

**TOWN OF JUPITER  
TOWN MANAGER'S OFFICE**



**DATE:** August 7, 2018  
**TO:** Honorable Mayor and Members of Town Council  
**THRU:** Matt Benoit, Town Manager  
**FROM:** John Sickler, Planning and Zoning Director JS  
**SUBJECT:** **COASTAL MANAGEMENT COMPREHENSIVE PLAN TEXT AMENDMENTS** – To add new Coastal Management Element policies pertaining to the adoption and implementation of strategies to protect property and infrastructure from the impacts of climate change and coastal flooding.

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<b>PZ #18-2765</b>	<b>Meeting</b>	<b>PZ</b>	<b>08/14/18</b>
<b>Ord. #14-18</b>	<b>dates:</b>	<b>TC</b>	<b>09/20/18 1<sup>st</sup> Reading</b>
<b>GW</b>		<b>TC</b>	<b>11/20/18 2<sup>nd</sup> Reading</b>

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*Applicant:* Town-initiated  
*Request:* To modify the Coastal Management Element of the Comprehensive Plan to:

- Amend existing policy 2.1.2 related to construction seaward of the Coastal Construction Control Line;
- Amend existing policies 2.6.4 and 2.6.5 to modify the dates for investigating additional comprehensive plan and land development regulation amendments related to climate change and the implementation of Adaptation Action Areas; and,
- To create new Coastal Management Element Policies 2.6.8 - 2.6.11 pertaining to the adoption and implementation of Florida Statutes in order to protect property and infrastructure from the impacts of climate change and coastal flooding.

***Staff Recommendation.***

Based upon the facts and findings contained herein, staff recommends that the Planning and Zoning Commission, acting as the Town's Local Planning Agency (LPA), recommend the Town Council **Adopt** the proposed Comprehensive Plan text amendments as noted above (shown in Exhibit 1).

### ***Background.***

In 2015, the Town added Objectives and Policies to the Comprehensive Plan related to climate change and sea level rise. As part of the Town's Evaluation and Appraisal Report (EAR)-based Comprehensive Plan text amendments in 2016, the Town proposed a Coastal Management Element policy in the Comprehensive Plan in an effort to meet the statutory requirements of the Coastal Management Section of the Florida Statutes (see Attachment A). The newly adopted portion of the section, subsection (2)(f), requires the incorporation of principles for eliminating inappropriate and unsafe development in coastal areas due to the risk of future flooding. Shortly after transmittal to the State, the Florida Department of Economic Opportunity (DEO) objected to the Town's text amendments and offered suggestions on how the Town could meet the principles outlined in statute in a future Comprehensive Plan text amendment (see Attachment B – DEO ORC Report). At the time, the Town was not required by law to adopt the amendments and more time was needed by staff to evaluate the required changes, so the amendments were removed from the EAR-based Comprehensive Plan amendments adopted in 2016.

Starting in 2016, the Town Council identified climate change as a strategic priority. Staff assembled a team in order to investigate and implement policies to enhance the resilience of the Town to the effects of climate change and sea level rise. The Town has already adopted many policies and practices that enhance the Town's resilience including the green building program, shoreline stabilization and living shoreline regulations, requiring higher minimum building elevations, and enhancements to the Town's stormwater system.

In 2017, the Town contracted Hazen and Sawyer to prepare a Sea Level Rise and Climate Change report which evaluated multiple aspects of the Stormwater Master Plan, Town Code, and the Comprehensive Plan. The purpose of the report was to provide staff with a comprehensive review of the Town's existing practices, policies, and codes to ensure that the Town is consistent with, or more stringent than, the statutory requirements and best practices related to climate change and sea level rise. The report examines other municipality's approaches to climate change and sea level rise, provides recommendations for improvements, and addresses the objections brought up by DEO with the new legislation. Staff has provided an excerpt of the report that contains the recommendations related to the new statutory requirements that are being addressed with the proposed amendments (see Attachment C – Pages from Hazen and Sawyer Report). A full copy of the report can be found [here](https://www.jupiter.fl.us/DocumentCenter/View/19080/Hazen-and-Sawyer-Final-Report) (https://www.jupiter.fl.us/DocumentCenter/View/19080/Hazen-and-Sawyer-Final-Report).

In addition to changes proposed to meet the statutory requirements, the Town continues to evaluate recommendations for resilience made by the Southeast Florida Regional Climate Change Compact (the Compact). The Compact consists of the four counties in Southeast Florida, Palm Beach, Broward, Miami-Dade, and Monroe. The Compact has developed a Regional Climate Action Plan (RCAP) that includes recommendations for how best to prepare for climate related impacts to the region. The RCAP was recently amended in December of 2017 with the help of local government staff, key stakeholders and partners, and members of the general public. In general, the plan establishes the framework for a regional effort to build climate resilience. Staff will continue to evaluate the recommendations within the RCAP and continue to recommend changes to the Town Council as needed.

## Analysis.

### A. Supporting Data and Analysis

Coastal Management Element Climate Change Implementing Policies – The proposed amendments (below and in ~~strike through~~ and underline in Exhibit 1) are to address Florida Statutes regarding sea level rise and flood risks, and implement appropriate recommendations of the Southeast Florida Regional Climate Change Compact's Regional Climate Action Plan (RCAP).

- Existing Policy 2.1.2- The Town shall use the following provisions as a means to direct ~~people construction~~ away from the coastal high hazard areas:
  - h. All new development and redevelopment ~~in the Coastal Construction Zone~~ seaward of the Coastal Construction Control Lines established pursuant to Section 161.053, F.S., shall comply with the requirements of Chapter 161, F.S. and the Coastal Construction Code of the Town.

Staff comment: The above amendment further clarifies an existing policy so that the Town will ensure development seaward (or east) of the Coastal Construction Control Line complies with Florida Statute (see Attachment C, section 3.3.4.2, pages 3-13).

- Existing Policy 2.6.4- By December ~~2018~~2020, the Town shall investigate the feasibility of integrating consideration of climate change impacts, and adaptation and mitigation strategies, into existing Comprehensive Plan goals, objectives and policies and land development regulations.
- Existing Policy 2.6.5- By December ~~2018~~2020, the Town shall investigate the feasibility of the use of Adaptation Action Areas as provided by Section 163.3177(6)(g)(10), Florida Statutes, to identify areas vulnerable to coastal storm surge and sea level rise impacts.

Staff comment (for both): The existing policies above are related to implementing elements of the Regional Climate Action Plan (the Plan) adopted by the Southeast Florida Regional Climate Change Compact (the Compact). The Plan identified Adaptation Action Areas as a tool for local governments to identify vulnerable areas, focus technical resources and provide guidance for adaptation planning efforts, including prioritization of infrastructure improvements and funding for improved resilience. According to Section 163.3164(1), F.S.,

***“Adaptation action area” or “adaptation area” means a designation in the coastal management element of a local government’s comprehensive plan which identifies one or more areas that experience coastal flooding due to extreme high tides and storm surge, and that are vulnerable to the related impacts of rising sea levels for the purpose of prioritizing funding for infrastructure needs and adaptation planning.***

The Town’s original target date of December 2018 was chosen to coincide with Palm Beach County’s similar efforts to investigate the use of Adaptation Action Areas by the end of 2017. To date, Palm Beach County has not implemented Adaptation Action Areas into their Comprehensive Plan. Adaptation Action Areas have been slow to develop, mostly due to the lack in state and federal funding to support any infrastructure improvements in these areas. Currently, the Town uses best practices to implement

infrastructure improvements in areas that are vulnerable to coastal flooding and the policies proposed in the Comprehensive Plan reinforce the Town's commitment to utilize best practices. Pushing back the date will allow more time to evaluate the aspects of Adaptation Action Areas, wait for potential future funding, and provide for consistency with any similar efforts being implemented by Palm Beach County.

- New Policy 2.6.8- The Town shall utilize best practices and initiate mitigation strategies to reduce the flood risk in coastal areas that result from high tide events, storm surge, flash floods, stormwater runoff, and the related impacts of sea level rise.
- New Policy 2.6.9- The Town shall implement engineering solutions to reduce the risk of flood in coastal areas, which may include the installation of stormwater drainage improvements as identified in the Stormwater Master Plan.

Staff comment (for both): The above policies are being proposed in order to meet the requirements of Section 163.3178(2)(f), 1-3, Florida Statutes (F.S.) In addition to the above policies, the Town has many existing policies in the Coastal Management Element that help to further implement these statutory requirements. Specifically, Policy 1.4.2 related to the Towns drainage system, Policy 1.5.14 related to restricting development in flood hazard areas, and Objective 2.1, and Policies 2.1.1 and 2.1.2 regarding directing development away from coastal high hazard areas (see Attachment C, sections 3.3.2 and 3.3.3, pages 3-7 through 3-12, and highlighted sections of Attachment D). Together, these policies will implement the statutory requirements by using best practices to reduce flood risks, improving stormwater systems, and directing development away from coastal flood zones.

- New Policy 2.6.10- The Town shall utilize the 1-Foot, 2-Foot, and 3-Foot Sea Level Rise in Palm Beach County – Jupiter Area maps identified in the Vulnerability Analysis prepared by the South Florida Regional Climate Change Compact when determining the risks of coastal flooding due to sea level rise.

Staff comment: The Department of Economic Opportunity suggested that the Town utilize maps to identify at-risk coastal areas due to sea level rise in order to meet Section 163.3178(2)(f), 1-3, F.S. staff is proposing to use the Southeast Florida Regional Climate Change Compact's Vulnerability Analysis which contains maps that show a 1-Foot, 2-Foot, and 3-Foot sea level rise scenarios (see Attachment E). The maps will allow the Town to identify these areas and further assess future infrastructure and planning needs to reduce the impacts of coastal flooding due to sea level rise (see Attachment C, section 3.3.1.1, pages 3-3 through 3-7).

- New Policy 2.6.11- The Town's Floodplain Management Regulations shall be consistent with, or more stringent than, the flood-resistant construction requirements in the Florida Building Code and applicable flood plain management regulations set forth in 44 C.F.R. part 60.

Staff comment: Currently, the Town Floodplain Management Regulations within [Chapter 22](#) of the Town Code are consistent with the Florida Building Code and 44 C.F.R. part 60 (see Attachment C, section 3.3.3.2, page 3-12). The Town is more stringent with regards to the minimum base flood elevation requirements for new homes. The Florida Building Code requires homes be built one foot above base flood whereas the Town requires

new homes to be built at one-and-a-half feet above base flood. This new policy reinforces the existing requirements in the Town Code.

- B. Internal Consistency with the Comprehensive Plan** - The proposed text amendments to Coastal Management Element are internally consistent and supported by the following objectives of the Town's Comprehensive Plan:

COASTAL MANAGEMENT ELEMENT

Policy 1.5.14- No development will be approved in flood hazard areas and floodways, that is, on land immediately adjacent to major drainage and receiving streams, rivers or low areas which are known to be subject to flooding or rushing water and which therefore, create a hazard to life and property. Rather, the Town will encourage that these lands be reserved for conservation, open space, and recreation.

Policy 1.7.2- The Town shall continue to actively enforce the Coastal Construction Code within the established Coastal Building Zone.

Objective 2.1: The Town shall direct development away from the coastal high hazard areas.

Objective 2.6 The Town shall adopt and implement strategies which increase community resiliency and protect property, infrastructure, and cultural and natural resources from the impacts of climate change, including sea level rise, changes in rainfall patterns, and extreme weather events.

Staff Comment (for all): The proposed changes to policies pertain to the implementation of Florida Statutes designed to protect property and infrastructure from the impacts of climate change and coastal flooding due to sea level rise. The proposed amendments are consistent with existing objectives and policies within the Coastal Management Element by ensuring the development and redevelopment of coastal areas are protected from the future impacts of climate change and sea level rise.

- C. Intergovernmental Coordination** - Staff has submitted an executive summary of the proposed Coastal Management Element Text Amendments to the Palm Beach County Interlocal Plan Amendment Review Committee (IPARC) on July 25, 2018. As of the date of this report, staff has not received any comments related to the text amendment.

The data and analysis supporting these text amendments will be included in the transmittal package sent to the Florida Department of Economic Opportunity (DEO).

**Conclusion.**

Staff finds the proposed comprehensive plan text amendments necessary, consistent with the Comprehensive Plan, and supported by data and analysis; therefore, staff recommends **approval** of the amendments.

**Attachments:**

Exhibit 1 – Proposed Text Amendments

Attachment A – Florida Statute 163.3178

Attachment B – DEO ORC Report

Attachment C – Pages from Hazen and Sawyer Report

Attachment D – Coastal Management Policies

Attachment E – Sea Level Rise Scenario Maps

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## **Exhibit 1 – Proposed Comprehensive Plan Text Amendments**

### **COASTAL MANAGEMENT ELEMENT:**

#### *Goals, Objectives and Policies*

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**Goal 2. The protection of human life and capital facilities from the destructive effects of hurricanes and natural disasters by limiting public expenditures and development activities in identified hurricane vulnerability zones, providing for safe and effective emergency evacuation and establishing procedures for post-disaster redevelopment.**

#### ***Hazard Mitigation and Hurricane Vulnerability Zone***

**Objective 2.1: The Town shall direct development away from the coastal high hazard areas.**

Policy 2.1.1 The Town's coastal high hazard area shall include the area as defined in Section 163.3178(2)(h), Florida Statutes and shown on the Town's Hurricane Preparedness Plan Map (see Figure 1).

Policy 2.1.2 The Town shall use the following provisions as a means to direct ~~people~~ construction away from the coastal high hazard areas:

- a. Retain undeveloped lands in the coastal high hazard areas as public recreational sites or for other nonresidential uses.
- b. Provide the opportunity for innovative land design which allows for incorporating and enhancing existing natural systems and open areas to serve as natural storm buffers and post disaster staging areas.
- c. Provide for adequate evacuation routes in the event of an emergency.
- d. Provide for recreational needs and other appropriate water dependent and water related uses in a manner consistent with the preservation of natural resources of the dune and beach system.
- e. No new uses other than recreational or water dependent structures shall be allowed in the Coastal Construction Zone (i.e., lifeguard station, restroom facilities, etc.).
- f. All construction occurring within FEMA flood vulnerability zones shall be required to meet storm and flood proofing standards required for a 100 year storm.
- g. In the event of structural damage in excess of 50% of the value of a structure, the structure should be rebuilt to current codes.
- h. All new development and redevelopment ~~in the Coastal Construction Zone~~ seaward of the Coastal Construction Control Lines established pursuant to Section 161.053, F.S., shall comply with the requirements of Chapter 161, F.S. and the Coastal Construction Code of the Town.

Policy 2.1.3 In order to reduce the exposure of life and public and private property to natural hazards the Town shall provide for general hazard mitigation by continuing enforcement of the regulations for building practices as specified in the adopted Coastal Construction Code, and shall further provide general hazard mitigation through the adoption of the future land use map with the adoption of this Comprehensive Plan. The Town shall review and implement those hazard mitigation recommendations of the Hurricane Evacuation Study and applicable existing interagency hazard mitigation reports.

#### ***Climate Change Objective and Policies***

**Objective 2.6 The Town shall adopt and implement strategies which increase community resiliency and protect property, infrastructure, and cultural and natural resources from the impacts of climate change, including sea level rise, changes in rainfall patterns, and extreme weather events.**

Policy 2.6.1 The Town shall continue its participation in the Southeast Florida Regional Climate Change Initiative.

Policy 2.6.2 The Town shall collaborate with Palm Beach County to increase regional resilience by sharing technical expertise, participating in annual summits, assessing local vulnerabilities, advancing agreed upon mitigation and adaptation strategies, and developing joint state and federal legislation policies and programs.

Policy 2.6.3 The Town shall coordinate with Palm Beach County, other local governments, and other federal, state and regional agencies and private property owners to develop initiatives and goals to address climate change.

Policy 2.6.4 By December ~~2018~~2020, the Town shall investigate the feasibility of integrating consideration of climate change impacts, and adaptation and mitigation strategies, into existing Comprehensive Plan goals, objectives and policies and land development regulations.

Policy 2.6.5 By December ~~2018~~2020, the Town shall investigate the feasibility of the use of Adaptation Action Areas as provided by Section 163.3177(6)(g)(10), Florida Statutes, to identify areas vulnerable to coastal storm surge and sea level rise impacts.

Policy 2.6.7 The Town shall continue to promote the use of mitigation strategies to increase energy efficiency and conservation, and to reduce greenhouse gas emissions. The mitigation strategies may include, but are not limited to, the adoption of Comprehensive Plan policies or land development regulations pertaining to land use and transportation strategies such as requiring compact residential development, incentives for mixed use and redevelopment projects that maximize internal trip capture, clustering residential densities along transit routes, improving access to transit and non-motorized movement, requiring interconnectivity among adjoining parcels of land, and incentives for green building methods.

Policy 2.6.8 The Town shall utilize best practices and initiate mitigation strategies to reduce the flood risk in coastal areas that result from high tide events, storm surge, flash floods, stormwater runoff, and the related impacts of sea level rise.

Policy 2.6.9 The Town shall implement engineering solutions to reduce the risk of flood in coastal areas, which may include the installation of stormwater drainage improvements as identified in the Stormwater Master Plan.

Policy 2.6.10 The Town shall utilize the 1-Foot, 2-Foot, and 3-Foot Sea Level Rise in Palm Beach County – Jupiter Area maps identified in the Vulnerability Analysis prepared by the South Florida Regional Climate Change Compact when determining the risks of coastal flooding due to sea level rise.

Policy 2.6.11 The Town’s Floodplain Management Regulations shall be consistent with, or more stringent than, the flood-resistant construction requirements in the Florida Building Code and applicable flood plain management regulations set forth in 44 C.F.R. part 60.

**163.3178 Coastal management.—**

(1) The Legislature recognizes there is significant interest in the resources of the coastal zone of the state. Further, the Legislature recognizes that, in the event of a natural disaster, the state may provide financial assistance to local governments for the reconstruction of roads, sewer systems, and other public facilities. Therefore, it is the intent of the Legislature that local government comprehensive plans restrict development activities where such activities would damage or destroy coastal resources, and that such plans protect human life and limit public expenditures in areas that are subject to destruction by natural disaster.

(2) Each coastal management element required by s. 163.3177(6)(g) shall be based on studies, surveys, and data; be consistent with coastal resource plans prepared and adopted pursuant to general or special law; and contain:

(a) A land use and inventory map of existing coastal uses, wildlife habitat, wetland and other vegetative communities, undeveloped areas, areas subject to coastal flooding, public access routes to beach and shore resources, historic preservation areas, and other areas of special concern to local government.

(b) An analysis of the environmental, socioeconomic, and fiscal impact of development and redevelopment proposed in the future land use plan, with required infrastructure to support this development or redevelopment, on the natural and historical resources of the coast and the plans and principles to be used to control development and redevelopment to eliminate or mitigate the adverse impacts on coastal wetlands; living marine resources; barrier islands, including beach and dune systems; unique wildlife habitat; historical and archaeological sites; and other fragile coastal resources.

(c) An analysis of the effects of existing drainage systems and the impact of point source and nonpoint source pollution on estuarine water quality and the plans and principles, including existing state and regional regulatory programs, which shall be used to maintain or upgrade water quality while maintaining sufficient quantities of water flow.

(d) A component which outlines principles for hazard mitigation and protection of human life against the effects of natural disaster, including population evacuation, which take into consideration the capability to safely evacuate the density of coastal population proposed in the future land use plan element in the event of an impending natural disaster. The Division of Emergency Management shall manage the update of the regional hurricane evacuation studies, ensure such studies are done in a consistent manner, and ensure that the methodology used for modeling storm surge is that used by the National Hurricane Center.

(e) A component which outlines principles for protecting existing beach and dune systems from human-induced erosion and for restoring altered beach and dune systems.

(f) A redevelopment component that outlines the principles that must be used to eliminate inappropriate and unsafe development in the coastal areas when opportunities arise. The component must:

1. Include development and redevelopment principles, strategies, and engineering solutions that reduce the flood risk in coastal areas which results from high-tide events, storm surge, flash floods, stormwater runoff, and the related impacts of sea-level rise.
2. Encourage the use of best practices development and redevelopment principles, strategies, and engineering solutions that will result in the removal of coastal real property from flood zone designations established by the Federal Emergency Management Agency.
3. Identify site development techniques and best practices that may reduce losses due to flooding and claims made under flood insurance policies issued in this state.
4. Be consistent with, or more stringent than, the flood-resistant construction requirements in the Florida Building Code and applicable flood plain management regulations set forth in 44 C.F.R. part 60.
5. Require that any construction activities seaward of the coastal construction control lines established pursuant to s. 161.053 be consistent with chapter 161.
6. Encourage local governments to participate in the National Flood Insurance Program Community Rating System administered by the Federal Emergency Management Agency to achieve flood insurance premium discounts for their residents.

(g) A shoreline use component that identifies public access to beach and shoreline areas and addresses the need for water-dependent and water-related facilities, including marinas, along shoreline areas. Such component must include the strategies that will be used to preserve recreational and commercial working waterfronts as defined in s. 342.07.

(h) Designation of coastal high-hazard areas and the criteria for mitigation for a comprehensive plan amendment in a coastal high-hazard area as defined in subsection (8). The coastal high-hazard area is the area below the elevation of the category 1 storm surge line as established by a Sea, Lake, and Overland Surges from Hurricanes (SLOSH) computerized storm surge model. Application of mitigation and the application of development and redevelopment policies, pursuant to s. 380.27(2), and any rules adopted thereunder, shall be at the discretion of local government.

(i) A component which outlines principles for providing that financial assurances are made that required public facilities will be in place to meet the demand imposed by the completed development or redevelopment. Such public facilities will be scheduled for phased completion to coincide with demands generated by the development or redevelopment.

(j) An identification of regulatory and management techniques that the local government plans to adopt or has adopted in order to mitigate the threat to human life and to control proposed development and redevelopment in order to protect the coastal environment and give consideration to cumulative impacts.

(k) A component which includes the comprehensive master plan prepared by each deepwater port listed in s. 311.09(1), which addresses existing port facilities and any proposed expansions, and which adequately addresses the applicable requirements of paragraphs (a)-(k) for areas within the port and proposed expansion areas. Such component shall be submitted to the appropriate local government at least 6 months prior to the due date of the local plan and shall be integrated with, and shall meet all criteria specified in, the coastal management element. “The appropriate local government” means the municipality having the responsibility for the area in which the deepwater port lies, except that where no municipality has responsibility, where a municipality and a county each have responsibility, or where two or more municipalities each have responsibility for the area in which the deepwater port lies, “the appropriate local government” means the county which has responsibility for the area in which the deepwater port lies. Failure by a deepwater port which is not part of a local government to submit its component to the appropriate local government shall not result in a local government being subject to sanctions pursuant to ss. 163.3167 and 163.3184. However, a deepwater port which is not part of a local government shall be subject to sanctions pursuant to s. 163.3184.

(3) Expansions to port harbors, spoil disposal sites, navigation channels, turning basins, harbor berths, and other related inwater harbor facilities of ports listed in s. 403.021(9); port transportation facilities and projects listed in s. 311.07(3)(b); intermodal transportation facilities identified pursuant to s. 311.09(3); and facilities determined by the state land planning agency and applicable general-purpose local government to be port-related industrial or commercial projects located within 3 miles of or in a port master plan area which rely upon the use of port and intermodal transportation facilities may not be designated as developments of regional impact if such expansions, projects, or facilities are consistent with comprehensive master plans that are in compliance with this section.

(4) Improvements and maintenance of federal and state highways that have been approved as part of a plan approved pursuant to s. 380.045 or s. 380.05 shall be exempt from the provisions of s. 380.27(2).

(5) The appropriate dispute resolution process provided under s. 186.509 must be used to reconcile inconsistencies between port master plans and local comprehensive plans. In recognition of the state’s commitment to deepwater ports, the state comprehensive plan must include goals, objectives, and policies that establish a statewide strategy for enhancement of existing deepwater ports, ensuring that priority is given to water-dependent land uses. As an incentive for promoting plan consistency, port facilities as defined in s. 315.02(6) on lands owned or controlled by a deepwater port as defined in s. 311.09(1), as of the effective date of this act shall not be subject to development-of-regional-impact review provided the port either successfully completes an alternative comprehensive development agreement with a local government pursuant to ss. 163.3220-163.3243 or successfully enters into a development agreement with the state land planning agency and applicable local government pursuant to s. 380.032 or, where the port is a department of a local government, successfully enters into a

development agreement with the state land planning agency pursuant to s. 380.032. Port facilities as defined in s. 315.02(6) on lands not owned or controlled by a deepwater port as defined in s. 311.09(1) as of the effective date of this act shall not be subject to development-of-regional-impact review provided the port successfully enters into a development agreement with the state land planning agency and applicable local government pursuant to s. 380.032 or, where the port is a department of a local government, successfully enters into a development agreement with the state land planning agency pursuant to s. 380.032.

(6) Each port listed in s. 311.09(1) and each local government in the coastal area which has spoil disposal responsibilities shall provide for or identify disposal sites for dredged materials in the future land use and port elements of the local comprehensive plan as needed to assure proper long-term management of material dredged from navigation channels, sufficient long-range disposal capacity, environmental sensitivity and compatibility, and reasonable cost and transportation. The disposal site selection criteria shall be developed in consultation with navigation and inlet districts and other appropriate state and federal agencies and the public. For areas owned or controlled by ports listed in s. 311.09(1) and proposed port expansion areas, compliance with the provisions of this subsection shall be achieved through comprehensive master plans prepared by each port and integrated with the appropriate local plan pursuant to paragraph (2)(k).

(7) Each county shall establish a county-based process for identifying and prioritizing coastal properties so they may be acquired as part of the state's land acquisition programs. This process must include the establishment of criteria for prioritizing coastal acquisitions which, in addition to recognizing pristine coastal properties and coastal properties of significant or important environmental sensitivity, recognize hazard mitigation, beach access, beach management, urban recreation, and other policies necessary for effective coastal management.

(8)(a) A proposed comprehensive plan amendment shall be found in compliance with state coastal high-hazard provisions if:

1. The adopted level of service for out-of-county hurricane evacuation is maintained for a category 5 storm event as measured on the Saffir-Simpson scale; or

2. A 12-hour evacuation time to shelter is maintained for a category 5 storm event as measured on the Saffir-Simpson scale and shelter space reasonably expected to accommodate the residents of the development contemplated by a proposed comprehensive plan amendment is available; or

3. Appropriate mitigation is provided that will satisfy subparagraph 1. or subparagraph 2. Appropriate mitigation shall include, without limitation, payment of money, contribution of land, and construction of hurricane shelters and transportation facilities. Required mitigation may not exceed the amount required for a developer to accommodate impacts reasonably attributable to development. A local government and a developer shall enter into a binding agreement to memorialize the mitigation plan.

(b) For those local governments that have not established a level of service for out-of-county hurricane evacuation by July 1, 2008, by following the process in paragraph (a), the level of service shall be no greater than 16 hours for a category 5 storm event as measured on the Saffir-Simpson scale.

(c) This subsection shall become effective immediately and shall apply to all local governments. No later than July 1, 2008, local governments shall amend their future land use map and coastal management element to include the new definition of coastal high-hazard area and to depict the coastal high-hazard area on the future land use map.

**History.**—s. 7, ch. 85-55; s. 8, ch. 86-191; s. 24, ch. 87-224; s. 7, ch. 93-206; s. 899, ch. 95-147; s. 11, ch. 96-320; s. 65, ch. 99-251; s. 2, ch. 2005-157; s. 2, ch. 2006-68; s. 4, ch. 2009-85; s. 44, ch. 2010-102; s. 14, ch. 2011-139; ss. 7, 80, ch. 2012-96; s. 6, ch. 2012-99; s. 1, ch. 2015-69.

**Rick Scott**  
GOVERNOR



**Cissy Proctor**  
EXECUTIVE DIRECTOR

July 15, 2016

The Honorable Todd Wodraska  
Mayor, Town of Jupiter  
210 Military Trail  
Jupiter, Florida 33458

Dear Mayor Wodraska:

The Department of Economic Opportunity has completed its review of the proposed comprehensive plan amendment for the Town of Jupiter (Amendment No. 16-1ER), which was received on May 16, 2016 and determined complete on May 17, 2016. We have reviewed the proposed amendment in accordance with the state coordinated review process set forth in sections 163.3184(2) and (4), Florida Statutes (F.S.), for compliance with Chapter 163, Part II, F.S. Review comments received by the Department from the appropriate reviewing agencies are also enclosed.

The attached Objections, Recommendations, and Comments Report outlines our findings concerning the amendment. We have identified two objections and one comment and have included recommendations regarding measures that can be taken to address the objection. We look forward to working together with you to address these issues.

The Town should act by choosing to adopt, adopt with changes, or not adopt the proposed amendment. Also, please note that section 163.3184(4)(e)1., F.S., provides that if the second public hearing is not held within 180 days of your receipt of the Department of Economic Opportunity report, the amendment shall be deemed withdrawn unless extended by agreement with notice to the Department of Economic Opportunity and any affected party that provided comment on the amendment. For your assistance, we have enclosed the procedures for final adoption and transmittal of the comprehensive plan amendment.

Florida Department of Economic Opportunity | Caldwell Building | 107 E. Madison Street | Tallahassee, FL 32399  
866.FLA.2345 | 850.245.7105 | 850.921.3223 Fax

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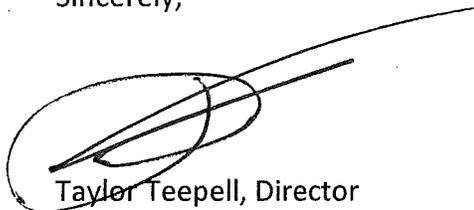
The Honorable Todd Wodraska

July 15, 2016

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If you have any questions related to this review, please contact Erin Schaefer, at (850) 717-8498, or by email at [Erin.Schaefer@deo.myflorida.com](mailto:Erin.Schaefer@deo.myflorida.com).

Sincerely,

A handwritten signature in black ink, consisting of several overlapping loops and a long horizontal stroke extending to the right.

Taylor Teepell, Director  
Division of Community Development

TT/es

Enclosures: Objections, Recommendations, and Comments Report  
Procedures for Adoption  
Agency Comments

cc: John Sickler, AICP, Director of Planning and Zoning, Town of Jupiter  
Michael J. Busha, AICP, Executive Director, Treasure Coast Regional Planning Council

## OBJECTIONS, RECOMMENDATIONS AND COMMENTS REPORT

### PROPOSED COMPREHENSIVE PLAN AMENDMENT

#### TOWN OF JUPITER (DEO No. 16-1ER)

Department staff identified the following three objections. If the Town adopts the amendment without addressing the objections, the Department may find the amendment not in compliance pursuant to section 163.3184(4)(e)4., Florida Statutes (F.S.).

#### Objections:

##### **Objection 1. Future Land Use Map – Planning Horizon**

The *Future Land Use Map* currently adopted by the Town does not have any associated timeframe and thus does not satisfy the requirement to cover an associated period covering at least one five-year and ten-year period.

**Authority:** Section 163.3177(5)(a), F.S.

**Recommendation:** The Town should revise the *Future Land Use Map* to reflect at least one five-year planning horizon and one ten-year planning horizon. The specific planning horizon should be included in the title of the map.

##### **Objection 2. Future Land Use Map Series – Hurricane Preparedness Map (Coastal High-Hazard Area)**

Section 163.3178(2)(h), F.S. defines the *coastal high-hazard area* as the area below the elevation of the Category 1 storm surge line as established by a *Sea, Lake, and Overland Surges from Hurricanes* (SLOSH) computerized storm surge model. Coastal Management Policy 2.1.1 of the Town's Comprehensive Plan defines the *coastal high-hazard area* as the Category 1 Hurricane Evacuation Zone, reflecting an out-of-date definition of the *coastal high-hazard area* (the Florida Statutes were revised in 2006 to include the current definition).

**Authority:** Sections 163.3178(2)(h), and 163.3177(6)(a)10.c.VI., F.S.

**Recommendation:** The Town should revise Coastal Management Element Policy 2.1.1 and the associated *Hurricane Preparedness Plan Map* to reflect the updated definition of the *coastal high-hazard area*.

**Objection 3. *Peril of Flood* (Section 163.3178(2)(f), F.S.)**

In 2015, section 163.3178(2)(f), F.S., was revised to include new requirements for local governments that are required to adopt a coastal management element, including the incorporation of a redevelopment component outlining principles used to eliminate inappropriate and unsafe development in coastal areas, with a focus on areas subject to flooding now and in the future. The associated legislation is referred to as *Peril of Flood* and it specifically encompasses section 163.3178(2)(f)1.-6., F.S.

The Town elected to use this amendment to facilitate compliance with *the Peril of Flood* requirements:

- Conservation Element Policy 1.6.4 is proposed to direct the Town to participate in the national Flood Insurance Program Community Rating System.
- Coastal Management Element Policy 2.6.8 is proposed to reduce the risk of flooding in coastal areas that may result from high tide events, storm surge, flash floods, stormwater runoff, and the related impacts of sea level rise.

However, these proposed policies do not meet all of the statutory requirements in the following ways:

- Coastal areas that are at risk for high-tide events, storm surges, flash floods, stormwater runoff, and sea-level rise are not identified, either in the *data and analysis* supporting the amendment or through a map or policy to be adopted.
- Proposed Coastal Management Element Policy 2.6.8 does not address the components of section 163.3178(2)(f)1., F.S., i.e., identifying and encouraging development and redevelopment principles, strategies, and engineering solutions that reduce the flood risk in coastal areas which results from high-tide events, storm surge, flash floods, stormwater runoff, and the related impacts of sea-level rise.
- The amendment does not identify development and redevelopment principles, strategies, and engineering solutions that will remove real property from flood zone designations pursuant to section 163.3178(2)(f)2., F.S.
- The amendment does not identify site development techniques and best practices that reduce losses due to flooding, pursuant to section 163.3178(2)(f)3., F.S.
- The amendment does not demonstrate construction requirements consistent with or more stringent than those required by section 163.3178(2)(f)4., F.S.

- Existing Coastal Management Element Policy 2.1.3 discusses the building practices required in the Town's adopted Coastal Construction Code, but does not demonstrate that this Code is consistent with the requirements of Chapter 161, F.S., pursuant to section 163.3178(2)(f)5., F.S.

**Authority:** Section 163.3178(2)(f), 1.-5., F.S.

**Recommendation:** The Town should use one of several available tools to identify its at-risk coastal areas (such as those provided by the National Oceanic and Atmospheric Administration at the following links: <https://coast.noaa.gov/digitalcoast/tools/flood-exposure> and <http://coast.noaa.gov/digitalcoast/tools/slr>). Based upon the identification and analysis of areas at risk to flooding now, and in the future, the amendment should be revised to identify principles, strategies, and engineering solutions appropriate to Jupiter that reduce flood risk and that remove real property from areas subject to inundation by flood and identify site development techniques and best practices that reduce losses due to flooding. The revised amendment should also demonstrate that the Town's construction requirements are consistent with or more stringent than 44 C.F.R. part 60., and explicitly affirm that the Town's adopted Coastal Construction Code is consistent with the requirements Section 163.3178(2)(f)5., F.S. and Chapter 161, F.S. Alternatively, the Town could not adopt the proposed amendments related to Peril of Flood legislation.

**SUBMITTAL OF ADOPTED COMPREHENSIVE PLAN AMENDMENTS**

**FOR STATE COORDINATED REVIEW**

**Section 163.3184(4), Florida Statutes**

**May 2011**

**NUMBER OF COPIES TO BE SUBMITTED:** Please submit three complete copies of all comprehensive plan materials, of which one complete paper copy and two complete electronic copies on CD ROM in Portable Document Format (PDF) to the Department of Economic Opportunity and one copy to each entity below that provided timely comments to the local government: the appropriate Regional Planning Council; Water Management District; Department of Transportation; Department of Environmental Protection; Department of State; the appropriate county (municipal amendments only); the Florida Fish and Wildlife Conservation Commission and the Department of Agriculture and Consumer Services (county plan amendments only); and the Department of Education (amendments relating to public schools); and for certain local governments, the appropriate military installation and any other local government or governmental agency that has filed a written request.

**SUBMITTAL LETTER:** Please include the following information in the cover letter transmitting the adopted amendment:

\_\_\_\_\_ Department of Economic Opportunity identification number for adopted amendment package;

\_\_\_\_\_ Summary description of the adoption package, including any amendments proposed but not adopted;

\_\_\_\_\_ Ordinance number and adoption date;

\_\_\_\_\_ Certification that the adopted amendment(s) has been submitted to all parties that provided timely comments to the local government;

\_\_\_\_\_ Name, title, address, telephone, FAX number and e-mail address of local government contact;

\_\_\_\_\_ Letter signed by the chief elected official or the person designated by the local government.

**ADOPTION AMENDMENT PACKAGE:** Please include the following information in the amendment package:



Hazen and Sawyer  
2101 NW Corporate Blvd., Suite 301  
Boca Raton, FL 33062 • 561-997-8070



# Town of Jupiter Code Review – Sea Level Rise and Climate Change

Final Report  
Hazen No. 44250-022  
July 26, 2017

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## Executive Summary

Planning for climate change and sea level rise has become a priority of many local governments in Southeast Florida. Because Southeast Florida coastal communities are among the most vulnerable in the United States to the effects of climate change and sea level rise, they are also at the forefront of implementing comprehensive plan policies and code modifications to increase climate change resiliency. Therefore, it is instructive to investigate what methods South Florida and other vulnerable communities throughout the United States are using to prepare for potential future conditions.

The State of Florida is beginning to require coastal communities to proactively plan for the increased vulnerability of flooding related to climate change. Section 163.3178(2)(f), F.S. was recently revised in 2015, (known as the Peril of Flood legislation). The legislation requires coastal local governments, including the Town, to implement policies within their comprehensive plan coastal management elements to prepare for increased flooding vulnerability. The coastal management elements of comprehensive plans must be revised to include principles for eliminating inappropriate and unsafe development in coastal areas, with a focus on areas subject to current or future flooding.

## Review of Current Codes and Development Guidelines

Current Town comprehensive plan policies, codes and development guidelines were reviewed and compared to other coastal local governments in Southeast Florida, along with local governments in other regions confronting similar issues. Areas where changes may help improve the Town's resiliency relative to climate change and sea level rise are identified below. The following general code and development guideline subject areas were investigated and compared between the Town and other local governments:

- Finished Floor Elevation Requirements
- Seawall Elevation Requirements
- Flood Protection Level of Service for Roads
- Adaptation Action Areas
- Salt Water Intrusion/Aquifer Recharge Policies
- Limitation of Development in Flood-Prone Coastal Areas
- General Requirements for Development to Consider Sea Level Rise

## Finished Floor Elevation Requirements

The current requirement in the Town of Jupiter (outlined in the Utilities Guide for Development - Design and Construction Standards – Water and Stormwater Manual) indicates that the lowest finished floor elevation shall be greater than six inches above the BFE established by the FEMA FIRM. It appears that this is not compliant with new Florida Building Code which incorporates the requirements of ASCE 24-05. It is recommended that new language be added as noted in (4) below.

Town of Jupiter – Utilities Guide for Development - Design and Construction Standards – Water and Stormwater - Section IV - 2. Level of Service Standards:

Lowest finished floor elevation shall be above the greater of the following:

- (1) *Above calculated flood stage during a 100-year, 3-day event with no discharge.*
- (2) *(Eighteen inches (18")) above the 100-year flood elevation established by the applicable FEMA FIRM or a regional basin study adopted by the Town.*
- (3) *Eighteen inches (18") or seven inches (7") (respectively for residential and non-residential construction) above the adjacent average road crown, except as waived by the Town.*
- (4) *In accordance with current Town adopted Florida Building Code, amendments and ASCE 24-05 requirements.*

## **Seawall Elevation Requirements**

Some South Florida local governments have increased minimum seawall height requirements in their code of ordinances. It is recommended that the Town investigate the feasibility of implementing minimum seawall heights for new construction, reconstruction, or rehabilitation of public and private seawalls, and mandatory replacement/raising of seawalls observed to allow tidal flooding. The Town should also consider requiring that seawalls constructed below certain elevations be designed to accommodate future upgrades to higher elevations. Seawalls installed above a certain elevation in most locations shall require facing with riprap or mangroves in accordance with Section 27-1397 of current Town code. When considering an ordinance requiring implementation of higher seawall elevations, the increased cost of construction, reconstruction, or rehabilitation should be balanced with the economic benefits from an increase in resilience to tidal flooding events and the likelihood of those flooding events occurring.

It is recommended that a study be completed to examine the consequences and benefits of implementing seawall elevation requirements. The study may include:

- Study existing public and private seawall elevations and condition, and prevailing FFE and FEMA BFE of waterfront properties.
- Anticipate how surrounding stormwater infrastructure could be affected by raising elevations.
- Identify code language and construction standards for new or rehabilitated seawalls, including required minimum and maximum seawall elevations for construction, reconstruction, or rehabilitation.
- Prioritize improvements, and formulate plan and schedule for rehabilitating and/or raising public seawalls.
- Investigate compatibility with other Comprehensive Plan Policies / Code of Ordinances, and Town objectives.

## **Flood Protection Level of Service for Roads**

The Town currently has higher flood protection LOS standards for certain roads when compared to some other South Florida local governments such as Palm Beach County and Miami-Dade County. Therefore, the Town is already taking an aggressive approach to maintaining LOS and it is recommended that the

Town maintain its current LOS standards. The Town may consider clarifying in its Guide for Development Design and Construction Standards – Water and Stormwater [Town of Jupiter Utilities, 2016], that the flood protection LOS standards are for LOS criteria established at the time of development. The Town may also wish to consider investigating adding enhanced LOS standards for coastal areas prone to flooding, by implementing the following policy in its Comprehensive Plan;

*Town of Jupiter – Comprehensive Plan – Coastal Management Element – Proposed Policy 2.6.9 – “Although flooding level of service criteria for existing roadways will generally be maintained as that which was established at the time of development, the Town shall endeavor to increase flooding level of service in coastal areas prone to tidal flooding due to sea level rise when deemed feasible by the Town.”*

## **Adaptation Action Areas**

As already identified in the Town of Jupiter - Comprehensive Plan - Coastal Management Element - Policy 2.6.5, it is recommended that the Town investigate the feasibility of Adaptation Action Areas (AAAs) to identify areas vulnerable to coastal storm surge and sea level rise impacts. The Town of Jupiter – 2017 Water and Stormwater Master Plan Update identified the potential AAAs for flood prone areas and for areas subject to saltwater intrusion that the Town may consider identifying in its Comprehensive Plan. Additionally, the Town should coordinate the boundaries of the AAAs with the request by the Florida Department of Economic Opportunity (DEO) to identify at-risk coastal areas to satisfy the Peril of Flood legislation requirements. It is not yet clear if AAAs will prove to be an effective tool for local governments to attract State and Federal funding as had originally been envisioned. However, it is recommended that the AAAs be established in preparation for funding that may become available in the future. Refer to the “Peril of Flood Legislation – Mapping Compliance Strategy” section for a discussion of strategies to identify specific AAAs.

## **Salt Water Intrusion/Aquifer Recharge**

The Town appears to have a robust set of policies in place related to salt water intrusion / aquifer recharge. Proactive planning such as this should guide the Town in improving resiliency relative to climate change and sea level rise. It is recommended that the Town continue to implement comprehensive plan policies related to salt water intrusion / aquifer recharge.

## **Limitation of Development in Flood-Prone Coastal Areas**

The Town also appears to have a robust set of policies in place that aim to limit or reduce development in flood-prone coastal areas. Proactive planning such as this should guide the Town in improving resiliency relative to climate change and sea level rise. It is recommended that the Town continue to implement comprehensive plan policies related to limitation or reduction of development in flood-prone coastal areas.

## **General Requirements for Development to Consider Sea Level Rise**

The Town currently enforces FFE requirements and roadway LOS requirements, and may consider updating these requirements based on predicted future effects of sea level rise and climate change. However,

The Town may wish to include more general language in its code of ordinances or comprehensive plans to ensure that climate change is being considered in public and private development. The Town may consider developing requirements for a letter, report, or prescriptive checklist indicating how a project has been designed for climate change resiliency and which is required to be submitted by developers to plan reviewers.

## Peril of Flood Legislation

Section 163.3178(2)(f), F.S. was revised in 2015, (Peril of Flood legislation), requiring the coastal management elements of comprehensive plans to include principles for eliminating inappropriate and unsafe development in coastal areas, with a focus on areas subject to current or future flooding. The Town submitted its initial proposed comprehensive plan amendment to address the Peril of Flood legislation on May 16, 2016 to the DEO. The DEO responded with an Objections, Recommendations, and Comments (ORC) report on July 15, 2016 (attached in **Appendix A**) identifying objections and comments to the proposed amendment language. The following strategies and policy language are proposed to assist the Town in responding to the DEO's concerns and complying with the Peril of Flood legislation.

### Peril of Flood Legislation – Mapping Compliance Strategy

In the July 2016 ORC letter, the DEO recommended that the Town use available tools to identify (map) its at-risk coastal areas in the comprehensive plan Peril of Flood amendment in accordance with 163.3178(2)(f), F.S. Several options are available to the Town to address this recommendation:

- The Town may choose to propose that the 1, 2 and 3-foot sea level rise scenarios and maps identified in the Vulnerability Analysis for Southeast Florida to Sea Level Rise report be adopted, [Palm Beach County, 2017], similar to the Town of Jupiter Inlet Colony. This approach can be beneficial as it synchronizes the Town's maps to the efforts of the Southeast Florida Regional Climate Change Compact (SFRCCC). This approach also would be in conformance with the Town's stated comprehensive plan policy to coordinate with the SFRCCC. The 1, 2, and 3-foot sea level rise scenario maps for the Jupiter Inlet area are provided in the body of the report as an example.
- The Town may also choose from another existing map, such as the Hurricane Preparedness Plan Map Series generated to identify Hurricane Tide Surge Zones to accompany Policy 2.2.10 under the Coastal Management Element recently adopted in October 2016.
- The Town may also consider taking the DEO's recommendation and use the National Oceanic and Atmospheric Administration (NOAA) mapper tools to identify at risk areas [NOAA, 2017]. A benefit of this mapping tool is that it does not only rely on a projection of areas flooded due to sea level rise, but also has the capability to consider societal, infrastructure, and ecosystem risks. Figures are provided in Section 3 of this report which show example maps generated. The quality of data generated by this tool is such that it can be used as an aid for identifying at-risk coastal areas, but not as a tool to solely rely on. Detailed local government knowledge of the Town's unique characteristics and objectives should also be used.

Finally, any policy language proposed should include a component that indicates how frequently a vulnerability analysis will be updated. Upon the Town’s selection of the description or map to be used to identify vulnerable areas, suggested language for the new policy could be as follows:

*Town of Jupiter – Comprehensive Plan – Coastal Management Element - Proposed Policy X.X:  
To determine the coastal areas at risk for flooding, the Town shall rely on (insert selected description or reference to map of vulnerable properties here). At least every five years, beginning in FY 2017/18, the Town shall reassess, and either reconfirm or update the boundaries of the coastal areas at risk.*

## **Peril of Flood Legislation – Principles, Strategies, and Engineering Solutions Compliance Strategy**

In the July 2016 ORC letter, the DEO recommended that the comprehensive plan Peril of Flood amendment be revised to identify principles, strategies, and engineering solutions appropriate to the Town to reduce flood risk and that remove real property from areas subject to inundation by flood in accordance with 163.3178(2)(f), 1-3 F.S. The DEO also recommended to identify site development techniques and best practices that reduce losses due to flooding. Multiple policies already exist throughout the Town’s Comprehensive Plan - Coastal Management Element that appear to address many of the concerns of F.S. 163.3178(2)(f), 1-3. It is recommended that the DEO’s attention be directed to these existing policies, which include the following:

- Policy 1.4.2
- Policy 1.5.14
- Objective 2.1
- Policy 2.1.1
- Policy 2.1.2, a - h
- Policy 2.6.5

An amendment could also be considered that directs attention to the efforts in the existing Community Investment Plan. Suggested language for the new policy could be as follows:

*Town of Jupiter – Comprehensive Plan – Coastal Management Element – Proposed Policy X.X –  
By FY 2016/2017, the Town will implement engineering solutions throughout the Town to reduce the flood risk in coastal areas through the Community Investment Program. Solutions may include the installation of stormwater drainage improvements identified in the regularly updated Stormwater Master Plan, including pervious pavement and provisions for future stormwater pump stations.*

To directly capture the Peril of Flood legislation language, it is recommended to include the originally submitted policy language from the Town’s May 2016 proposal to the DEO as a component of this. The language is reiterated below:

*Town of Jupiter – Comprehensive Plan – Coastal Management Element – Proposed Policy 2.6.8 –  
“The Town shall continue to utilize best practices and initiate mitigation strategies to reduce the risk of flooding in coastal areas that may result from high tide events, storm surge, flash floods, stormwater runoff, and the related impacts of sea level rise.”*

Also, if the Town decides to implement additional freeboard or increased minimum seawall elevation requirements, these could also be cited as other proactive strategies toward meeting this requirement.

## **Peril of Flood Legislation – Consistency with FBC and 44 C.F.R. part 60 Compliance Strategy**

In the July 2016 ORC letter, the DEO recommended that the comprehensive plan Peril of Flood amendment be revised to demonstrate that the Town's construction requirements are consistent with or more stringent than 44 C.F.R. part 60 in accordance with 163.3178(2)(f), 4 F.S. It is beyond the scope of this report to investigate and compare the Town's flood-resistant construction requirements to the FBC and 44 C.F.R. Part 60 for compliance with F.S. 163.3178(2)(f),4. However, the Town's Floodplain Management Ordinance was recently revised in April 2015 to comply with new requirements of the FBC, under Ordinance 28-14 Building Code Technical Amendments and Ordinance 29-14 Flood Prevention and Protection. Once compliance is confirmed, it is recommended that the Town implement a similar strategy to the Town of Jupiter Inlet Colony and the City of Boynton Beach, by explicitly stating compliance with the requirements. Suggested language for the new policy could be as follows:

*Town of Jupiter - Comprehensive Plan – Coastal Management Element – Proposed Policy X.XX - “The Town's Floodplain Management Regulations shall continue to be consistent with, or more stringent than, the flood-resistant construction requirements in the Florida Building Code and applicable flood plain management regulations set forth in 44 C.F.R. part 60.”*

## **Peril of Flood Legislation – Coastal Construction Compliance Strategy**

In the July 2016 ORC letter, the DEO recommended that the comprehensive plan Peril of Flood amendment be revised to explicitly affirm that the Town's adopted Coastal Construction Code is consistent with the requirements Section 163.3178(2)(f)5., F.S. and Chapter 161, F.S. It is beyond the scope of this report to investigate and compare that the Town's Coastal Construction Code is consistent with Chapter 161, F.S and compliance with F.S. 163.3178(2)(f),5. Once the Town's Coastal Construction Code is confirmed to be consistent with Chapter 161, F.S., the following revision to Policy 2.1.2 may be considered:

*Town of Jupiter - Comprehensive Plan – Coastal Management Element – Proposed Revision to Existing Policy 2.1.2 - The Town shall use the following provisions as a means to direct people away from the coastal high hazard areas: h. All new development and redevelopment in the Coastal Construction Zone and seaward of the coastal construction control lines established pursuant to s. 161.053 shall comply with the requirements of Chapter 161, F.S. and the Coastal Construction Code of the Town, and the Coastal Construction Code shall be consistent with Chapter 161, F.S.*

## **Peril of Flood Legislation – Participation in the FEMA NFIP CRS**

The DEO had no objections or comments regarding the Town's approach to Section 163.3178(2)(f), 6. The Town's initial response provided to the DEO on May 16, 2016 should already be compliant with FS 163.3178(2)(f),6. The policy language is reiterated below:

*Town of Jupiter - Comprehensive Plan – Coastal Management Element – Proposed Policy 1.6.4 – “The Town will continue to participate in the National Flood Insurance Program Community Rating System (CRS) and strive to maintain or improve its current CRS rating.”*

## 1. Introduction

Planning for climate change and sea level rise has become a priority of many local governments in Southeast Florida. Because Southeast Florida coastal communities are among the most vulnerable in the United States to the effects of climate change and sea level rise, they are also at the forefront of implementing comprehensive plan policies and code modifications to increase climate change resiliency. Therefore, it is instructive to investigate what methods South Florida and other vulnerable communities throughout the United States are using to prepare for potential future conditions.

The State of Florida is beginning to require coastal communities to proactively plan for the increased vulnerability of flooding related to climate change. Section 163.3178(2)(f), F.S. was recently revised in 2015, (known as the Peril of Flood legislation). The legislation requires coastal local governments, including the Town, to implement policies within its comprehensive plan coastal management elements to prepare for increased flooding vulnerability. The coastal management elements of comprehensive plans must be revised to include principles for eliminating inappropriate and unsafe development in coastal areas, with a focus on areas subject to current or future flooding.

In Section 2 of this report, current Town comprehensive plan policies, codes and development guidelines are reviewed and compared to other coastal local governments in Southeast Florida, along with local governments in other regions confronting similar issues. Areas where changes may help improve the Town's resiliency relative to climate change and sea level rise are identified.

The Town submitted its initial proposed comprehensive plan amendment to address the Peril of Flood legislation on May 16, 2016 to the Florida Department of Economic Opportunity (DEO). The DEO responded on July 15, 2016 identifying objections and comments to the Town's proposed amendment language relating to the Peril of Flood legislation. In Section 3 of this report, strategies and policy language are proposed to assist the Town in responding to the DEO's concerns and complying with the Peril of Flood legislation.

## 2.4 Adaptation Action Areas

Florida Statutes Chapter 163 requires that local governments create a comprehensive plan. In 2011, language was introduced into Florida Statutes Chapter 163 that created the concept of AAAs. Excerpts from the Florida Statutes below provide a definition of AAAs.

*Florida Statutes - Section 163.3164(1) - "Adaptation action area" or "adaptation area" means a designation in the coastal management element of a local government's comprehensive plan which identifies one or more areas that experience coastal flooding due to extreme high tides and storm surge, and that are vulnerable to the related impacts of rising sea levels for the purpose of prioritizing funding for infrastructure needs and adaptation planning."*

*Florida Statutes - Section 163.3177(6)(g)(10). – "At the option of the local government, develop an adaptation action area designation for those low-lying coastal zones that are experiencing coastal flooding due to extreme high tides and storm surge and are vulnerable to the impacts of rising sea level. Local governments that adopt an adaptation action area may consider policies within the coastal management element to improve resilience to coastal flooding resulting from high-tide events, storm surge, flash floods, stormwater runoff, and related impacts of sea level rise. Criteria for the adaptation action area may include, but need not be limited to, areas for which the land elevations are below, at, or near mean higher high water, which have a hydrologic connection to coastal waters, or which are designated as evacuation zones for storm surge."*

The SFRCCC produced the RCAP, as a basis for the development of new climate change resiliency goals, objectives and policies for local governments. One of the key concepts promoted by the RCAP is the AAA. Local governments may be able to use AAAs as a tool to identify and prioritize climate change resiliency measures for vulnerable areas within their municipalities. Implementation of AAAs is not a requirement but is voluntary. Policies from the Town's and other key local governments related to the SFRCCC and AAAs are provided in the following sections. Refer to the section entitled "Proposed Section 163.3178(2)(f), F.S. – Mapping Compliance Strategy" for recommendations on identifying specific AAAs.

### 2.4.1 Town of Jupiter

The new policies implemented into Coastal Management Element - Objective 2.6 of the plan recognize the RCAP as a basis for the development of new goals, objectives and policies for the Town. The Town recently

adopted Coastal Management Elements to declare its intent to participate in the SFRCCC, coordinate with Palm Beach County, and to investigate the feasibility of the use of AAAs. Some of the key policies recently adopted by the Town include the following:

- Town of Jupiter - Comprehensive Plan - Coastal Management Element - Policy 2.6.1 – “The Town shall continue its participation in the Southeast Florida Regional Climate Change Initiative.”
- Town of Jupiter - Comprehensive Plan - Coastal Management Element - Policy 2.6.2 – “The Town shall collaborate with Palm Beach County to increase regional resilience...”
- Town of Jupiter - Comprehensive Plan - Coastal Management Element - Policy 2.6.4 – “By December 2018, the Town shall investigate the feasibility of integrating consideration of climate change impacts, and adaptation and mitigation strategies, into existing Comprehensive Plan goals, objectives and policies and land development regulations.”
- Town of Jupiter - Comprehensive Plan - Coastal Management Element - Policy 2.6.5 – “By December 2018, the Town shall investigate the feasibility of the use of Adaptation Action Areas as provided by Section 163.3177(6)(g)(10), Florida Statutes, to identify areas vulnerable to coastal storm surge and sea level rise impacts.”

The Town of Jupiter – 2017 Water and Stormwater Master Plan Update identified the following potential AAAs [Town of Jupiter Utilities, 2016];

- Seminole Avenue Pump Station Basin and Yacht Club Estates, portions of Jones Creek, portions of Sims Creek, and Carlin Park, for areas subject to flooding.
- An area encompassing non-Town owned Surficial Aquifer System (SAS) withdrawal facilities, for areas subject to saltwater intrusion.

## **2.4.2 Fort Lauderdale**

The City of Fort Lauderdale is one of the first Florida local governments to implement AAAs. The City participated in a pilot program with the Florida DEO to develop AAAs. As one of the first steps toward implementation, the City revised its Comprehensive Plan – Coastal Management Element – Objective 3.1 in June 2014 to clearly define the concept and planning for AAAs, [SFRPC, 2015].

Insertion of the AAA concept into the Comprehensive Plan was just a first step. To identify the actual boundaries of the AAAs, the City of Fort Lauderdale was able to use planning tools developed by Broward County. Planning tools used include Broward County’s Enhanced Local Mitigation Strategy including loss estimation and mapping impacts of 1, 2, and 3-foot sea level rise scenarios, as well as a Priority Planning Areas for Sea Level Rise Map, which Broward County generated in partnership with the SFWMD and the National Oceanic and Atmospheric Administration (NOAA). Finally, in 2015, the City explicitly identified and created maps for 16 AAAs and 38 projects for funding in its Adopted Community Investment Plan - Fiscal Years 2017-2021. The projects comprise mainly storm water and seawall improvements, [SFRPC, 2015].

### **2.4.3 Broward County**

Broward County was the first Florida community to integrate AAA language into its comprehensive plan. Broward County is also the community with the most expansive climate change resiliency component within its Comprehensive Plan, with the Climate Change Element devoted entirely to climate change resiliency. The Climate Change Element is based on Broward County’s “Climate Change Action Plan – Addressing our Changing Climate”, which was developed by the Broward County Climate Change Task Force, and comprises 81 separate policies that were adopted in February 2013 and amended in December 2016. Broward County identifies AAAs as a strategy and indicates that it intends to assist local governments in implementing AAAs under Broward County’s Comprehensive Plan - Climate Change Element, [SFRPC, 2015].

### **2.4.4 Miami-Dade**

Miami-Dade County revised its Comprehensive Plan Land Use Element with climate change resiliency measures in October 2013, including the identification of AAAs as a strategy. Miami-Dade has not yet implemented AAAs, but is planning on piloting the concept in 2017 in accordance with the report entitled “Adaptation Action Areas: Feasibility Assessment, September 2015” [Miami-Dade County, 2015]. The report cites the City of Fort Lauderdale experience with developing AAAs as a model. Miami-Dade County identifies AAAs as a strategy and indicates that it intends to assist local governments in implementing AAAs under Miami-Dade County’s Comprehensive Plan – Land Use Element.

### **2.4.5 Discussion**

The 2012 SFRCCC RCAP strongly recommended implementing AAAs through multiple key policy items [SFRCCC, 2012]. While not many AAAs have been implemented yet in Florida, many South Florida communities have identified future AAA implementation in their comprehensive plans. The City of Miami Beach and the City of Fort Lauderdale have recently identified AAAs. Palm Beach, Broward, and Miami-Dade Counties all indicate in their comprehensive plans that they intend to implement AAAs, and plan to assist local governments to develop AAAs.

Proponents of the AAAs from the SFRCCC originally envisioned one of the main uses to potentially attract State and Federal funding. However, since the law was passed in 2011, no significant funding has materialized. The State Senate only recently considered Senate Bill (SB) 584 in the spring 2016 session. SB 584 proposed a matching grant program administered by the Division of Emergency Management to provide up to \$50 million in funding for implementation of flood risk reduction measures statewide (not specifically limited to projects within AAAs), [Markell, 2016]. However, SB 584 died in the appropriations committee. Therefore, it is not yet clear if AAAs will prove to be an effective tool for local governments to attract State and Federal funding. However, it is recommended that the AAAs be established in preparation for funding that may become available in the future.

As already identified in the Town of Jupiter - Comprehensive Plan - Coastal Management Element - Policy 2.6.5, it is recommended that the Town investigate the feasibility of AAAs to identify areas vulnerable to coastal storm surge and sea level rise impacts. The Town of Jupiter – 2017 Water and Stormwater Master Plan Update identified the potential AAAs for flood prone areas and for areas subject to saltwater intrusion that the Town may consider identifying in its Comprehensive Plan. Additionally, the Town should

coordinate the boundaries of the AAAs with the request by the DEO to identify at-risk coastal areas to satisfy the Peril of Flood legislation requirements, discussed in the next section of this report. Refer to the “Peril of Flood Legislation – Mapping Compliance Strategy” section for a discussion of strategies to identify specific AAAs.

## 2.5 Salt Water Intrusion/Aquifer Recharge

Most local governments throughout South Florida rely on the Surficial Biscayne Aquifer as a primary water source. Salt water intrusion caused by rising sea levels threatens the surficial aquifer. The threat of salt water intrusion has been recognized for decades, and therefore, most local governments including the Town have codes and comprehensive plan policies in place to mitigate salt water intrusion.

### 2.5.1 Town of Jupiter

The Town’s 2017 Water and Stormwater Master Plan Update identified that two of the most prevalent issues that the Town’s water system must address are related to sea level rise and salt water intrusion, [Town of Jupiter, 2016]. Salt water intrusion directly impacts the local Surficial Aquifer which supplies raw water to the Town’s nanofiltration water treatment plant. The Floridan Aquifer, which supplies raw water to the Town’s Reverse Osmosis Treatment System, is indirectly impacted because salt water intrusion into the shallow Surficial Aquifer may cause additional reliance and stress on the deeper Floridan Aquifer.

The Town has already implemented many key comprehensive plan policies and ordinances related to salt water intrusion / aquifer recharge, including the following:

- Strategies for aquifer recharge
  - Town of Jupiter - Comprehensive Plan - Conservation Element - Policy 1.3.8
  - Town of Jupiter - Comprehensive Plan - Conservation Element - Policy 1.3.12
  - Town of Jupiter - Comprehensive Plan - Infrastructure Element - Policy 1.6.3
  - Town of Jupiter - Comprehensive Plan - Infrastructure Element - Policy 1.6.4
- Encouragement of water reuse
  - Town of Jupiter - Comprehensive Plan - Conservation Element - Policy 1.3.5
  - Town of Jupiter - Comprehensive Plan - Capital Improvements Element - Policy 1.2.3
  - Town of Jupiter - Comprehensive Plan - Infrastructure Element - Policy 1.5.1
- Developing alternative water supplies
  - Town of Jupiter - Comprehensive Plan - Conservation Element - Policy 1.3.4
- Landscaping to discourage water use
  - Town of Jupiter - Code of Ordinances - Sec. 23-62.1.(a) and Sec. 23-86. (a)
  - Town of Jupiter - Comprehensive Plan – Infrastructure Element - Policy 1.5.1

- Monitoring of water quality and quantity
  - Town of Jupiter - Comprehensive Plan - Conservation Element - Policy 1.3.1
- Water and stormwater master planning
  - Town of Jupiter - Comprehensive Plan - Infrastructure Element - Policy 1.3.8
  - Town of Jupiter - Comprehensive Plan – Infrastructure Element - Policy 1.3.12.

## 2.5.2 Other Local Governments

The following municipalities were investigated and in general have multiple similar comprehensive plan policies and ordinances related to salt water intrusion and aquifer recharge:

- Palm Beach County
- Broward County
- Miami-Dade County
- City of Miami Beach
- City of Fort Lauderdale
- City of West Palm Beach

## 2.5.3 Discussion

Various local government comprehensive plans and codes were investigated and compared to the Town. Based on this investigation, it appears that the Town already has a robust set of policies in place related to salt water intrusion / aquifer recharge, at least equivalent in scope to the local governments investigated. Continued proactive planning such as this should guide the Town in improving resiliency relative to climate change and sea level rise. It is recommended that the Town continue to implement comprehensive plan policies related to salt water intrusion / aquifer recharge.

## 2.6 Limitation of Development in Flood-Prone Coastal Areas

Many local governments across Florida have already established policies in their code of ordinances and comprehensive plans that discourage or remove development from flood-prone areas. Many of these policies are in accordance with general climate change adaptation strategies promoted by the South Florida Regional Planning Council (SFRPC) and DEO [SFRPC, 2015].

### 2.6.1 Town of Jupiter

The Town's Comprehensive Plan also includes many policies to limit or reduce development in flood-prone and coastal high hazard areas that are vulnerable to sea level rise and storm surge flooding. Examples of some of these policies are excerpted below:

- Town of Jupiter - Code of Ordinances - Chapter 21 - BUILDINGS AND BUILDING REGULATIONS, ARTICLE X. - COASTAL CONSTRUCTION CODE, Sec. 21-326. - Oceanfront setbacks; Atlantic Ocean land.
- Town of Jupiter - Comprehensive Plan - Capital Improvements Element - Objective 1.5.
- Town of Jupiter - Comprehensive Plan - Future Land Use Element - Policy 1.3.15
- Town of Jupiter - Comprehensive Plan - Conservation Element - Policy 1.6.1
- Town of Jupiter - Comprehensive Plan - Infrastructure Element - Policy 1.3.9
- Town of Jupiter - Comprehensive Plan - Future Land Use Element - Policy 1.3.23 - Transfer of development rights

## 2.6.2 Other Local Governments

The following local governments were investigated and in general have multiple similar comprehensive plan policies and ordinances related to limitation of development in flood-prone areas:

- Palm Beach County
- Broward County
- Miami-Dade County
- City of Miami Beach
- City of Fort Lauderdale
- City of West Palm Beach

## 2.6.3 Discussion

Various local government comprehensive plans and codes were investigated and compared to the Town. Based on this investigation, it appears that the Town already has a robust set of policies in place related to limitation of development in flood-prone areas, at least equivalent in scope to the other local governments investigated. Continued proactive planning such as this should guide the Town in improving resiliency relative to climate change and sea level rise. It is recommended that the Town continue to implement comprehensive plan policies related to limitation or reduction of development in flood-prone coastal areas.

## 2.7 General Requirements for Development to Consider Sea Level Rise

As discussed in previous sections, the Town currently enforces FFE requirements and roadway LOS requirements that it may consider updating based on predicted future effects of sea level rise and climate change. However, many local governments have started to require that new development and redevelopment consider the general effects of sea level rise in development plans.

### 2.7.1 Miami-Dade County

Miami-Dade County has recently introduced an ordinance requiring that all public infrastructure projects consider the effects of sea level rise. The ordinance is as follows:

*Miami-Dade County – Code of Ordinances - Chapter 2 – Administrations, Rule 5.09 - Statement of consideration of impact of sea level rise – “For all agenda items brought to the Board that relate to the planning, design and/or construction of County infrastructure projects, including but not limited to, County building elevation projects, County installation of mechanical and electrical systems, County infrastructure modifications and County infrastructure renovations, the Mayor or Mayor’s designee shall include a statement in the item that the impact of sea level rise has been considered in the project.”*

### 2.7.2 Boston, MA

In 2013, The Boston Redevelopment Authority revised Article 80 of the Boston Zoning Code to require that climate change be considered as part of the review process for large new developments and large renovation projects. The change affects all private property owners proposing to develop new buildings over 20,000 square feet or proposing renovations over 100,000 square feet. The requirement is as follows:

*“...identify changes in the climate and environment and how such changes will affect the project’s environmental impacts including survivability, integrity, and safety of the project and its inhabitants.”*

Boston requires that a Climate Change Preparedness and Resiliency Checklist be completed to assess how the effects of climate change could affect a proposed development, and is a factor in determining whether or not to permit a project for development [Vogel, et. al, 2016].

### 2.7.3 New York City, NY

The New York City Waterfront Revitalization Program recently introduced the following language into its June 2016 plan:

*Policy 6.2 – “Integrate consideration of the latest New York City projections of climate change and sea level rise ... into the planning and design of projects in the city’s Coastal Zone.”*

*“A. In the planning and design of all projects—except for the maintenance or in-kind, in place replacement of existing facilities—identify the potential vulnerabilities of the project to the effects of sea level rise, coastal flooding, and storm surge over its usable life and the general consequences to the project of these types of events. This analysis should be conducted by an architect, engineer or other qualified professional.”*

*“B. Identify and incorporate design techniques in projects that address the potential vulnerabilities and consequences identified and/or enhance the capacity to incorporate adaptive techniques in the future.” [New York City, 2016]*

#### **2.7.4 Discussion**

The Town currently enforces FFE requirements and roadway LOS requirements, and may consider updating these requirements based on predicted future effects of sea level rise and climate change. However, The Town may wish to include more general language in its code of ordinances or comprehensive plan to ensure that climate change is being considered in public and private development. The Town may consider developing requirements for a letter, report, or prescriptive checklist indicating how a project has been designed for climate change resiliency and which is required to be submitted by developers to plan reviewers.

### 3. Peril of Flood Legislation

Section 163.3178(2)(f), F.S. was recently revised in 2015, (Peril of Flood legislation), requiring the coastal management elements of comprehensive plans to include principles for eliminating inappropriate and unsafe development in coastal areas, with a focus on areas subject to current or future flooding. The Peril of Flood legislation is presented below:

State of Florida Statutes - Section 163.3178(2) *“Each coastal management element required by s. 163.3177(6)(g) shall...contain: ... (f) A redevelopment component that outlines the principles that must be used to eliminate inappropriate and unsafe development in the coastal areas when opportunities arise. The component must:*

- 1. Include development and redevelopment principles, strategies, and engineering solutions that reduce the flood risk in coastal areas which results from high-tide events, storm surge, flash floods, stormwater runoff, and the related impacts of sea-level rise.*
- 2. Encourage the use of best practices development and redevelopment principles, strategies, and engineering solutions that will result in the removal of coastal real property from flood zone designations established by the Federal Emergency Management Agency.*
- 3. Identify site development techniques and best practices that may reduce losses due to flooding and claims made under flood insurance policies issued in this state.*
- 4. Be consistent with, or more stringent than, the flood-resistant construction requirements in the Florida Building Code and applicable flood plain management regulations set forth in 44 C.F.R. part 60.*
- 5. Require that any construction activities seaward of the coastal construction control lines established pursuant to s. 161.053 be consistent with chapter 161.*
- 6. Encourage local governments to participate in the National Flood Insurance Program Community Rating System administered by the Federal Emergency Management Agency to achieve flood insurance premium discounts for their residents.”*

#### 3.1 Town of Jupiter

The Town submitted its initial proposed comprehensive plan amendment to address the Peril of Flood legislation on May 16, 2016 to the Florida DEO. A new climate change section had already been recently implemented in the Town’s Comprehensive Plan in June 2015 which appeared to address many of the Peril of Flood legislation’s objectives. Therefore, the Town’s submittal to the DEO in May 2016 to satisfy the Peril of Flood legislation only comprised two new proposed policies, which were as follows:

Town of Jupiter – Comprehensive Plan – Coastal Management Element – Proposed Policy 1.6.4 - *“The Town will continue to participate in the National Flood Insurance Program Community Rating System (CRS) and strive to maintain or improve its current CRS rating. [Section 163.3178, F.S. (Chapter 2015-69, section 1)]”*

Town of Jupiter – Comprehensive Plan – Coastal Management Element – Proposed Policy 2.6.8 – *“The Town shall continue to utilize best practices and initiate mitigation strategies to reduce the risk of flooding in coastal areas that may result from high tide events, storm surge, flash floods, stormwater runoff, and the related impacts of sea level rise. [Section 163.3178, F.S (Chapter 2015-69, section 1)]”*

The DEO responded back to the Town with an Objections, Recommendations, and Comments (ORC) report on July 15, 2016 (attached in **Appendix B**) identifying objections and comments to the proposed amendment language relating to the Peril of Flood legislation. Therefore, the Town decided to delay the incorporation of the Peril of Flood legislation into its comprehensive plan until the comments could be adequately addressed in the following year. The following section investigates the DEOs concerns, and proposes strategies and policy language to assist the Town in responding to the DEO’s concerns and complying with the Peril of Flood legislation.

### **3.2 Other South Florida Local Governments**

Other nearby local governments have successfully responded to DEO ORC reports, and have recently approved Peril of Flood amendments:

- City of Miami Beach, adopted by commission on October 26, 2016
- Town of Jupiter Inlet Colony, adopted by commission on October 17, 2016
- City of Boynton Beach, adopted by commission on December 6, 2016

Nearby local governments with recently submitted amendments which have not yet been approved include:

- City of West Palm Beach
- Town of Palm Beach

### **3.3 Proposed Approach for Town to Address Peril of Flood**

The following section discusses the DEOs July 2016 objections to the Town’s initial May 2016 proposed amendment to address the Peril of Flood legislation. Other local governments who have successfully amended their comprehensive plans are listed and discussed, and the proposed strategy and policy language to comply with the Peril of Flood legislation and address the DEO recommendations is then presented. This section is presented in the following format;

- The DEO ORC recommendation to the Town is listed
- Approaches by other local governments are provided for consideration
- The recommended strategy/policy language for the Town to comply with Peril of Flood Legislation and address DEO concerns is presented

### 3.3.1 Section 163.3178(2)(f), F.S. – Mapping

**DEO Recommendation:** The Town should use one of several available tools to identify its at-risk coastal areas (such as those provided by NOAA) at the following links:

<https://coast.noaa.gov/digitalcoast/tools/flood-exposure>; and

<http://coast.noaa.gov/digitalcoast/tools/slr>

#### 3.3.1.1 Approaches by Other Local Governments to Address 163.3178(2)(f), F.S. – Mapping

City of Boynton Beach – Under Policy 7.6.1 of its Comprehensive Plan Coastal element, identifies that FEMA flood zone and repetitive claim maps, storm surge/Coastal High Hazard Area maps and sea level rise impact maps be maintained and used to identify current and potential future areas subject to high flood hazard. New maps were provided identifying these areas.

Town of Jupiter Inlet Colony – Under Policy 12.1 of its Comprehensive Plan Coastal element, identifies that the 1, 2 and 3 feet sea level rise scenarios and maps identified in the Vulnerability Analysis provided in the RCAP document are used to delineate AAAs. Under Policy 12.2 of its Comprehensive Plan Coastal element, indicates that support documentation and map that identifies vulnerable properties as defined by FEMA repetitive loss properties will be updated at least once every five years.

City of Miami Beach – Due to its unique vulnerability to climate change and sea level rise, identifies under Policy 13.3 of its Comprehensive Plan Coastal element, that the entire City is designated an AAA. Policy 13.2 indicates that a vulnerability assessment for public investments, infrastructure and assets at risk will be updated once every five years.

#### 3.3.1.2 Proposed Section 163.3178(2)(f), F.S. – Mapping Compliance Strategy

Jupiter Inlet Colony successfully proposed that the 1, 2 and 3-foot sea level rise scenarios and maps identified in the Vulnerability Analysis for Southeast Florida to Sea Level Rise report be adopted. The Town may choose to take the same approach and adopt the same map series, [Palm Beach County, 2017]. This approach can be beneficial as it synchronizes the Town’s maps to the efforts of the regional SFRCCC efforts. This approach also would be in conformance with the Town’s stated comprehensive plan policy to coordinate with the SFRCCC. The 1, 2, and 3-foot sea level rise scenario maps for the Jupiter Inlet area are provided as **Figures 1, 2, and 3**.

## Sea Level Rise Countywide Vulnerability Analysis Map

The Vulnerability Analysis for Southeast Florida to Sea Level Rise, conducted in 2012, provides 1, 2 and 3 foot sea level rise scenarios. Of the four counties analyzed, Palm Beach County has higher topography and less waterways west of the Intracoastal Waterway, which help limit the potential impacts to our communities.

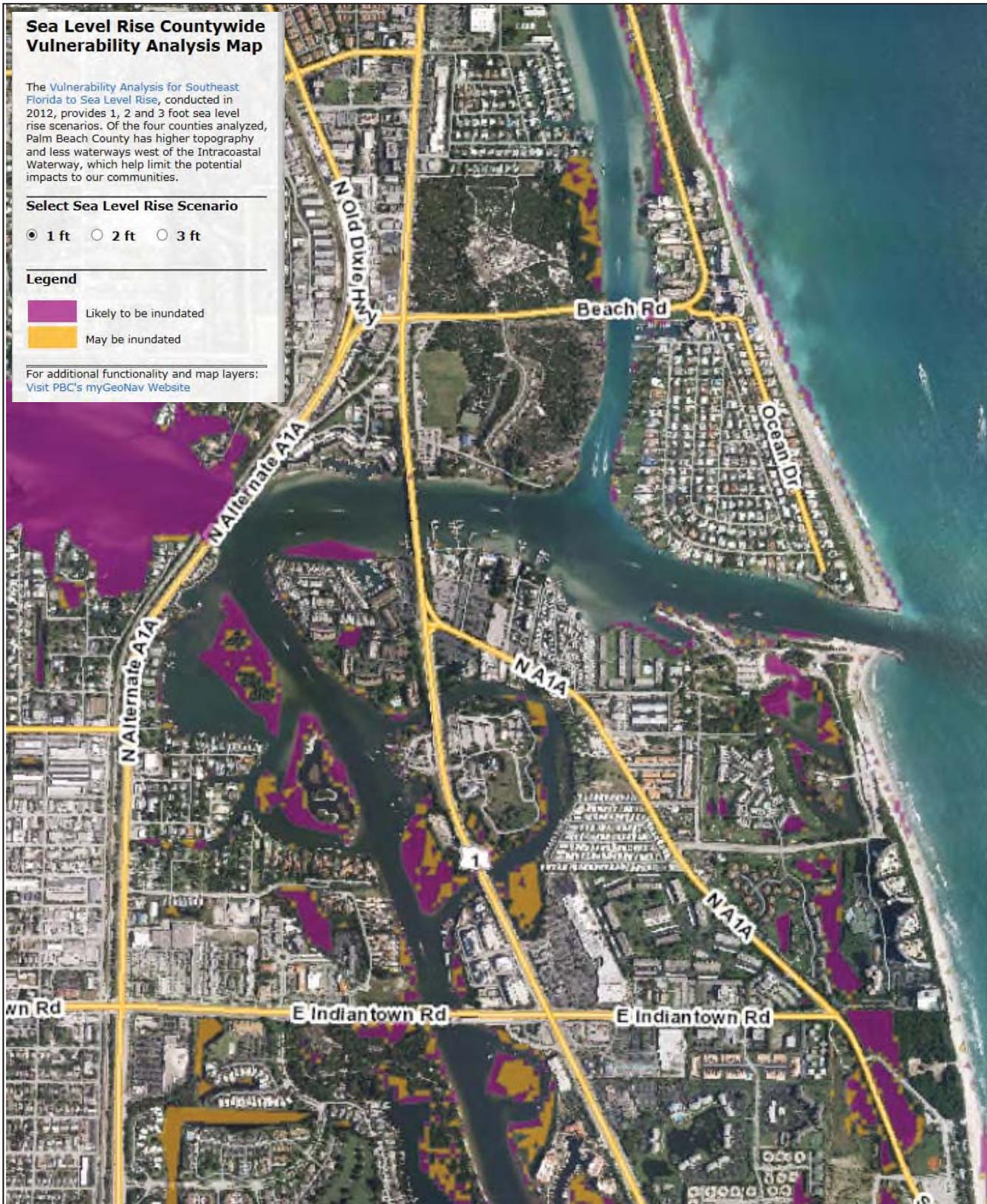
### Select Sea Level Rise Scenario

1 ft    2 ft    3 ft

### Legend

- Likely to be inundated
- May be inundated

For additional functionality and map layers:  
Visit PBC's [myGeoNav Website](#)



	Project Name: Code Review – Sea Level Rise and Climate Change Town of Jupiter		Vulnerability Analysis for SE Florida to Sea Level Rise – 1 Foot SLR Scenario Map Example	
			H&S Project Number: 44250-022	Figure 1

**Sea Level Rise Countywide Vulnerability Analysis Map**

The Vulnerability Analysis for Southeast Florida to Sea Level Rise, conducted in 2012, provides 1, 2 and 3 foot sea level rise scenarios. Of the four counties analyzed, Palm Beach County has higher topography and less waterways west of the Intracoastal Waterway, which help limit the potential impacts to our communities.

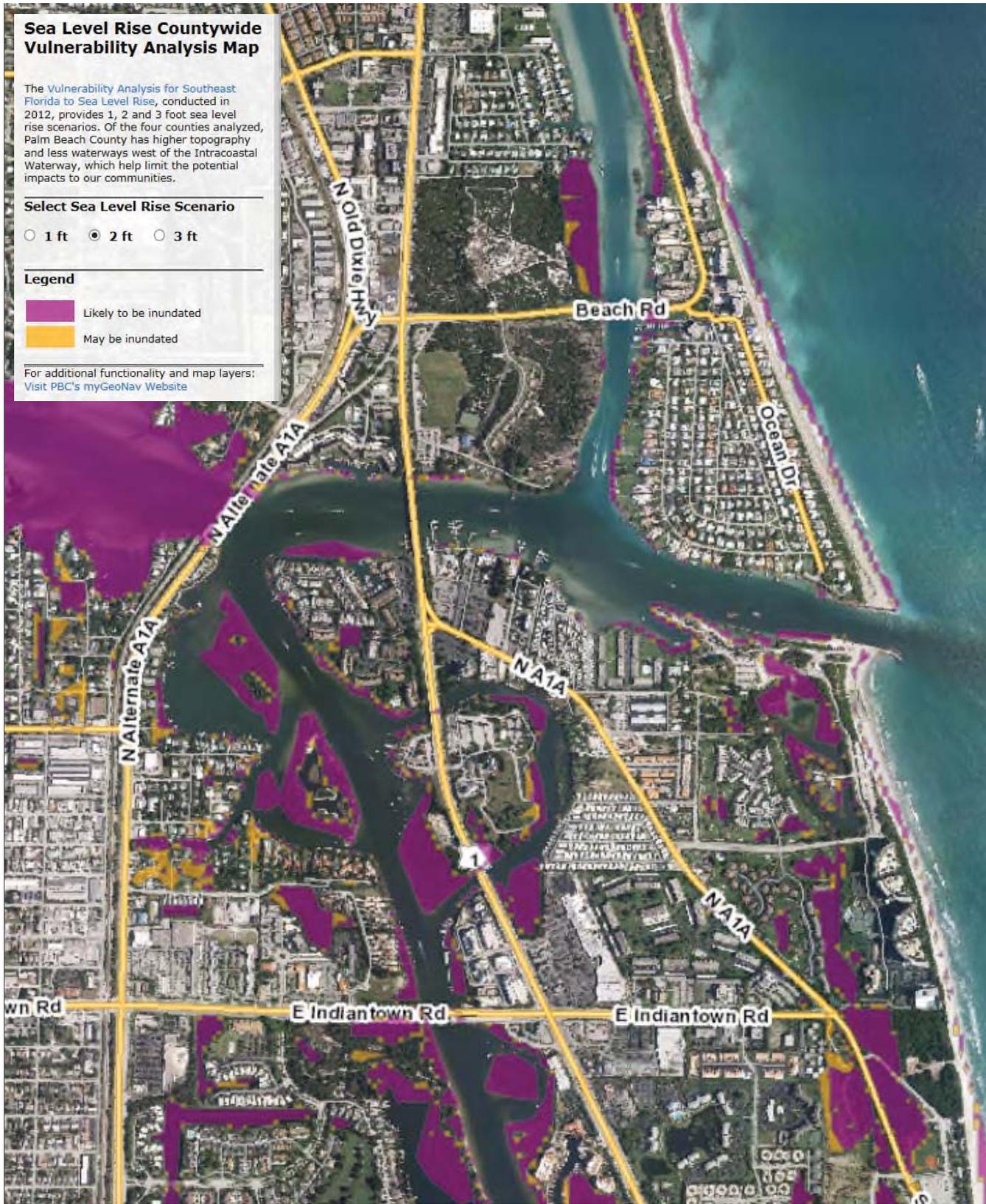
**Select Sea Level Rise Scenario**

- 1 ft    2 ft    3 ft

**Legend**

- Likely to be inundated
- May be inundated

For additional functionality and map layers: Visit PBC's [myGeoNav Website](#)



	Project Name: Code Review – Sea Level Rise and Climate Change Town of Jupiter		Vulnerability Analysis for SE Florida to Sea Level Rise – 2 Foot SLR Scenario Map Example	
			H&S Project Number: 44250-022	<b>Figure 2</b>

**Sea Level Rise Countywide Vulnerability Analysis Map**

The Vulnerability Analysis for Southeast Florida to Sea Level Rise, conducted in 2012, provides 1, 2 and 3 foot sea level rise scenarios. Of the four counties analyzed, Palm Beach County has higher topography and less waterways west of the Intracoastal Waterway, which help limit the potential impacts to our communities.

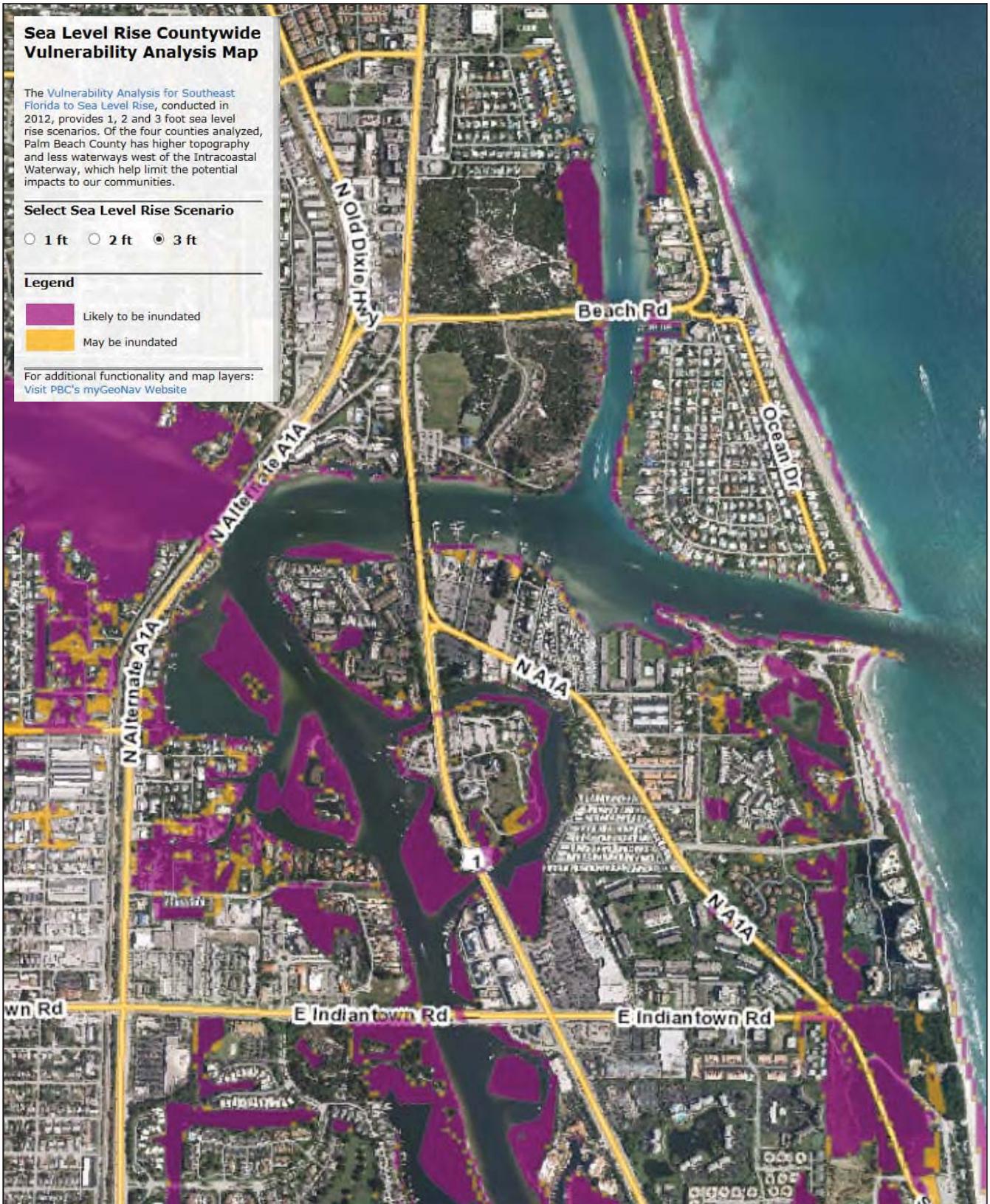
**Select Sea Level Rise Scenario**

- 1 ft    2 ft    3 ft

**Legend**

- Likely to be inundated
- May be inundated

For additional functionality and map layers:  
Visit PBC's [myGeoNav Website](#)



	Project Name:		Vulnerability Analysis for SE Florida to Sea Level Rise – 3 Foot SLR Scenario Map Example	
	Code Review – Sea Level Rise and Climate Change Town of Jupiter		H&S Project Number: 44250-022	Figure 3

The Town may also choose from another existing map, such as the Hurricane Preparedness Plan Map Series generated to identify Hurricane Tide Surge Zones to accompany Policy 2.2.10 under the Coastal Management Element recently adopted in October 2016.

The Town of Jupiter may also consider taking the DEO's recommendation and using the NOAA mapper tools to identify at risk areas [NOAA, 2017]. A benefit of this mapping tool is that it does not only rely on a projection of areas flooded due to sea level rise. The Coastal Flood Mapper tool has the capability to consider societal, infrastructure, and ecosystem risks. For example, see **Figure 4**, which depicts a map generated showing areas of flood risk superimposed on a demographic map depicting percent population of elderly residents. Based on the Town's social, infrastructure, or environmental priorities, they may choose to use the NOAA Coastal Flood Mapper tool to assist them in identifying and prioritizing at risk coastal areas.

Also, the Coastal Flood Mapper tool also has the ability to identify areas that are subject to multiple flooding risks, called the Coastal Flood Hazard Composite layer. For example, see **Figure 5**, which shows a map generated with areas of higher hazard composite in darker color. This method shows areas that are prone to flooding by one or more of the following coastal hazards:

- Shallow coastal flooding
- High- and moderate-risk flooding (designated by FEMA)
- Storm surge for category 1 through category 3 hurricanes
- Sea level rise scenarios of 1, 2, and 3 feet

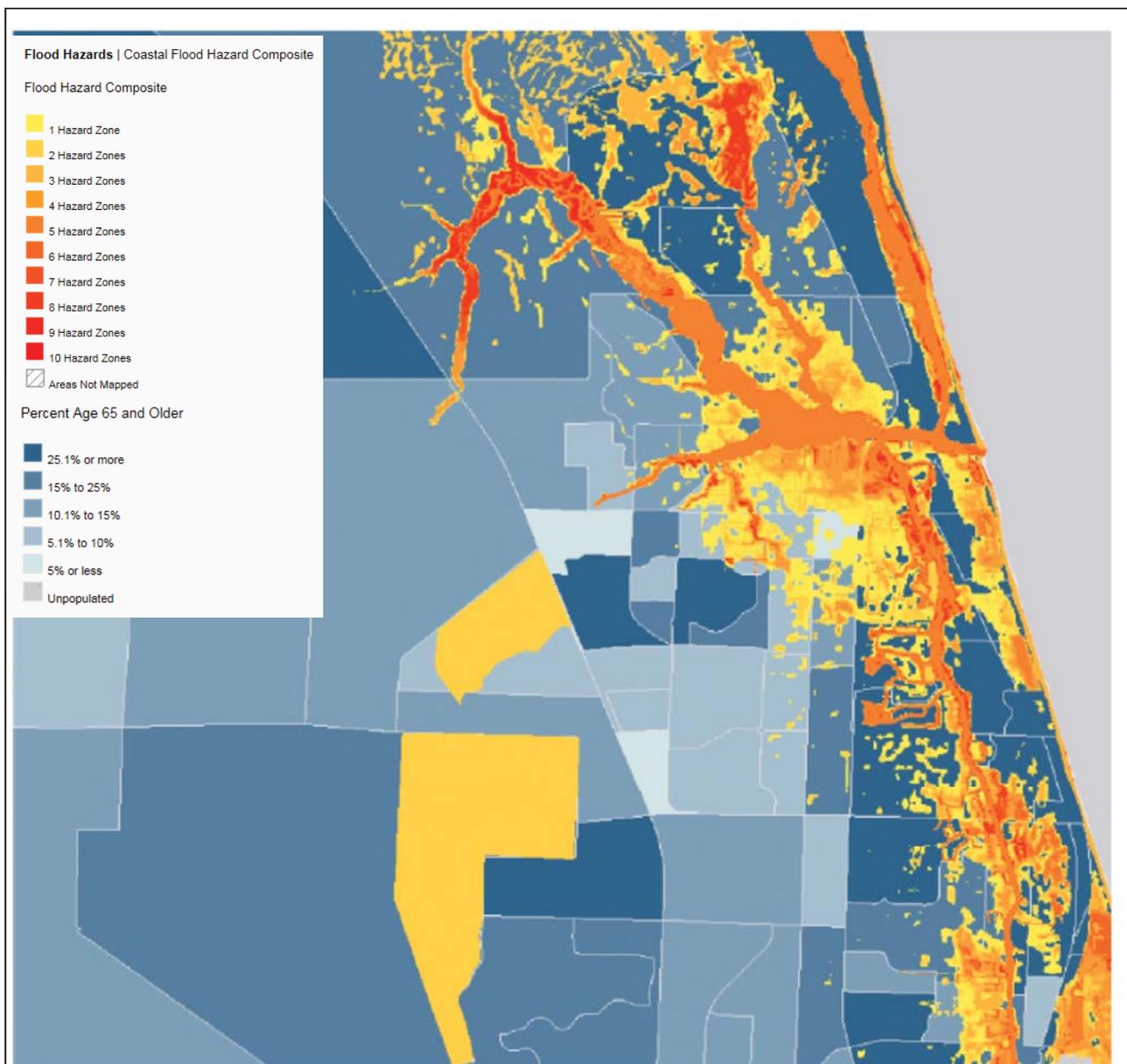
The quality of data generated by this tool is such that it can be used as an aid for identifying at-risk coastal areas, but not as the only tool to rely on. Detailed knowledge that Town officials have of the Town's unique characteristic should also be used.

Finally, any policy language proposed should include a component that indicates how frequently the vulnerability analysis will be updated, similar to Town of Jupiter Inlet Colony or City of Miami Beach. Upon the Town's selection of the description or map used to identify vulnerable areas, suggested language for the new policy could be as follows:

*Town of Jupiter – Comprehensive Plan – Coastal Management Element - Proposed Policy X.X:  
“To determine the coastal areas at risk for flooding, the Town shall rely on (insert selected description or reference to map of vulnerable properties here). At least every five years, beginning in FY 2017/18, the Town shall reassess, and either reconfirm or update the boundaries of the coastal areas at risk.”*

### **3.3.2 Section 163.3178(2)(f), 1-3 - Principles, Strategies, and Engineering Solutions**

**DEO Recommendation:** Based upon the identification and analysis of areas at risk to flooding now, and in the future, the amendment should be revised to identify principles, strategies, and engineering solutions appropriate to Jupiter that reduce flood risk and that remove real property from areas subject to inundation by flood and identify site development techniques and best practices that reduce losses due to flooding.



## Coastal Flood Exposure Mapper

This method shows areas that are prone to flooding by one or more of the following coastal hazards;

- Shallow coastal flooding
- High- and moderate-risk flooding (designated by FEMA)
- Storm surge for category 1 through category 3 hurricanes
- Sea level rise scenarios of 1, 2, and 3 feet

For example, an area mapped to be within 4 hazard zones, may be subject to two zones for storm surge for category 1 and category 2 hurricanes, and for two zones of sea level rise scenarios of 1 and 2 feet, for a total of 4 zones.

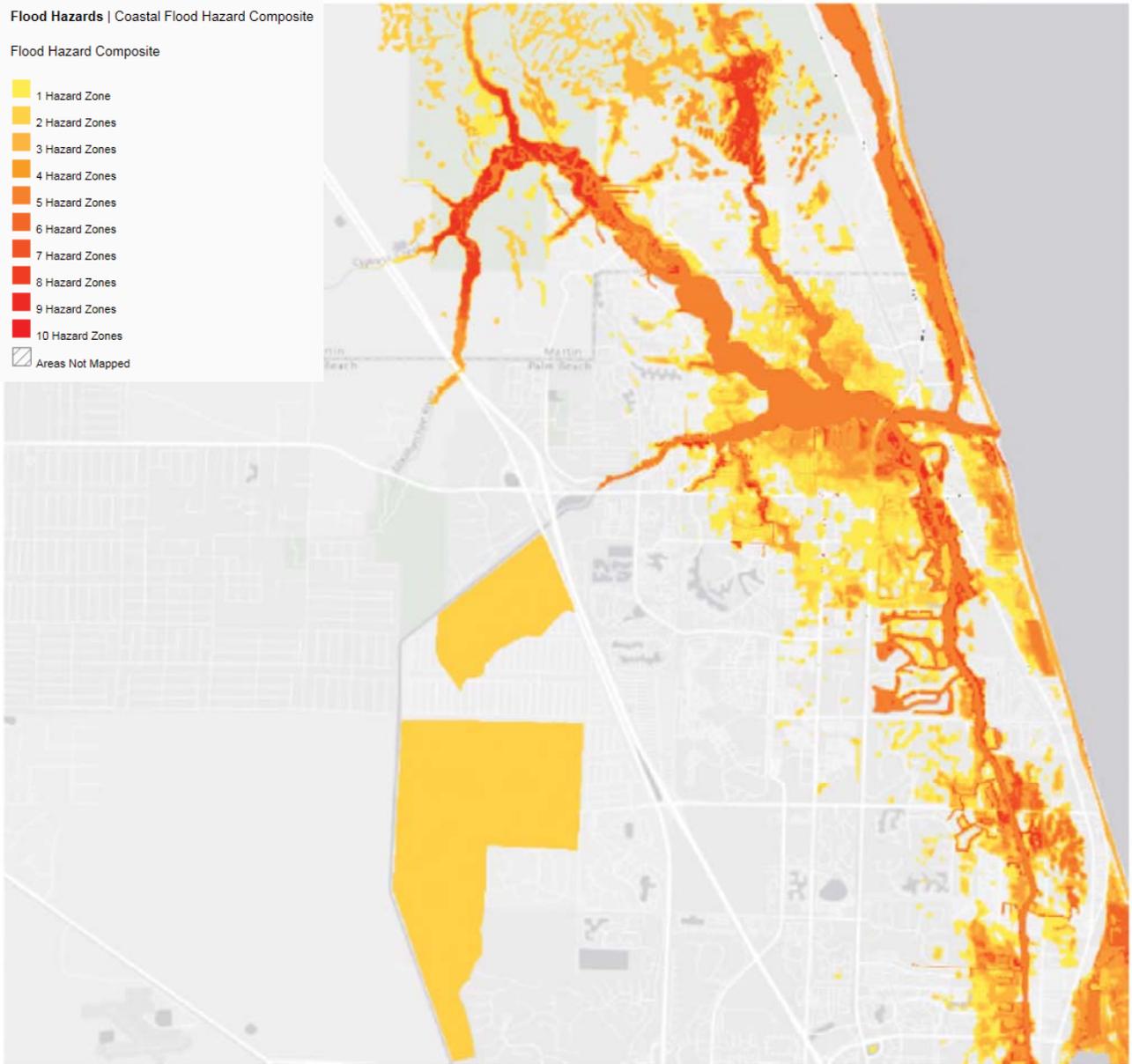
	Project Name: Code Review – Sea Level Rise and Climate Change Town of Jupiter	NOAA Coastal Flood Exposure Mapper – Elderly Societal Exposure Map Example
		H&S Project Number: 44250-022

Figure 4

**Flood Hazards | Coastal Flood Hazard Composite**

**Flood Hazard Composite**

- 1 Hazard Zone
- 2 Hazard Zones
- 3 Hazard Zones
- 4 Hazard Zones
- 5 Hazard Zones
- 6 Hazard Zones
- 7 Hazard Zones
- 8 Hazard Zones
- 9 Hazard Zones
- 10 Hazard Zones
- Areas Not Mapped



**Coastal Flood Exposure Mapper**

This method shows areas that are prone to flooding by one or more of the following coastal hazards;

- Shallow coastal flooding
- High- and moderate-risk flooding (designated by FEMA)
- Storm surge for category 1 through category 3 hurricanes
- Sea level rise scenarios of 1, 2, and 3 feet

For example, an area mapped to be within 4 hazard zones, may be subject to two zones for storm surge for category 1 and category 2 hurricanes, and for two zones of sea level rise scenarios of 1 and 2 feet, for a total of 4 zones.

	Project Name:	NOAA Coastal Flood Exposure Mapper - Coastal Flood Hazard Composites Map Example	
	Code Review – Sea Level Rise and Climate Change Town of Jupiter	H&S Project Number: 44250-022	Figure 5

### 3.3.2.1 Approaches by Other Local Governments to Address 163.3178(2)(f), 1-3

The following local governments have generally addressed Section 163.3178(2)(f), 1 through 3 in their recent comprehensive plan amendments in the following manner:

City of Miami Beach Policies to Address Section 163.3178(2)(f), 1-3

- Improve stormwater systems
- Increase building elevation requirements
- Improve landscaping
- Establish actual boundaries of AAAs (one of the first cities to formally do so in Florida), briefly define general adaptation strategies, define documents where general adaptation strategies may be implemented in, and define general sources of funding for them

City of Boynton Beach Policies to Address Section 163.3178(2)(f), 1-3

- Limit coastal development to water-dependent uses
- Improve stormwater system
- Complete seawall repairs
- Briefly define general adaptation and improvement engineering solutions
- Evaluate AAAs by 2018

Town of Jupiter Inlet Colony Policies to Address Section 163.3178(2)(f), 1-3

- Briefly define general adaptation engineering solutions
- Increase pervious area, improve stormwater systems

### 3.3.2.2 Proposed 163.3178(2)(f), 1-3 Compliance Strategy

Multiple policies already exist throughout the Comprehensive Plan - Coastal Management Element that appear to address many of the concerns of 163.3178(2)(f), 1-3. It is recommended that the DEOs attention be directed to these policies, which include the following:

Town of Jupiter – Comprehensive Plan – Coastal Management Element – Policy 1.4.2 - *“Retrofitting of substandard public drainage systems shall occur during repair, expansion, or redevelopment activities...”*

Town of Jupiter – Comprehensive Plan – Coastal Management Element – Policy 1.5.14 – *“No development will be approved in flood hazard areas and floodways...which are known to be subject to flooding ...Rather, the Town will encourage that these lands be reserved for conservation, open space, and recreation.”*

Town of Jupiter – Comprehensive Plan – Coastal Management Element – Objective 2.1 - *“...The Town shall direct development away from the coastal high hazard areas...”*

Town of Jupiter – Comprehensive Plan – Coastal Management Element – Policy 2.1.1 – “...*The Town’s coastal high hazard area shall be identified as Category 1 Hurricane evacuation zones....*”

Town of Jupiter – Comprehensive Plan – Coastal Management Element – Policy 2.1.2 “*The Town shall use the following provisions as a means to direct people away from the coastal high hazard areas:*

- a. *Retain undeveloped lands in the coastal high hazard areas as public recreational sites or for other nonresidential uses.*
- b. *Provide the opportunity for innovative land design which allows for incorporating and enhancing existing natural systems and open areas to serve as natural storm buffers and post disaster staging areas.*
- c. *Provide for adequate evacuation routes in the event of an emergency.*
- d. *Provide for recreational needs and other appropriate water dependent and water related uses in a manner consistent with the preservation of natural resources of the dune and beach system.*
- e. *No new uses other than recreational or water dependent structures shall be allowed in the Coastal Construction Zone (i.e., lifeguard station, restroom facilities, etc.).*
- f. *All construction occurring within FEMA flood vulnerability zones shall be required to meet storm and flood proofing standards required for a 100-year storm.*
- g. *In the event of structural damage in excess of 50% of the value of a structure, the structure should be rebuilt to current codes.*
- h. *All new development and redevelopment in the Coastal Construction Zone shall comply with the requirements of Chapter 161, F.S. and the Coastal Construction Code of the Town.”*

Town of Jupiter – Comprehensive Plan – Coastal Management Element – Policy 2.6.5 – “*By December 2018, the Town shall investigate the feasibility of the use of Adaptation Action Areas...*”

One common component of the approved amendments from City of Miami Beach, City of Boynton Beach, and Town of Jupiter Inlet Colony were that they identified specific engineering solutions. The Town is already being proactive in implementing these solutions in its Community Investment Program. An amendment could be considered that directs attention to the efforts in the Community Investment Plan. Suggested language for the new policy could be as follows:

*Town of Jupiter – Comprehensive Plan – Coastal Management Element – Proposed Policy X.X – By FY 2016/2017, the Town will implement engineering solutions throughout the Town to reduce the flood risk in coastal areas through the Community Investment Program. Solutions may include the installation of stormwater drainage improvements identified in the regularly updated Stormwater Master Plan, including pervious pavement and provisions for future stormwater pump stations.*

To directly capture the Peril of Flood legislation language, it is recommended to also include the originally submitted policy language from the Town’s May 2016 proposal to the DEO. The language is reiterated below:

*Town of Jupiter – Comprehensive Plan – Coastal Management Element – Proposed Policy 2.6.8 – “The Town shall continue to utilize best practices and initiate mitigation strategies to reduce the risk of flooding in coastal areas that may result from high tide events, storm surge, flash floods, stormwater runoff, and the related impacts of sea level rise.”*

Also, if the Town decides to implement additional freeboard or increased minimum seawall elevations, these could be cited as another proactive strategy toward meeting this requirement.

### **3.3.3 Section 163.3178(2)(f),4 – Consistency with FBC and 44 C.F.R. Part 60**

**DEO Recommendation:** The revised amendment should also demonstrate that the Town's construction requirements are consistent with or more stringent than 44 C.F.R. part 60.

#### **3.3.3.1 Approaches by Other Local Governments to Address 163.3178(2)(f),4**

Both the City of Boynton Beach and the Town of Jupiter Inlet Colony appear to comply with this requirement by simply explicitly stating that they intend to be consistent or more stringent than 44 C.F.R. part 60. The policies are excerpted below:

*Town of Jupiter Inlet Colony – Comprehensive Plan – Coastal Element - Policy 12.4: “The Town's land development regulations and Building Code shall be consistent with, or more stringent than, the flood resistant construction requirements established in the Florida Building Code and applicable flood plain management regulations set forth in 44 CFR, part 60.”*

*City of Boynton Beach - Comprehensive Plan – Coastal Element - Policy 7.7.1: “By the end of 2017, the City shall ...ensure that all future modifications of the flood-resistant construction requirements in the Flood Prevention Code continue to be consistent with, or more stringent than, requirements of the Florida Building Code and applicable flood plain management regulations set forth in 44 C.F.R. part 60.”*

#### **3.3.3.2 Proposed 163.3178(2)(f),4 Compliance Strategy**

It is beyond the scope of this report to investigate and compare the Town's flood-resistant construction requirements to the FBC and 44 Code of Federal Regulation (C.F.R.) Part 60. However, the Town's Floodplain Management Ordinance was recently revised in April 2015 to comply with new requirements of the FBC, under Ordinance 28-14 Building Code Technical Amendments and Ordinance 29-14 Flood Prevention and Protection.

Once compliance is confirmed, it is recommended that the Town implement a similar strategy to the Town of Jupiter Inlet Colony and the City of Boynton Beach. Suggested language for the new policy could be as follows:

*Town of Jupiter - Comprehensive Plan – Coastal Management Element – Proposed Policy X.XX - “The Town's Floodplain Management Regulations shall continue to be consistent with, or more stringent than, the flood-resistant construction requirements in the Florida Building Code and applicable flood plain management regulations set forth in 44 C.F.R. part 60.”*

### 3.3.4 Section 163.3178(2)(f),5- Coastal Construction

**DEO Recommendation:** ...and explicitly affirm that the Town's adopted Coastal Construction Code is consistent with the requirements Section 163.3178(2)(f)5., F.S. and Chapter 161, F.S.

#### 3.3.4.1 Approaches by Other Local Governments To Address 163.3178(2)(f),5

The City of Boynton Beach included the following new policy language in its recent amendment:

*City of Boynton Beach - Policy 7.6.10 – “The City shall require that any construction activities seaward of the coastal construction control lines established pursuant to Chapter 161.053, F.S. be consistent with the statutory provisions.”*

#### 3.3.4.2 Proposed 163.3178(2)(f),5 Compliance Strategy

It is beyond the scope of this report to investigate and confirm that the Town’s adopted Coastal Construction Code is consistent with Chapter 161, F.S. The Town already has the following language in the Coastal Management Element:

*Town of Jupiter - Comprehensive Plan – Coastal Management Element –Policy 2.1.2 – “The Town shall use the following provisions as a means to direct people away from the coastal high hazard areas: h. All new development and redevelopment in the Coastal Construction Zone shall comply with the requirements of Chapter 161, F.S. and the Coastal Construction Code of the Town.”*

Once the Town’s Coastal Construction Code is confirmed to be consistent with Chapter 161, F.S., the following revision to Policy 2.1.2 may be considered:

*Town of Jupiter - Comprehensive Plan – Coastal Management Element – Proposed Revision to Existing Policy 2.1.2 - The Town shall use the following provisions as a means to direct people away from the coastal high hazard areas: h. All new development and redevelopment in the Coastal Construction Zone and seaward of the coastal construction control lines established pursuant to s. 161.053 shall comply with the requirements of Chapter 161, F.S. and the Coastal Construction Code of the Town and the Coastal Construction Code shall be consistent with Chapter 161, F.S.*

### 3.3.5 Section 163.3178(2)(f),6 – Participation in the FEMA NFIP CRS

**DEO Recommendation:** The DEO had no objections or comments regarding the Town’s approach to Section 163.3178(2)(f),6.

#### 3.3.5.1 Proposed FS 163.3178(2)(f),6 Compliance Strategy

The Towns initial response provided to the DEO on May 16, 2016 should be compliant. The policy language is provided below:

*Town of Jupiter - Comprehensive Plan – Coastal Management Element – Proposed Policy 1.6.4 – “The Town will continue to participate in the National Flood Insurance Program Community Rating System (CRS) and strive to maintain or improve its current CRS rating.”*

the area, such as passive recreation, observation areas, hiking and nature trails, canoeing, primitive camping and environmental education facilities. Active recreation uses, such as playing fields, tennis courts, etc. shall be prohibited. All residential, commercial, industrial and community service uses shall be prohibited.

**Policy 1.2.3** The Town shall monitor and maintain public access to the river corridor so that the environmental values of the system can be enjoyed, but not overburdened, by users.

**Policy 1.2.4** The Town shall participate with the South Florida Water Management District, Palm Beach County, Jupiter Inlet District, Loxahatchee River District and other appropriate agencies to reestablish the historic hydrologic connections between three segments of the corridor.

**Policy 1.2.5** The Town supports the proposed South Florida Water Management District C-18 wetland restoration program.

**Wildlife and Fisheries Objective and Policies**

**Objective 1.3:** The Town shall maintain the adopted strategies to protect and re-establish coastal wildlife and fisheries populations and habitats which provide for minimization of development impacts and the preservation of necessary habitat. These strategies include at a minimum:

**Policy 1.3.1** Site plan review and evaluation shall consider development impacts on wildlife, fish and habitat. The Town shall require safeguards to prevent or significantly reduce the potential

adverse impacts of development activities. These safeguards shall be based upon information derived from the Environmentally Sensitive area criteria.

**Policy 1.3.2** Sites proposed for agriculture or development activities within the known range of endangered or threatened species or where such species are expected to occur based upon habitat suitability and species ranges shall be surveyed at the request of local officials by qualified government ecologists prior to approval or commencement of such activities to determine whether or not endangered or threatened plant or animal populations occur.

**Estuarine Environmental Quality Objectives & Policies**

**Objective 1.4:** The Town shall maintain strategies to ensure that the quality of estuarine water within the Town's Coastal Planning Area reaches Class 2 definition and maintain that level as determined by measurable chemical constituents.

**Policy 1.4.1** The Town shall maintain a surface and stormwater management ordinance. This ordinance is intended to minimize degradation of surface waters through treatment of stormwater runoff. At a minimum, specified treatments should include maximum feasible on-site retention, establishment of littoral zones in lake management systems and wetland areas and use of grassy swales for filtration. This policy shall apply to both existing and new systems.

**Policy 1.4.2** Retrofitting of substandard public drainage systems shall occur during repair, expansion, or redevelopment activities. This policy is intended to

address water quality problems resulting from inadequately maintained systems, or those systems constructed previous to a complete understanding of the effects of stormwater runoff on water quality.

**Policy 1.4.3** The Town seeks the cooperation and participation of all surrounding local governments in minimizing and eventually eliminating pollutant sources and excess silt entering estuarine waters. Consistent with this effort the Town will maintain active membership on the Loxahatchee Council of Governments, Loxahatchee River Management Coordinating Council and the Treasure Coast Regional Planning Council.

**Policy 1.4.4** The Town shall not permit significant alteration of tidal flushing and circulation patterns by development activities without demonstrated proof by the applicant that such alteration will not have a negative impact on the natural environment.

**Policy 1.4.5** The Town shall prohibit canals as defined in this Section. For purposes of this policy a canal is defined as any artificial waterway providing access to waters of the State or to any of the rivers, streams, creeks, canals, or other waters of the State or their tributary systems for the purposes of navigation, aesthetics, recreation, and/or enhancement of property. This definition expressly excludes non-residential canals required for agricultural irrigation and drainage purposes. Also excluded are appropriately designed swales and ditches approved by the Engineering and Public Works Director as necessary for controlled outflow of surface water.

**Policy 1.4.6** Effective turbidity control mechanisms and procedures shall be used to protect water quality in areas adjacent to construction activities.

**Preservation of Marine Natural Systems**  
**Objective and Policies**

**Objective 1.5:** The Town shall maintain the adopted strategies to protect and preserve the functions and values of marine natural systems. The land development regulations shall continue to provide for the protection of natural resources and include at a minimum:

**Policy 1.5.1** The Town adopts the objectives and policies and supports the implementation of the Loxahatchee Wild and Scenic River Management Plan.

**Policy 1.5.2** The Town adopts the objectives and policies and supports the implementation of the Loxahatchee River Aquatic Preserve Management Plan.

**Policy 1.5.3** Sloping revetments and interlocking blocks shall be used in high energy areas to more effectively dissipate wave forces, boat wakes and reduce the effects of bottom scouring. New bulkheads and seawalls shall only be used to protect existing development and shall be located landward of coastal wetlands and their ecotones.

**Policy 1.5.4** Land development activities that are feasible only through dredging and filling of submerged and wetland areas should be discouraged.

**Policy 1.5.5** Buffer zones of vegetation and/or riprap, to provide for an environment for native vegetation, should be established between any area of urban development and adjacent waterways. The

Department of Planning and Zoning shall provide general information assistance and referral services to citizens interested in the impacts of Jupiter's physical development on natural resources and resource conservation.

**Policy 1.5.13** The Town shall continue to coordinate with the Florida Department of Environmental Protection related to any anticipated changes to the Town's mangrove protection regulations contained in Chapter 26 of the Town Code.

**Policy 1.5.14** No development will be approved in flood hazard areas and floodways, that is, on land immediately adjacent to major drainage and receiving streams, rivers or low areas which are known to be subject to flooding or rushing water and which therefore, create a hazard to life and property. Rather, the Town will encourage that these lands be reserved for conservation, open space, and recreation.

**Policy 1.5.15** The Town shall prevent and regulate the construction of flood barriers which will unnaturally divert flood hazards to other lands.

**Water Dependent and Water Related Objective and Policies**

**Objective 1.6:** The development and implementation of criteria for prioritizing water dependent and water related land use activities within the Town's Coastal Planning Area as identified in this Element.

**Policy 1.6.1** The land use activities permitted within the estuarine shoreline zone shall be:

- a) public boat ramps and public use marinas;
- b) other water oriented recreation;

- c) commercial fishing and sport fishing;
- d) water related uses;
- e) water dependent industries or utilities; and
- f) residential with marinas or other water oriented recreation uses.

**Policy 1.6.2** The following criteria shall be used in the development and site plan review procedures for all boat ramp projects:

- a) Size and location of boat ramps throughout the Town should be determined by population centers and projected need. Proposed boat ramps should be near significant population center and offer access to large navigable waters.
- b) Non-water related facilities associated with all boat ramp facilities, such as restrooms, pump-out stations, and parking shall be located in upland areas.
- c) Adequate traffic capacity shall be available on all public roads and adequate upland areas shall also be available for the boat ramp parking area.

**Policy 1.6.3** The siting of all boat facilities shall be consistent with the guidelines, methodologies, procedures and policies established in the Boat Facility Siting Plan for Palm Beach County prepared by the Treasure Coast Regional Planning Council,

**Policy 1.6.4** All site plans shall be reviewed to determine if the site is located in an area designated as low, medium, or high probability of impact to manatees as defined in the Boat Facility Siting Plan.

**Policy 1.6.5** If a boat facility is proposed at a location that was not considered an existing or potential site in the Boat

immediately in that area and the Town Planning and Zoning Department and Florida Department of State Division of Historical Resources shall be notified. Proper protection, to the satisfaction of both of these agencies, shall be provided either by preservation or excavation by qualified scientists.

**Policy 1.9.5** Historic resources shall be protected through designation as historic sites by the State, Palm Beach County, or the Town.

**Policy 1.9.6** The Town shall inventory, designate, and preserve buildings, sites, districts and other resources of historic significance in Jupiter. The Town shall continue to implement its historic and archaeological preservation ordinance and further protect historic and archaeological resources through review of building permit and development applications to ensure their compliance with all applicable historic and archaeological designations.

**Policy 1.9.7** Through the implementation of the historic and archaeological preservation ordinance the Town will safeguard the Town's unique history and heritage, foster civic pride and respect for the accomplishments of the past, and protect and enhance the Town's attraction to visitors.

**Policy 1.9.8** Subsequent to a disaster, the Town shall include the Jupiter Historic Resources Board Chairperson, or their designee, on all local damage assessment teams that are assigned to assess the condition of all historic structures and archaeological resources in the Town.

**Policy 1.9.9** The Town will continue to assist the Loxahatchee River Historical Society in implementing its emergency

preparedness plan to protect the documents, records and historical and archaeological artifacts contained within the WWII U.S. Naval Housing Building in the event of a natural disaster.

**Policy 1.9.10** To preserve the Town's historically and archaeologically significant sites, the Town shall pursue local historic designations (for those not designated) or other protective measures, and depict the locations on the Future Land Use Map for the following:

- Peoples Congregational Church;
- Jupiter Elementary School;
- Jupiter Inlet Lighthouse (including 360 degrees of the light beam emanating from the lighthouse lamp room);
- Old Town Hall;
- Riverbend Regional Park;
- Sawfish Bay Park;
- Jupiter Inlet Village Marina;
- World War II Naval Housing Building;
- Jupiter Presbyterian Church;-
- Suni Sands property;
- Civic Center;
- Jupiter FEC Train Depot.

***Goal 2. The protection of human life and capital facilities from the destructive effects of hurricanes and natural disasters by limiting public expenditures and development activities in identified hurricane vulnerability zones, providing for safe and effective emergency evacuation and establishing procedures for post-disaster redevelopment.***

**Hazard Mitigation and Hurricane  
Vulnerability Zone**

**Objective 2.1: The Town shall direct development away from the coastal high hazard areas.**

**Policy 2.1.1** The Town's coastal high hazard area shall include the area as defined in Section 163.3178(2)(h), Florida Statutes and shown on the Town's Hurricane Preparedness Plan Map (see Figure 1).

**Policy 2.1.2** The Town shall use the following provisions as a means to direct people away from the coastal high hazard areas:

- a. Retain undeveloped lands in the coastal high hazard areas as public recreational sites or for other nonresidential uses.
- b. Provide the opportunity for innovative land design which allows for incorporating and enhancing existing natural systems and open areas to serve as natural storm buffers and post disaster staging areas.
- c. Provide for adequate evacuation routes in the event of an emergency.
- d. Provide for recreational needs and other appropriate water dependent and water related uses in a manner consistent with the preservation of natural resources of the dune and beach system.
- e. No new uses other than recreational or water dependent structures shall be allowed in the Coastal Construction Zone (i.e., lifeguard station, restroom facilities, etc.).
- f. All construction occurring within FEMA flood vulnerability zones shall be required to meet storm and flood proofing standards required for a 100 year storm.
- g. In the event of structural damage in excess of 50% of the value of a structure, the structure should be rebuilt to current codes.
- h. All new development and redevelopment in the Coastal Construction Zone shall comply with

the requirements of Chapter 161, F.S. and the Coastal Construction Code of the Town.

**Policy 2.1.3** In order to reduce the exposure of life and public and private property to natural hazards the Town shall provide for general hazard mitigation by continuing enforcement of the regulations for building practices as specified in the adopted Coastal Construction Code, and shall further provide general hazard mitigation through the adoption of the future land use map with the adoption of this Comprehensive Plan. The Town shall review and implement those hazard mitigation recommendations of the Hurricane Evacuation Study and applicable existing interagency hazard mitigation reports.

**Hurricane Evacuation Objective and Policies**

**Objective 2.2:** To provide for public safety during emergency evacuation by maintaining or reducing the Town's build-out emergency evacuation clearance time and maintaining an adequate emergency evacuation roadway system and providing for adequate emergency shelters located outside of the coastal high hazard area.

**Policy 2.2.1** The Town shall maintain build-out emergency evacuation clearance time for a Category 3 hurricane of 12 hours as supported in the Town's 2003 US One Intracoastal Waterway Corridor Hurricane Evacuation Impact Analysis Technical Memorandum.

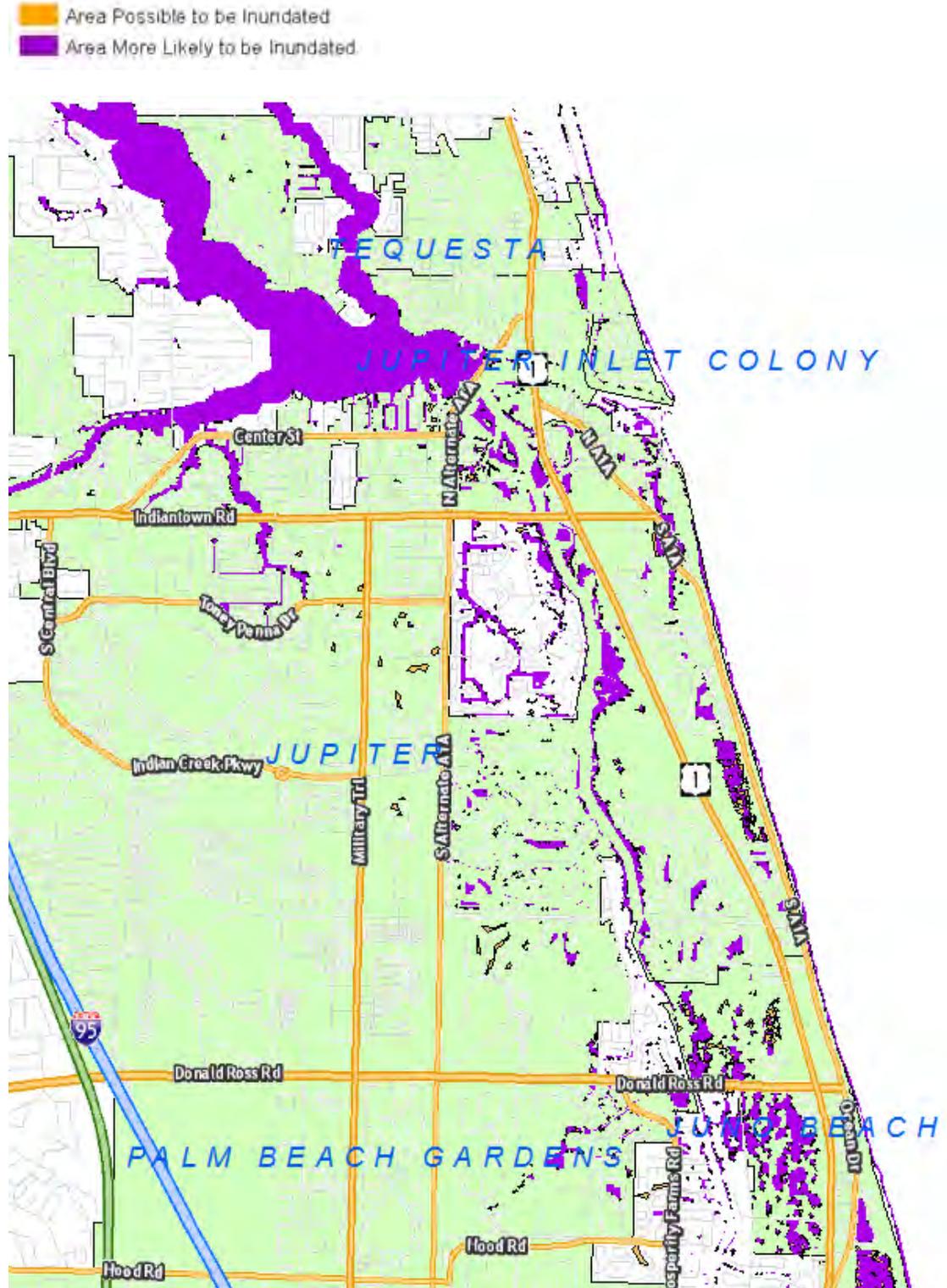
**Policy 2.2.2** All new development proposed within the Hurricane Vulnerability Zone shall include detailed



# Analysis of the Vulnerability of Southeast Florida to Sea Level Rise



## 2-Foot Sea Level Rise in Palm Beach County - Jupiter Area



# Analysis of the Vulnerability of Southeast Florida to Sea Level Rise



## 3-Foot Sea Level Rise in Palm Beach County - Jupiter Area

