fees.

SIS Facilities

SIS Roadway Corridors	Roadway Segment	LOS Standard
I-95	Martin County Line to Gatlin Boulevard	C
I-95	Gatlin Boulevard to St. Lucie Boulevard	C
I-95	St. Lucie Boulevard to Midway Road	C
I-95	Midway Road to SR 70/ Okeechobee Road	C
I-95	SR 70/ Okeechobee Road to SR 68/ Orange Avenue	D
I-95	SR 68/ Orange Avenue to SR 614/ Indrio Road	D
I-95	SR 614/ Indrio Road to Indian River County Line	C
Florida's Turnpike	Martin County Line to Becker Road	C
Florida's Turnpike	Becker Road to Port St. Lucie Boulevard	C
Florida's Turnpike	Port St. Lucie Boulevard to SR 70/ Okeechobee Road	C
Florida's Turnpike	SR 70/ Okeechobee Road to Indian River County	B
SR 70/ Okeechobee Road	Okeechobee County Line to Carlton Road	B
SR 70/ Okeechobee Road	Carlton Rod to McCarthy Road	B
SR 70/ Okeechobee Road	McCarthy Road to Florida's Turnpike	B
SR 70/ Okeechobee Road	Florida's Turnpike to I-95	C

Public Facility	Level of Service	Service Area
Potable Water	100 gallons per capita per day 117 gallons per capita per day (FPUA)	Unincorporated areas
Sanitary Sewer	100 gallons per capita per day 110 gallons per capital per day (FPUA)	Unincorporated areas
Solid Waste	3.88 pounds of Class I solid waste per capita per day at landfill County-wide 0.81 pounds of construction and demolition debris per capita County-wide	Countywide
Parks & Recreation	5 acres of community parks/1,000 population	Unincorporated areas
	2.5 acres of regional parks/1,000 population	Countywide
	21.2 acres of Resource-based parks/1,000 population	Countywide
Schools	100% of program capacity for all schools	Countywide

Policy 9.1.1.13 - The County shall amend the Adequate Facilities Ordinance to include school concurrency requirements within one year of adoption of this element.

Policy: 9.1.1.14 - The standards for Level of Service for Category B Public Facilities shall be as follows:

	Level of Service	**Service Area**
Library	0.525 square feet of library space per capita	Countywide
	1.45 books per capita	Countywide
Mosquito Control	Maintain state standards for controlling adult mosquitoes when they exceed 25 per night.	Countywide
Airport	Provide for up to 369,192 operations per year.	NA

Policy 9.1.1.15 - Capital Improvements for Category B Public Facilities shall be included in this element and updated annually in order to monitor maintenance of Category B level of service standards.

Policy 9.1.1.16 - The County shall maintain the provision of Administrative and Maintenance space as the County grows.

Policy 9.1.1.17 - The County shall continue to require new development to meet Level of Service Standards for both on- and off-site improvements, including local streets, water and sewer connection lines, stormwater management facilities, and open space.

Policy 9.1.1.18 - A Capital Improvement is defined as follows: a major nonrecurring expenditure that includes one or more of the following:

1. Any acquisition of land for a public purpose; or
2. Any construction of a new facility (a public building, or water lines, playfield or the like) or an addition to, or extension of such a facility; or
3. A nonrecurring rehabilitation (something which is infrequent and would not be considered annual or other recurring maintenance) or major repair of all or a part of a building, its grounds, or a facility, or equipment, provided that the cost is $50,000 or more and the improvement will have a useful life of ten years or more;
4. Purchase of major equipment items with a cost, individually or in total, of $100,000.00 or more, which have a useful life of ten years or more;
5. Any planning, feasibility, engineering or design study related to an individual capital project or to a program that is implemented through individual capital improvement projects; or
6. Any expenditure that pertains to a physical asset which has been identified as an existing or projected need in one or more individual Comprehensive Plan amendments.

Policy 9.1.1.19 - The County adopts by reference the St. Lucie School District Five Year District Facilities Work Program.

Fiscal Analysis of Estimated Transportation Capital Improvements (excluding I-95)						
Committed Funding						
Funding Source	FY 06-07	FY 07-08	FY 08-09	FY 09-10	FY 10-11	
Balance From Previous Year	$0	$0	$1,453,809	$2,907,618	$4,361,427	
Impact Fees Credited for Roadways*	$0	$1,453,809	$1,453,809	$1,453,809	$3,971,286	
General Fund Allocation	$0	$0	$0	$0	$0	
Developers' Agreements	$0	$0	$0	$0	$0	**
Special District/MSTU	$0	$0	$0	$0	$15,934,613	**
Grants	$0	$0	$0	$0	$6,700,000	***
FDOT Adopted Work Plan					$147,145,341	
Total Funding	$0	$1,453,809	$2,907,618	$4,361,427	$178,112,667	
Capital Improvements Cost	$0	$1,453,809	$0	$0	$178,112,667	
Balance	$0	$1,453,809	$2,907,618	$4,361,427	$0	
* Per unit impact fee for roadways/ schedule 3 of Chapter 10 of submitted data and analysis						
** Developments presently in the approval process but not yet finally approved, are anticipated to construct roadway improvements that will reduce the amount of funding needed from the Special District/MSTU. Special District funding to be used only to the extent that impact fees, proportionate fair-share contributions, and other developer contributions are inadequate to fund scheduled capital improvements.						
***Grants from TRIPS, Council on Aging [this table was last updated in 2007]						

Objective 9.1.2: Provide needed public facilities that are within the ability of the County to fund the facilities from County revenues, development's proportionate share and contributions and grants or gifts from other sources.

Policy 9.1.2.1 - The estimated costs of all needed capital improvements shall not exceed conservative estimates of revenues from sources that are available to the County pursuant to or not precluded by current statutes, and which have not been rejected by referendum, if a referendum is required to enact a source of revenue.

Policy 9.1.2.2 - The County will allocate the costs of new public facilities on the basis of the benefits received by existing and future residents so that current residents will not subsidize new development.

Policy 9.1.2.3 – Both existing and future development contribute to the costs for the provision of public facilities, as follows:

A. Future development. Future development shall pay for 100 percent of the capital improvements needed to address the impact of such development. Future development's proportion of the cost of capital improvements needed to address the impact of such development shall be determined, in part, by the County's impact fee ordinances and supporting studies, which shall include credits for other payments by future development. Impact fees, enterprise fund user charges, connection fees, and other user fees paid by new development shall be reviewed every two years to assure that provision of capital improvements needed to address the impact of future development will not increase ad valorem tax rates. Upon completion of construction, "future" development becomes "present" development, and shall contribute to paying the costs of the replacement of obsolete or worn out facilities as described in subsection B below.

   Future development's payments may take the form of, but are not limited to,

voluntary contributions for the benefit of any public facility, impact fees, capacity fees, dedications of land, provision of public facilities, and future payments of user fees, special assessments and taxes. Future development shall not pay impact fees for the portion of any capital improvements that reduces or eliminates existing deficiencies.

B. Existing development. Existing development shall pay for the capital improvements to facilities that reduce or eliminate existing deficiencies, and some or all of the replacement of obsolete or worn out facilities.

   Existing development's payments may take the form of user fees, special assessments, and taxes.

Policy 9.1.2.4 - Both existing and future development may have part of their costs paid by grants, entitlements or provision of public facilities from other levels of government and independent districts.

Policy 9.1.2.5 - Capital improvements may be financed, and debt shall be managed as follows:

a. Public facilities financed by County enterprise funds (i.e., automated services, potable water, sanitary sewer and solid waste) shall be financed by:
   1) Debt to be repaid by user fees and charges for enterprise services, or
   2) Current assets (i.e., reserves, surpluses and current revenue), or
   3) A combination of debt and current assets.

b. The financing of the capital cost of public facilities with non-enterprise funds (i.e., roads, stormwater management and parks) shall be from current revenue, equity or debt, or a combination of current revenue, equity and debt, whichever may be most cost effective and consistent with prudent asset and liability management, given the useful life of the assets to be financed and efficient use of the County's debt capacity.
c. All development orders issued by the County which require public facilities that will be financed by debt shall be conditioned on the issuance of the debt, or the substitution of a comparable amount of non-debt revenues.

Policy 9.1.2.6 - The County shall not provide a public facility, nor shall it accept the provision of a public facility by others, if the County is unable to pay for the subsequent annual operating and maintenance costs of the facility.

Policy 9.1.2.7 - In the event that sources of revenue listed in the Schedule of Capital Improvements of this Element require voter approval in a local referendum that has not been held, or a referendum is held and is unsuccessful, this Comprehensive Plan will be amended to include one or more new revenue sources which shall not increase the County's existing debt. Alternatively, this Comprehensive Plan may be amended to adjust for the lack of revenues, in any of the following ways:

1. Increase the use of other sources of revenue.
2. Reduce the standard for levels of service for one or more public facilities.
3. Decrease the cost, and therefore the quality, of some types of public facilities while retaining the quantity of the facilities that is inherent in the standard for Levels of Service.
4. A combination of the above alternatives.

Policy 9.1.2.8 - All development orders issued by the County which require Category A public facilities that will be financed by sources of revenue which require voter approval in a local referendum that is yet to be held shall be conditioned on the referendum being approved, or the substitution of other sources of revenue to ensure that facilities are provided concurrent with need.

Policy 9.1.2.9 - Recognizing that future funding opportunities may be less than or greater than originally anticipated and that overall the County will operate within a constrained financial setting, the first priority for allocation of monies for capital purposes is for the maintenance of the County's present facilities so as to ensure proper protection of the investments in such facilities.

Policy 9.1.2.10 - The County shall prudently limit the amount of debt it assumes for capital improvements or other purposes. At a minimum, the County shall not assume debt obligations which would result in the County exceeding the debt ratios established by state law.

Objective 9.1.3: Within the County's financial capability, provide needed capital improvements for repair or replacement of obsolete or worn out facilities, eliminating existing deficiencies, and meeting the needs of future development and redevelopment caused by previously issued and new development orders.

Policy 9.1.3.1 - The County shall provide, or arrange for others to provide, the public facilities listed in the Schedule of Capital Improvements of this Capital Improvements Element.

Policy 9.1.3.2 - Pursuant to Section 163.3177, Florida Statutes, the Schedule of Capital Improvements may be adjusted by ordinance not deemed to be an amendment to the Comprehensive Plan for corrections, updates, and modifications concerning costs; revenue sources; acceptance of facilities pursuant to dedications which are consistent with the plan; or the date of construction of any facility enumerated in the Schedule of Capital Improvements.

Policy 9.1.3.3 - The County shall adopt a capital budget as part of the annual budgeting process that includes all the capital improvements projects listed in the Schedule of Capital Improvements for expenditure during the appropriate fiscal year, except that the County may omit from its annual budget any capital improvements for which a binding agreement has been executed with another party to provide the same project in the same fiscal year.

Policy 9.1.3.4 - The County shall utilize the following implementation schedule to aid state requirements for annual updates and to ensure level of service standards are maintained:

- Preliminary meetings discussion of capital improvement need during Strategic Planning Committee meeting in November.
- Prepare capital improvement plan in coordination with County budget for approval in April.
- Capital improvement plan/budget workshop in July with the Board of County Commissioners for discussion of proposed projects and financing
- Public hearing on capital improvement plan/budget in September.
- Revise Schedule of Capital Improvements and update Capital Improvement Element in October.

Objective 9.1.4: Coordinate land use decisions and available or projected fiscal resources with a schedule of capital improvements that maintains adopted Level of Service Standards and meets existing and future facility needs.

Policy 9.1.4.1 - All Category A public facility capital improvements shall be consistent with the goals, objectives and policies of the appropriate elements of this Comprehensive Plan.

Policy 9.1.4.2 - The County shall integrate its land use planning and decisions with its plans for public facility capital improvements by using the policies listed in this section of the Capital Improvements Element. The location of, and Level of Service provided by projects in the Schedule of Capital Improvements shall maintain adopted standards for Levels of Service for existing and future development in a manner and location consistent with the Future Land Use Element of this Comprehensive Plan. Individual land use decisions shall be consistent with the Comprehensive Plan and the ability of the County to provide and maintain Level of Service.

Policy 9.1.4.3 - The County shall continue to implement its Land Development Code for adequate public facilities to provide for a system of review of various applications for development orders which applications, if granted, would impact the Levels of Service of Category A and issue Certificates of Capacity. Such system of review shall assure that no final development order shall be issued which results in a reduction in the Levels of Service. The Land Development Code shall address the following, at a minimum, in determining whether a development order can be issued.

A. No final development order shall be issued by the County unless there shall be sufficient capacity of Category A public facilities to meet the standards for Levels of Service for the existing and committed development and for the proposed development according to the following deadlines:
   1) Prior to the issuance of a building permit for the following public facilities:
      (a) Potable water.
      (b) Sanitary sewer.
      (c) Solid waste.
   2) Prior to the issuance of the building permit, assurance as to the completion for the following public facilities within the next twelve months must be provided:
      (a) Arterial and collector roads.
      (b) Storm water management.

B. The capacity of Category A public facilities shall be determined for preliminary development orders according to one of the following:
   1) The applicant may request a determination of such capacity as part of the review and approval of the preliminary development order provided that:
      (a) The determination that such capacity is available shall apply only to specific uses, densities, and intensities based on information provided by the applicant, and included in the development order, and
      (b) The determination that such capacity is available shall be valid for development that is completed within a period:
         (1) Not to exceed two years, or
         (2) Any period of time acceptable to the County and the applicant, provided that the period of time is explicitly set forth in a binding development agreement as authorized by Florida Statutes, and

the applicant provides one or more of the following assurances, acceptable to the County in form and amount, to guarantee the applicant's pro rata share of the County's financial obligation for public facilities which are constructed by the County for the benefit of the subject property:

[a] Performance bond,
[b] Irrevocable letter of credit,
[c] Prepayment of impact fees,
[d] Prepayment of capacity (i.e., prepayment of capacity connection charges), or
[e] Formation of a Community Development District pursuant to Chapter 190, Florida Statutes.

(c) Whenever an applicant's pro rata share of a public facility is less than the full cost of the facility, the County shall do one of the following:
  (1) Contract with the applicant for the full cost of the facility, including terms regarding reimbursement of the applicant for costs in excess of the applicant's pro rata share, or
  (2) Obtain assurances similar to those in subsection (b)[2] from other sources, or
  (3) Amend this Comprehensive Plan to modify the adopted standard for the Level of Service so as to reduce the required facility to equal the applicant's needs.

(d) Pursuant to (a) and (b), above, no further determination of capacity for the subject property shall be required prior to the expiration of the determination of capacity for the preliminary development order, except that any change in the density, intensity or land use that requires additional public facilities or capacity is subject to review and approval or denial by the County. The determination of capacity for the preliminary development order shall be considered a reservation of capacity until the end of the time periods specified in Policy 9.1.4.3.(B)(1)(b) above, or until the County is notified in writing by the applicant that the project will not be undertaken during those time periods and that the applicant voluntarily yields the reserved capacity. Public facility capacity that is determined to be available pursuant to this subsection shall be reserved on behalf of the preliminary development order in such a manner as to prevent the overuse or over commitment of the same public facility capacity.
  (1) Notwithstanding the procedures outlined in Policy 9.1.4.3.(B)(1), all approvals at the preliminary development order stage shall include a condition that the final development order containing a specific plan for development, including the densities and intensities of development, will not be issued unless public services and facilities exist or are assured to be available to meet or exceed the Level of Service Standards concurrent with the impacts of development.
  (2) The applicant may elect to request approval of a preliminary development order without a determination of capacity of Category A public facilities provided that any such order is issued subject to requirements in the applicable land development regulation or to specific conditions contained in the preliminary development order that:

(e) Final development orders for the subject property are subject to a determination of capacity of Category A public facilities,
(f) No rights to obtain final development orders, nor any other rights to develop the subject property have been granted or implied by the County's approval of the preliminary development order without determining the capacity of public facilities.
(g) Applicants for development orders may offer to provide public facilities at the applicant's own expense in order to ensure sufficient capacity of Category A public facilities, as determined according to Paragraphs a and b, above. Development orders may be issued subject to the provision of public facilities by the applicant subject to both of the following requirements:
    (1) The County and the applicant enter into an enforceable development agreement which shall provide, at a minimum, a schedule for construction of the public facilities and mechanisms for monitoring to insure that the public facilities are completed concurrent with the impacts of the development, or the development will not be allowed to proceed.
    (2) The public facilities are contained in the Schedule of Capital Improvements of the Comprehensive Plan.
(h) If public facilities are provided at an applicant's own expense, as allowed in subparagraph (c) above, the facility shall not be provided later than the fiscal year for which that facility was programmed in the Schedule of Capital Improvements.

Policy 9.1.4.4 - A preliminary development order is defined as a DRI Development approval, zoning approval, preliminary plat approval, preliminary development plan approval, Plan amendment approval, preliminary Planned Unit Development approval, or any other development order other than a final development order and for which there are not found to be any impacts of development.

Policy 9.1.4.5 - The impacts of development on public facilities within St. Lucie County are found to occur at the same time as development authorized by a final development order. The Board defines final development order as a building permit, conditional use approval, Board of Adjustment approval, or any other development order which has an immediate and continuing impact upon the infrastructure. The County shall determine, prior to the issuance of final development orders, whether or not there is sufficient capacity of Category A public facilities to meet the standards for Levels of Service for existing population and the proposed development concurrent with the proposed development.

Policy 9.1.4.6 - The Land Development Code of the County shall provide that applications for development orders that are denied because of insufficient capacity of public facilities may be resubmitted after a time period to be specified in the Land Development Code. Such time period is in lieu of, and not in addition to, other minimum waiting periods imposed on applications for development orders that are denied for reasons other than lack of capacity of public facilities. Land Development Code shall require that development commence within a specified time after a development order is issued, or the development order shall expire, subject to reasonable extensions of time based on criteria included in the regulations. The Land Development Code also shall provide for the County to reserve capacity for approved final development orders for a specified period of time.

Policy 9.1.4.7 - Impact fee ordinances shall require the same standard for the Level of Service as is required by the Comprehensive Plan.

Policy 9.1.4.8 - The annual budget shall include in its capital appropriations all projects in the Schedule of Capital Improvements that are planned for expenditure during the next fiscal year.

Policy 9.1.4.9 - The County's annual multiyear Capital Improvement Program (CIP) shall be prepared in conjunction with the annual review and update of the Capital Improvements Element. The CIP shall contain all of the projects listed in the updated Schedule of Capital Improvements.

Policy 9.1.4.10 - The Capital Improvements Element shall be reviewed and updated annually. Beginning in April of each year, the element shall be updated in conjunction with the County's budget process and the release of the official population estimates and projections by the Office of Economic and Demographic Research (OEDR). Projections from the Bureau of Economic and Business Research (BEBR) of the University of Florida may be utilized as well. The update shall include:

A. Revision of population projections to reflect both the official projections from OEDR and formally adopted local estimates prepared by the Planning and Development Services Department,
B. Update of inventory of public facilities,
C. Update of costs of public facilities,
D. Update of Public Facilities Requirements analysis (actual Levels of Service compared to adopted standards),
E. Update of revenue forecasts,
F. Revision and development of capital improvement projects for the next five fiscal years,
G. Update of analysis of financial capacity, and
H. Update of analysis of any pending public education facility impacts on infrastructure.
I. Review of relevant data and science for storm events, storm surge and flooding. Evaluation of the costs and benefits of adaptation alternatives in the location and design of new infrastructure as well as the fortification or retrofitting of existing infrastructure.
J. Review of the most energy efficient technologies available and cost savings related to reduced energy needs, operations and maintenance saved.

Policy 9.1.4.11 - The County shall establish and maintain a Concurrency Implementation and Monitoring System. The System shall consist of the following components:

A. Annual report on the capacity and Levels of Service of public facilities. This report will function as a public information source to summarize the actual capacity of public facilities, and forecast the capacity of public facilities for each of the five succeeding fiscal years. The report shall be prepared in conjunction with the updated Schedule of Capital Improvements. The annual report shall also summarize and forecast capacities and Levels of Service for comparison to the standards adopted in the Capital Improvement Element, but such portion of the annual report shall be for information purposes only and shall not pertain to the issuance of development orders by the County.
B. Public Facility Capacity Review. A separate record shall be maintained during each

fiscal year to indicate the cumulative impacts of all development orders approved during the fiscal year-to-date on the capacity of public facilities as set forth in the most recent annual report on capacity and Levels of Service of public facilities.

C. Concurrency Implementation Strategies. The County shall annually review the concurrency implementation policies that are incorporated in this Capital Improvements Element:
   (1) Standards for Levels of Service are phased to specific fiscal years in order to provide clear, unambiguous standards for issuance of development orders.
   (2) Standards for Levels of Service are applied within appropriate geographical areas of the County. Standards for County-wide public facilities are applied to development orders based on Levels of Service throughout the County. Standards for public facilities that serve less than the entire County are applied to development orders on the basis of Levels of Service within assigned service areas.
   (3) Standards for Levels of Service are applied according to the timing of the impacts of development on public facilities. Final development orders, which impact public facilities in a matter of months, are issued subject to the availability of water, sewer, and solid waste facilities prior to the issuance of the building permit, and other public facilities (i.e., roads, parks, and drainage) must be available within twelve months of the issuance of the building permit. Preliminary development orders can be issued subject to public facility capacity, but the capacity determination expires in two years. As an alternative, the determination of public facility capacity for preliminary development orders can be waived with an agreement that a capacity determination must be made prior to issuance of any final development order for the subject property. Such a waiver specifically precludes the acquisition of rights to a final development order as a result of the issuance of the preliminary development order.
   (4) Levels of Service are compared to adopted standards on an annual basis. Annual monitoring is used, rather than case-by-case monitoring, for the following reasons: a) annual monitoring corresponds to annual expenditures for capital improvements during the County's fiscal year; b) annual monitoring covers seasonal variations in Levels of Service; and c) case-by-case monitoring would require applicants for development orders or the County to conduct costly, time-consuming research which would often be partially redundant of prior research, or involve disparate methodologies and produce inconsistent results.
   (5) Public facility capital improvements are prioritized among competing applications for the same amount of facility capacity according to the criteria in the Capital Improvements Element. If any applications have to be deferred to a future fiscal year because of insufficient capacity of public facilities during the current fiscal year, the applications to be deferred will be selected on the basis of rational criteria as determined by the Board of County Commissioners.

COASTAL HIGH HAZARD AREAS

Objective 9.1.5: The County shall protect the coastline and avoid loss of life and property in coastal areas by minimizing land development and public facilities in coastal high hazard areas.

Policy 9.1.5.1 - Publicly funded infrastructure shall not be constructed within the Coastal High Hazard Area unless the expenditure is for:

A. Restoration or enhancement of natural resources or public access;
B. Land application of treated effluent disposal (irrigation) on public and private open spaces;
C. Flood-proofing water and sanitary sewage facilities;
D. The development or improvement of a facility which will serve a crucial need by ameliorating the evacuation time of residents of the County;
E. Reconstruction of seawalls that are essential to the protection of existing public facilities or infrastructure;
F. The retrofitting of stormwater management facilities for water quality enhancement of stormwater runoff; or
G. Port facilities.

SCHEDULE OF CAPITAL IMPROVEMENTS

The following tables show the Capital Improvements for the FY 2017/18 - FY 2021/22 period. From the St. Lucie County Capital Improvements Plan FY 2017/18-2021/22.

ADOPTED CAPITAL IMPROVEMENT PLAN: FY 2017/18 TO FY 2021/22							
WATER & SEWER PROJECTS							
PROJECT NAME	**FUNDING SOURCE**	**FY 2017/18**	**FY2018/19**	**FY2019/20**	**FY2020/21**	**FY2021/22**	**TOTAL FY2018 - 2022**
US1 Water Main in SLCU Services Area	Capital Facilities Fund	$ -	$ -	$ 123,000	$ 1,108,000	$ -	$ 1,231,000
Taylor Dairy Road 30 inch Water Main	Capital Facilities Fund	$ -	$ -	$ 460,000		$ -	$ 460,000
Miramar & Indrio Rd 24 Inch Water Main	Capital Facilities Fund	$ -	$ -	$ 156,000	$ 1,407,000	$ -	$ 1,563,000
Rangeline Road Water Main Interconnect	Capital Facilities Fund	$ -	$ -	$ -	$ 250,000	$ -	$ 250,000
North Hutchinson Island Force Mains	Capital Facilities Fund	$ -	$ -	$ 300,000		$ -	$ 300,000
North Hutchinson Island Chloramines booster Station	Capital Facilities Fund	$ -	$ -	$ 123,000	$ 1,108,000	$ -	$ 1,231,000
North County Water Reclamation Facility	Capital Facilities Fund	$ -	$ -	$ 8,750,000	$ 8,000,000	$ -	$ 16,750,000
Indrio Rd Force Main	Capital Facilities Fund	$ -	$ 56,300	$ 1,406,700		$ -	$ 1,463,000
North County Water Treatment Plant	Capital Facilities Fund	$ -	$ -	$ 8,600,000	$ 7,350,000	$ -	$ 15,950,000
Central County Wastewater Treatment Plant	Capital Facilities Fund	$ 310,579	$ -	$ 3,000,000	$ 2,000,000	$ -	$ 5,310,579
Central County Wastewater Treatment Plant	Capital Facilities Fund	$ -	$ -	$ 718,000	$ 588,000	$ -	$ 1,306,000
NHI Septic Removal Project	Operations	$ 186,895	$ -	$ 6,000,000	$ 4,500,000	$ -	$ 10,686,895
Fairgrounds Water Storage Tank	Capital Facilities Fund	$ -	$ -	$ 500,000	$ 1,300,000	$ -	$ 1,800,000
NHI Clarifier Rebuild	Renewal & Replacement Fund	$ 25,000	$ 30,000	$ -	$ -	$ -	$ 55,000
N County Service Area Aquifer Wells	Capital Facilities Fund	$ -	$ -	$ 1,300,000		$ -	$ 1,300,000
NHI Water Distribution Replacement	Renewal & Replacement Fund	$ 15,993	$ -	$ 1,080,000	$ 1,500,000	$ -	$ 2,595,993
Fairwinds WWTP Expansion	Capital Facilities Fund	$ 50,000	$ -	$ -	$ -	$ -	$ 50,000
Bulk Water Connect with FPUA	Capital Facilities Fund	$ -	$ -	$ -	$ 384,000	$ -	$ 384,000
No Co Pump at Holiday Pines Water Treatment	Capital Facilities Fund	$ -	$ -	$ 150,000	$ -	$ -	$ 150,000
No Co Pump at Holiday Pines Water Treatment	Capital Facilities Fund	$ -	$ -	$ 850,000	$ 700,000	$ -	$ 1,550,000
Turnpike Feeder Road Force Main	Capital Facilities Fund	$ -	$ -	$ 64,000	$ 582,000	$ -	$ 646,000
Airport 12 in Water Main North	Capital Facilities Fund	$ -	$ -	$ 59,000	$ 530,000	$ -	$ 589,000
Airport 12 in Water Main South	Capital Facilities Fund	$ -	$ -	$ 180,000	$ 1,630,000	$ -	$ 1,810,000
North Hutchinson Island Lift Station Pump Replacement	Renewal & Replacement Fund	$ -	$ -	$ -	$ 800,000	$ -	$ 800,000
North Hutchinson Island Force Main Replacement	Renewal & Replacement Fund	$ -	$ -	$ -	$ 855,000	$ -	$ 855,000
South Hutchinson Island Force Main Replacement	Renewal & Replacement Fund	$ -	$ -	$ -	$ 214,000	$ -	$ 214,000
Turnpike Feeder Road Water Main	Capital Facilities Fund	$ -	$ -	$ 45,000	$ 406,000	$ -	$ 451,000
SCADA and PLC Upgrades	Renewal & Replacement Fund	$ 50,000	$ -	$ -	$ -	$ -	$ 50,000
SHI Force Main Air Release Valve Replacement	Renewal & Replacement Fund	$ 38,000	$ -	$ -	$ -	$ -	$ 38,000
SHI Return Activated Sludge Pump and Piping Replacement	Renewal & Replacement Fund	$ 125,000	$ -	$ -	$ -	$ -	$ 125,000
SHI Infrastructure Replacement	Renewal & Replacement Fund	$ 70,000	$ -	$ -	$ -	$ -	$ 70,000
SHI Lift Station Piping and Valve Replacement	Renewal & Replacement Fund	$ 60,000	$ -	$ -	$ -	$ -	$ 60,000
North County Water & Wastewater Line Extension	Capital Facilities Fund	$ 200,000	$ 200,000	$ 200,000	$ 200,000	$ 200,000	$ 1,000,000
TOTAL		**$ 1,131,467**	**$ 286,300**	**$ 34,064,700**	**$ 35,412,000**	**$ 200,000**	**$ 71,094,467**

Source: St. Lucie County Capital Improvements Plan FY 2017/18-2021/22

ADOPTED CAPITAL IMPROVEMENT PLAN: FY 2017/18 TO FY 2021/22							
SOLID WASTE PROJECTS							
PROJECT NAME	**FUNDING SOURCE**	**FY 2017/18**	**FY2018/19**	**FY2019/20**	**FY2020/21**	**FY2021/22**	**TOTAL FY2018 - 2022**
Landfill Phase 4 Cell Construction	Sanitary Landfill	$ 6,224,249	$ 1,340,000	$ -	$ -	$ -	$ 7,564,249
Household Hazardous Waste Building	Sanitary Landfill	$ 54,142	$ -	$ -	$ -	$ -	$ 54,142
Phase III B Partial Closure	Sanitary Landfill	$ 1,456,742	$ 380,842	$ -	$ -	$ -	$ 1,837,584
TOTAL		**$ 7,735,133**	**$ 1,720,842**	**$ -**	**$ -**	**$ -**	**$ 9,455,975**

Source: St. Lucie County Capital Improvements Plan FY 2017/18-2021/22

ADOPTED CAPITAL IMPROVEMENT PLAN: FY 2017/18 TO FY 2021/22								
DRAINAGE PROJECTS								
PROJECT NAME	**FUNDING SOURCE**	**FY 2017/18**	**FY2018/19**	**FY2019/20**	**FY2020/21**	**FY2021/22**	**ANTICIPATED NEEDS**	**TOTAL FY2018 - 2022**
Midway Rd at NSLWCD Canal 92 Culvert Replacement	Drainage Maintenance MSTU	$ 15,000	$ 100,000	$ -	$ -	$ -	$ -	$ 115,000
Ideal Holding Rd at NSLRWCD Canal 77 Culvert	Drainage Maintenance MSTU	$ 60,000	$ -	$ -	$ -	$ -	$ -	$ 60,000
So Header Canal Rd at NSLRWCD Canal 72 Culvert	Drainage Maintenance MSTU	$ 15,000	$ 250,000	$ -	$ -	$ -	$ -	$ 265,000
Selvitz Rd at NSLRWCD Canal 102 Culvert Replacement	Drainage Maintenance MSTU	$ 115,000	$ 250,000	$ -	$ -	$ -	$ -	$ 365,000
So Header Canal Rd at NSLRWCD C68 Culvert	Drainage Maintenance MSTU	$ 15,000	$ 250,000	$ -	$ -	$ -	$ -	$ 265,000
Midway Rd Cross Drain E Savannas Park Entrance	Drainage Maintenance MSTU	$ 40,000	$ -	$ -	$ -	$ -	$ -	$ 40,000
Midway Rd Cross Drain E Silver Oak Dr	Drainage Maintenance MSTU	$ 250,000	$ -	$ -	$ -	$ -	$ -	$ 250,000
Midway Rd at NSLRWCD Canal 22	Drainage Maintenance MSTU	$ 40,000	$ -	$ -	$ -	$ -	$ -	$ 40,000
Emergency/Unanticipated Culverts	Drainage Maintenance MSTU	$ 45,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ -	$ 1,045,000
Johnston Road at FPFWCD Canal 16	Drainage Maintenance MSTU	$ 250,000	$ -	$ -	$ -	$ -	$ -	$ 250,000
Rock Rd at NSLRWCD Canal 48	Drainage Maintenance MSTU	$ 15,000	$ 250,000	$ -	$ -	$ -	$ -	$ 265,000
Farmers Mktat7th St Ditch Culvert Replacement	Drainage Maintenance MSTU	$ 107,872	$ -	$ -	$ -	$ -	$ -	$ 107,872
Oleander Ave Parallel Culvert	Drainage Maintenance MSTU	$ 205,166	$ -	$ -	$ -	$ -	$ -	$ 205,166
Orange Avenue at NSLRWCD Canal 54 (Pulizer)	Drainage Maintenance MSTU	$ 814,826	$ -	$ -	$ -	$ -	$ -	$ 814,826
Russo Rd at FPFWCD Canal 6 Culvert	Drainage Maintenance MSTU	$ 150,000	$ -	$ -	$ -	$ -	$ -	$ 150,000
Indian River Ests Drainage Phase II	Gas Taxes	$ 100,000	$ -	$ -	$ -	$ -	$ -	$ 00,000
Indian River Ests Drainage Phase III	Drainage Maintenance MSTU	$ 100,000	$ -	$ -	$ -	$ -	$ -	$ 100,000
Indian River Ests Drainage Phase III	Gas Taxes	$ 50,000	$ -	$ -	$ -	$ -	$ -	$ 50,000
Indian River Baffle Boxes	Drainage Maintenance MSTU	$ 15,197	$ -	$ -	$ -	$ -	$ -	$ 15,197
Paradise Park Phase 4	Drainage Maintenance MSTU	$ 145,497	$ -	$ -	$ -	$ -	$ -	$ 145,497
Paradise Park Drainage-Phase 5	Grant Funds	$ 143,036	$ -	$ -	$ -	$ -	$ -	$ 143,036
Paradise Park Drainage-Phase 5	Grant Funds	$ 92,760	$ -	$ -	$ -	$ -	$ -	$ 92,760
Paradise Park Drainage-Phase 5	Drainage Maintenance MSTU	$ 619,683	$ -	$ -	$ -	$ -	$ -	$ 619,683
Platts Creek Preserve	Drainage Maintenance MSTU	$ 600	$ -	$ -	$ -	$ -	$ -	$ 600
Platts Creek Preserve	Drainage Maintenance MSTU	$ 910	$ -	$ -	$ -	$ -	$ -	$ 910
Platts Creek Preserve	Gas Taxes	$ 245,713	$ -	$ -	$ -	$ -	$ -	$ 245,713
Platts Creek Preserve	Capital Financing	$ 60,820	$ -	$ -	$ -	$ -	$ -	$ 60,820
Melville Rd Stormwater Master Plan	Drainage Maintenance MSTU	$ 430,529	$ 150,000	$ 500,000	$ 500,000	$ -	$ -	$ 1,580,529
Melville Rd Stormwater Master Plan	Drainage Maintenance MSTU	$ 91,464	$ 150,000	$ 500,000	$ 500,000	$ -	$ -	$ 1,241,464
San Lucie Stormwater Master Plan	Drainage Maintenance MSTU	$ -	$ -	$ -	$ 500,000	$ 500,000	$ -	$ 1,000,000
San Lucie Drainage Improvement-Phase II	Grant Funds	$ 400,000	$ -	$ -	$ -	$ -	$ -	$ 400,000

San Lucie Drainage Improvement-Phase II	Drainage Maintenance MSTU	$ 250,325	$ 40,000	$ 250,000	$ -	$ 590,000	$ -	$ 1,380,325
White City Drainage Citrus & Saeger Phase I	Drainage Maintenance MSTU	$ 50,000	$ -	$ -	$ -	$ -	$ -	$ 50,000
Harmony Heights Phase I	Drainage Maintenance MSTU	$ 511,838	$ -	$ -	$ -	$ -	$ -	$ 511,838
Angle Rd Drainage Project	Drainage Maintenance MSTU	$ 75,000	$ -	$ -	$ -	$ -	$ -	$ 75,000
Easy St Canal 17	Drainage Maintenance MSTU	$ 50,000	$ -	$ -	$ -	$ -	$ -	$ 50,000
White City Canals F & G	Drainage Maintenance MSTU	$ -	$ -	$ -	$ -	$ 100,000	$ 10,900,000	$ 11,000,000
Sunland Gardens Neighborhood Improvement	Drainage Maintenance MSTU	$ -	$ -	$ -	$ -	$ 200,000	$ 24,800,000	$ 25,000,000
Harmony Heights Drainage Improvement Ph 2-5	Drainage Maintenance MSTU	$ -	$ -	$ 250,000	$ -	$ 250,000	$ 8,000,000	$ 8,750,000
Wet Detention Pond Retrofit Program - TMDL	Drainage Maintenance MSTU	$ -	$ -	$ -	$ -	$ -	$ 1,000,000	$ 1,000,000
St Lucie Estuary / Indian River Lagoon - TMDL	Drainage Maintenance MSTU	$ -	$ -	$ -	$ -	$ -	$ 9,500,000	$ 9,500,000
Koblegard Rd at FPFWCD Canal13	Drainage Maintenance MSTU	$ -	$ -	$ -	$ 15,000	$ 150,000	$ -	$ 165,000
Koblegard Rd at FPFWCD Canal 12	Drainage Maintenance MSTU	$ -	$ -	$ -	$ 15,000	$ 150,000	$ -	$ 165,000
Koblegard Rd at FPFWCD Canal 11	Drainage Maintenance MSTU	$ -	$ 15,000	$ 150,000	$ -	$ -	$ -	$ 165,000
Koblegard Rd at FPFWCD Canal 10	Drainage Maintenance MSTU	$ -	$ -	$ 15,000	$ -	$ -	$ -	$ 165,000
South Header Canal Rd at Canal 69	Drainage Maintenance MSTU	$ -	$ -	$ 100,000	$ -	$ -	$ -	$ 100,000
South Header Canal Rd at Canal 66	Drainage Maintenance MSTU	$ -	$ 100,000	$ -	$ -	$ -	$ -	$ 100,000
South Header Canal Rd at Canal 65	Drainage Maintenance MSTU	$ -	$ 100,000	$ -	$ -	$ -	$ -	$ 100,000
Midway Rd at NSLRWCD Canal 93	Drainage Maintenance MSTU	$ 50,000	$ -	$ -	$ -	$ -	$ -	$ 50,000
San Lucie Stormwater Phase 3	Drainage Maintenance MSTU	$ 176,223	$ 150,000	$ 200,000	$ -	$ 150,000	$ 8,376,223	$ 9,052,446
Orange Ave & Rock Rd Culvert	Drainage Maintenance MSTU	$ 30,000	$ -	$ -	$ -	$ -	$ -	$ 30,000
Summit St at NSLRWCD Culvert 8	Drainage Maintenance MSTU	$ 205,000	$ -	$ -	$ -	$ -	$ -	$ 205,000
TOTAL		**$ 6,032,458**	**$2,055,000**	**$ 2,215,000**	**$ 2,430,000**	**$ 2,340,000**	**$ 62,576,223**	**$ 77,648,681**

Source: St. Lucie County Capital Improvements Plan FY 2017/18-2021/22

ADOPTED CAPITAL IMPROVEMENT PLAN: FY 2017/18 TO FY 2021/22

ROADWAY PROJECTS

PROJECT NAME	FUNDING SOURCE	FY 2017/18	FY2018/19	FY2019/20	FY2020/21	FY2021/22	ANTICIPATED NEEDS	TOTAL FY2018 - 2022
Midway Rd (Selvitz Rd - 25th St)	Impact Fees	$ 36,428	$ -	$ -	$ -	$ -	$ -	$ 36,428
Midway Rd (Selvitz Rd - 25th St)	Impact Fees	$ 1,457,648	$ -	$ -	$ -	$ -	$ -	$ 1,457,648
Midway Rd (Selvitz Rd - 25th St)	Capital Financing	$ 382,953	$ -	$ -	$ -	$ -	$ -	$ 382,953
Glades Rd & Selvitz (PD &E Study)	Impact Fees	$ 156,558	$ -	$ -	$ -	$ -	$ -	$ 156,558
Kings Hwy and Indrio Rd Widening	Grant Funds	$ 15,962,836	$ -	$ -	$ -	$ -	$ -	$ 15,962,836
Kings Hwy and Indrio Rd Widening	Impact Fees	$ 1,429,104	$ -	$ -	$ -	$ -	$ -	$ 1,429,104
Kings Hwy and Indrio Rd Widening	Capital Financing	$ 532,168	$ -	$ -	$ -	$ -	$ -	$ 532,168
Kings Highway Widening	Impact Fees	$ 150,000	$ -	$ -	$ -	$ -	$ -	$ 150,000
Whispering Oaks Offsite Improvements	Impact Fees	$ 110,000	$ -	$ -	$ -	$ -	$ -	$ 110,000
Unincorporated Bike Paths / Sidewalks	Gas Taxes	$ 192,752	$ -	$ -	$ -	$ -	$ -	$ 192,752
S. 25th St Bridge - East Side	Impact Fees	$ 100,000	$ -	$ -	$ -	$ -	$ -	$ 100,000
Carlton Road Bridge over SFWMD Canal 24	Gas Taxes	$ 50,000	$ -	$ -	$ -	$ -	$ -	$ 50,000
Glades Cut-Off Road Bridge over SFWMD Canal 24	Gas Taxes	$ 50,000	$ -	$ -	$ -	$ -	$ -	$ 50,000
Bridge at McCarty/Ten Mile Creek North	Gas Taxes	$ 36,073	$ -	$ -	$ -	$ -	$ -	$ 36,073
Gordy Road Bridge	Gas Taxes	$ 100,000	$ -	$ -	$ -	$ -	$ -	$ 100,000
Midway Rd - 2600' E of Shinn Rd	Gas Taxes	$ 21,676	$ -	$ -	$ -	$ -	$ -	$ 21,676
Airport Connector (Turnpike to Kings Highway)	Impact Fees	$ 1,700,000	$ -	$ 2,500,000	$ -	$ 2,500,000	$ 11,300,000	$ 18,000,000

Selvitz Rd (Glade Cutoff to Edwards)	Impact Fees	$ -	$ -	$ -	$ -	$ 1,000,000	$ 8,300,000	$ 9,300,000
Glades Cutoff Rd (Commerce to Selvitz	Impact Fees	$ -	$ -	$ -	$ -	$ 3,000,000	$ 67,100,000	$ 73,100,000
Jenkins Rd (Midway to St Lucie Blvd)	Impact Fees	$ -	$ 3,500,000	$ -	$ -	$ 3,000,000	$ 117,100,000	$ 123,600,000
Juanita Ave Phase 3 (Juanita to Bridge-US1)	Impact Fees	$ -	450,000	$ -	$ -	$ -	$ -	$ 450,000
St James SW (Royce to Lazy River)	Impact Fees	$ -	$ -	$ 260,000	$ -	$ -	$ -	$ 260,000
Oleander Ave SW (Midway to Saeger)	Impact Fees	$ -	$ -	$ -	$ -	$ 1,323,840	$ -	$ 1,323,840
Weatherbee Rd SW (US1 to Oleander Ave)	Impact Fees	$ -	$ -	$ -	$ -	$ 445,220	$ -	$ 445,220
Walton Rd SW (Lennard to Green River Parkway)	Impact Fees	$ -	$ -	$ -	$ -	$ 632,730	$ -	$ 632,730
Midway Rd-Glades Cutoff/Selvitz Rd	Impact Fees	$ 672	$ -	$ -	$ -	$ -	$ 25,000,000	$ 25,000,672
CIP Projects To Be Determined	Development Fees	$ 1,497,246	$ -	$ -	$ -	$ -	$ -	$ 1,497,246
TOTAL		**$ 23,966,113**	**$ 3,950,000**	**$ 2,760,000**	**$ 3,000,000**	**$ 11,901,790**	**$ 228,800,000**	**$ 274,377,903**

Source: St. Lucie County Capital Improvements Plan FY 2017/18-2021/22

ADOPTED CAPITAL IMPROVEMENT PLAN: FY 2017/18 TO FY 2021/22

TRANSIT PROJECTS

PROJECT NAME	FUNDING SOURCE	FY 2017/18	FY2018/19	FY2019/20	FY2020/21	FY2021/22	TOTAL FY2018 - 2022
Bus Shelter-Gatlin Blvd	Public Transit MSTU	$ 8,312	$ -	$ -	$ -	$ -	$ 8,312
Bus Shelter-Prima Vista	Grant Funds	$ 12,165	$ -	$ -	$ -	$ -	$ 12,165
Bus Shelter-Ravenswood Ln	Grant Funds	$ 15,951	$ -	$ -	$ -	$ -	$ 15,951
Selvitz Rd. Transit Admin. Bldg.	Grant Funds	$ 292,553	$ -	$ -	$ -	$ -	$ 292,553
Bus Sheleter at Cashmere Blvd	Public Transit MSTU	$ 26,336	$ -	$ -	$ -	$ -	$ 26,336
Bus Sheleter at Delaware and 32nd St	Public Transit MSTU	$ 26,510	$ -	$ -	$ -	$ -	$ 26,510
Bus Sheleter at Juanita Ave and Essex Dr	Public Transit MSTU	$ 41,309	$ -	$ -	$ -	$ -	$ 41,309
TOTAL		**$ 423,136**	$ -	$ -	$ -	$ -	**$ 423,136**

Source: Source: St. Lucie County Capital Improvements Plan FY 2017/18-2021/22

ADOPTED CAPITAL IMPROVEMENT PLAN: FY 2017/18 TO FY 2021/22

AIRPORT PROJECTS

PROJECT NAME	FUNDING SOURCE	FY 2017/18	FY2018/19	FY2019/20	FY2020/21	FY2021/22	TOTAL FY2018 - 2022
AP Design/Construct Customs Renovation	Grant Funds	$ 297,077	$ -	$ -	$ -	$ -	$ 297,077
AP Parallel Runway Taxiway Connector	Grant Funds	$ 730,990	$ -	$ -	$ -	$ -	$ 730,990
A/P-Sec Cameras/High Mast Lighting	Grant Funds	$ 115,850	$ -	$ -	$ -	$ -	$ 115,850
Airport Entryway Project	Grant Funds	$ 300,000	$ -	$ -	$ -	$ -	$ 300,000
Micro surface Runway 14/32	Grant Funds	$ 1,139,850	$ -	$ -	$ -	$ -	$ 1,139,850
AP Rehab Taxiway D-1	Grant Funds	$ 420,000	$ -	$ -	$ -	$ -	$ 420,000
AP Drainage and Erosion Control Improvements	Airport Fund	$ 40,000	$ 40,000	$ -	$ -	$ -	$ 80,000
Design and Install Segmented Circle	Airport Fund	$ 9,000	$ -	$ -	$ -	$ -	$ 9,000
Construct Terminal Service Parking	Airport Fund	$ 147,800	$ -	$ -	$ -	$ -	$ 147,800
Construct Terminal Service Parking	Grant Funds	$ 562,712	$ -	$ -	$ -	$ -	$ 562,712
Install Segmented Circle Runway 10L/28R	Airport Fund	$ 15,000	$ -	$ -	$ -	$ -	$ 15,000
Create North Parallel Taxiway	Airport Fund	$ -	$ -	$ -	$155,600	$ -	$ 155,600
Security Perimeter Fencing and Access Control	Airport Fund	$ -	$ 64,500	$ 64,500	$ -	$ -	$ 129,000
Airport Security Improvement	Grant Funds	$ 77,375	$ -	$ -	$ -	$ -	$ 77,375
Install and Rehab AP NVAIDS	Grant Funds	$ 632,871	$ -	$ -	$ -	$ -	$ 632,871
AP-10L/28R S Apron Design and Construction	Grant Funds	$ 455,551	$ -	$ -	$ -	$ -	$ 455,551
Lengthen Runway 10R/28L	Airport Fund	$ -	$ -	$ -	$ 183,986	$ -	$ 183,986
Noise Operations Monitoring System	Airport Fund	$ -	$ -	$ -	$ -	$ -	$ 160,000

MRO Hangar	Airport Fund	$ -	$ -	$ -	$ -	$ -	$ 27,500
MRO Hangar	Grant Funds	$ -	$ -	$ -	$ -	$ -	$ 1,500,000
MRO Hangar	Grant Funds	$ -	$ -	$ -	$ -	$ -	$ 3,527,500
Airfield Signage and Lighting Update	Airport Fund	$ -	$ 45,000	$ 45,000	$ -	$ -	$ 90,000
Study for Proposed North Industrial Park	Airport Fund	$ -	$ -	$ -	$ -	$ -	$ 200,000
Runway 14/32 Airfield Lighting and Signage Update	Airport Fund	$ -	$ -	$ 20,000	$ 20,000	$ -	$ 40,000
TOTAL		**$ 10,359,076**	**$ 149,500**	**$ 129,500**	**$ 359,586**	**$ -**	**$ 10,997,662**

Source: St. Lucie County Capital Improvements Plan FY 2017/18-2021/22

ADOPTED CAPITAL IMPROVEMENT PLAN: FY 2017/18 TO FY 2021/22

PORT OF FORT PIERCE PROJECTS

PROJECT NAME	FUNDING SOURCE	FY 2017/18	FY2018/19	FY2019/20	FY2020/21	FY2021/22	TOTAL FY2018 - 2022
N. Entrance To Port of Ft. Pierce	Grant Funds	$ 280,947	$ -	$ -	$ -	$ -	$ 280,947
N. Entrance To Port of Ft. Pierce	Grant Funds	$ 3,167,346	$ -	$ -	$ -	$ -	$ 3,167,346
Land Appraisal	Port Fund	$ 2,900	$ -	$ -	$ -	$ -	$ 2,900
Redevelopment of Fisherman's Wharf	Capital Financing	$ 1,387,500	$ -	$ -	$ -	$ -	$ 1,387,500
Redevelopment of Fisherman's Wharf	Grant Funds	$ 300,000	$ -	$ -	$ -	$ -	$ 300,000
Redevelopment of Fisherman's Wharf	Grant Funds	$ 696,000	$ -	$ -	$ -	$ -	$ 696,000
Redevelopment of Fisherman's Wharf	Grant Funds	$ 510,000	$ -	$ -	$ -	$ -	$ 510,000
Redevelopment of Fisherman's Wharf	Grant Funds	$ 115,676	$ -	$ -	$ -	$ -	$ 115,676
Harbor Pointe Development	Capital Financing	$ 250,000	$ -	$ -	$ -	$ -	$ 250,000
TOTAL		**$ 6,710,369**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 6,710,369**

Source: St. Lucie County Capital Improvements Plan FY 2017/18-2021/22

ADOPTED CAPITAL IMPROVEMENT PLAN: FY 2017/18 TO FY 2021/22

PARKS & RECREATION PROJECTS

PROJECT NAME	FUNDING SOURCE	FY 2017/18	FY2018/19	FY2019/20	FY2020/21	FY2021/22	TOTAL FY2018 - 2022
Indrio Road Recreation Area	General Fund	$ 75,437	$ -	$ -	$ -	$ -	$ 75,437
Sterling Facilities Services CIP	Sports Complex Improvement Fund	$ 146,381	$ -	$ -	$ -	$ -	$ 146,381
John B. Parks Sports Complex - ADA	Parks MSTU	$ 169,477	$ -	$ -	$ -	$ -	$ 169,477
Pepper Park/Wildcat Cove Pier	Boating Improvement Projects Fund	$ 12,269	$ -	$ -	$ -	$ -	$ 12,269
North Causeway Boat Launch Facility	Boating Improvement Projects Fund	$ 239,451	$ -	$ -	$ -	$ -	$ 239,451
Pepper Park Renovation	Grant Funds	$ 132,248	$ -	$ -	$ -	$ -	$ 132,248
Pepper Park Renovation	Parks MSTU	$ 137,767	$ -	$ -	$ -	$ -	$ 137,767
Lincoln Park Community Center Improvements	Impact Fees - Parks	$ 26,116	$ -	$ -	$ -	$ -	$ 26,116
River Park Marina ADA Improvements	Parks MSTU	$ 50,000	$ -	$ -	$ -	$ -	$ 50,000
Lakewood Park ADA Playground Replacement	Parks MSTU	$ 6,740	$ -	$ -	$ -	$ -	$ 6,740
Golf Course Enclose Pavilion	Parks MSTU	$ 10,987	$ -	$ -	$ -	$ -	$ 10,987
South County Beach Park Restrooms Renovation	Parks MSTU	$ 189,483	$ 150,000	$ 150,000		$ -	$ 489,483
Equestrian Wash rack and Sewer Connection	Impact Fees	$ 223,110	$ -	$ -	$ -	$ -	$ 223,110
White City Park	General Fund	$ 285,970	$ -	$ -	$ -	$ -	$ 285,970
White City Park	General Fund	$ 336,242	$ -	$ -	$ -	$ -	$ 336,242
Sheraton Park Plaza Playground	Parks MSTU	$ 38,105	$ -	$ -	$ -	$ -	$ 38,105
New Fairground Restroom	Impact Fees	$ 400,000	$ -	$ -	$ -	$ -	$ 400,000
Adams Arena PA System	Impact Fees	$ 100,000	$ -	$ -	$ -	$ -	$ 100,000
New Upgrades to Electrical Panel	Impact Fees	$ 150,000	$ -	$ -	$ -	$ -	$ 150,000

Adams Arena Electrical Addition	Impact Fees	$ 60,000	$ -	$ -	$ -	$ -	$ 60,000
Riverpark Marina Trail Boardwalk	Parks MSTU	$ 25,000	$ -	$ -	$ -	$ -	$ 25,000
Lakewood Baseball Irrigation and Drainage	Parks MSTU	$ 100,000	$ 100,000	$ 100,000	$ -	$ -	$ 300,000
Lawnwood BF #5-6 Press Box	Parks MSTU	$ 125,000	$ -	$ -	$ -	$ -	$ 125,000
Lakewood Park Community Center Water Connection	Parks MSTU	$ 300,000	$ 250,000	$ -	$ -	$ -	$ 550,000
Golf Course Driving Range Tee Expansion	Parks MSTU	$ 85,000	$ 35,000	$ 30,000	$ -	$ -	$ 150,000
First Data Field Improvements	Capital Financing	$ 54,500,000	$ -	$ -	$ -	$ -	$ 54,500,000
Pickleball Courts	Parks MSTU	$ 25,000	$ -	$ -	$ -	$ -	$ 25,000
Savanas Campsite Extension	Parks MSTU	$ 100,000	$ -	$ -	$ -	$ -	$ 100,000
TOTAL		**$ 58,049,783**	**$ 535,000**	**$ 280,000**	$ -	$ -	**$ 58,864,783**

Source: St. Lucie County Capital Improvements Plan FY 2017/18-2021/22

ADOPTED CAPITAL IMPROVEMENT PLAN: FY 2017/18 TO FY 2021/22

FACILITIES PROJECTS

PROJECT NAME	FUNDING SOURCE	FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	TOTAL FY 2018 - 2022
TCERDA PARK - Research & Development	Capital Fund	$ 340	$ -	$ -	$ -	$ -	$ 340
TCERDA PARK - Research & Development	Capital Fund	$ 3,883	$ -	$ -	$ -	$ -	$ 3,883
TCERDA -BLDG SUNSHINE KITCHEN	Capital Fund	$ 650,051	$ -	$ -	$ -	$ -	$ 650,051
TCERDA -BLDG SUNSHINE KITCHEN	Grant Funds	$ 1,791,735	$ -	$ -	$ -	$ -	$ 1,791,735
Rock Road Jail/Medical Wing Expansion (Design)	Impact FeeS - Law Enforcement	$ 250,000	$ -	$ -	$ -	$ -	$ 250,000
Rock Rd Jail- Upgrade Security System	Capital Financing	$ 129,392	$ -	$ -	$ -	$ -	$ 129,392
Admin Building Drainage Improvements	General Fund	$ 80,000	$ -	$ -	$ -	$ -	$ 80,000
Facilities Compound Improvements	General Fund	$ 50,000	$ -	$ -	$ -	$ -	$ 50,000
Facilities Compound Improvements	Mosquito Fund	$ 25,000	$ -	$ -	$ -	$ -	$ 25,000
Facilities Compound Improvements	Gas Taxes	$ 25,000	$ -	$ -	$ -	$ -	$ 25,000
Courthouse Annex Air Handler Replacement	Court Facilities Fund	$ 542,404	$ -	$ -	$ -	$ -	$ 542,404
Guardian Ad Litem Office Space Project	Court Facilities Fund	$ 330,000	$ -	$ -	$ -	$ -	$ 330,000
St Lucie County Admin Parking Lot	County Capital	$ 107,642	$ -	$ -	$ -	$ -	$ 107,642
Court Facilities Study	Fine and Forfeiture	$ 100,000	$ -	$ -	$ -	$ -	$ 100,000
Rosser Blvd Branch Library - Renovation	General Fund	$ 21,538	$ -	$ -	$ -	$ -	$ 21,538
Rosser Blvd Branch Library - Renovation	Impact Fees - Library	$ 108,844	$ -	$ -	$ -	$ -	$ 108,844
TOTAL		**$ 4,215,829**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 4,215,829**

Source: St. Lucie County Capital Improvements Plan FY 2017/18-2021/22

ADOPTED CAPITAL IMPROVEMENT PLAN: FY 2017/18 TO FY 2021/22

MOSQUITO CONTROL & COASTAL MANAGEMENT PROJECTS

PROJECT NAME	FUNDING SOURCE	FY 2017/18	FY2018/19	FY2019/20	FY2020/21	FY2021/22	TOTAL FY2018 - 2022
Harbor Branch Preserve Riprap Project Phase 1 & 2	Mosquito Fund	$ 200,000	$ 200,000	$ -	$ -	$ -	$ 400,000
Mosquito Compound Equipment Wash Station Filtration System	Mosquito Fund	$ 130,000	$ -	$ -	$ -	$ -	$ 130,000
Island Dune Culvert Replacement IMP 10B	Mosquito Fund	$ 37,900	$ -	$ -	$ -	$ -	$ 37,900
Harbor branch Preserve Dike Improvement	Mosquito Fund	$ 90,000	$ -	$ -	$ -	$ -	$ 90,000
TOTAL		**$ 457,900**	**$ 200,000**	**$ -**	**$ -**	**$ -**	**$ 657,900**

Source: St. Lucie County Capital Improvements Plan FY 2017/18-2021/22

ADOPTED CAPITAL IMPROVEMENT PLAN: FY 2017/18 TO FY 2021/22							
ENVIRONMENTAL LANDS PROJECTS							
PROJECT NAME	**FUNDING SOURCE**	**FY 2017/18**	**FY 2018/19**	**FY 2019/20**	**FY 2020/21**	**FY 2021/22**	**TOTAL FY 2018 - 2022**
Heathcote Stormwater Park	Environmental Land Acquisition Fund	$ 220,398	$ -	$ -	$ -	$ -	$ 220,398
Petravice Preserve	Capital Financing	$ 200,000	$ -	$ -	$ -	$ -	$ 200,000
St Lucie Village Boardwalk	General Fund	$ 1,650	$ -	$ -	$ -	$ -	$ 1,650
St Lucie Village Boardwalk	Capital Financing	$ 28,350	$ -	$ -	$ -	$ -	$ 28,350
Ft. Pierce Mine	Environmental Land Acquisition Fund	$ 244,080	$ -	$ -	$ -	$ -	$ 244,080
Greenways and Trails Master Plan	Environmental Land Acquisition Fund	$ 89,745	$ -	$ -	$ -	$ -	$ 89,745
Florida Municipal Power Agency Land Preservation Agreement	County Capital Fund	$ 305,456	$ -	$ -	$ -	$ -	$ 305,456
Environmentally Safe Land Purchase	Capital Financing	$ 10,941	$ -	$ -	$ -	$ -	$ 10,941
Environmentally Safe Land Purchase	Capital Financing	$ 564,748	$ -	$ -	$ -	$ -	$ 564,748
IRL-S C23/24 Basin South Reservoir	Capital Financing	$ 1,000,000	$ -	$ -	$ -	$ -	$ 1,000,000
Raccoon Island Classroom	General Fund	$ 25,000	$ -	$ -	$ -	$ -	$ 25,000
Pole Barn at Platts Creek Shop	General Fund	$ 50,000	$ -	$ -	$ -	$ -	$ 50,000
TOTAL		**$ 2,740,368**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 2,740,368**

Source: St. Lucie County Capital Improvements Plan FY 2017/18-2021/22