



**AGENDA  
TOWN OF JUPITER  
ENVIRONMENTAL TASKFORCE MEETING  
TOWN HALL COMMUNITY ROOM  
MONDAY, AUGUST 25, 2025  
6:00 PM**

**Call To Order**

**ROLL CALL**

Chair Willie Puz (At Large)  
Vice-Chair Christina Akly  
Christa Cherry  
Elizabeth Summers  
Emily O'Mahoney  
Jill Watson (At Large)  
Taylor O'Hara (At Large)  
Kara Krueger (ALT)  
Nathan Shemella (ALT)

**CITIZEN COMMENTS**

All Non-agenda items are limited to three (3) minutes. Anyone wishing to speak is asked to go to the podium and state his/her name and address for the record. **The Task Force will not discuss these items this evening.**

**MINUTES**

1. Approval of the June 23, 2025 ETF Minutes

**PUBLIC BUSINESS**

2. Introduction of new Task Force member Taylor O'Hara
3. Presentation from CJ McCartney - Creating Nature-Inspired Habitats for Public and Private Spaces
4. Sustainability Assessment Status
5. Staff Updates
  - A. North Delaware Exotic Removal

- B.** Sims Creek Preserve
  - C.** Sawfish Bay Park
  - D.** Boards & Committees Volunteer Luncheon October 3, 2025
- 6.** Task Force Member Comments
  - 7.** Next meeting tentatively scheduled for Monday, October 27, 2025 at 6:00 p.m. at Town Hall Community Room

**ADJOURNMENT**



**AGENDA  
TOWN OF JUPITER  
ENVIRONMENTAL TASK FORCE (ETF)  
TOWN HALL COMMUNITY ROOM  
June 23, 2025  
6:00 PM**

**ROLL CALL:**

Chair Willie Puz	<input type="checkbox"/>	Member Jill Watson	X
Vice-Chair Christina Akly	X	Member Taylor O’Hara	<input type="checkbox"/>
Member Christa Cherry	X	Member Kara Kreuger (Alt)	X
Member Emily O’Mahoney	<input type="checkbox"/>	Member Nathan Shemella (Alt)	X
Member Beth Summers	<input type="checkbox"/>		

Staff Liaisons: Ashley Reeves, Natural Resources Coordinator  
Eddy Akpoji, Senior Natural Resources Coordinator  
Stephanie A. Thoburn, Asst. Director of Planning and Zoning

**CITIZEN COMMENTS**

All non-agenda items are limited to three (3) minutes. Anyone wishing to speak is asked to go to the podium and state his/her name and address for the record. **The Task Force will not discuss these items this evening.**

**MINUTES**

Approval of the April 28, 2024 ETF Meeting Minutes [Attachment 1]

Motion to approve by member Cherry. Seconded by member Watson.

Christina Akly	Christa Cherry	Jill Watson	Kara Kreuger	Nathan Shemella
Yes	Yes	Yes	Yes	Yes

**PUBLIC BUSINESS**

1. Welcome – New Task Force members: Taylor O’Hara (absent), Kara Kreuger, and Nathan Shemella

Acting Chair Akly asked newest Task Force members to introduce themselves. Members Kara Krueger and Nathan Shemella introduced themselves and their environmental background.

## 2. Presentation – Vulnerability Assessment Update by Town of Jupiter Utilities, and Hazen and Sawyer [Attachment 2]

Amanda Barnes, Director of Water and Stormwater Utilities, introduced herself, Julie Bielecki and Eric Stanley, representatives from Hazen and Sawyer, the consultants who are helping the Town with a Resilient Florida planning grant from the Florida Department of Environmental Protection (FDEP) to conduct the Vulnerability Assessment. Hazen and Sawyer are also helping to implement the program, do the modeling, and get implementation grants. Ms. Bielecki outlined the presentation on the Vulnerability Assessment: what it is, what it entails, the advantages to the Town, and the progress made so far.

Vulnerability Assessment was previously identified as a key recommendation from the Sustainability Assessment. The Town wanted to pursue the Vulnerability Assessment to understand the effects of flooding, sea level rise, extreme weather, tidal conditions, and rainfall on important assets.

The Resilient Florida planning grant awarded the Town a 100% reimbursable grant – the state will reimburse the Town upon the completion of the project.

Ms. Bielecki described the benefits of completing the Vulnerability Assessment: will make the Town eligible for Resilient Florida funding and create an up-to-date Stormwater Model with the Town's current characteristics.

Ms. Bielecki listed the steps to complete the Assessment as per Florida statutes. The first two steps have been completed– identified the Town's critical assets and developed the stormwater model. The team is currently undertaking the third step – overlaying the critical assets on the flood data to understand how exposed each asset is to flooding. Exposure rates of each asset will show the Town what assets are most vulnerable. Later, the team will establish focus areas and consolidate for Town Council to review and submit to the FDEP.

Task Force members discussed where the assets are located geographically and whether they are available in a report. Ms. Barnes explained that the analysis process is still underway and being updated. Tentatively scheduled to present the information to Town Council by the end of 2025.

Task Force members asked if this opens the Town up to more grants. Staff responds affirmatively and discusses the plan to utilize these grants for Sawfish Bay Park.

Task Force members asked how the flooding models compare to those from FEMA. Mr. Stanley responds that the team's flooding model is tailored to the Town, not the entire state like FEMA.

Ms. Reeves asked about the 1-5 exposure analysis scale and the degree of each designation. Ms. Bielecki responded that a 3 is when an asset should be taken into more consideration.

Task Force members asked what is the main cause of the flooding. Ms. Bielecki responded that it is primarily because of the Town's coastal environment.

Task Force members and Staff further discussed the presented flood maps, primarily which roads and parking lots are the most at risk.

### 3. Staff Updates

#### a. North Delaware Exotic Removal

Staff provided the progress of exotic removal at the North Delaware open space property which started at the beginning of June. No development plans for the property as of the meeting. Staff has been in contact with the Jupiter High School Environmental Horticulture Group who may grow slash pine and saw palmetto for the Town. The trees may be used for edging and filling. Staff may be looking to increase the amount of wetland areas to address the Strategic Initiative regarding water quality in Jones Creek.

#### b. Sims Creek Preserve

Staff updated Task Force members on the status of the Sims Creek Preserve project. Staff had bid opening earlier that day, and includes public access with TruGrid permeable pavers and a bioswale area on the south portion of the property. Contract is tentatively scheduled to go to Town Council for approval in August.

#### c. Natural Environment Centennial Committee

Staff provided updates on previous and upcoming Centennial events put on by the Natural Environmental Centennial Committee, including: Arbor Day in May, the Paddleboard tour and waterway cleanup in Jupiter Oxbow in October. Staff asked Task Force members to reach out if they want to volunteer. Life on Jupiter Water panel presentation on local fisherman in November.

#### 4. Task Force Member comments

Task Force members expressed enjoyment in the previous ETF meeting's presentation on oyster recycling. Expressed a desire for more presentations on Sawfish Bay Park.

Task Force members asked if parks are switching grass for turf. Staff informed Task Force members of an upcoming public input workshop in the Community Center on the Parks Master Plan Update.

Task Force members congratulated Task Force member Watson for becoming a member at large and Staff member Akpoji for joining the Town of Jupiter team.

Next meeting – tentatively scheduled for Monday, August 25, 2025 at 6:00 p.m. at Town Hall Community Room.

#### **ADJOURNMENT**

7:16pm motion to adjourn



TOWN OF  
JUPITER



\*This draft has not been presented to Town Council

# Town of Jupiter Sustainability Assessment

## PATHWAY TO A PLAN

April 2024

**Hazen**



## Table of Contents

Executive Summary .....	1
1. Introduction .....	1-1
1.1 What is a Sustainability Plan?.....	1-1
1.2 Sustainability and Resiliency.....	1-2
1.3 Defining Key Terms .....	1-3
2. Town of Jupiter .....	2-1
2.1 Governance and Municipal Services.....	2-1
2.2 The Environmental Task Force .....	2-1
2.3 Environmental History .....	2-2
2.3.1 Early Civilization.....	2-2
2.3.2 Original Vegetative Communities and Hydrologic Systems .....	2-4
2.3.3 Development Boom.....	2-5
2.3.4 Environmental Impacts.....	2-5
2.4 Considerations for Future Development .....	2-5
3. Protected and Significant Environmental Systems.....	3-1
3.1 Waterways and Blueways .....	3-1
3.1.1 Living Shoreline Initiatives.....	3-7
3.2 Greenways and Open Space .....	3-8
3.2.1 Town of Jupiter Open Space Program .....	3-8
3.3 Stormwater Management Systems .....	3-13
3.4 Groundwater Aquifers .....	3-16
3.4.1 Surficial Aquifer .....	3-19
3.4.2 Floridan Aquifer.....	3-19
3.4.3 Surface Water and Groundwater Relationships .....	3-19
3.5 Climate.....	3-19
3.6 Environmental Protection .....	3-20
4. Summary of Existing Documents .....	4-1
4.1 Comprehensive Plan.....	4-1
4.2 Town of Jupiter Municipal Code.....	4-2

4.3	Town Council Strategic Planning .....	4-3
4.4	Water and Stormwater Utilities Planning .....	4-5
4.5	Southeast Florida Regional Climate Change Compact .....	4-6
5.	Framework for the Future Sustainability Plan .....	5-1
5.1	Sustainability Plans Share Common Themes While Execution May Differ .....	5-1
5.2	Elements Commonly Explored in Sustainability Plans .....	5-2
5.2.1	Energy Conservation .....	5-3
5.2.2	Greenhouse Gas Emission Reduction.....	5-3
5.2.3	Water Use Reduction.....	5-4
5.2.4	Solid Waste Reduction .....	5-5
5.2.5	Conservation and Preservation of Lands and Waterways.....	5-5
5.2.6	Beach and Shoreline Conservation and Restoration.....	5-6
5.2.7	Resiliency to Climate Change.....	5-7
5.2.8	Green Building Standards.....	5-8
5.2.9	Education and Community Outreach.....	5-8
5.2.10	Grants and Funding Opportunities.....	5-9
5.3	Environmental Task Force Sustainability Plan Topics.....	5-11
5.4	Foundational Elements for the Town-Wide Sustainability Plan .....	5-14
5.5	Final Recommendations .....	5-16
	References.....	1

## List of Tables

Table 1:	Summary of Florida Environmental Agencies .....	3-20
Table 2:	Adaptation and Mitigation Strategies to Improve Comprehensive Plan Elements .....	4-1
Table 3:	Adaptation and Mitigation Strategies to Improve Town Code and Policies related to Climate Threat Planning.....	4-3
Table 4:	Definitions for Town of Jupiter Strategic Results .....	4-4
Table 5:	Summary of Recommended Adaptation Actions for Water and Stormwater Utilities .	4-6
Table 6:	Grant Programs to Support Sustainable and Resilient Initiatives.....	5-10

## List of Figures

Figure 1:	Sustainable and Resilient Defined for the Town of Jupiter.....	1-3
Figure 2:	Historical Photos of the Town of Jupiter.....	2-3

Figure 3: National Oceanic and Atmospheric Administration (NOAA) Map, 1833 .....	2-4
Figure 4: Overlooking Jupiter Inlet from the Lighthouse .....	3-1
Figure 5: Jupiter Waterway Trail Map.....	3-2
Figure 6: Red Mangrove at Jupiter Inlet Lighthouse Park.....	3-3
Figure 7: Marine and Freshwater Habitats <sup>3</sup> .....	3-4
Figure 8: Imperiled Species and Plants in the Town of Jupiter .....	3-6
Figure 9 Town of Jupiter’s Map of Open Space Properties.....	3-9
Figure 10: Town of Jupiter Upland Habitats .....	3-10
Figure 11: Town of Jupiter Open Space Properties .....	3-12
Figure 12: Jupiter Stormwater Utility Service Area and Ownership Map.....	3-14
Figure 13: Jupiter Stormwater System and Receiving Waterbodies Map .....	3-15
Figure 14: Generalized Hydrogeologic Cross Section of the South Florida Aquifer System ...	3-17
Figure 15: Town of Jupiter Utilities Dual Aquifer Water Supplies.....	3-18
Figure 16: Todd Street Mangrove Preserve .....	5-5
Figure 17: Jupiter Open Space Properties at Sims Creek Preserve (L) and Washington Street Preserve (R).....	5-6
Figure 18: Open Waters of the Loxahatchee River .....	5-7
Figure 19: Juno Street Pump Station and Wet Well .....	5-8
Figure 20: Constructing Reef Balls for Installation at Sawfish Bay Park .....	5-9
Figure 21: Town of Jupiter Sustainability Plan Outline .....	5-15

## List of Appendices

- Appendix A: Town of Jupiter Historical Timeline
- Appendix B: Detailed Review of Existing Town of Jupiter Documents
- Appendix C: Town of Jupiter Comprehensive Plan Elements, Objectives and Goals related to Sustainability Plan Assessment
- Appendix D: Town of Jupiter 2023 Strategic Plan at a Glance
- Appendix E: Federal Funding Summary Green Infrastructure and Nature-Based Solutions

## Executive Summary

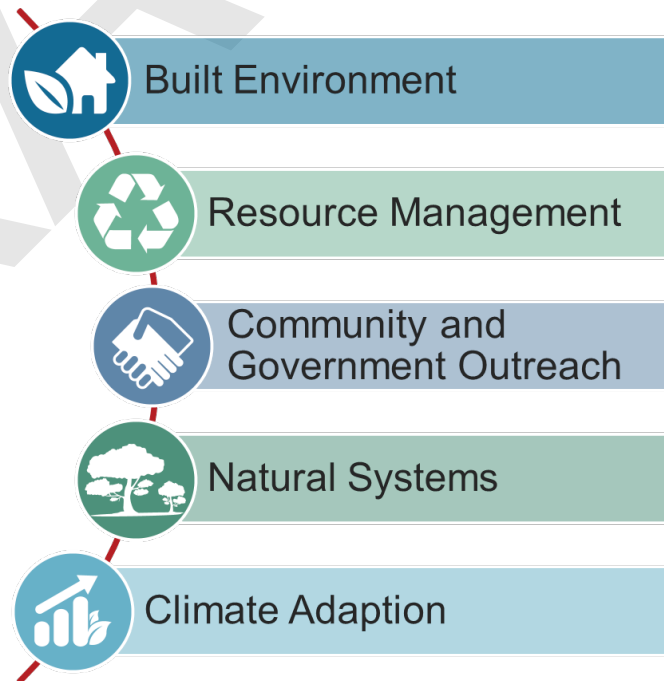
The Town of Jupiter (Town) recognizes the importance of prioritizing sustainability within municipal operations and integrating into their long-term planning strategies for the community they serve. The Town intends to develop a Town wide Sustainability Plan, to serve as a roadmap for incorporating related principles, implementing and continuing projects, and identifying key metrics to support a sustainable Town. The purpose of this document is to summarize investigative efforts conducted to assess existing Town programs and policies and identify key priorities with the goal of developing a customized framework and outline for a subsequent sustainability plan.

The Town has maintained a watchful eye on development, and review of existing programs and policies demonstrates thoughtful planning for the community. Regional development and population growth have irreversibly altered the area’s landscape, which was once more biodiverse, due to the variety of waterways and upland habitats requiring protection. The challenge of preserving and protecting the natural landscape is exacerbated by the Town’s coastal proximity and frontline exposure to growing climate threats such as sea level rise, flood inundation and extreme weather events.

***Planning for a sustainable future that considers the environment, economics and equity while also improving the community’s resiliency and adaptation to climate threats have been key priorities identified in this assessment.***

The Town’s Environmental Task Force is a key stakeholder in the development of the Sustainability Plan and has been instrumental in the identification of the core elements recommended to form the outline for the subsequent plan. These include integrating sustainable and resilient principles into the areas of built environment, resource management, outreach, natural systems and climate adaption.

The Sustainability Plan will build upon these elements and set a course for the prioritization of future goals that improve how the Town and its community function with the environment while relying on nature’s capacity to enhance resilience to address a wide range of climate threat challenges.



## 1. Introduction

*The Town of Jupiter has prioritized the development of a Sustainability Plan. This report considers Jupiter’s history of development, natural environment, and existing sustainability practices with the intent to identify strategies and inform development of the future Town-wide Sustainability Plan.*

The Town of Jupiter (Town) is a distinctive coastal community committed to preserving its unique character, history, and vibrant, small-town feel. The Town’s mission is to provide exceptional municipal services that add value to residents’ lives and businesses while assuring a long-term sustainable community. This report represents the first phase in plan development assessing the Town’s current situation concerning sustainability practices including conservation, environmental protection, resilient practices, and green initiatives that have been previously implemented in the Town’s plans, codes, documents, and studies.

This report is organized to provide an overview of the Town of Jupiter’s system of governance and municipal services, which will include a historical account of the area’s evolution and development with associated impacts on environmental resources. The Town’s region of influence including significant and sensitive environmental systems will be described to offer perspective on the diverse habitats surrounding Jupiter that merit sustainable planning and long-term protection. Subsequent sections will provide an outline of the Town’s efforts, to date, on sustainability-related topics including those referenced in the Town’s Comprehensive and Strategic Plans. Finally, the report will identify priorities to establish the path forward in the development of a long-term and Town-wide sustainability plan. Key objectives identified in this initial phase will form the basis of the Sustainability Plan with detailed implementation strategies to be developed in future project phases.

### 1.1 What is a Sustainability Plan?

Sustainability, specifically sustainable development, has been a theme and priority adopted across countries, cultures, politics, and economics, with organizations from the global to local levels considering its importance in long term planning. The United Nations sought to define sustainability as early as 1987 by the Brundtland Commission of the United Nations (UN 1987), “Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” The United Nation’s 1987 definition continues to be frequently cited today by various agencies as they seek to define sustainability and subsequently incorporate sustainable and resilient goals within long term planning documents.

***Sustainability Plans are developed to create policies, implement actionable steps, and identify key performance metrics that support a sustainable future for the organization and community.***



**Hazen's illustration of the relationship between the three dimensions of sustainable development**

In 2015, the United Nations adopted Transforming our World: the 2030 Agenda for Sustainable Development, which includes 17 sustainable development goals and 169 targets integrated and balanced among the “three dimensions of sustainable development: the economic, social and environmental” (UN 2015). This “triple bottom line” originally coined by John Elkington in 1994, suggests that equal evaluation of people, profit and planet provides a full accounting of the cost of doing business. Like the United Nations, sustainability plans developed at the national, state, and local levels have consistently used the triple bottom line as the framework for plan development (UN 2015). For Jupiter, responsible production and consumption, good health and well-being, affordable and clean energy, and reduced inequalities are key considerations for a solid framework.

## 1.2 Sustainability and Resiliency

More recently, the United Nations published the Global Sustainable Development Report, an update to the 2030 agenda. Two crises are identified: climate change and irreversible biodiversity loss, which threaten to derail development progress. The following themes are explored in this report (GSDR 2019):

- Achieving human wellbeing without depleting the natural capital contained in the “global commons” – sustainable development is equivalent to reducing demand for the earth’s resources
- Re-imagination of the relationship between society and nature – working with nature and using nature-based solutions can protect the environment and benefit from nature’s capacity to enhance resilience and improve development
- Progress is made through partnerships and cooperation where transformation occurs at all levels. This may be initiated through government policies and financial incentives as well as through community action and behavior change

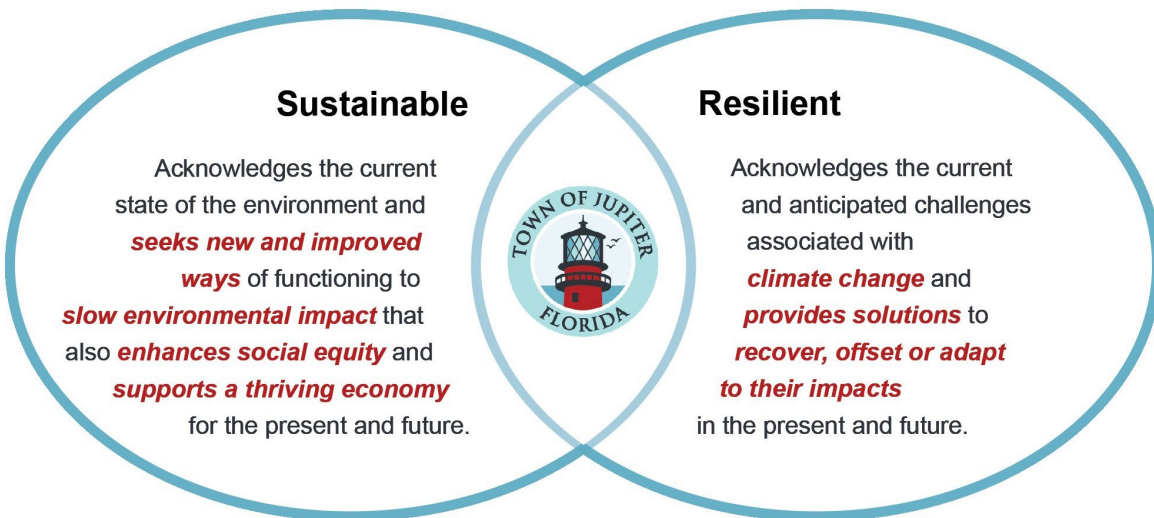
Sustainability and resiliency are often discussed synonymously in the context of climate change, especially in South Florida, where prioritized initiatives are aimed at improving resiliency to the effects of climate change, reducing greenhouse gas emissions and promoting climate equity within the community. While sustainability seeks to achieve balance between environmental, economic, and community wellbeing,

resiliency acknowledges the current state of environmental degradation and the need to implement strategies to minimize and withstand impact to recover quickly and prepare for future challenges. Climate change and the increased frequency of extreme weather events have many communities also prioritizing resiliency within planning efforts.

Local governments have the authority to implement policies and programs that create sustainable or unsustainable conditions, thus influencing the future of their organization and community. Sustainable initiatives often center on land use and development regulations, safeguarding resource consumption, related infrastructure investments and raising community awareness. Sustainability Plans are developed to create policies, implement actionable steps, and identify key performance metrics that support a sustainable future for the organization and community. The Town has identified that sustainable practices should consider both mitigation and adaptation strategies for managing the Town’s resources, environmental ecosystems and the effects of climate change, both realized or anticipated in ways that enhance economic stability and promote community stewardship.

### 1.3 Defining Key Terms

An organization’s definition of “sustainable” may differ influencing the priorities and key objectives within a sustainability plan. During this assessment, the Environmental Task Force participated in the development of key terms as well as identifying that sustainability for the Town must also consider community resiliency to the effects of climate change. **Figure 1** depicts the definitions developed for *sustainable* and *resilient* and illustrates their synergistic relationship. Both definitions are intended to guide development of the Town-wide Sustainability Plan.



**Figure 1: Sustainable and Resilient Defined for the Town of Jupiter**

## 2. Town of Jupiter

*The Town’s municipality and vision for the community it serves as well as provide a historical account of development in relation to the Town’s environmental resources.*

The Town of Jupiter is approximately 28 square miles with a 2022 estimated population of 61,341 as of April 2022. The Town is a coastal community that celebrates its history and heritage being uniquely situated amongst upland and coastal areas and intersected by the only state-designated wild and scenic Loxahatchee River. The Town maintains a small-town feel and sense of community that is unique in South Florida. By keeping a watchful eye on development and managing smart growth, Jupiter has avoided many of the challenges facing South Florida communities today. These efforts are captured in the Town’s vision statement, “Jupiter is a distinctive coastal community committed to preserving its unique character and history and vibrant, small-town feel.”

### 2.1 Governance and Municipal Services

The Town of Jupiter operates under the Council-Manager form of government. The Town Council, a board of five elected officials, sets policy, approves budgetary and financial activities, and sets the town’s strategic direction and vision. Working with the Town Council, the town manager directs the town’s operations, managing departments that deliver the town’s services, programs, and special projects. The Town consists of the following departments that provide exceptional municipal services to the residents of Jupiter.

Building	Parks and Recreation
Community Relations	Planning and Zoning
Engineering and Public Works	Police and Code Compliance
Finance	Town Clerk
Human Resources	Town Manager
Information Systems	Water and Stormwater Utilities
Neighborhood Services	

### 2.2 The Environmental Task Force

In 2019, the Town established an Environmental Task Force composed of nine (9) residents of the Town, appointed by Jupiter’s Town Council, and who demonstrate an interest in the environment. Initially, the Task Force was created to provide information and recommendations to the Town Council on code revision needs and best practices on environmental and sustainability-related initiatives with specific emphasis on tree preservation. More recently, the Environmental Task Force’s purpose and mission were refined to encompass matters pertaining to environmental enhancement, protection, and preservation with the specific

goal to review and offer insight into development of a comprehensive Town Sustainability Plan, which was a key task identified in Town Council's 2022/2023 Strategic Plan. The Environmental Task Force is a key stakeholder in the development of the sustainability plan.

## 2.3 Environmental History

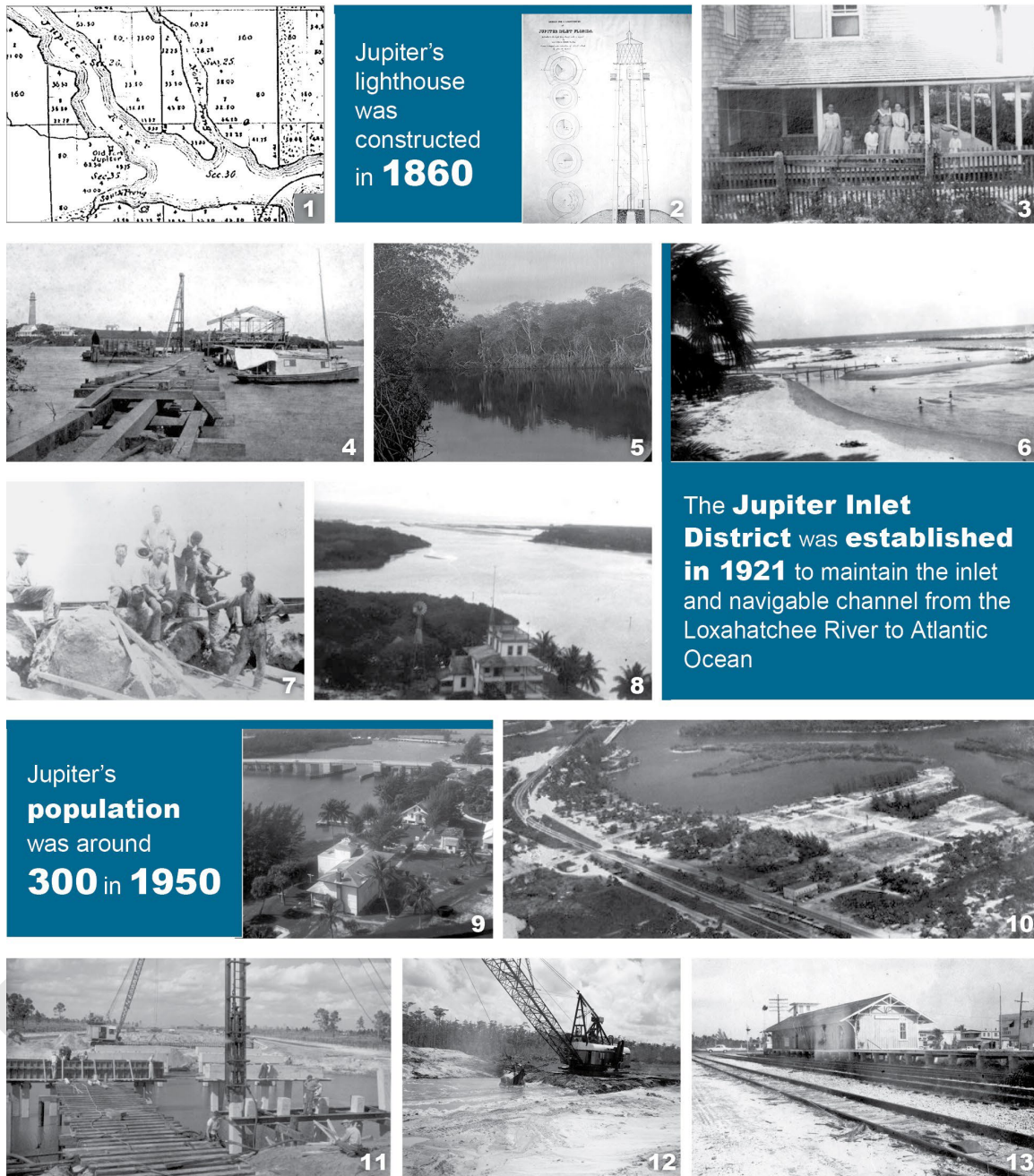
The evolution of Jupiter's environmental landscape, as a result of development and population growth, is important to consider for the Town-wide Sustainability Plan. A brief review of the Town of Jupiter's environmental history is provided herein, and a collection of historical photos presented in **Figure 2** and on the following pages. **Appendix A** provides a detailed historical timeline, which was developed as a collaborative effort between the Town's Planning and Zoning Department with feedback from the Loxahatchee River Historical Society.

### 2.3.1 Early Civilization

For over five thousand years, the landscape and marine life in the Jupiter area were so rich and diverse that it supported a small town of about 3,000 Indigenous People. Large shell mounds have been documented along the Jupiter Inlet and current day Intracoastal Waterway, providing proof of the biodiversity of years past. These mounds, created by ancient Indigenous People, contained the fish bones, shells, and faunal bones of animals, such as the now extinct monk seal, that once lived in our area. Stories and accounts from early visitors describe how the land and water were once part of a thriving environment that was largely dependent on the marine habitat.

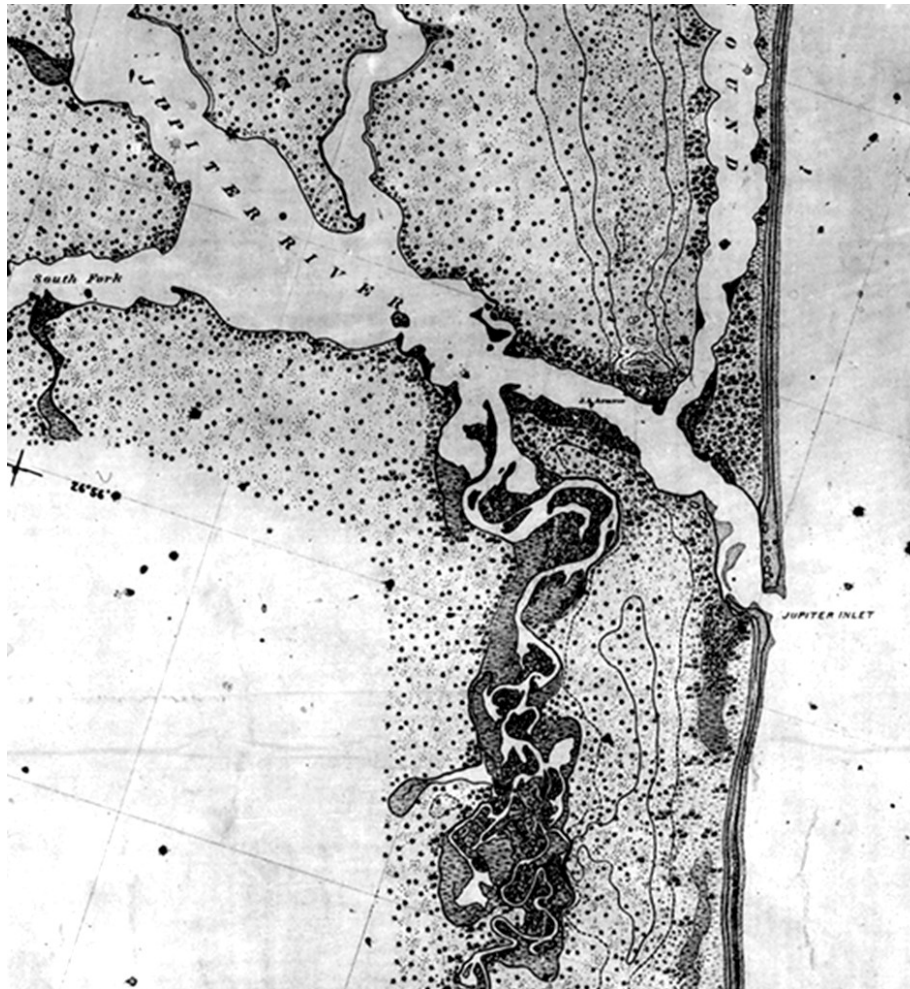
Waterways were a primary mode of transportation for Indigenous People and the earliest settlers. The Jupiter Inlet was first shown on maps dating back to 1671, according to the U.S. Army Corps of Engineers. Jupiter inlet was a natural inlet, closing intermittently and the location would shift. This allowed the rivers to have more fresh water with more Cypress trees along the banks of the river instead of the mangroves seen today. It was the only outlet for the Loxahatchee River, Lake Worth Creek and Jupiter Sound with part of the flow from the St. Lucie and Indian Rivers diverting to the ocean through the Jupiter Inlet as well. In the early days, the inlet was several hundred yards south of its present location at times as depicted in **Figure 3**. The proximity of the Indian River lagoon afforded safer passage from Ponce Inlet to Jupiter River since reefs, shoals, and rough seas in the Atlantic outside of the barrier islands made boat travel unsafe.

## Historic Jupiter



(1) Fort Jupiter, 1855; (2) Jupiter Lighthouse, 1860; (3) Dubois family home, 1890; (4) Construction of the Celestial Rail over Jupiter Inlet in 1890; (5) The narrows of Jupiter in 1910; (6) The waterfront at Jupiter Inlet, 1920; (7) Workers on the jetty at Jupiter Inlet in 1920; (8) A view of the inlet in 1924; (9) A 1950 view from the lighthouse overlooking the US-1 bridge; (10) Alternate A1A corridor; (11) Turnpike construction over the C-18 canal, 1956; (12) Dredging and construction of the C-18 Canal, 1957; (13) FEC Railway Station in Jupiter.

**Figure 2: Historical Photos of the Town of Jupiter<sup>1</sup>**



*Development permanently altered Jupiter's landscape*

*From formation of the Fort Jupiter Reservation Boundaries in 1855 to location of the Jupiter Inlet in 1922 to the development boom and environmental stewardship in the 1970s to creation of the I-95 / Indiantown Road intersection in 1987. Fort Jupiter, particularly, was important because of the Seminole Wars that ended in displacement of the Seminoles for white settlers.*

**Figure 3: National Oceanic and Atmospheric Administration (NOAA) Map, 1833**

### 2.3.2 Original Vegetative Communities and Hydrologic Systems

Prior to the development that is seen today, Jupiter was a more diverse landscape. The Town was originally comprised of Sand Pine Scrub along the coast, Mesic and Hydric Pine Flatwoods that merged with Cypress and Maple sloughs. Wet prairies were scattered with Cypress Domes along Military Trail, and some hardwood and coastal hammocks with mangrove fringes existed closer to the inlet. There was more fresh water along the rivers and waterways, since the inlet closed and shifted at times. Cypress trees were the predominant tree species along the Loxahatchee River and Jones Creek. When the Jupiter Inlet was relocated and formalized in 1922, the salinity of the river increased allowing more mangroves to prosper. Much of central and coastal Jupiter was high and dry with Sand Pine Scrub and Pine Flatwoods vegetation which made these areas prime developable land. The outstanding fishing and unique natural experiences that have drawn many new people to the Town have impacted the once vibrant environment. The original

<sup>1</sup> Photos courtesy of the Town of Jupiter and Florida Memory State Archives

vegetative communities were sustainable until man made changes to the environment modified the landscape that had existed for thousands of years.

### **2.3.3 Development Boom**

The incremental impact on the environment is directly linked to the increase in population spurred by new transportation connections and new housing. Major development booms that occurred drew new residents to the Town when the population grew in 1930 from a scant 176 residents to Post World War II (1950) with a population of 313. While the population did not increase significantly in the 1950's, the manipulation of the land and water set the tone and forever changed the natural systems. By 1970, the number of residents reached 3,136 people, which slowly increased until 1980 when the Town's population was 9,868. Fishing and wildlife were still very prevalent up through the 1980's. But when Interstate 95 was connected to the Town in 1987, the population jumped to 24,986 by 1990 and the Town began to see aspects of the natural environment wane. As of April 2022, the Town of Jupiter's estimated population was 61,341 and does not include seasonal visitors. Seasonal visitors increase the area's population by as much as 20%.

### **2.3.4 Environmental Impacts**

Property owners, developers and the government significantly changed the landscape of the past. Farmers, ranchers and water control districts drained wetlands, changed the flow of water in the Cypress and Maple sloughs and wet prairies. Limestone Creek and Jones Creek were deepened and extended. Mangrove islands and fringes were filled in for valuable waterfront real estate. The Town's high and dry Pine Flatwoods and Sand Pine Scrub along the inlet and coast became the Town's first subdivided neighborhoods. Some of the old Live Oak and Scrub Oak trees were saved for shade from the old hardwood hammocks and coastal hammocks. Human development of the twentieth century has manipulated the natural features and impacted the diversity of wildlife. With the development booms that came from the two railways, post-World War II and most recently after the Town connected to I-95, the land and water has been re-sculpted to meet human needs and desires.

## **2.4 Considerations for Future Development**

While there has been some thoughtful planning over the last fifty years, it is important that the Town have a vision for how the land and water will function in the future so that the environment and development can exist in a sustainable and resilient manner for another thousand years. A sustainability plan that outlines the issues and includes nature-based solutions from small scale to large scale projects should be incorporated at all levels of development. Everyday living for an individual single-family homeowner can help reduce the impact on the Town's fragile environment by including reduced irrigation, native and xeric plantings that provide beauty and habitat, solar, rain gardens, composting, and allowing soil to have life and insects etc. These, among others, are ways in which residents can help create a more sustainable Jupiter. Larger scale projects can be incorporated into common areas for neighborhoods, as well as projects that are overseen by the Palm Beach County or Town of Jupiter that seek to restore functional native habitat through the open space program, make greenway connections between private and publicly owned preserve areas, and creation of new wetlands that treat urban runoff prior to discharging into the Loxahatchee River and Intracoastal Waterway. Working together and following a common vision on different scales, sustainability and resiliency can be achieved at the local, regional and even global scale...if we all do our part.

### 3. Protected and Significant Environmental Systems

*Environmental systems and habitats within the region maintain the character of the community and contribute to the economic viability of the region.*

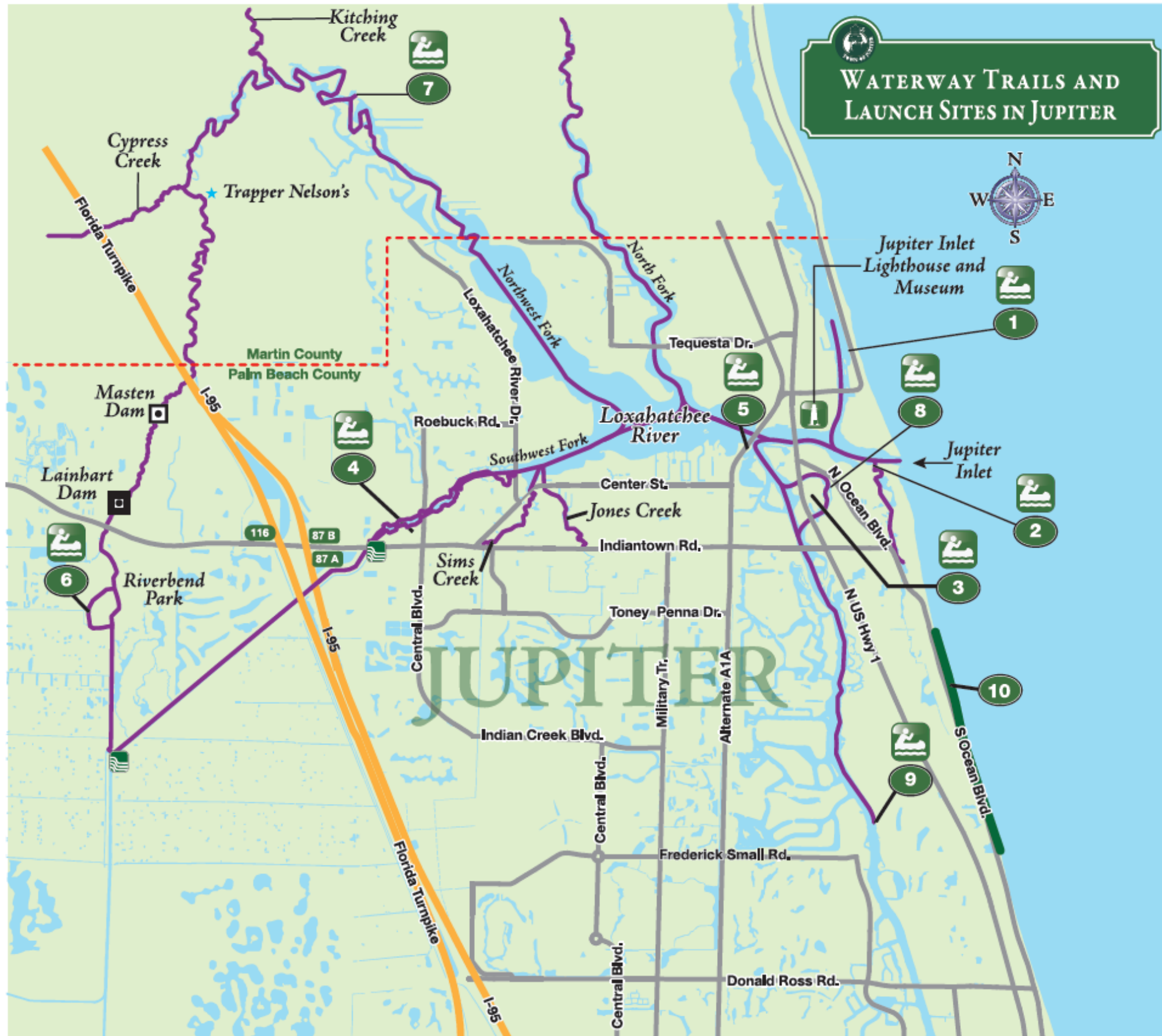
The Town and surrounding areas contain a variety of significant and rare environmental systems consisting of upland and submerged lands that have been preserved and managed by Federal, State, and County governments in addition to the Town. The Town's coastal proximity provides both marine and freshwater habitats as well as exposes the area to the exacerbated effects of climate change including extreme weather events and sea level rise. Underground aquifers at varying depths and hydrogeologic characteristics also represent the primary potable water supply to Jupiter and the surrounding region.




**Figure 4: Overlooking Jupiter Inlet from the Lighthouse**

#### 3.1 Waterways and Blueways


Waterways include recognized, naturally occurring, and manmade aquatic systems. Blueways are defined as a network of multi-activity recreational trails and sites closely linked with the water with access to other activities, conservation lands, communities, and parks. More than 12% of Jupiter's Town limits are occupied by waterways and blueways and approximately 225 miles of land borders water, with 39.2 miles of paddle trail including the Loxahatchee River, which intersects the heart of Jupiter. Jupiter's waterway trails map is included on the following page.








### LAUNCH SITES


1. Coral Cove Park- South Extension
2. DuBois Park
3. Burt Reynolds Park
4. Limestone Creek Natural Area
5. Sawfish Bay Park
6. Riverbend Park
7. Jonathan Dickinson State Park
8. Inlet Village Park
9. FIND River Park
10. Jupiter Beach Access Points

 Dam

 Spillway

 Paddling Trails

 Exit



**JUPITER WATERWAY TRAIL**

PADDLE • DIVE • SNORKEL • FISH • BIKE • HIKE • PLAY • ENJOY

[www.jupiter.fl.us/waterwaytrail](http://www.jupiter.fl.us/waterwaytrail)

Figure 5: Jupiter Waterway Trail Map

Some of the regionally significant waterways and aquatics habitats found in Jupiter are provided below and a photo collection presented on the following page.

- Atlantic Ocean
- Jupiter Inlet
- Intracoastal Waterway
- Loxahatchee River
- Sawfish Bay
- Jones Creek
- Sims Creek
- Mangroves
- Limestone Creek (C-18 Canal)
- Wet Prairies
- Sloughs
- Cypress Swamps

These waterways provide pathways for floodwater, wildlife habitat, numerous recreational and economic opportunities as well as supplement drinking water resources through aquifer recharge. Many daily activities affect water quality, locally and far downstream. As a result, the Town's long-term planning should incorporate sustainable and resilient policies to protect and restore these systems. Residents who lived in Jupiter for forty years or more have witnessed the noticeable decline in the health of waterways. Mangroves, oyster beds and seagrasses, which are considered regionally significant to the local ecosystem, are found within the Jupiter Inlet, Loxahatchee River, Intracoastal Waterway in addition to portions of Sims Creek residential, Jones creek and Limestone Creek (dredged to be the C-18 canal) as well as various manmade canals.

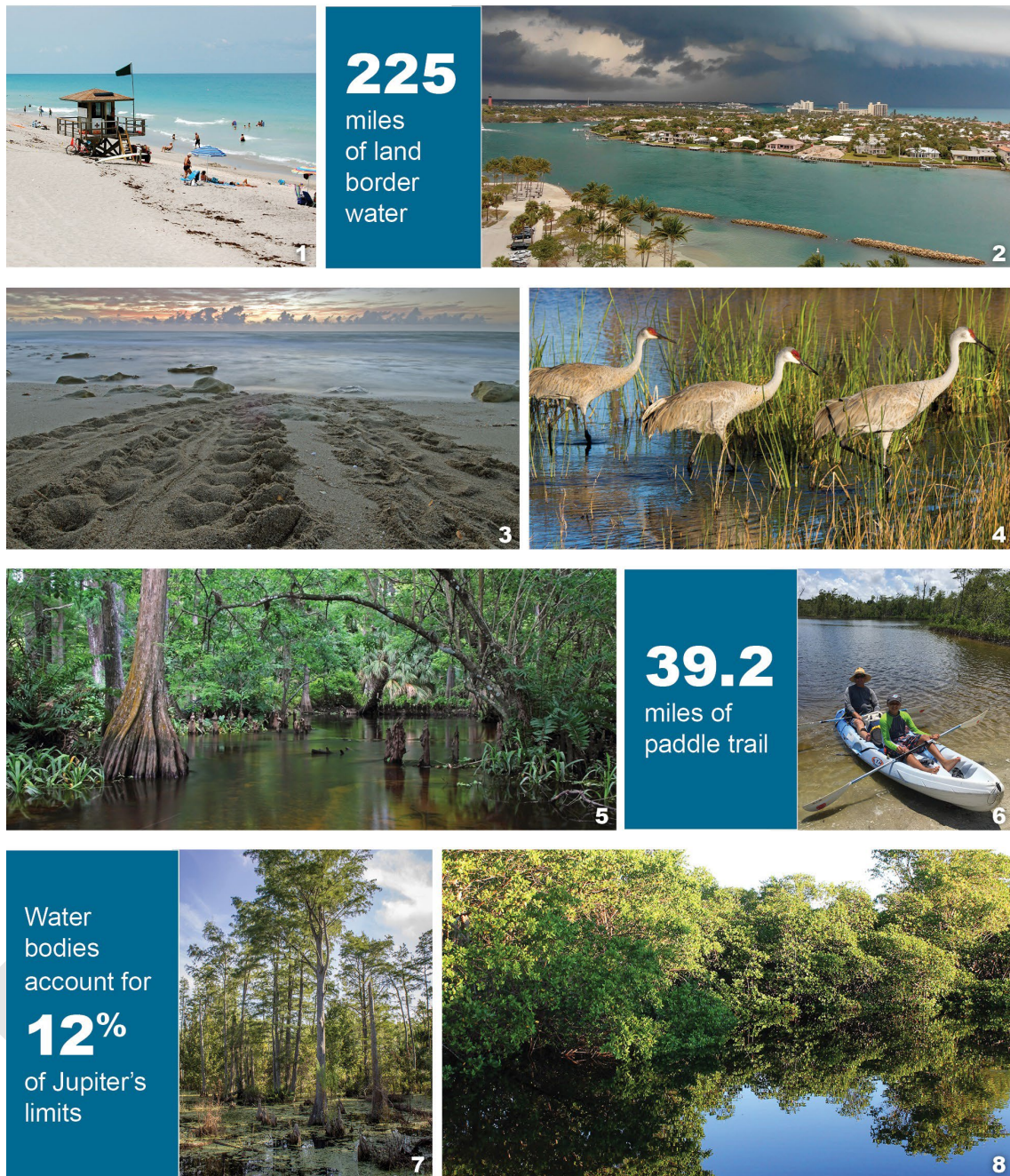


**Figure 6: Red Mangrove at Jupiter Inlet Lighthouse Park<sup>2</sup>**

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<sup>2</sup> "Environmental Resources Management - Jupiter-Inlet." <https://discover.pbcgov.org/erm/NaturalAreas/Jupiter-Inlet.aspx>, Accessed 3 Jan. 2023

## Marine and Freshwater Habitats



(1) Beaches in Jupiter; (2) Jupiter Inlet preparing for the storm; (3) Tracks from sea turtle nesting season; (4) Sandhill cranes in Cypress Creek; (5) Wild and scenic Loxahatchee River; (6) Kayaking on Jupiter's waterways; (7) Cypress Swamp in North Jupiter Flatwoods Natural Area; (8) Mangroves in Delaware Scrub.

**Figure 7: Marine and Freshwater Habitats<sup>3</sup>**

<sup>3</sup> Photos courtesy of the Town of Jupiter and Palm Beach County Division of Environmental Resource Management

Mangroves and oyster reefs benefit the health of aquatic systems by cleaning water, stabilizing shorelines, and providing essential fish and marine life habitat (Oysters, FWC). Oyster filtering reefs and seagrasses play a critical role in shallow coastal regions providing sediment stabilization, nutrient cycling, detrital food sources, and are nursery grounds for many recreational and commercially important fisheries. Both populations continue to decline globally and within the Loxahatchee River Estuary. Altered hydrology through flood control, coastal construction, dredge and fill operations, and boating activities have all contributed to decline in seagrass and oyster habitats (Metz, 2020). The Town is in the process of installing a living shoreline at Sawfish Bay Park. This 3-phase project has an approved capital investment program with \$850k of funding. The project will stabilize the existing vinyl seawall by installing reef balls, mangrove planters, oyster modules, and rip rap. Staff also submitted for a \$3.2M NOAA grant to restore Sawfish Bay (a 30-acre aquatic preserve bounded by Sawfish Island, Karen J. Golonka island and Sawfish Bay Park). The project is to restore oyster reefs within Sawfish Bay and provide seagrass protection as one of Town Council's strategic initiatives. A photo collection of imperiled plants and species is provided on the following page.



**Sawfish Bay Park - Living Shoreline**



**Sawfish Bay Park: Reef ball 1 year post Deployment**



**Bureau of Land Management and Jupiter Inlet District Living Shoreline**

## Imperiled Species and Plants



(1) Florida manatee; (2) Manatee seagrass; (3) Turtle seagrass; (4) Johnson's seagrass; (5) Shoal grass; (6) Sea turtle hatching; (7) Gopher Tortoise; (8) Hawksbill sea turtle feeding on seagrass; (9) Four-petal PawPaw; (10) Florida Scrub Jay; (11) Ghost orchid; (12) Small-Tooth Sawfish; (13) Red bellied woodpecker in Limestone Creek Natural Area; (14) Oyster reef.

**Figure 8: Imperiled Species and Plants in the Town of Jupiter<sup>4</sup>**

<sup>4</sup> Photos courtesy of the Town of Jupiter, Palm Beach County Division of Environmental Resource Management, Florida Fish and Wildlife Conservation Commission, Florida Department of Environmental Protection

### 3.1.1 Living Shoreline Initiatives

The Town has already begun measures to strengthen shorelines and waterfront property on public properties through the installation of living shorelines. Living shorelines utilize natural materials, such as plants and rock, in order to create a natural but protected coastline. Recent studies have shown that on top of creating marine habitat and storing carbon, living shorelines absorb more wave energy and are more resilient to storms than manmade bulkheads. A significant living shoreline project was recently completed within the Town at the Jupiter Lighthouse Outstanding Natural Area in 2021. Constructed by the Jupiter Inlet District and Bureau of Land Management, the project consists of eleven limestone breakwaters and native plantings, along with an observation pier for public enjoyment.

Living shorelines are also a prominent feature of the Sawfish Bay Marine Restoration Project. This multi-year initiative began with a pilot project completed in February 2023 in the southwestern corner of the old marina basin at Sawfish Bay Park. Following the initial installation of rip rap, Reef Balls of varying sizes, and mangrove plantings, the area has already seen an increase in marine biodiversity. In particular, the Reef Balls encourage the production of oyster reefs, which over time improve the water quality, create diverse marine habitat, and absorb wave energy from storms and boat traffic. The second phase was in February 2024 with future phases of the Sawfish Bay Marine Restoration Project expanding with reef Balls, rip rap, and mangrove plantings out of the old marina basin at Sawfish Bay Park and over to two nearby islands, Sawfish Island and Mayor Karen J. Golonka Island. The project will further encourage the growth of seagrass beds throughout the Sawfish Bay area, improve water quality, stave off the replacement of the seawall within Sawfish Bay Park by attenuating wave action and protecting the wall and upland infrastructure, as well as the creation and improvement of public waterfront access enjoyment areas.

Years of multiple storms, erosion, and increased boat traffic have destabilized large stretches of the Town's waterfront properties. The Community Redevelopment Agency approved including more living shoreline along the Jupiter Riverwalk, currently a 2.5-mile-long recreational corridor that follows along the east side of the Intracoastal Waterway south of the Jupiter Inlet. Stabilization and construction of the Riverwalk can provide an opportunity to create oyster beds and more marine habitat that will protect the shoreline from scouring while creating marine habitat. To help improve the deteriorated sections of the Riverwalk shoreline, a multi-phase living shoreline project is currently in the planning/permitting phases. The first phase of these improvements will include adding rip rap and mangrove plantings to long segments of shoreline abutting the Mangrove Bay community. These sections of the shoreline have been severely degraded, and the living shoreline installation will help to prevent erosion while also creating a rich and diverse aquatic environment. Future phases for the Riverwalk shoreline include adding piling attachments, oyster reefs, breakwaters, Reef Balls, and mangrove plantings. The combination of these strategies will help to attenuate wave action due to boats and storms, as well as protect these public and private lands from further erosion.

## 3.2 Greenways and Open Space

The Town of Jupiter includes 14,813 acres of land with 3,243 acres or over 20% is dedicated to parks, natural areas, and privately owned preserves (2021 Annual Report). **Figure 9** on the following page includes a map of Jupiter area parks and greenways. Greenways and open space provide wildlife, habitat, recreation, maintain character, increase property values for abutting landowners, support eco-tourism, health, offer alternative transportation and help balance the built and natural environments. They offer connectivity to places of interest bolstering local economies as well as wildlife corridors and stormwater management and treatment areas.

The following upland habitats are native to Jupiter with a photo collection presented on the following page:

- Hardwood hammocks
- Pine flatwoods
- Coastal strand and scrub

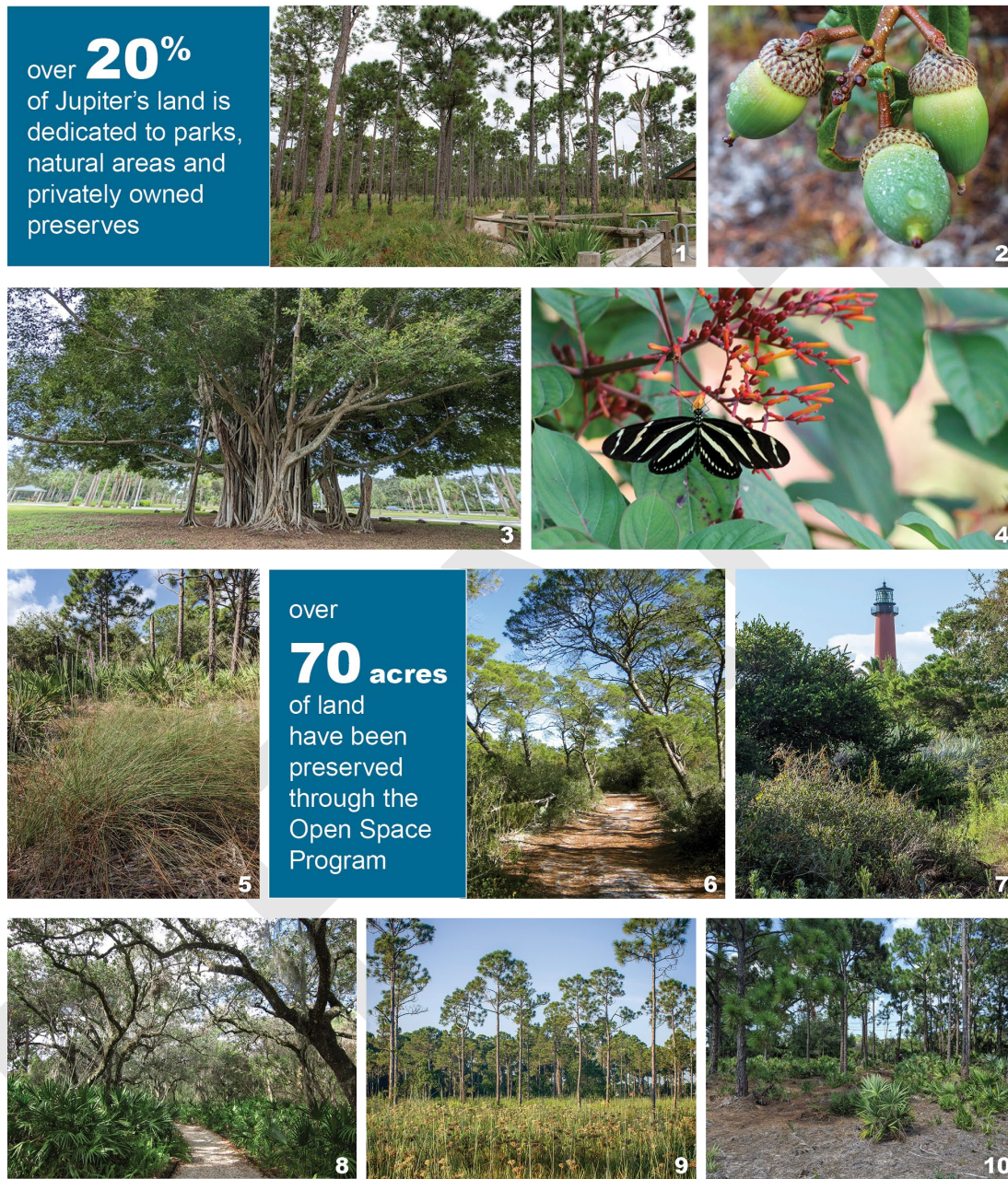
Most of the native upland areas within the Jupiter area have been impacted and many have been lost due to development and related anthropogenic (manmade) impacts. Habitat loss has contributed to the decline of native species including, but not limited to, the scrub-jay, gopher tortoise, burrowing owl and four-petal pawpaw. Sustainable development seeks to incorporate nature-based strategies including preservation of existing habitats and creation of new habitat through the use of green infrastructure that supports native wildlife and provides passive recreation opportunities. This partial restoration can be accomplished through planting native landscaping materials in parks and common spaces and the creation of artificial wetlands that help manage stormwater runoff thereby improving water quality.

### 3.2.1 Town of Jupiter Open Space Program

The Town first established the Open Space program in 2004 after Jupiter voters passed a \$17.5M bond referendum to purchase vacant lands in the Town with the goal of preserving remaining areas of rare and sensitive natural habitat to link existing preserve areas and waterways while addressing traffic and fire development. Most of the open space properties are directly adjacent to tidally influenced waters, which helps to increase community-wide sea-level resilience by preventing development and providing a natural buffer between rising waters and infrastructure. A second bond referendum was passed by voters in 2019, which authorized the Town to issue up to \$20M in general obligation bonds for the purpose of acquiring land. The two initiatives resulted in a combined total of up to \$37.5M available for land acquisition.



## Upland Habitats and Open Space



(1) Uplands of Limestone Creek Natural Area; (2) Live oak acorns; (3) Ficus Tree in Cinquez Park; (4) Zebra long wing butterfly in Limestone Creek; (5) Wiregrass in Georgian Park; (6) Walking trail in Jupiter Ridge Natural Area; (7) Jupiter Inlet Lighthouse Outstanding Natural Area; (8) Jones Creek Hammock; (9) Pine Flatwoods in North Jupiter Flatwoods Natural Area; (10) Saw Palmetto in Georgian Park.

**Figure 10: Town of Jupiter Upland Habitats**

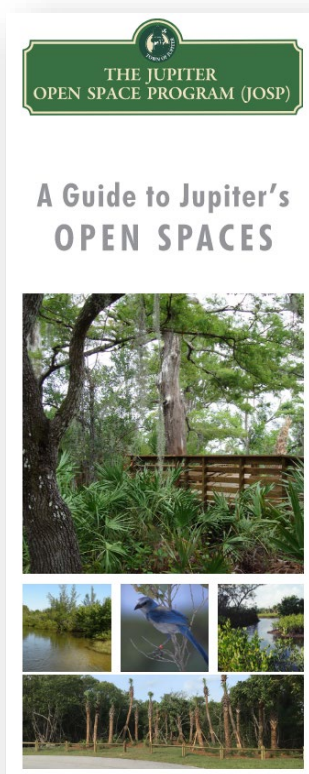
<sup>5</sup> Photos courtesy of the Town of Jupiter and Palm Beach County Division of Environmental Resource Management

The lands purchased through the Open Space program contain unique natural, environmental, historic, or cultural features. The intent is to convert these lands into designated conservation areas that preserve natural habitat and create spaces for the enjoyment of the public. This is accomplished through five goals:

- Protect environmentally sensitive lands
- Dedicate vacant parcels for open space uses
- Preserve archaeological or historic sites
- Mitigate future traffic levels by preserving the remaining open space in the town
- Improve the public's access to Jupiter's natural assets

After the open space lands are acquired, non-native, invasive vegetation is removed. Restoration through the planting or re-creation of native habitat begins on many of the open space properties. Development and creation of new wetland and bioretention ponds are installed, increasing the stormwater capacity of the area. Then the properties are managed as natural areas or passive parks through the adoption of management strategies or individual site plans.

Through partnerships with agencies such as Palm Beach County, the Florida Department of Environmental Protection, the Loxahatchee River Preservation Initiative and the Florida Fish and Wildlife Conservation Commission, the Town has purchased approximately 137 acres of land across 11 properties and include previously dedicated parcels that are designated conservation. The open space properties are listed below and Town of Jupiter brochure available online.



1. Washington Street Preserve: 39.2 acres purchased March 2011
2. Cinquez Park: 13 acres purchased September 2008
3. Sims Creek Preserve: 2.82 acres purchased November 2005
4. North Delaware Property: 7.88 acres purchased June 2021
5. Delaware Scrub Natural Area: 15.88 acres purchased May 2005
6. Jones Creek Preserve: 2.71 acres purchased July 2005
7. Todd Street Mangrove Preserve: 1.17 acres purchased February 2014
8. Jones Creek Hammock: 18.61 acres acquired July 1987
9. Georgian Park Preserve: 2.08 acres purchased 1983
10. Jones Creek Headwaters: 22 acres purchased 1990s
11. Karen J. Golonka Island: 12 acres purchased June 2008
12. Palmwood Preserve: 15.78 acres dedicated 2023
13. Almas Place Preserve: 1.72 acres acquired in the 1980s

Current open space lands in the Town showcase a variety of natural Florida ecosystems, from the mangrove and seagrass habitats of Karen J. Golonka Island to the cypress sloughs and wetlands of the Jones Creek Hammock, to the pine flatwoods and coastal scrub habitats found in the Delaware Scrub Natural Area. The Open Space Program also prioritizes the purchase of land where habitat preservation is not an option but there is potential for restoration. Once purchased and protected, the vacant land can be converted into open space for the enjoyment and benefit of the public. Cinquez Park, a 13-acre parcel of land on Indiantown Road, is an example of an open space property where habitat preservation was not feasible due to past impacts. Originally purchased to reduce traffic impacts on Indiantown Road, Cinquez Parks now hosts a dog park, accessible walking paths, pavilions and picnic areas, and the lake was restored for fishing and drainage. Large areas have also been replanted and wetlands are being created. Photos are pictured in **Figure 11**<sup>6</sup>.

The most recent acquisition funded by the Open Space program is currently at the north end of Delaware Boulevard that is approximately 8-acres in size. This site is directly adjacent to tidally influenced Jones Creek, which flows into the Loxahatchee River. Future restoration of the property could include both sustainable and resilient strategies such as restoration of native plant communities, planting of additional mangroves and the creation of wetlands to improve water quality and provide passive recreation opportunities. After the non-native vegetation has been removed from the property, the remaining vegetation will be supplemented with new plantings to re-create the pine flatwoods plant community that once thrived here. The waterfront mangrove environment can also be enhanced through the creation of an oxbow and the planting of new mangroves.



**Figure 11: Town of Jupiter Open Space Properties**  
(Top to Bottom) Karen J Golonka Island, Cinquez Park, and Delaware Boulevard Property

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<sup>6</sup> Photos courtesy of the Town of Jupiter

A long-term goal for the Open Space program is to continue linking these properties to other public and privately-owned properties and waterways thereby enhancing or creating wildlife corridors throughout the Town. For example, the Town's myriad of stormwater management systems (canals, swales and ponds) are opportunities to evolve with more nature-based strategies to include littoral shelves and wetland plants/trees for wildlife foraging and habitat. There are currently over three thousand acres of dedicated green space in the Town, consisting of parks owned by both the Town and Palm Beach County, preserve areas on Town and state property, as well as preserves and conservation easements on private properties and developments. Many of these properties are adjacent to water bodies, and the connection of these lands could create areas that provide wildlife the space needed to encourage population growth, providing critical habitat for several threatened and endangered species that are native to this area.

### 3.3 Stormwater Management Systems

Jupiter's landscape has changed dramatically over the last century due to the development of the natural areas making room for homes and businesses to support the region's growing population. Stormwater management systems were designed and constructed along with developments and roadways to reduce the risk of flooding using man-made systems in combination with the natural landscape to channelize runoff into canals, swales and/or underground piped, conveyance networks.

A variety of public and private entities, in addition to the Town of Jupiter, contributed to the early development of stormwater management systems. Today, the Town of Jupiter's Stormwater Utility service area includes all properties within municipal boundaries and prioritizes both flood control and water quality treatment of runoff. The service area is illustrated with a map in **Figure 12** (on the following page) and represents a complex drainage network of interconnected systems owned by multiple stakeholders.

The different public entities' involvement with stormwater management are also described in Figure 12, and include the South Florida Water Management District, Palm Beach County, Florida Department of Transportation and Village of Tequesta each have systems interconnected with Town-owned assets, and influence drainage and stormwater quality within Jupiter. The following public entities are independent Special Districts created by the Florida legislature in the mid-to-late 20<sup>th</sup> Century and provide water management and infrastructure development within certain communities around Jupiter:

- Northern Palm Beach County Improvement District
- Northern Palm Beach Heights Water Control District
- South Indian River Water Control District

The primary receiving water bodies for stormwater within the Town of Jupiter are the Loxahatchee River and the Intracoastal Waterway – both are tidally influenced and have experienced a decline in water quality. While some runoff directly discharges to these waterbodies, most occurs via canal systems and tributary creeks. A map pictured in **Figure 13** depicts some of the major stormwater components located in the Town necessary to convey runoff through the engineered systems and further emphasizes the complexity of stormwater management in Jupiter.

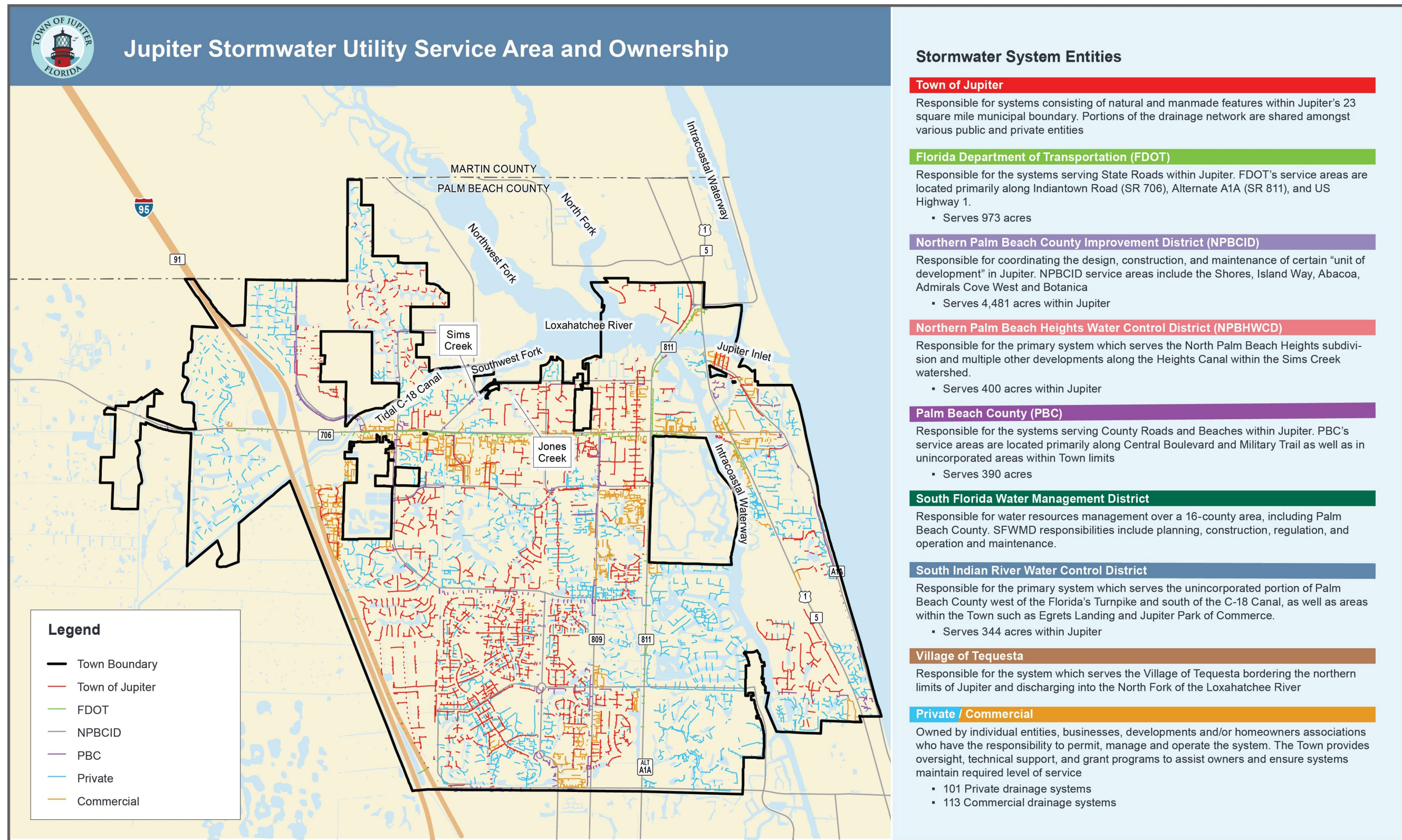


Figure 12: Jupiter Stormwater Utility Service Area and Ownership Map

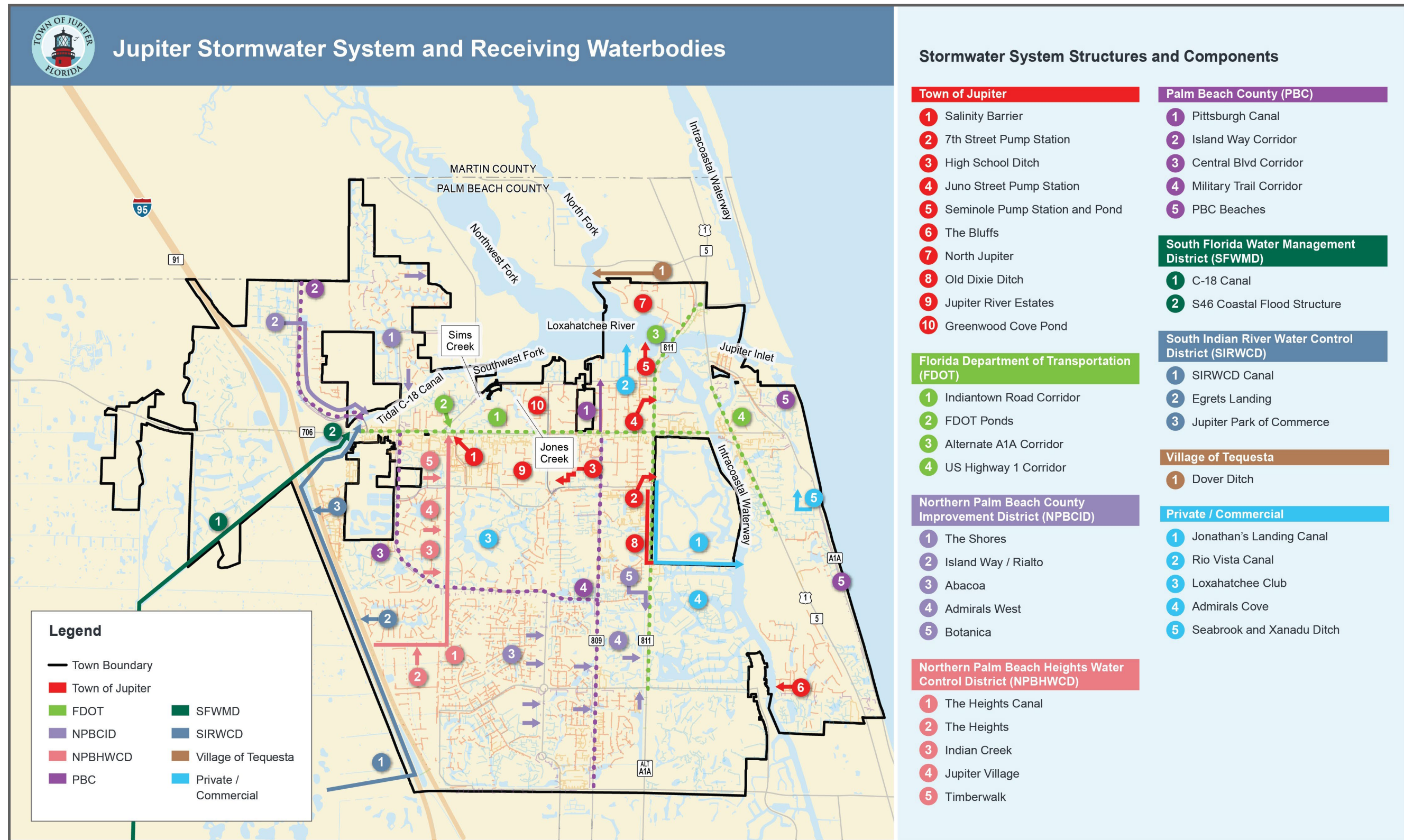


Figure 13: Jupiter Stormwater System and Receiving Waterbodies Map

As illustrated in Figure 13, most of the centrally developed regions of Jupiter located South of Indiantown Road drain to either Sims Creek or Jones Creek. The Heights Canal, owned and managed by Northern Palm Beach Heights Water Control District, carries runoff from various communities including the Heights, Indian Creek, Jupiter Village and Timberwalk prior to discharging to Sims Creek. Run-off from Abacoa, Admirals West and Botanica travel east through conveyance piping owned by the Town or private communities into systems managed by Northern Palm Beach County Improvement District and discharges into the Intracoastal Waterway. Northern Palm Beach County Improvement District also owns and manages systems along Island Way and within the Shores that provide storage, treatment and conveyance of runoff discharging to the C-18 Canal and Southwest Fork of the Loxahatchee River. The Pittsburgh Canal located between Indiantown Road and Center Street is owned by Palm Beach County but interconnects with the Town of Jupiter's systems and discharges into the Loxahatchee River.

These are a few examples highlighting the complexity of water resources management in Jupiter. The successful operation of the interconnected systems requires collaboration amongst multiple stakeholders. Coastal proximity will require that the Town of Jupiter Stormwater Utility have adaptable solutions to prepare for climate change and sea level rise. Meanwhile, stormwater management must also consider water quality treatment to both protect and restore aquatic habitats in the Loxahatchee River and Intracoastal Waterway. Stormwater management strategies that include nature-based solutions can accomplish both flood protection and water quality treatment and are recommended for evaluation in the Town-wide Sustainability Plan.

### 3.4 Groundwater Aquifers

The majority of the region's potable water supply originates from underground aquifers. The principal aquifer systems in South Florida include the surficial and Floridan. The quality and quantity of groundwater varies by depth. Shallower wells typically range from 50 to 200-ft deep and are characterized as freshwater; however, quality can vary as the aquifer migrates to the east and closer to the ocean, which may experience saltwater intrusion. Other wells extend to depths up to 2,000-ft but penetrate a confining layer of bedrock and are brackish. An illustration of the hydrogeologic cross section in South Florida is provided in **Figure 14**.

The Town's utility provides drinking water to residents of Jupiter, Juno Beach and portions of unincorporated Palm Beach and Martin Counties. The treatment facility relies on two (2) distinct aquifers to meet potable water demands for the region, which is illustrated in **Figure 15**.

The Town's diversification of water resources has minimized the risk to sensitive environmental ecosystems including the "wild and scenic" Loxahatchee River, which may experience degradation from over withdrawal of the fresh, surficial aquifer. The Town made this diversification decision in the early 1980s and has carefully monitored operations through the dry and wet seasons to maximize protection of both resources.

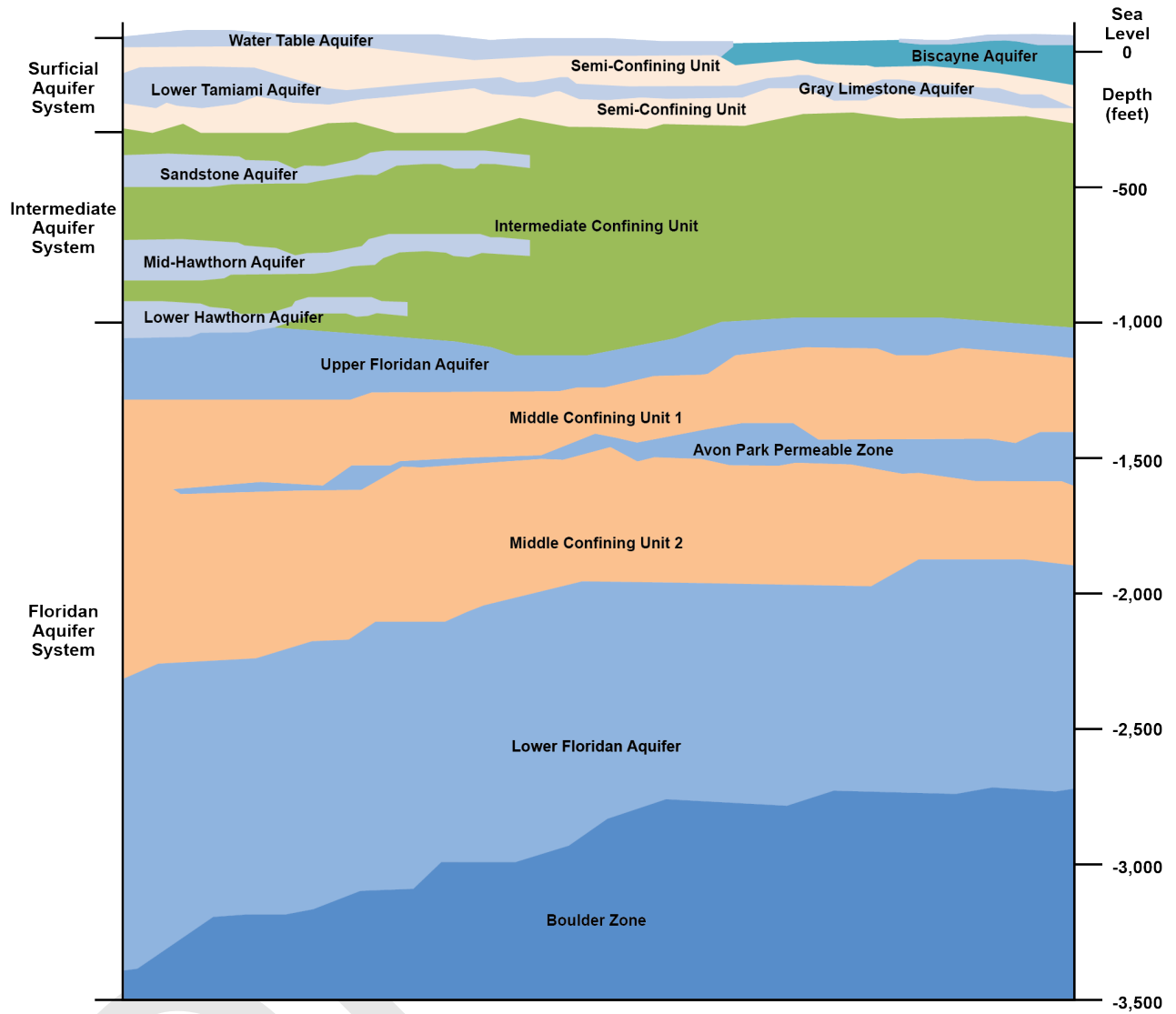


Figure 14: Generalized Hydrogeologic Cross Section of the South Florida Aquifer System<sup>7</sup>

<sup>7</sup> Adapted from South Florida Water Management District Lower East Coast Water Supply Plan Update

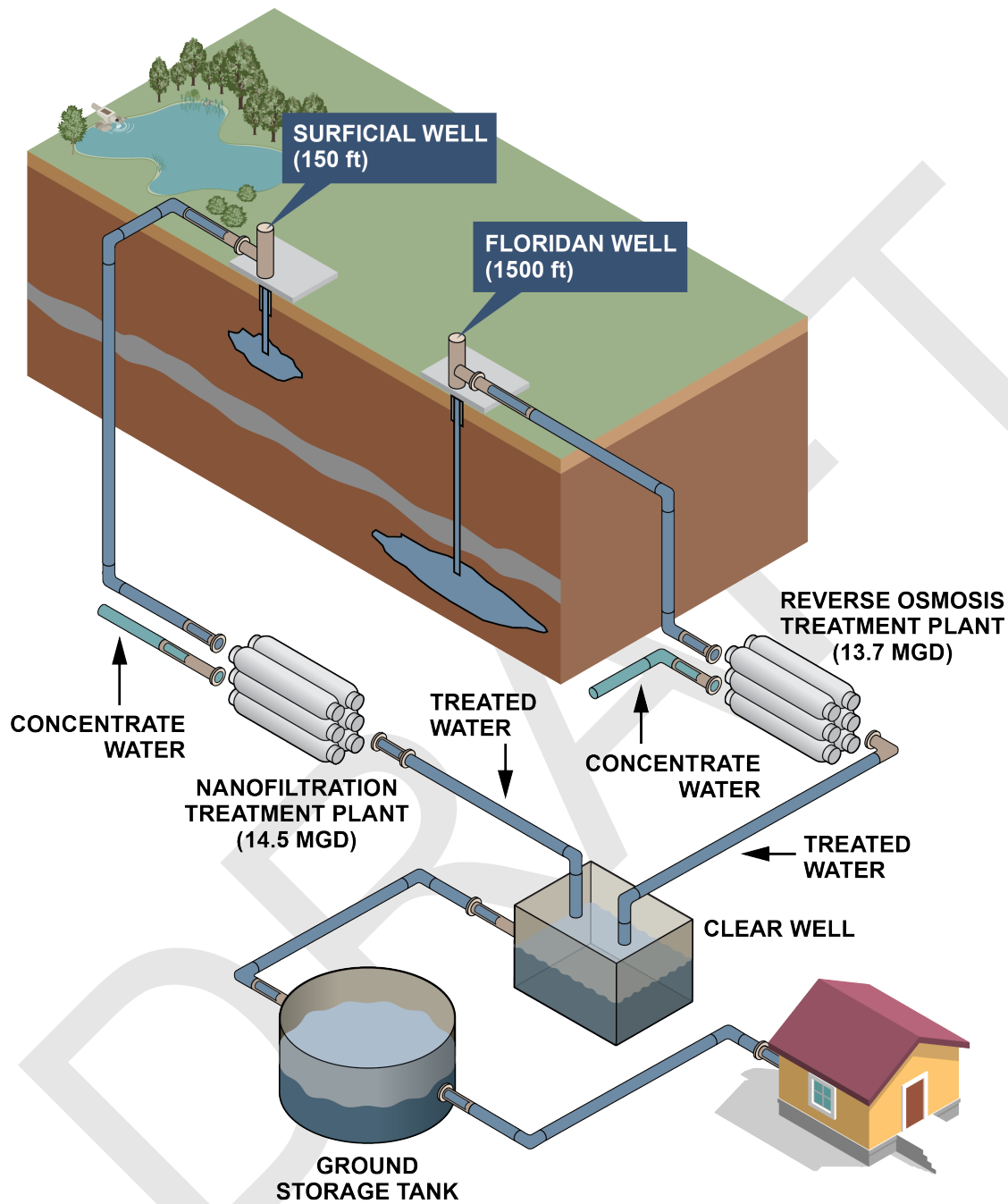


Figure 15: Town of Jupiter Utilities Dual Aquifer Water Supplies<sup>8</sup>

<sup>8</sup> Adapted from Town of Jupiter Utilities 2017 Master Plan Update

### **3.4.1 Surficial Aquifer**

The surficial aquifer is unconfined and is the region's primary, potable raw water supply which is characterized as being low in salt but contains hydrogen sulfide and iron as well as appreciable levels of color, organics and sand. The Town has 55 surficial aquifer wells that are treated by nanofiltration and ion exchange processes. Wells range in depth from 150 to 200 feet. The surficial aquifer has limited allocations in order to comply with protection criteria for surrounding environmental areas (SFWMD, 2018). As such, alternative water supplies are critical to meeting the Town's and region's current and future, potable water demands.

### **3.4.2 Floridan Aquifer**

The Floridan aquifer system traverses much of Florida and is characterized by a confining layer of carbonate bedrock and artesian water levels reaching 40 to 55 feet above land surface (SFWMD, 2018). Groundwater quality varies across the State but contains brackish water in the Southeast Florida region. For this reason, the Floridan aquifer is considered an alternative water supply where its use has doubled in the region over the past decade as freshwater availability declines (SFWMD, 2018). The Town has 12 Floridan aquifer wells, which are treated with reverse osmosis. Well depths range from 1,300 to 1,800 feet.

Inclusion of this resource to meet potable water demands prevents over withdrawal from traditional water supplies and the subsequent environmental harm that can occur as a result. The aquifer is highly prolific; however, increasing use has contributed to its degradation in both quality and quantity. Conservative wellfield design and operation have been recommended to improve sustainability of the Floridan aquifer system.

### **3.4.3 Surface Water and Groundwater Relationships**

Surface water and groundwater resources are interconnected as surface water features recharge aquifers. Most South Florida municipalities, with the exception of City of West Palm Beach, rely on fresh groundwater as the traditional and primary source of potable drinking water. Surface water indirectly meets regional water supply needs due to its interaction with groundwater by way of recharge especially during the dry season. Created surface water management systems intended to capture and manage rainfall can negatively impact aquifer recharge as it diverts water elsewhere before it percolates down to the water table. Once diverted, this water may contribute to aquifer recharge elsewhere in the system, supply a downstream consumptive use or be discharged to tide. (SFWMD, 2022)

The groundwater hydrology in South Florida has been permanently altered by Central and Southern Florida Flood Control Project that channelized the Kissimmee River watershed as well as urban and agricultural development. The created canal systems have drained much of the natural watersheds that would replenish the surficial aquifer system. Aside from loss of aquifer capacity, this has allowed inland migration of saltwater in some areas. Saltwater intrusion within the surficial aquifer system is a major concern in coastal areas. (SFWMD, 2022)

## **3.5 Climate**

South Florida is a unique region that is increasingly vulnerable to the impacts of climate change and sea level rise due to low land elevations, flat topography, a porous geology, and dense coastal development. In

combination, climate change and sea level rise are expected to present challenges to water resource planning, management, and infrastructure for communities throughout Palm Beach County.

South Florida experiences a sub-tropic climate with distinct wet and dry seasons. Annual precipitation in the region between Key West and Palm Beach County averages 57 inches. Nearly 75% of rainfall occurs during the wet season (May through October). Average seasonal temperatures for the area range from approximately 69°F in the winter to 84°F in the summer (SFWMD, 2022). In 2022, the Town of Jupiter received 64 inches of water with 57% occurring between May and October.

Hurricanes are one of the major natural disasters that can impact the region. Hurricane season runs from June 1 to November 30. Aside from hurricanes, the region is prone to tropical storms and other extreme wet weather events. Climate change has impacted weather patterns including rainfall intensity, frequency and duration placing communities at higher risk to flooding and necessitating improvements to stormwater management systems.

### 3.6 Environmental Protection

The Town is motivated to include strategies and initiatives to prioritize long term environmental protection by implementing sustainable practices. Environmental protection strategies can be accomplished through partnership and collaboration with state and/or local agencies. **Table 1** is a summary of Florida Environmental agencies that enhance environmental protection and restoration and represent opportunities for partnership in the execution of priorities identified for the future Sustainability Plan.

**Table 1: Summary of Florida Environmental Agencies**

Agency	About	Jurisdiction	Website
<b>State</b>			
Florida Department of Environmental Protection (FDEP)	FDEP is the state's lead agency for environmental management & stewardship, protecting air, water & land	Regulation of mangroves, wetlands, drinking water, wastewater & stormwater; Ecosystems restoration with resilience & coastal protection	<a href="#">FDEP</a>
Florida Fish & Wildlife Commission (FWC)	FWC manages fish & wildlife resources for their long-term well-being & the benefit of people	Environmental monitoring, restoration, licensing, permitting; & Imperiled species	<a href="#">FWC</a>
South Florida Water Management District (SFWMD)	SFWMD is one of five regional agencies that manage water resources in South Florida including PBC	Managing & protecting water resources; Flood control; Water supply permitting; Water quality; Natural systems; & Everglades restoration	<a href="#">SFWMD</a>
<b>Local</b>			
Palm Beach County (PBC) Environmental Resource Management (ERM)	ERM administers environmental programs that protect, preserve, & enhance Palm Beach County's natural resources on land and in & under water	Beachfront lighting; Lake excavation & littoral zones; Native vegetation; Parks management; Petroleum storage tanks & contamination cleanup; Surface water; Wellfield protection	<a href="#">PBC-ERM</a>

Agency	About	Jurisdiction	Website
Florida Department of Health (FDOH) in PBC	FDOH in PBC provides public health programs including toxic chemicals, wastes, disease vectors, safety hazards, natural disasters, & contaminated air, food, & water	Well construction; Drinking water compliance & permitting; Wastewater compliance & permitting; Healthy Beaches Program	<a href="#">PBCDOH</a> <a href="#">FDOH</a> <a href="#">Beaches</a>
Jupiter Inlet District (JID)	JID is a special taxing district established in 1921 to maintain the Jupiter Inlet & navigational channel from the River to Atlantic Ocean	Inlet dredging & maintenance of navigation channels; Shoreline stabilization & erosion control; Coordination with US Army Corp of Engineers & FDEP	<a href="#">JID</a>
Loxahatchee River District (LRD)	LRD, created in 1971 as an Independent District, owns a wastewater treatment facility & oversees River monitoring & restoration.	Regional wastewater treatment; Reuse irrigation system; Loxahatchee River monitoring & research	<a href="#">LRD</a>
Loxahatchee River Preservation Initiative (LRPI)	LRPI is a multi-agency partnership that guides funds directed at watershed restoration projects in NE PBC & south Martin County	Administers & prioritizes grant funds from the State with local matching funds	<a href="#">LRPI</a>
Loxahatchee River Management Coordinating Council (LRMCC)	LRMCC was established to advise FDEP & SFWMD on matters affecting the Loxahatchee River, to enhance communication, identify & resolve inter-governmental coordination issues.	Development of the Loxahatchee River Management Plant & Administrative oversight of the Loxahatchee River Pollutant Reduction (4e) Plan	<a href="#">LRMCC</a>
Solid Waste Authority (SWA) of PBC	SWA is responsible for providing an Integrated Solid Waste Management System for PBC	Solid waste disposal; Recycling; Hazardous waste; Diversion; Renewable energy; Landfilling	<a href="#">SWA</a>

## 4. Summary of Existing Documents

*Review of Town plans, reports, studies and initiatives, which have recommended or put forth various mitigation and adaptation strategies.*

The Town has demonstrated a commitment to sustainable and resilient planning through strategies within their Comprehensive Plan, Town Code and Strategic Planning. Additionally, the Town has completed a compendium of plans, reports and studies that have put forth various mitigation and adaptation strategies. Sustainability-related information was compiled to highlight areas where the Town has been successful versus those that may warrant additional exploration and/or improvement within Sustainability Plan development. A brief outline is presented herein, and a comprehensive summary included in **Appendix B**.

### 4.1 Comprehensive Plan

The Town’s Comprehensive Plan includes multiple goals, policies and objectives that support sustainable development, environmental protection, and movement toward resilient infrastructure. A summary of the Comprehensive Plan elements, goals and objectives have been summarized into an outline included in **Appendix C**.

The Town recognizes the importance of preserving sensitive, significant and/or historic environmental and natural systems as evidenced by their mention of and/or inclusion in nearly every element of the Plan. Further demonstration is evident through the Town’s investment in an Open Space program beginning in 2004 and again in 2019 resulting in the acquisition of more than 100+ acres of property to date.

Further improvements are outlined in **Table 2**, provided on the following page, where additional exploration could be included as a component of the Sustainability Plan

**Table 2: Adaptation and Mitigation Strategies to Improve Comprehensive Plan Elements**

Comprehensive Plan Element	Adaptation and Mitigation Strategies
Future Land Use Element	<ul style="list-style-type: none"> <li>• Include language to ensure that climate change is being considered in public and private development</li> <li>• Go beyond encouragement of green design theories and move towards required standards that are, at a minimum, incorporated into Town projects</li> <li>• Encourage (or require) greenhouse gas emissions evaluation for new or redevelopment projects</li> </ul>
Transportation Element	<ul style="list-style-type: none"> <li>• Policies and/or actions to reduce vehicle miles driven in Jupiter</li> <li>• Promote use of electric vehicles within the community and organization</li> <li>• Policies to encourage/improve transit-oriented development</li> </ul>

Comprehensive Plan Element	Adaptation and Mitigation Strategies
Conservation	<ul style="list-style-type: none"> <li>• Renew policy 1.10.2 within the Conservation Element to pursue a green local government certification from a state or nationally recognized certifying organization</li> <li>• Establish a policy to limit non-municipal surficial aquifer withdrawal facilities in Adaptation Action Areas</li> <li>• Pursue additional grant funding to maximize restoration and preservation initiatives.</li> </ul>
Coastal Management	<ul style="list-style-type: none"> <li>• Address Coastal Management element policy 2.6.4 by including a vulnerability assessment within the sustainability plan</li> <li>• Address Coastal Management element policy 2.6.5 by identifying Adaptation Action Areas for the Town</li> <li>• Expand definition of coastal high hazard areas, where applicable, by reference to Adaptation Action Areas</li> <li>• Expand efforts related to marine, wetland and freshwater habitat restoration</li> <li>• Encourage dual purpose stormwater retention areas that mimic natural systems</li> </ul>
Recreation and Open Space	<ul style="list-style-type: none"> <li>• Develop a formal and/or prescriptive evaluation process that includes sustainable and resilient objectives for future property acquisition under the open space program</li> <li>• Incorporate green design standards for projects where applicable</li> </ul>
Infrastructure	<ul style="list-style-type: none"> <li>• Evaluate climate resiliency for applicable projects</li> <li>• Incorporate green design standards for projects where applicable</li> </ul>
Capital Investment Program	<ul style="list-style-type: none"> <li>• Evaluate climate resiliency for applicable projects</li> <li>• Incorporate green design standards for projects where applicable</li> <li>• Pursue additional grant funding to maximize restoration and preservation initiatives.</li> </ul>
Intergovernmental Coordination	<ul style="list-style-type: none"> <li>• Strengthen partnership efforts with local municipalities and State agencies specific to climate resiliency</li> </ul>

## 4.2 Town of Jupiter Municipal Code

The Town Municipal Code aligns with and supports the Comprehensive Plan. Strong code requirements have facilitated protection of native, upland habitats and areas of environmental and/or historical significance. The code has also supported sustainable growth, expansion of the Town’s water utility, provided for limited coastal development, and includes prescriptive zoning and development requirements for the Town.

Many coastal municipalities in South Florida are prioritizing long term planning to ensure a sustainable and resilient community in the face of climate threats like sea level rise and flood inundation. Regulatory actions help to provide enhanced protections to existing public and private assets against climate threats expected during their useful life. Policy and regulatory changes can mitigate environmental degradation that contribute to climate change while adaptation actions and standards improve the communities’ resiliency to climate threats. **Table 3** summarizes some strategies for review and inclusion in future plan development.










**Table 3: Adaptation and Mitigation Strategies to Improve Town Code and Policies related to Climate Threat Planning**

Adaptation	Mitigation
<ul style="list-style-type: none"> <li>• Expand definition of coastal high hazard and/or high risk flooding areas through creation of Adaptation Action Areas                             <ul style="list-style-type: none"> <li>○ Revise development/re-development requirements</li> <li>○ Revise technical amendments to Florida Building Code where appropriate related to building construction and finished floor elevation requirements</li> <li>○ Enhance Level of Service standards within Adaptation Action Areas</li> <li>○ Impose impact fees within Adaptation Action Areas for future redevelopment projects to offset improvement costs</li> </ul> </li> <li>• Create Adaptation Action Areas specific to surficial aquifer system protection, and consolidate non-Town owned surficial aquifer withdrawal facilities to minimize saltwater intrusion</li> <li>• Re-evaluate seawall height requirements, where applicable, in relation to Sea Level Rise</li> <li>• Include requirements that climate threats including sea level rise and flood inundation are considered in public/private development including documentation of a project’s climate resiliency</li> <li>• Maintain a minimum tree canopy in each development and along public streets</li> </ul>	<ul style="list-style-type: none"> <li>• Incentive programs to promote residential and commercial recycling especially at existing facilities</li> <li>• Update water conservation section pertaining to use of water saving devices</li> <li>• Incentive programs for existing customers to swap older fixtures for more efficient models</li> <li>• Incentive programs to incorporate electric vehicle charging stations in re-development projects</li> <li>• Revise existing Green Building Program section of code</li> <li>• Improve incentivization and/or require use of green building standards</li> <li>• Develop green infrastructure standards for stormwater</li> <li>• Incentivize and/or require green infrastructure within development/re-development projects</li> <li>• Ensure that green infrastructure projects are connected through land setbacks/easements to provide habitat and greenway</li> <li>• Require waterfront properties to provide a marine stewardship plan for existing or proposed restorations</li> </ul>

### 4.3 Town Council Strategic Planning

The Town’s Strategic Plan includes nine (9) strategic results, outlined in **Table 4**, which represent the outcomes Jupiter aims to achieve. The Town developed a short summary of the 2023-24 strategic plan, “Strategic Plan as a Glance 2023-24,” which is included in **Appendix D**.

**Table 4: Definitions for Town of Jupiter Strategic Results**

Strategic Result	Definition
 <p>Fiscal Responsibility</p>	<p>Prepare and manage budget; maintain fiduciary responsibility.</p>
 <p>Organizational Excellence</p>	<p>Organizational governance; internal support and services</p>
 <p>Strong Local Economy</p>	<p>Support local businesses, create a business-friendly environment.</p>
 <p>Town Communication</p>	<p>Support and enhance open, two-way communication between the Town and its residents and businesses.</p>
 <p>Mobility</p>	<p>Improved mobility for all modes of transit</p>
 <p>Manage Growth</p>	<p>Plan for and manage growth, development and redevelopment to maintain Jupiter’s small town feel and its integrity as a distinctive, vibrant coastal community.</p>
 <p>Safety</p>	<p>Keep citizens and business safe</p>
 <p>Unique, Small-Town Feel</p>	<p>Maintain and enhance our vibrant small town feel by leveraging the unique combination of community, cultural and recreational assets that make Jupiter a special place to live and work</p>
 <p>Green, Blue and Open Spaces</p>	<p>Continue beautification and natural areas; green spaces, parks, beaches and landscaping. Maintain Jupiter as a distinctive coastal community with open and natural environments.</p>

The Town Council completes strategic planning on an annual basis to develop specific initiatives to support strategic results for the Town’s organization and community. These are prioritized and implemented by Town staff along with allocation of resources to ensure their completion. Engagement of the Environmental Task Force within this process may facilitate inclusion of sustainable and resilient themes within prioritized projects. Major and related initiatives identified for 2023-24 include:

- Construction of the new Town Hall facility, construction of Town Green on the municipal complex and re-purposing of the vacant property on Daniels Way

- Mobility improvements including traffic mitigation along major corridors and related to the US 1 bridge construction
- Safety improvements and collaboration related to high-speed rail
- Environmental protection and restoration related to seagrass, Loxahatchee River and Jones Creek
- Enhance access and use of green space by providing more open and natural areas for protection including plans for the recently acquired at 500 N. Delaware Property
- Explore designating distinct areas or districts or local areas of significance throughout Jupiter with corresponding development guidelines
- Review and update the development approval process with specific emphasis on elimination of the bonus point program and updates to the public benefit policy and standards

#### **4.4 Water and Stormwater Utilities Planning**

The Town routinely prepares an update to its water and stormwater master plans once every five (5) years to keep them current relative to utility accomplishments, assessment of current and future conditions, review of regulatory requirements/impacts on utility needs, and financial forecasts and recommendations.

Utilities' documents review included the 2017 and 2022 Master Plan Updates as well as a Water Supply Plan Update prepared in 2019 for the South Florida Water Management District and a Risk and Resiliency Assessment completed in 2020.

Major issues and opportunities explored within these plans included:

- Ensuring adequacy of raw water supplies
- Degradation of the brackish, Floridan aquifer, an alternative water supply
- Protection of the surficial aquifer, a freshwater supply, from saltwater intrusion
- Planning for phased improvements to existing water treatment processes
- Management and disposal of concentrate from the water treatment processes
- Minimizing the risk of flooding
- Improving the water quality of stormwater discharges
- Strategies to manage the current and anticipated impacts of climate change including sea level rise
- Preparing for regulatory changes that impact both utilities
- Continued pursuit of grants to supplement investments into existing and/or new system components
- Green infrastructure

Master plans recommended a number of projects to address highlighted issues, which were prioritized using various metrics including asset criticality, vulnerability, feasibility of implementation and cost. For example, the Stormwater Master Plan Updates included development of a simple, “bathtub” model where sea level rise scenarios at 1-ft, 2-ft and 3-ft were modelled to identify the area(s) most vulnerable to flood inundation. Stormwater projects were prioritized for those communities to reduce the risk of flooding. Planning included an evaluation of the financial capacity for each utility and offered funding strategies for those projects to support long-term economic viability for both utilities.

Both utilities emphasized the challenges associated with climate change and sea level rise and critical need to implement policies and adaptable solutions to help position the Town to effectively manage current and future impacts. Aside from project planning, a series of non-structural or policy-related recommendations were offered to improve resiliency to climate change as summarized in **Table 5**.

**Table 5: Summary of Recommended Adaptation Actions for Water and Stormwater Utilities**

Utilities Department	Adaptation Action
Water	Improve viability of surficial aquifer recharge system
	Establish adaptation action areas for the surficial aquifer system*
Stormwater	Complete a Vulnerability Assessment*
	Perform hydrologic/hydraulic modeling analysis
	Establish adaptation action areas for flooding*
	Investigate the feasibility of implementing a seawall height ordinance
	Evaluate rainfall frequency change factors and level of service flood standards
	Encourage (or require) green infrastructure

**Note:**

\* Evaluating the feasibility of the recommended action is identified in the Town’s Comprehensive Plan, Coastal Management element to be completed by 2023

## 4.5 Southeast Florida Regional Climate Change Compact

The Southeast Florida Regional Climate Change Compact, previously referred to as the SFRCCC, and now simply the Compact represents a partnership between Broward, Miami-Dade, Monroe, and Palm Beach counties to foster sustainability and climate resilience at a unified, regional scale. In 2015, the Town Council adopted Resolution No. 86-15 endorsing and affirming the Compact’s efforts. The Town’s ongoing participation with the Compact is included as Policy 2.6.1 within the Comprehensive Plan Coastal Management Element.

One of the initial objectives of the Compact was to unify the existing local sea level rise projections to develop a single set of regional sea level rise projections for use by the participating counties. The original projection was developed in 2011, revised in 2015 and most recently updated in 2019. They have also

developed a number of tools to assist local governments evaluate the sustainability and resiliency of their communities and incorporate various recommendations within comprehensive and master plans including the Climate Assessment Tool (C-CAT) that identifies five key Greenhouse Gas Emission Mitigation and six key Adaptation Priority Actions that are considered by the Compact to be foundational to climate resilience in Southeast Florida. These priority actions could guide sustainability plan development or be used as a metric to evaluate the Town's progress towards building a resilient and sustainable community.

## 5. Framework for the Future Sustainability Plan

*Review common areas included in existing sustainability plans developed by similar, coastal municipalities, review the sustainability plan outline generated by the Environmental Task Force in 2021 and its evolution during this assessment and present a pathway to the development of a Town-wide Sustainability Plan.*

### 5.1 Sustainability Plans Share Common Themes While Execution May Differ

Municipalities throughout Florida and the United States have worked to develop sustainability plans. Approach to plan development and focus areas prioritized for action varies amongst entities as noted in the examples provided for a couple of Municipalities below. Some plans utilize existing certification frameworks to guide their plan and/or community development. Examples include:

- Sustainability Tools for Assessing and Rating (STAR) Communities
- Leadership in Energy and Environmental Design (LEED) for Cities and Communities
- Florida Green Building Coalition (FGBC) Local Government Certification
- Envision by the Institute for Sustainable Infrastructure (ISI)

STAR and LEED, which aligned in 2018, provide a nation-wide framework and certification program for evaluating community-wide sustainability that considers the environment, economy, and social equity. FGBC also offers a Green Local Government certification to which the Town of Jupiter (Town) had previously achieved silver status. This certification lapsed in 2019, but the Town had evaluated the feasibility of upgrading to a gold status, which was also included as updated policy language within the Conservation Element of the Comprehensive Plan. The City of St. Petersburg used STAR Communities categories as a guiding framework in the development of their 2019 Integrated Sustainability Action Plan (ISAP) (St. Petersburg, 2019). The City of West Palm Beach developed a sustainability plan in 2012 with no specific mention of certification framework. In the 2020 update, West Palm Beach identified the need to “harmonize” plan recommendations with LEED for Cities as a critical task to keep the plan focused and outcome driven (WPB, 2020). Going forward, pursuit of a certification can be a consideration within sustainability plan development.

Pursuit of certification has merits and drawbacks. LEED and Envision have developed established methods for evaluation and quantification of sustainability-centric decision drivers and provide an avenue for public recognition of the organization’s commitment to sustainability helping to communicate the value and importance of the investment to ratepayers. Certification framework can be adapted for use in master planning, alternatives analysis and/or screening of non-monetary drivers. Alternately, certification achievement often requires an increased investment of resources – both time and money, as well as eliciting community engagement within the evaluation process. A project’s up-front budget and timeline can both

be extended as a result. However, community engagement should be an inherent part of sustainability planning and implementation as this offers a platform to hear from a diverse pool of stakeholders, solicit ideas for implementation and encourage collaboration. Upfront investments are inherent to achieving community or project-specific certification, but long-term benefits are quantifiable and offer evidence-based commitment to sustainable and resilient practices.

Many sustainability plans include an element that seeks to quantify resource use including greenhouse gas accounting with related reduction strategies. Resource use can be evaluated at community-wide and municipal-focused levels. This practice provides one source of metric to evaluate the success and effectiveness of implementing sustainable plan goals. Alternatively, plans may also consider life cycle assessment, which includes quantification of environmental impacts associated with different design and operational decisions often made as part of any budget. As with greenhouse gas accounting, life cycle assessment offers a system that can associate metrics and quantifiable targets within project evaluation (e.g. using cheaper materials such as vinyl for a seawall that has a shorter life cycle than steel). These are beneficial practices; however, movement towards sustainable development does not always translate into quantifiable or measurable returns, especially within a short-term duration.

Nearly every plan makes direct or indirect reference to the triple bottom line where sustainable development should consider economics, environment, and equity. Economics may refer to profitability within a business enterprise system and/or the affordability of implementing sustainable practices. From a community perspective, economics may also consider affordability, local industry and revenue generation as well as meaningful career opportunities. The environment considers resource protection, impacts from resource consumption and the built and natural environments that surround communities. Equity can include evaluation of social impacts like contribution to community wellbeing, quality of life, unequal use of resources and/or measures to reduce the disproportionate impact of climate change on vulnerable communities.

Typical sustainability plans should recognize the value and need for community engagement and regional collaboration. Soliciting feedback from a broad cross section of community stakeholders is invaluable to developing plans and projects that meet objectives across work sectors and service areas. Sustainability planning often encompasses multiple interrelated and potentially contradictory priorities. Engagement promotes efficient use of resources that simultaneously meet multiple needs while enabling avoidance of unintended consequences. Regional collaboration amongst local and county governments is especially evident within vulnerability assessments and resiliency planning to address climate change as many critical and at-risk assets are shared across municipal boundaries. Meaningful stakeholder engagement and evidence of collaboration through public meetings or workshops are requirements within certification frameworks and can strengthen a community's application to receive related grant funding. For example, community outreach and engagement are encouraged by the Florida Department of Environmental Protection for funding available under the Resilient Florida Grant Program.

## **5.2 Elements Commonly Explored in Sustainability Plans**

The following sections briefly present a variety of priorities often explored in sustainability plans from similar coastal municipalities for consideration in future development of the Town-wide Sustainability Plan. Discussion within the Town of Jupiter's current operations, policies and codes is also provided, where applicable.

### 5.2.1 Energy Conservation

Energy conservation can consider ways to reduce dependence on traditional sources while also seeking alternative energy. Existing consumption trends are typically segregated into stationary and non-stationary sources or buildings and transportation. At the community level, transportation is typically a major source of energy consumption and greenhouse gas emissions, representing 48% of South Florida’s greenhouse gas emissions (Compact, 2015). Strategies can include promoting electrification of vehicles and/or transit-oriented development as well as discouraging urban sprawl.

Residential and commercial buildings are another major consumption source. Often, evaluation of existing buildings can offer opportunities to reduce consumption before making investments in alternative energy projects. Related to energy conservation is an organization’s commitment to broaden the depth of energy sources for a community including use of solar power.



### 5.2.2 Greenhouse Gas Emission Reduction

Establishing greenhouse gas emissions reduction goals provides a measure to track progress towards sustainability and is considered a key mitigation strategy by multiple organizations. Many organizations offer tools or platforms that can facilitate an evaluation and inventory of emissions at the community and organizational levels. Local Governments for Sustainability, referred to as ICLEI, offer ClearPath, which is a cloud-based tool that can be used to complete inventories, forecasts, climate action plans and monitoring. This tool requires an annual subscription. Hazen can create a non-proprietary, Excel-based tool, which focuses on greenhouse gas inventories related to water and stormwater facilities. This baseline assessment can be referenced in evaluating progress towards emission reduction targets.

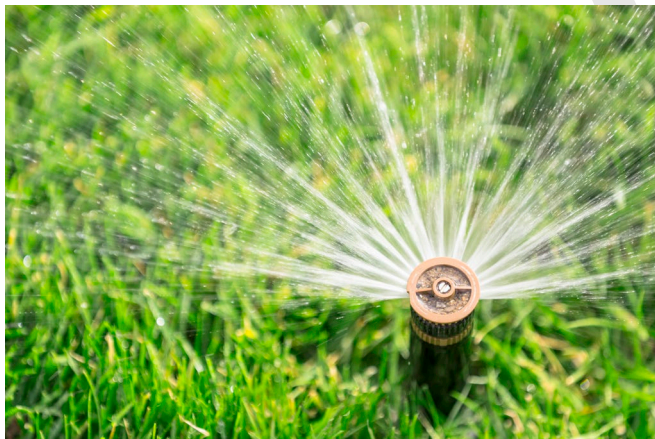


The Southeast Florida Compact completed a regional greenhouse gas emissions study for Palm Beach, Broward and Monroe Counties, which included energy section consideration only, and found that the built environment and transportation accounted for more than 98% of the emissions to the region (SFCCC, 2015). Decreasing greenhouse gas emissions is typically accomplished by implementing efficiency strategies related to energy use, water consumption and solid waste generation.



### 5.2.3 Water Use Reduction

Water use reduction can be achieved by seeking alternative water sources to augment potable and irrigation water demands as well as improving water use efficiency in buildings. Alternative water supplies represent 50% of the Town's raw water supply. The Town has established a strong water conservation framework within their municipal code; however, references to high efficiency flow rates and 100% irrigation coverage for new developments are outdated and require update. Going further, new strategies could incorporate incentive programs for homeowners to swap existing fixtures.



A regional reuse irrigation program has existed since the 1980s and is managed by Loxahatchee River District. The Town has reinforced their commitment to this program through policies within the Comprehensive Plan. Expansion of this system, while supported by the Town, is contingent upon available capacity from the District and feasibility of connection to the regional system. Irrigation demand can also be met with landscaping with native plants, and rainwater harvesting projects, including new standards for medians and parking lot islands which the Town has implemented with the Jupiter

Lakes Streetscape and the Gateway Landscape projects at Center Street and Indiantown Road, the triangle parcel by KFC, and at Indiantown Road/Turnpike exit. Another option exists where the Town could continue to advocate for full utilization of the existing surficial aquifer recharge system to divert excess flows from the C-18 canal, which would otherwise discharge to tide. This strategy requires regional collaboration with the South Florida Water Management District.

## 5.2.4 Solid Waste Reduction

Community growth is often correlated with increasing resource demand and waste generation. Resource depletion is compounded by the environmental and cost impacts to dispose of waste. Sustainable waste management includes waste reduction, recycling, composting and safe disposal. From a worldwide perspective, 40% of waste accumulates in landfills (LEED, 2021). The Solid Waste Authority of Palm Beach County reports that Palm Beach County's recycling rate was 78% in 2021, which is the second highest in the state.



Determining the current recycling rate for Jupiter could be included within sustainable plan development along with recycling goals to work towards. The Solid Waste Authority has existing tools and recommendations to encourage recycling within communities. The Town's municipal code could be revised to include more defined, prescriptive requirements for recycling at commercial businesses and/or multi-family residences while seeking to encourage market-based demand for recycled products. Finally, community engagement and education can be highly effective in shifting community behaviors related to resource consumption, waste generation and recycling.

## 5.2.5 Conservation and Preservation of Lands and Waterways

The Town's Open Space program has resulted in a highly successful initiative to acquire and preserve property within the Town of Jupiter for protection of environmentally sensitive lands and significant native habitats as well as individual trees for the added purposes of creating greater public access and enjoyment. The program originated in 2004, with an additional bond referendum approval in 2019, allocating more funding for the open space program. The Town's evaluation process as outlined on the Town's website includes:



*Any properties acquired with the funds will fall into at least one of the following categories or uses:*

- *Environmentally sensitive, waterfront and recreational lands*
- *Lands for open spaces*
- *Archaeological or historic preservation*
- *Traffic mitigation*

**Figure 16: Todd Street Mangrove Preserve**

The Planning and Zoning Department through the Natural Division has processed improvements to the open properties with increased stormwater capacity so that 100 year storm events may be addressed in these public lands, reducing impacts to roads and development. The evaluation process could expand upon the existing criteria to include a ranking process that uses both cost and non-cost factors as well as alignment with sustainable and resilient initiatives. Once properties are acquired, the Town could formalize their criteria for the restoration and conservation of such land as well as incorporating design features that align with green development standards.



**Figure 17: Jupiter Open Space Properties at Sims Creek Preserve (L) and Washington Street Preserve (R)**

### **5.2.6 Beach and Shoreline Conservation and Restoration**

The Town and other local entities have worked to conserve and restore beachfront shoreline properties. The Town also includes regulations and policies within its municipal code and comprehensive plans. For example, development is limited within coastal high hazard areas and most of the beachfront property in Jupiter has been preserved for environmental protection and public access. There are additional opportunities to utilize green infrastructure and shoreline restoration that incorporates the natural adaptive capacity found in nature. A living shorelines program is included within Florida Department of Environmental Protection's Resilient Florida Program to support these types of projects and the Town has encouraged the creation of living shorelines within its marine facilities ordinance as well as installing a living shoreline in the Sawfish Bay restoration plans. The Jupiter Inlet District and Bureau of Land Management (BLM) also installed a living shoreline with breakwater along the Lighthouse which has helped with shoreline stabilization while restoring marine habitat. There may be other locations within the Loxahatchee River or Intracoastal Waterway where similar projects could be executed in partnership with entities such Florida Department of Environmental Protection, Jupiter Inlet District, and/or Loxahatchee River Preservation Initiative.



**Figure 18: Open Waters of the Loxahatchee River**

### **5.2.7 Resiliency to Climate Change**

Climate change is increasingly recognized as an imminent threat by local governments. Improving the Town's resiliency involves first understanding the critical threats faced by the community. Sea level rise is perhaps the most apparent sign of climate change in coastal South Florida and compounds multiple interrelated threats including storm surge, inland flooding, groundwater inundation, saltwater intrusion, drought and more. The Coastal Resilience Partnership of Southeast Palm Beach County identified twelve distinct threats in their vulnerability assessment completed in 2021. The relative risks of climate change threats must also be considered relative to the systems they can impact and asset criticality. The intersection of climate change threat and systems/assets at risk should drive project prioritization to reduce risk and/or improve adaptability of the system. Thus, resiliency understands the threats face by a community and plans to improve the adaptive capabilities of the community.

The Town, through its water and stormwater master planning process has begun much of this work relative to sea level rise and flooding with projects underway or in the planning phase that seek to reduce risk and improve the adaptation capabilities of vulnerable assets and communities within the Town. For example, the photos below depict the Juno Street Pump Station, a project recently completed by the Stormwater Utility to alleviate flooding near Center Street and Alternate A1A. The Town also submitted and received a grant for Florida Resiliency for a Town-wide Vulnerability Assessment that will inform the creation of adaptation action areas for the Town. Adaptation action areas provide a vehicle for prioritizing funding for infrastructure improvements and implementing enhanced building code and elevation requirements for associated development and re-development projects.



**Figure 19: Juno Street Pump Station and Wet Well**

### **5.2.8 Green Building Standards**

Certified green buildings are designed to reduce the overall impact of the built environment on the natural environment and human health by efficiently using energy, water and material resources; protecting occupant health and improving productivity; reducing waste, pollution and degradation; help communities to be more resilient to natural disasters and climate change impacts. The Town includes a green development section within its municipal code and references prioritization of green local government standards. The Town has approved three (3) development projects using this standard in the code.

### **5.2.9 Education and Community Outreach**

Community involvement is key in achieving sustainable and resilient objectives set for the Town. Creating forums in the early stages of plan development will provide opportunity to engage the diverse population of residents, business owners, community advocates and leaders to understand what sustainability and resiliency mean to the community and gather additional ideas for implementation. Ongoing outreach through use of social media and existing websites can document ongoing efforts and provide an avenue for public recognition of the organization's commitment to sustainability. Showcasing sustainable and resilient policies, in action, can help shift the community's mindset and behaviors towards adopting similar lifestyle and behavior changes. Implementation of mitigation and adaption actions on a community-wide basis will have a compounded effect for achieving sustainability plan goals.



Figure 20: Constructing Reef Balls for Installation at Sawfish Bay Park<sup>9</sup>

### 5.2.10 Grants and Funding Opportunities

**Table 6** summarizes some of the available Federal and State grant programs to support sustainable and resilient initiatives. **Appendix E** includes a document available from the Florida Department of Environmental Protection that lists additional Federal funding for green infrastructure and nature-based solutions.

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<sup>9</sup> Photos courtesy of the Town of Jupiter. Construction was done with Jupiter Environmental Research Field Studies Academy students from Jupiter High School.

**Table 6: Grant Programs to Support Sustainable and Resilient Initiatives**

Program Name	Description
<b>Federal</b>	
Building Resilient Infrastructure and Communities (BRIC)	The BRIC program is a Federal Emergency Management Agency grant that gives states, local communities, tribes and territories funding for hazard mitigation and resiliency projects including disasters from wildfires, drought, hurricanes, earthquakes, extreme heat, and flooding.
Coastal and Marine Habitat Restoration and Infrastructure Funding Grants	These grants are offered under the National Oceanic and Atmospheric Administration (NOAA) Office for Coastal Management with leveraging funds from the Bipartisan Infrastructure Law and the Inflation Reduction Act to administer \$832 million over five years. Funds will support projects that invest in coastal protection and restoration to increase community resilience to climate change and extreme weather events and improve how we manage our ocean resources. The Town submitted an application for a \$3.2M grant.
Solar for All	This program is offered to help achieve countrywide climate and environmental justice goals. The Environmental Protection Agency will award grants to states, territories, tribal governments, municipalities, and eligible nonprofit recipients to help low-income and disadvantaged communities to benefit from the rapid growth in distributed solar capacity.
<b>Florida Department of Environmental Protection (FDEP)</b>	
Resilient Florida Grant Program	Local governments are eligible to apply for implementation project funding after conducting a vulnerability assessment, evaluation, report, or other similar document that demonstrates a risk of flooding or risks due to sea level rise to a critical asset or the project area. Beginning in 2024, a Vulnerability Assessment meeting the requirements of section 380.093, F.S., will be a requirement to receive funding. The Town submitted for and received a \$260k grant to conduct a Town-wide Vulnerability Assessment.
Coastal Partnership Initiative (CPI) Grant Program	The CPI grant program was developed to protect and effectively manage coastal resources. Eligible governments include those that are required to have a coastal element within their comprehensive plan. CPI grants support four areas: resiliency, public access, working waterfronts and coastal stewardship
State Water-quality Assistance Grant (SWAG)	The Nonpoint Source Management Program administers federal and state grant funding for projects that reduce pollution from nonpoint sources, particularly to address impaired waterbodies and meet restoration goals related to TMDLs and restoration plans. There are no set maximum or minimum funding request caps per project, but available funds are distributed statewide.
Innovative Technologies Grant Program	This grant program is for projects that evaluate and implement innovative technologies and short-term solutions to combat harmful algal blooms and nutrient enrichment, restore and preserve Florida's fresh waterbodies, and implement certain water quality treatment technologies
<b>South Florida Water Management District (SFWMD)</b>	
Cooperative Funding Program	This program allows local governments and private entities to share costs for projects that assist in creating sustainable water resources, provide flood protection and enhance conservation efforts.

Program Name	Description
Alternative Water Supply (AWS)	The State has annually approved funding for development of water supply and water resource development projects. Eligible projects for consideration are construction-ready and provide an alternative water supply benefit within the South Florida Water Management District
Water Conservation	This component of the Cooperative Funding Program is intended to continue supporting water conservative efforts by public and private users. Projects that use hardware and/or technology to implement water conservation are eligible for funding consideration.
<b>Florida Power and Light (FPL)</b>	
FPL Solar Vantage	FPL Solar Vantage is a convenient program for businesses to install solar without upfront capital costs. Businesses are encouraged to participate in the program and offset a portion of their energy use, earn Renewable Energy Certificates (RECs), generate carbon free solar energy on site and potentially provide shaded parking and outdoor workplaces with solar paneled roofs.
FPL EVolution	This FPL offered program installs electric vehicle charging stations at retail plazas, restaurants, gas stations, municipal buildings, parking garages, and in rural areas at no cost to businesses that want to install public fast chargers.
<b>Loxahatchee River Preservation Initiative (LRPI)</b>	
LRPI	This grant program is administered locally to guide and leverage funds available from the State to address Loxahatchee River impairments through water quality treatment and/or habitat improvement for the River or its tributaries

### 5.3 Environmental Task Force Sustainability Plan Topics

The Environmental Task Force assisted with brainstorming sustainability plan topics and generated an outline dated March 26, 2021, which is provided on the following page. One of the Task Force’s priorities in sustainability plan development included the creation of green local government objectives and goals for the Town to work towards. This assessment included review of the original outline with the Town of Jupiter’s existing goals and policies to refine and focus foundational elements of the Town-wide Sustainability Plan. Collaborative efforts between the Town of Jupiter and Environmental Task Force during this assessment lead to the refinement of the original outline as presented in the subsequent section.

#### 1. Green Local Government

- a. Town Properties
  - 1) Reduce Carbon Use
    - a) Implement solar power in the Town’s government buildings and operations.
    - b) Replace natural gas-fueled fleet vehicles with electric vehicles where appropriate.
    - c) Install at least two level-2 electric vehicle charging station at each Town-

owned building, in addition to the two existing level-2 stations located at Town Hall by 2023 (place these in prime locations)

- d) Set goals for Town properties (new construction or major redevelopment) to be LEED certified Gold as a minimum.
  - e) Expand bicycle lanes for connectivity.
- 2) Reduce Water Use
- a) Implement xeric landscaping principles at all the Town's buildings, parks and open spaces to remove, minimize or eliminate the need for irrigation.
  - b) Implement a policy that requires the exclusive use of reclaimed water for landscape irrigation at all Town buildings and where suitable at Town parks and open spaces by the year (insert date).
  - c) Implement rainwater collection into Town-owned buildings.
- 3) Create a "Greener" Jupiter
- a) Prioritize preservation as the intended use of environmentally valuable lands acquired under the 2019 Land Acquisition Program. Where preservation is not practical, prioritize conservation or open space for the intended use of such acquired lands.
  - b) Facilitate the planting of trees in the Town's right-of-way within non-HOA neighborhoods lacking a preferable amount of street trees or tree canopy.
  - c) Support the development of neighborhood activists to create community gardens through donation or leasing of Town owned land.
  - d) Recommendation for green roofs and rooftop planters/gardens on new construction of Town-owned buildings.
  - e) Continue with the Tree City USA program
- b. Zoning and Development
- 1) Review and modify current zoning codes to assist in mitigating sea level rise and climate change for the project and for the Town as a whole and to fulfill the comprehensive plan. This would include but not be limited to parking/tree planting requirements, storm water management and developer incentives.

## 2. Waste

- a. Plastic Reduction
  - 1) Consider single use plastic bans (straws, plastic bags, Styrofoam)
  - 2) promote and encourage the PURE campaign
    - a) Single-use straws or stirrers by request only; biodegradable versions of these items

- b) Ban sale and use of disposable polystyrene foam food service items in all businesses
- b. Promote Recycling
  - 1) Educate the Public regarding SS403.706; that directs all multifamily, commercial, industrial to recycle.
  - 2) Incentivize business recycling and specifically larger waste producers (i.e., stadiums, schools, etc.)
  - 3) Continue community education
  - 4) Determine current recycling rates and identify future goals for the community as a whole.
  - 5) Increase recycling/waste disposal opportunities in public areas where appropriate
- c. Trash
  - 1) Develop waste reduction strategies

### 3. Natural Resources

- a. Water
  - 1) Create natural swales whenever possible
  - 2) Reduce Fertilizer runoff by reducing use
  - 3) Create baseline measurement and monitor Town's annual fertilizer runoff
  - 4) Continue to monitor drinking water contaminants of concern. (i.e., PFAS).
- b. Trees
  - 1) Determine the desirable tree canopy coverage town wide.
  - 2) Code updates for tree removal/impacts
- c. Terrestrial and Marine Ecosystems
  - 1) Protect wildlife corridors, develop a master plan.
  - 2) Protect and continue to monitor Seagrass
  - 3) Encourage Mangroves for erosion protection / living shorelines (regulatory agency cooperation/incentivize)
  - 4) Protect and continue to monitor Marine fauna (manatees, turtles)
  - 5) Encourage artificial reefs utilizing Reef Balls
  - 6) Seek Dark Sky certification requiring code modifications
  - 7) identify and enhance shoreline protection areas

#### 4. Community

##### a. Education and Outreach

- 1) Educate residents on sustainability, the importance of resiliency, and the Town's current programs and practices
- 2) Continue educational forums (also include local schools as a target audience)
- 3) Incentivize residential/commercial use of solar panels
- 4) Continue and foster community partnership with local environmental organizations to support sustainability efforts.

#### 5. Climate-Adaptation

##### a. Develop localized climate-adaptation strategies

##### b. Further develop coastal resiliency plan

- 1) Create goals and timelines to evaluate vulnerabilities, prioritize needs, develop strategies, integrate strategies into existing plans, and identify available funding opportunities
- 2) Create a timeline to coordinate with state and federal agencies to implement plan strategies where appropriate (beach and dune restoration, shoreline stabilization)
- 3) Look for opportunities to partner or join other regional coastal resiliency initiatives.

### 5.4 Foundational Elements for the Town-Wide Sustainability Plan

During this assessment, the Environmental Task Force re-visited the original sustainability plan outline, refined its organization and focused priorities based on existing Town of Jupiter (Town) municipal code, Comprehensive Plan elements, and the compendium of existing documents and plans previously developed by the Town. The following major conclusions unique to the Town were identified:

- The Town exists in a region of coastal proximity that is rich in environmental diversity with various ecosystems, diverse habitats, and species warranting both restoration and long-term protection.
- The Town has a long history of implementing codes, ordinances and plans that support careful development, open space preservation, and environmental protection while also providing prudent, long-term community investment planning.
- The Town's coastal proximity increases risk to and exacerbates the effects of climate change necessitating a plan that includes both mitigation and adaptation actions to promote a community that is both sustainable and resilient.
- While goals and policies are in place establishing the foundation, a sustainability plan will offer the roadmap to achieving actionable goals with metrics in place to monitor success. Integration of both sustainability and resiliency will promote a strong future that addresses environmental, economic, and social challenges in the Town. In consideration of the Town's history and current policies as well as the original Environmental Task Force draft outline, **Figure 21** presents the foundational elements to develop the Town-wide Sustainability Plan.



Figure 21: Town of Jupiter Sustainability Plan Outline

## 5.5 Final Recommendations

Development of the Town-wide Sustainability Plan should begin with the identification of additional, key stakeholders beyond the Environmental Task Force. These may include members of the community, elected officials and/or Town employees. Key stakeholders would maintain engagement through plan development, provide perspective on prioritization of plan elements, assist in the evaluation of baseline assessments, establish metrics and offer feedback on progress towards goals.

Specific objectives and goals within each foundational element should continue to be refined in subsequent project phases. Goals should include metrics, which can be used to track successful implementation. Goals and associated metrics require an understanding of current conditions to inform and provide context to identified goals. As such, future phases of sustainability plan development should focus on completion of a baseline assessment of the community in relation to priority mitigation and adaptation strategies. Example assessments may include:

- A study of government operations and the community that considers consumption trends, both quantity and type, for water use, waste production, energy use and associated greenhouse gas emissions
- Conduct a vulnerability assessment of hazards related to climate change including sea level rise, flooding, saltwater intrusion and extreme weather that consider both exposure and sensitivity analysis in relation to community assets

A baseline assessment of internal and community-wide consumption trends can be used to establish greenhouse gas emission reduction targets, which will inform goals associated with Resource Management and Built Environment plan elements. A Town-wide vulnerability assessment is underway, using grant funding received from the Resilient Florida Grant Program. The assessment will inform climate change threats, quantify risk to critical assets, establish goals to improve community resiliency and guide the establishment of community adaptation action areas and enhanced building code requirements within at-risk areas of Town. Future resiliency projects may also be eligible for grant funding under this same program. Publicly reporting on progress for both efforts is recommended to be a component of the Community Outreach element.

Finally, one of the Environmental Task Force's prioritized plan topics, Green Local Government, is recommended to be incorporated within each element. Rather than creating separate objectives and goals for the community and organization, the Town would adopt a "lead by example" mindset where sustainable and resilient decision-making is interwoven into daily operations, project prioritization and community investment. The Town should consider pursuit of a sustainable community certification to formalize this commitment. Phase 2 of the sustainability plan development is recommended to include evaluation and adoption of a certification program that aligns with the Town's current and future community goals and may require operational modifications to achieve the certification. In this way, the Town can use its influence to showcase their commitment to sustainability where the community would follow in their footsteps.

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## Appendix A: Town of Jupiter Historical Timeline

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## Town of Jupiter Historical Timeline

*The purpose of Appendix B is to provide a detailed timeline of Jupiter's development in relation to the environment. The following timeline was developed as a collaborative effort between the Town of Jupiter Planning and Zoning Department and Jupiter's Historical Society.*

**Timeline of Changes to the Environment-** The historical environmental timeline of man-made changes that impacted the land and water:

- 1821- Florida became a U.S. Territory from Spain which began the need to settle the wilderness area with farms
- 1835- Second Seminole War with two main battles occurred in current day Loxahatchee Battlefield Park/Riverbend Park



Photo Credit: Jupiter Inlet Lighthouse and Museum

- 1838- Fort Jupiter established at Pennock Point to hold and displace Seminole prisoners under the Indian Removal Act of 1830 to Oklahoma
- 1855- Map of the Fort Jupiter Reservation by Alfred Jones (Jones Creek) shows the inlet in a more southeastern orientation of the inlet joining the Atlantic Ocean.

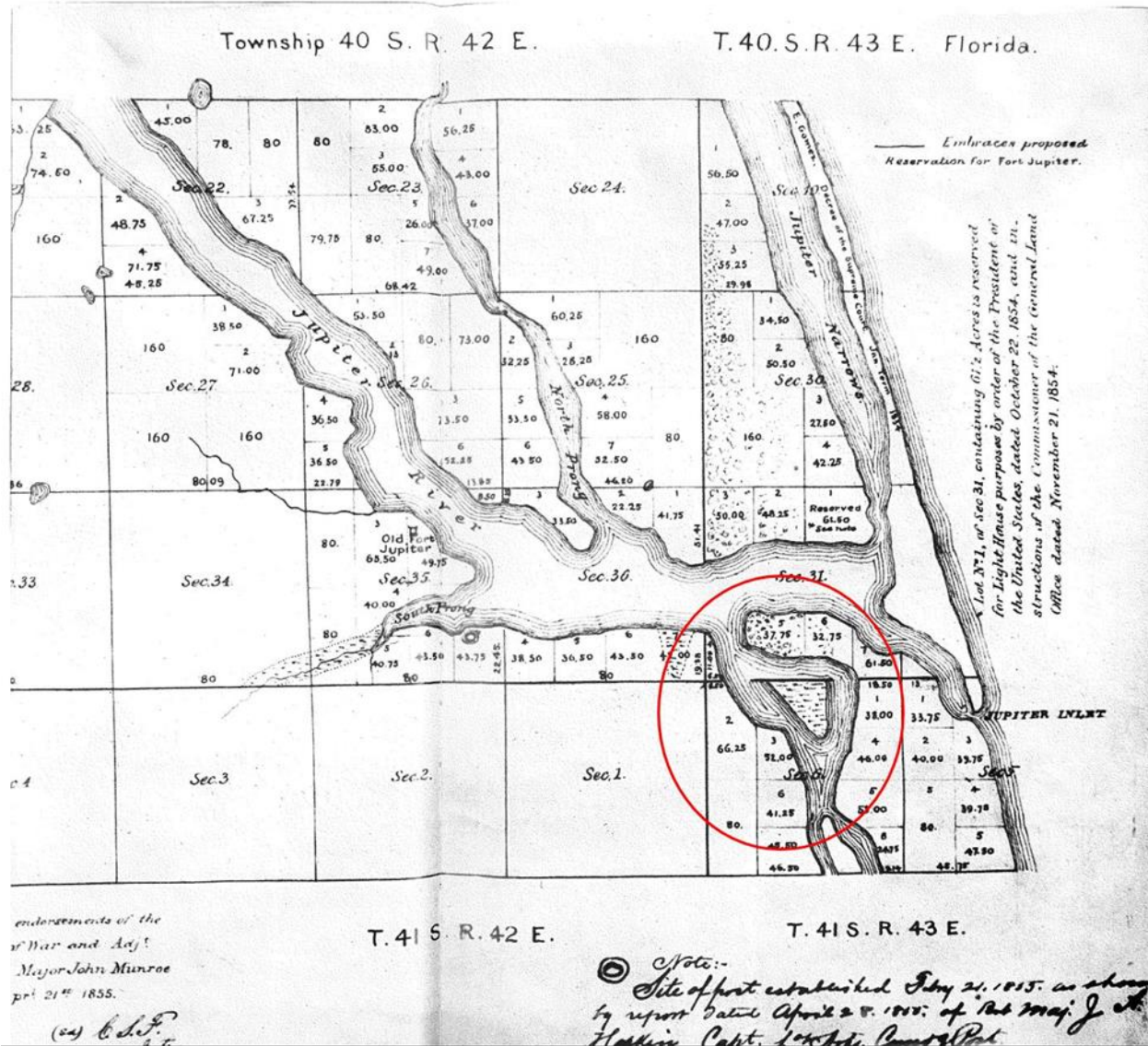


Photo Credit: Page 17 of "Five Thousand Years on the Loxahatchee: A pictorial History of Jupiter / Tequesta, Florida By James D. Snyder - "In 1855 the army drew up the boundaries of the Fort Jupiter Reservation. Some of its subdivisions became the first parcels to be sold to settlers a few years later. (Loxahatchee River Historical Society)"

- 1860- Construction of Lighthouse



Photo Credit: Jupiter Inlet Lighthouse and Museum

- 1889- Completion of Jupiter and Lake Worth Railway (aka Celestial Railway)
- 1890s- Extensive Cypress and Pine logging occurred in the northwest fork of the Loxahatchee River by Benjamin Hunt (lived on his homestead on NW fork island way); Pine logging continued up to the 1930s with Major Clarkson by Camp Murphy (current day Jonathan Dickenson State Park)
- 1892- New Waterways
  - New canals dug and dredged by the Florida Coast Line Canal and Transportation Company allowed for the construction of Henry Flagler's railroad which was the beginning of the Intracoastal Waterway in Jupiter;
  - Construction and formalized cut for the St. Lucie Inlet cut through the barrier strip about 10km north of Jupiter and altered hydrodynamics would lead to the need for management of the Jupiter Inlet to reduce shoaling and maintain a navigable channel.
- 1894- Completion of the Florida East Coast Railway in Jupiter; Removal of large shell mound at Sawfish Bay
- 1890s to 1920s- Oyster beds from the mouth of Loxahatchee River and Sawfish Bay were removed and used for road base
- 1900s- Agricultural impact of the native vegetative communities from pineapple farming occurred throughout Jupiter along current day Center Street, Indiantown Road, and US1 replacing dry sandy Pine Flatwoods or Scrub habitat
- 1902- Pennock Plantation operated a fernery and dairy farm on land in current day is known as Pennock Point, much of central Jupiter, from Center Street to where Toney Penna is today; Pennock dairy pastures were on previous Pine Flatwoods habitat
- 1913- Pine Gardens neighborhood (north and south of Indiantown Road) was platted on previous Mesic Pine Flatwoods
- 1920s-
  - Double track of the FEC narrowed the mouth of Loxahatchee River which contributed to decline in the oyster population due to the change in salinity;
  - Jupiter Farms irrigation grid dug for agriculture that drained the wetlands

- 1922- Jupiter Inlet location was formalized in current location (relocated 1,250 feet north) cutting a channel 100 feet wide with a foot depth of sand below the Mean High Water Line.



*1890 photos taken by William Henry Jackson from the Jupiter Lighthouse. The photo on the left shows surf breaking across the mouth of the inlet indicating a shallow sand bar that would have impeded vessel traffic. The waterway to the left leads north to Jupiter Narrows and then into the Indian River Lagoon. The photo on the right shows a sternwheel steamboat docked at the Jupiter and Lake Worth Railway (Celestial Railway).*

- 1925- Town of Jupiter is incorporated
- 1930s- Population 176 per U.S. Census
  - Intracoastal Waterway cut in and maintained oxbows; made larger in 1980's
  - Camp Murphy was established on previous Sand Pine Scrub through eminent domain as a top-secret radar school during World War II
- 1940s- Areas by the Pennock Point peninsula included a sand bar that during low tide, cows from the Pennock's dairy farm would walk across a sand bar to Fort Jupiter which reduced the salinity into the Limestone Creek
- **1950s Development Boom: Post WWII** – Population 313 per U.S. Census
  - Ranchers in Jupiter and Florida systematically dug canals to drain wetlands
  - Developers and property owners systematically dredged and filled mangrove islands and mangrove fringes to create developable land along the Jupiter River, Loxahatchee River, Intracoastal Waterway, Jupiter (Jones) Creek and the FEC Canal. Lands End neighborhood created by Neil Dubois.
  - Limestone Creek and the southwest fork (Stump fork) of Loxahatchee River was dug and channelized and renamed the C-18 canal from Hungry Land and Donald Ross work was done by the Central and South Florida Flood Control district
  - C-18 canal received more fast moving water that starved the flow of the Northwest fork of the Loxahatchee River
  - Pennock ditch (a small irrigation ditch for agricultural use) was dredged by Northern Palm Beach Heights Improvement District
  - The development boom that occurred in the 1950s cast the dye of development in the town. The establishment of flood control districts that drained previous sloughs and wet

- prairies made way for the approval of land development through new plats, new subdivisions and construction.
- Camp Murphy becomes Jonathan Dickinson State park with 10,500 acres through additional acquisition including Trapper Nelson's roughly 1,000 acres
  - Park Avenue (future Military Trail) constructed bifurcating freshwater wetlands on the east from the Jones Creek Headwaters to the west
  - 1958- Pratt & Whitney, manufacturer of rocket and jet engines, opened a 7,000 acre site west of Jupiter
  - 1959-
    - Beginning establishment of bulkhead lines along the Jupiter River and US Highway One, north of Indiantown Road, which protected existing mangroves.
    - Sunshine State Parkway (now Florida's Turnpike) is opened passing through Jupiter and crosses the Loxahatchee River
    - U.S. Highway One and bridge replacement constructed in current location
    - Jupiter River Estates was developed. The historic Pine Flatwood and Cypress slough that extended to current day Palm Beach County Aquatic Center was replaced with housing, dredging new canals which extended Jones Creek and filled in wetlands.
  - 1960s- State level environmental concern changed flood control districts to water management districts (current day SFWMD)
  - 1965- The practice of dredging and filling of natural mangrove islands became controversial when resident environmentalists Bill and Frank Lund brought the issue forward; need to protect the natural Loxahatchee River.
  - 1966- Town Council establish bulkhead lines along the Jupiter River, Loxahatchee River, Intracoastal Waterway, Jupiter (Jones) Creek and the FEC Canal for the purpose of controlling dredging and filling of submerged State land
  - **1970s Development Boom and Environmental Stewardship-** Population 3,136
    - Dedication of the beach front from construction was systematically required of new development
    - Palm Beach County purchases Dubois Park, Carlin Park, Karen Marcus Park
    - Florida Department of Transportation plans to build the missing section of Interstate 95 through the Loxahatchee River headwaters; Palm Beach County Commissioner Robert Culpepper leads the fight against the construction
    - South Florida Water Management District begins purchasing parts of the Loxahatchee River Headwaters near Indiantown Road
  - 1973- Project River Keeper water quality monitoring program was created by the Loxahatchee River District
  - 1975- Changes in salinity to the river
    - Alternate A1A (SR-811) bridge was reconstructed by the Florida Department of transportation which created land that is current day Sawfish Bay Park and narrowed the mouth of the Loxahatchee River
    - Jupiter Inlet District urged by the "Citizens Committee for Improvement of the Jupiter Inlet" was permitted by Florida Department of Natural Resources to remove "dead" oyster beds by the mouth of the Loxahatchee River for navigation purposes.



Photo Credit: Jupiter Inlet Lighthouse and Museum

- Jonathan Dickenson State Park starts to see a noticeable decline over the amount of Cypress trees vs. mangroves. Cypress stands now retreat up to Jonathan Dickenson due to the brackish water that influences the Loxahatchee River
- 1978- *Loxahatchee Lament* published to save the Loxahatchee River, to inform newcomers of how the river functioned and to preserve the future of the river.
- 1980s- Population 9,868
  - Fight over the location of Interstate 95 was resolved when Palm Beach County and SFWMD purchased 1000's of acres to preserve the watershed of the Loxahatchee River
  - JID commissioned their first comprehensive management plan for protection of the river with goals to enhance public recreation and restore four oxbows
  - Jupiter Ridge Natural Area purchased preserving Sand Pine Scrub along the ICW
  - 1000's of acres of farming occurs along the Turnpike near Indiantown Road and Donald Ross Road
- 1985- Upper ten miles of the northwestern fork of the Loxahatchee River was designated as Florida's first National Wild and Scenic River
- **1987- Explosive Growth** was spurred by the completion of Interstate 95 through Jupiter abutting Florida's Turnpike creating an exit at Indiantown Road and Donald Ross Road
- 1990- Population 24,986 per U.S. Census
- 1992- Palm Beach County purchases Jupiter Ridge Natural Area
- 1996- 2,000 acres of agricultural and pine flatwoods land along Donald Ross Road, Military Trail and Alternate A1A is approved for Abacoa
- 2004- Town of Jupiter Open Space Bond Program was approved by voter referendum and again in 2019 to purchase land and restore habitat (totaling \$37.5M)
- 2008- Jupiter Lighthouse Reservation was congressionally designated Jupiter Inlet Lighthouse Outstanding Natural Area (JILONA)

## Appendix B: Detailed Review of Existing Town of Jupiter Documents

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## Summary of Existing Documents

*The purpose of Appendix B is to provide a detailed review of plans, reports, studies, and initiatives that the Town has previously completed, which have recommended or put forth various mitigation and adaptation strategies in support of a sustainability plan.*

### 1. Comprehensive Plan

As required by the State of Florida, the Town maintains a Comprehensive Plan, which represents a blueprint for future growth establishing policies for land use within the Town, evaluating suitability of land for development, and ensuring the adequacy of public facilities and infrastructure as well as financial capacity to serve future development. The Comprehensive Plan includes different elements listed below goals and objectives have been summarized into an outline included in **Appendix C**.

- |                       |                                   |
|-----------------------|-----------------------------------|
| 1. Future Land Use    | 6. Recreation and Open Space      |
| 2. Transportation     | 7. Infrastructure                 |
| 3. Housing            | 8. Capital Investment Program     |
| 4. Conservation       | 9. Intergovernmental Coordination |
| 5. Coastal Management | 10. Property Rights               |

In 2022, the Town began the state-required Comprehensive Plan Evaluation and Appraisal Report (EAR) process that are required every seven (7) years. The Town anticipates amendments to the Future Land Use, Housing, Recreation and Open Space, Coastal Management and Conservation Elements will be required based on local conditions and strategic priorities.

Of particular note, the 2020 Comp Plan amendments included the following major objectives:

- Develop transit-oriented criteria that supports public transit use by 2023
- Establishing a goal to upgrade the Town’s Green Local Government Certification from silver to gold by 2021
- Evaluate and integrate, where feasible, climate change impacts and adaptation and mitigation strategies into the Comprehensive Plan and development regulations by 2023
- Evaluate and integrate, where feasible, 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 by 2023

In 2021, the Transportation Element of the Comprehensive Plan was updated including reference to and inclusion of the Town’s long-term transportation plan. In 2022, the newest, Property Rights Element, of the Comprehensive Plan was developed and approved.

## 1.1 Progress Towards Sustainability

The Town's Comprehensive Plan includes multiple goals, policies and objectives that support sustainable development, environmental protection, and movement toward resilient infrastructure. The Town recognizes the importance of preserving sensitive, significant and/or historic environmental and natural systems as evidenced by their mention of and/or inclusion in nearly every element of the Plan. Further demonstration is evident through the Town's investment in an Open Space program since 2004 resulting in the acquisition of more than 100+ acres of property. The Comprehensive Plan includes detailed levels of service for the various municipal services provided by the Town and takes care to ensure that the established level of service standards can be maintained for future development.

The Town's Community Investment Program is updated annually to provide project and funding outlook for the subsequent five (5) years, which is incorporated in the Comprehensive Plan. **Table B-1** summarizes the environmentally focused projects for the 2023-2027 Community Investment Program that were presented at the August 2022 ETF Meeting.

Additional highlights that align with sustainability and resiliency objectives:

- Encourage mixed land use and discourage urban sprawl
- Evaluation of land use impact on water quality and quantity
- Minimizing future development within coastal areas vulnerable to hurricane damage
- Transfer of development rights for coastal high hazard areas
- Limiting public expenditures in flood-prone, coastal areas
- Land development regulations that consider natural and historic resources
- Conservation and protection of environmentally significant areas
- Preservation of open space that provides for pedestrian movement with access to natural resources
- Encouraging development that provides meaningful job opportunities including bioscience research and biotechnology
- Measures to reduce traffic congestion and encourage pedestrian use
- Policies to protect groundwater and surface water resources
- Encouraged use of green design theories

**Table B-1 Environmentally Focused CIP Projects for 2023-2027**

Project Name	Project In-Service Date	Description
CRA Riverwalk Shoreline Stabilization	2025	The project will stabilize the shoreline abutting the Town-owned section of Riverwalk that is located behind Mangrove Bay. This 200 linear foot section is being impacted by boat wake along the Intracoastal Waterway. The shoreline stabilization will include rip rap and transitional native upland plant material. Where feasible additional living shoreline will be installed to augment the existing mangrove area
Sawfish Bay Park Historic and Environmental Improvements	2026	The project includes build out of the Historic Train Depot for a museum, community meeting space for the Aicher House, and environmental improvements along the park's existing seawall. A living shoreline is proposed along the vinyl seawall to include rip rap, Reef Balls, mangroves, and flushing culvert. The goal is to improve water quality, increase oyster recruitment and provide a more suitable seagrass habitat
Deep Injection Well System	2025	The project includes construction of a Class I deep injection well (DIW) to manage concentrate generated at the water treatment plant. Historically, the Town's reverse osmosis (RO) concentrate management practice has been surface discharge through an outfall to the Southwest Fork of the Loxahatchee River, which is permitted by FDEP. Though the Town has consistently met permit conditions, water quality impairments in The River may drive regulatory changes, precluding surface water discharge as the preferable long-term method for future concentrate management. Alternative disposal is expected to reduce nitrogen loading to The River and is integral to the Regional Loxahatchee River Pollutant Reduction Plan.

## 1.2 Future Opportunities

Much of the content within the Town's Comprehensive Plan forms a strong foundational element for sustainability plan creation. Organizations that are moving towards implementation of sustainable practices do not necessarily require wholesale changes. Rather, a shift or re-calibration in the approach to executing related initiatives, revisions to existing policies and/or re-prioritization of future projects may streamline plan creation. Further improvements are outlined in **Table B-2** where additional exploration could be included as component of the Sustainability Plan.

**Table B-2 Adaptation and Mitigation Strategies to Improve Comprehensive Plan Elements**

Comprehensive Plan Element	Adaptation and Mitigation Strategies
Future Land Use Element	<ul style="list-style-type: none"> <li>• Include language to ensure that climate change is being considered in public and private development</li> <li>• Go beyond encouragement of green design theories and move towards required standards that are, at a minimum, incorporated into Town projects</li> <li>• Encourage (or require) greenhouse gas emissions evaluation for new or redevelopment projects</li> <li>• Policy 1.3.16 To provide further protection of existing and future conservation and recreation lands (parcels designated in FLUM)</li> <li>• Objective 1.18 By December 2026, the Town shall develop criteria to require that developments located within a half-mile of a public transit station</li> </ul>
Transportation Element	<ul style="list-style-type: none"> <li>• Policies and/or actions to reduce vehicle miles driven in Jupiter</li> <li>• Promote use of electric vehicles within the community and municipal organization</li> <li>• Policies to encourage/improve transit-oriented development</li> </ul>
Conservation	<ul style="list-style-type: none"> <li>• Renew policy 1.10.2 within the Conservation Element to pursue a green local government certification from a state or nationally recognized certifying organization</li> <li>• Establish a policy to limit non-municipal surficial aquifer withdrawal facilities in Adaptation Action Areas</li> <li>• Policy 1.1.3 requires proposed development abutting environmentally sensitive areas to submit an environmental assessment report</li> <li>• Include marine stewardship plans for waterfront properties</li> <li>• Policy 1.1.4 The town will support the protection of environmentally sensitive lands using the Jupiter Open Space Program</li> </ul>
Coastal Management	<ul style="list-style-type: none"> <li>• Address Coastal Management element policy 2.6.4 by including a vulnerability assessment within the sustainability plan</li> <li>• Address Coastal Management element policy 2.6.5 by identifying Adaptation Action Areas for the Town</li> <li>• Expand definition of coastal high hazard areas, where applicable, by reference to Adaptation Action Areas</li> <li>• Objective 1.5 The Town will maintain strategies to implement marine stewardship plans on developments and redevelopments</li> <li>• Policy 1.5.1 and Policy 1.5.2 The Town adopts the Loxahatchee Wild and Scenic River Preserve Management Plan and The Loxahatchee River Aquatic Preserve Management Plan</li> <li>• Policy 1.5.3 Living shorelines enhancements shall be provided wherever feasible</li> <li>• Policy 1.5.6 The Town shall require new development along waterfronts to ensure sea level rise is address via nature based solutions</li> </ul>

**Table B-2 Adaptation and Mitigation Strategies to Improve Comprehensive Plan Elements**

Comprehensive Plan Element	Adaptation and Mitigation Strategies
Recreation and Open Space	<ul style="list-style-type: none"> <li>• Develop a formal and/or prescriptive evaluation process that includes sustainable and resilient objectives for future property acquisition under the open space program</li> <li>• Incorporate green design standards for projects where applicable</li> </ul>
Infrastructure	<ul style="list-style-type: none"> <li>• Evaluate climate resiliency for applicable projects</li> <li>• Incorporate green design standards for projects where applicable</li> <li>• Pursue additional grant funding to maximize restoration and preservation initiatives.</li> <li>• Policy 1.3.13 The Town’s 2022 Water Master Plan Update and 2019 10-year Water Supply Facilities Work Plan is adopted by reference in the Comprehensive Plan</li> </ul>
Capital Investment Program	<ul style="list-style-type: none"> <li>• Evaluate climate resiliency for applicable projects</li> <li>• Incorporate green design standards for projects where applicable</li> <li>• Pursue additional grant funding to maximize restoration and preservation initiatives.</li> <li>• Policy 1.2.1 The town shall utilize adopted level of service standards in reviewing impacts of new or redevelopment for public facilities and service such as sanitary sewer, solid waste, drainage, and potable water</li> </ul>
Intergovernmental Coordination	<ul style="list-style-type: none"> <li>• Strengthen partnership efforts with local municipalities and State agencies specific to climate resiliency</li> </ul>

## 2. Town of Jupiter Code

The Town Municipal Code aligns with and supports the Comprehensive Plan. Strong code requirements have facilitated protection of native, upland habitats and areas of environmental and/or historical significance. The code has also supported sustainable growth, expansion of the Town’s water utility, provided for limited coastal development, and includes prescriptive zoning and development requirements for the Town.

Prioritizing long term planning to ensure a sustainable and resilient community in the face of loss of habitat, sea level rise and extreme weather events. Policy and regulatory strategies can include mitigation actions to enhance protections to existing public and private assets to lessen the potential impacts from environmental and manmade changes. The following section summarizes and outlines the existing codes to determine what may be missing or needed for future strategies.

## 2.1 Town of Jupiter Existing Code

Existing relevant sections of Town code that support the sustainability assessment include:

- Chapter 14 Parks and Recreation, Article III, Division 3 Town of Jupiter Natural Areas Regulations promote native upland habitat preservation.
- Chapter 20 Utilities, Articles such as II, VI, and VII outline water systems, irrigation and stormwater policies. Articles IV and VII outline the Town’s water and irrigation conservation programs.
  - Article II- Water System Extension Policy for planning and expansion of the water system that is sustainable, not create adverse impacts nor undue financial burden for the existing service area and customers.
  - Article VI- Policies for stormwater utility with emphasis on water quality and treatment of stormwater discharges.
  - Article VII- Water and irrigation conservation program has requirements to ensure water and landscape irrigation conservation, such as a progressive rate structure, curtail excessive use, watering restrictions, installation of water-saving devices and a surcharge for excessive use.
- Chapter 21 Buildings and Building Regulations- adopted by reference the Florida Building Code (FBC in 2015 reflecting the requirements of ASCE 24-05), which address finished floor elevation requirements for flood and coastal high-hazard areas.
  - Article V- Requires coastal construction areas and ocean-front setbacks for structures.
- Chapter 22 Flood Prevention and Protection establishes policies for stormwater management including flood control.
  - Article X- Requires flood resistant development through building design and construction standards, coastal construction restrictions, and utility/facility regulations.
- Chapter 23 Landscaping requires protection of existing vegetation, installation of native landscaping, minimum greenspace requirements and protection of water resources by encouraging native plantings and xeriscape.
  - Article III- Outlines Landscape design standards that are site and zoning specific.
    - Sec. 23-68 – Property perimeter requirements outlines the specific requirements for different sites and zoning.
    - Native landscaping regulations, minimum 50% up to 80%
    - Specific Greenspace percentages are required according to each zoning district outlined in Sec. 23-71

- 25% upland preserve
  - Article V addresses Florida-Friendly Fertilizer use to reduce nutrient loading to the sensitive water bodies.
- Chapter 26 Vegetation and Environmental Preservation requires preservation of native habitats and environmentally sensitive lands, creation and restoration of areas that were impacted in the past and provides for tree protection.
  - Sec. 26-68 Defines environmentally sensitive areas of the Town
  - Sec. 26-95 Requires minimum sizes and connectivity between preserves, and maintenance requirements
  - Sec 26-121 Requires tree mitigation (planting of new trees)
- Chapter 27 Zoning includes regulations to provide adequate public facilities, preserve natural resources and storm drainage, consider character of each district encouraging most appropriate use of land.
  - Article V details site plan requirements, such as an environmental assessment study based upon the environmental character of the property. Large scale developments must also include traffic impact analysis and detail for the location and size of open space areas
  - Article XI Supplementary District Regulations includes Division 18 Green Building Program, outlines an incentive program to provide green building standards provided that new development or redevelopment achieve green building certification.

## 2.2 Town of Jupiter Code Review – Sea Level Rise and Extreme Weather Events

Jupiter’s mitigation and policy strategies to address sea level rise and extreme weather events within the comprehensive plan and coastal management elements were edited and implemented after the State of Florida passed Peril of Flood legislation under Section 163.3178(2)(f), F.S. **Table B-3** on the following page, assesses topics in regards to sea level rise and extreme weather events by giving a summary of the current actions in place and recommendations to improve or add policies to address the issues.

**Table B-3 Recommendations for Sea Level Rise and Extreme Weather Event Mitigation**

Subject Area	Current Strategies	Recommendations
Finished Floor Elevation Requirements	Revised the Utilities Guide for Development - Design and Construction Standards – Water and Stormwater Manual to be consistent with FFE requirements in Town Code	Continue to update town code to be consistent with Amendments to Florida Building Code.
Flood Protection Level of Service (LOS) for Roads	Implemented higher flood protection LOS standards for certain roads.	Enhance LOS standards for additional coastal areas prone to flooding
Adaptation Action Areas (AAAs)	Currently anticipate in the Compact by coordinating with PBC.	Conduct Vulnerability Assessment Investigate and report the feasibility of the use of adaptation action areas to identify areas vulnerable to coastal storm surge and sea level rise impacts.
Salt Water Intrusion/Aquifer Recharge Policies	Maintain current programs and policies	Conduct Vulnerability Assessment Consider inclusion of areas subject to saltwater intrusion as identified in the Vulnerability Assessment within designated adaptation action areas
Reduce Irrigation	Regulations in place to encourage landscaping irrigation conservation	Maintain and capture stormwater/non-potable water for irrigation/reuse
Marine Stewardship along waterfront	Environmental Stewardship is required, and Marine related stewardship plans are recommended	Promote/require Marine Stewardship Plans for any development abutting waterfront
Canopy Coverage	Currently require street and landscape trees	Increase native tree canopy Identify opportunities to plant more street trees Native trees planted along Right-of-way
Green roof and solar Energy	Currently considered an added benefit	Require green roof and solar over parking lots and other suitable areas
Artificial Turf	In process to regulate the installation of artificial turf	Regulate artificial turf as similar to impermeable structures such as patios.

**Table B-3 Recommendations for Sea Level Rise and Extreme Weather Event Mitigation**

Subject Area	Current Strategies	Recommendations
Limitation of Development in Flood-Prone Coastal Areas	The Town has already implemented many key comprehensive plan policies and ordinances to limit or reduce development in flood-prone and coastal high hazard areas	<p>Maintain policies and continue with proactive planning</p> <p>Investigate new strategies for protecting existing development</p> <p>Reevaluate flood prone areas in Vulnerability Assessment</p>
Upland retaining walls/Seawall Elevation Requirements	The Town's current code provides for a maximum seawall elevation, living shorelines and upland retaining walls.	<p>Investigate minimum seawall heights for reconstruction, or rehabilitation of public and private seawalls, and encourage replacement of seawalls observed to result in flooding.</p> <p>Maintain natural shoreline where possible</p> <p>Promote restoration of marine habitat where existing seawalls are rebuilt</p>
General Requirements for Development to Consider sea level rise	Promote living shorelines	<p>Include language in the Comprehensive Plan to be then implemented through Town Code to ensure that extreme weather events are being considered in public and private development</p> <p>Establish requirements indicating how a project is designed for extreme weather events resiliency.</p>

### 2.3 Future Opportunities to become a Sustainable Community

By creating sustainable and resilient policies, adaptation actions and mitigation strategies can be developed and implemented with the goal of reducing the risk of loss from extreme weather events and curbing environmental degradation. **Table B-4** summarizes some strategies for review and inclusion in future plan development:










**Table B-4 Adaptation and Mitigation Strategies to Improve Town Code and Policies related to Climate Change Planning**

Adaptation	Mitigation
<ul style="list-style-type: none"> <li>• Expand definition of coastal high hazard and/or high risk flooding areas through creation of Adaptation Action Areas                             <ul style="list-style-type: none"> <li>○ Revise development/re-development requirements</li> <li>○ Revise technical amendments to Florida Building Code where appropriate related to building construction and finished floor elevation requirements</li> <li>○ Enhance Level of Service standards within Adaptation Action Areas</li> <li>○ Impose impact fees within Adaptation Action Areas for future redevelopment projects to offset improvement costs</li> </ul> </li> <li>• Create Adaptation Action Areas specific to surficial aquifer system protection, and consolidate non-Town owned surficial aquifer withdrawal facilities to minimize saltwater intrusion</li> <li>• Re-evaluate seawall height requirements, where applicable, in relation to Sea Level Rise</li> <li>• Include requirements that climate threats including sea level rise and flood inundation are considered in public/private development including documentation of a project’s climate resiliency</li> <li>• Maintain a minimum tree canopy in each development and along public streets</li> </ul>	<ul style="list-style-type: none"> <li>• Incentive programs to promote residential and commercial recycling especially at existing facilities</li> <li>• Update water conservation section pertaining to use of water saving devices</li> <li>• Incentive programs for existing customers to swap older fixtures for more efficient models</li> <li>• Incentive programs to incorporate Electric Vehicle charging stations in re-development projects</li> <li>• Revise existing Green Building Program section of code</li> <li>• Improve incentivization and/or require use of green building standards</li> <li>• Develop green infrastructure standards for stormwater, habitat and public access</li> <li>• Incentivize and/or require green infrastructure within development/re-development projects</li> <li>• Ensure that green infrastructure projects are connected through land setbacks/easements to provide habitat and greenway</li> <li>• Require waterfront properties to provide and maintain a marine stewardship plan for existing or proposed restorations</li> </ul>

### 3. Town Council Strategic Planning

The Town’s Strategic Plan includes nine (9) strategic results, outlined in **Table B-5** which represent the outcomes Jupiter aims to achieve. Annually the Town Council reviews and updates the strategic plan to support the completion. Town staff then work towards execution of the identified objectives that meet the goals the Town Council has set for the community.

**Table B-5 Definitions for Town of Jupiter Strategic Results**

Strategic Result	Definition
 <p>Fiscal Responsibility</p>	<p>Prepare and manage budget; maintain fiduciary responsibility.</p>
 <p>Organizational Excellence</p>	<p>Organizational governance; internal support and services</p>
 <p>Strong Local Economy</p>	<p>Support local businesses, create a business-friendly environment.</p>
 <p>Town Communication</p>	<p>Support and enhance open, two-way communication between the Town and its residents and businesses.</p>
 <p>Mobility</p>	<p>Improved mobility for all modes of transit</p>
 <p>Manage Growth</p>	<p>Plan for and manage growth, development and redevelopment to maintain Jupiter’s small town feel and its integrity as a distinctive, vibrant coastal community.</p>
 <p>Safety</p>	<p>Keep citizens and business safe</p>
 <p>Unique, Small Town Feel</p>	<p>Maintain and enhance our vibrant small town feel by leveraging the unique combination of community, cultural and recreational assets that make Jupiter a special place to live and work</p>
 <p>Green, Blue and Open Spaces</p>	<p>Continue beautification and natural areas, green spaces, parks, beaches and landscaping. Maintain Jupiter as a distinctive coastal community with open and natural environments.</p>

## 3.1 Progress Towards Sustainability

The Town developed a short summary of the 2022-23 strategic plan, “Strategic Plan as a Glance 2022-23,” which is included in **Appendix D**. Major initiatives identified for 2022-23 where sustainability and/or resiliency objective could be integrated include:

- Construction of the new Town Hall facility, construction of Town Green on the municipal complex and re-purposing of the vacant property on Daniels Way
- Mobility improvements including traffic mitigation along major corridors and related to the US 1 bridge construction
- Safety improvements and collaboration related to high-speed rail
- Environmental protection and restoration related to seagrass, Loxahatchee River and Jones Creek
- Enhance access and use of green space by providing more open and natural areas for protection including plans for the recently acquired Taylor Property
- Explore designating distinct areas or districts of local significance throughout Jupiter with corresponding development guidelines
- Review and update the development approval process with specific emphasis on elimination of the bonus point program and updates to the public benefit policy and standards

## 3.2 Future Opportunities

Prioritized initiatives may span multiple strategic planning years where action plans could evolve to incorporate sustainability and/or resiliency within their implementation. Engagement of the ETF during this process may facilitate inclusion of sustainable and resilient themes within prioritized projects selected to support strategic results. In the near term, the sustainability plan’s objectives and goals should be structured to align with the strategic plan.

## 4. Water and Stormwater Utilities Planning

The Town’s Utilities Department, consisting of water and stormwater divisions, strives to offer excellent municipal services at competitive regional rates while maintaining environmental consciousness. The Water and Stormwater Utilities have a long history of implementing practices that are both sustainable and resilient.

To ensure the Town continues to uphold these standards, the Town routinely prepares an update to its water and stormwater master plans every five (5) years to keep them current relative to utility accomplishments, assessment of current and future conditions, review of regulatory requirements/impacts on utility needs, and financial forecasts and recommendations. The master planning processes evaluates the appropriateness and prioritization for near term, projects within the five year outlook, and more importantly for the long term, 25-year planning horizon. The following sub-sections will provide an

overview of recent master planning efforts with emphasis on efforts to address sustainability and/or resiliency within municipal operation and management. Additionally, summaries will be offered on the Water Utility's recently completed Water Supply Plan Update and Risk and Resiliency Assessment.

## 4.1 2017 Master Plan Update

Water and stormwater master plan updates were completed in 2017. Prevalent issues in the 2017 MPU included evaluation of raw water supplies – both adequacy and quality, potential impacts of climate change including sea level rise, creation of Adaptation Action Areas, and pending regulatory changes. The Utilities had approached a state of maturity with few opportunities for expansion and minimal new construction emphasizing the importance of investing in and planning for renewal and replacement. Capital planning had evolved to a rather complex study of the potential capabilities of existing assets to safely meet all demands of the service area and all future regulatory mandates while also improving systems' resiliency to impacts related to climate change.

### 4.1.1 Water Master Plan Update

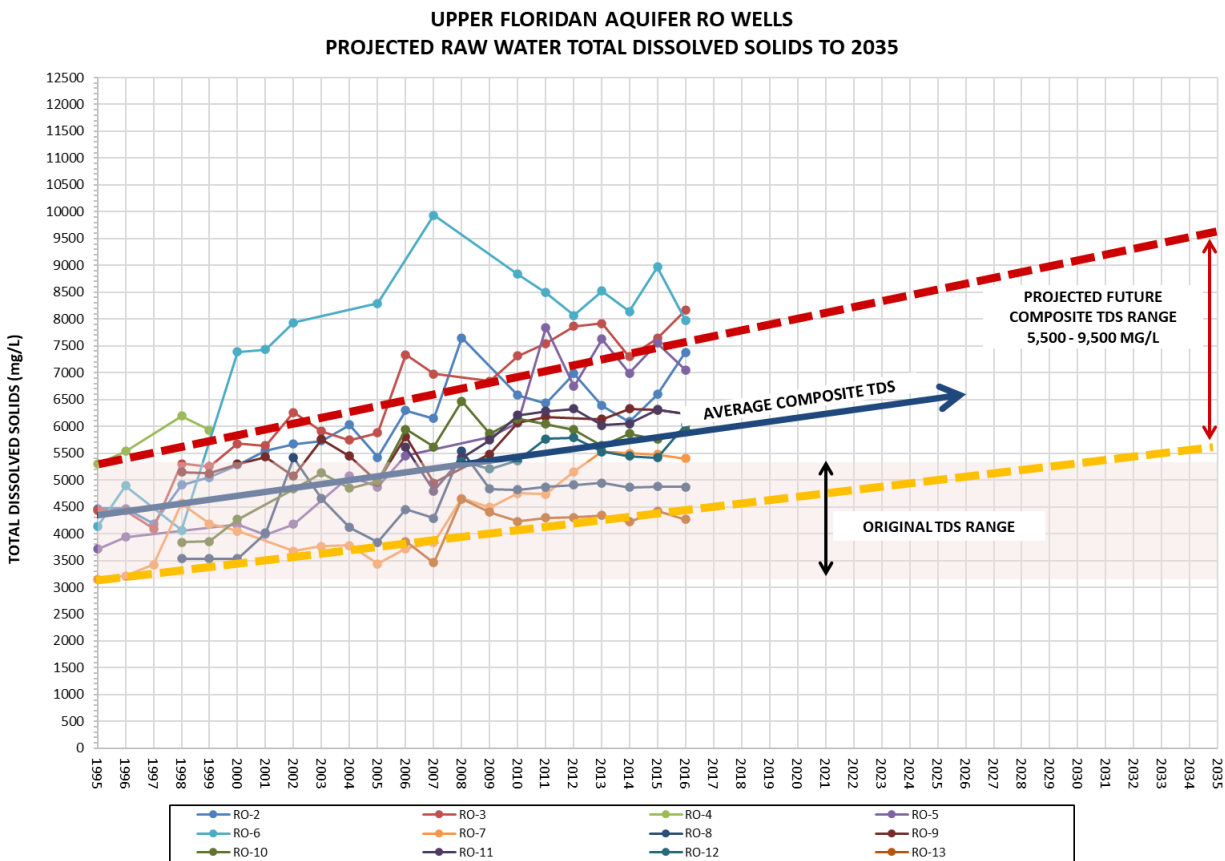
The Water Master Plan Update focused on two (2) primary issues:

- Degradation of the brackish, Floridan aquifer and projects necessary to ensure long term sustainability of the alternative water supply
- Sea level rise impacts to the surficial aquifer and recommended policy changes that offer protection to the significant regional resource

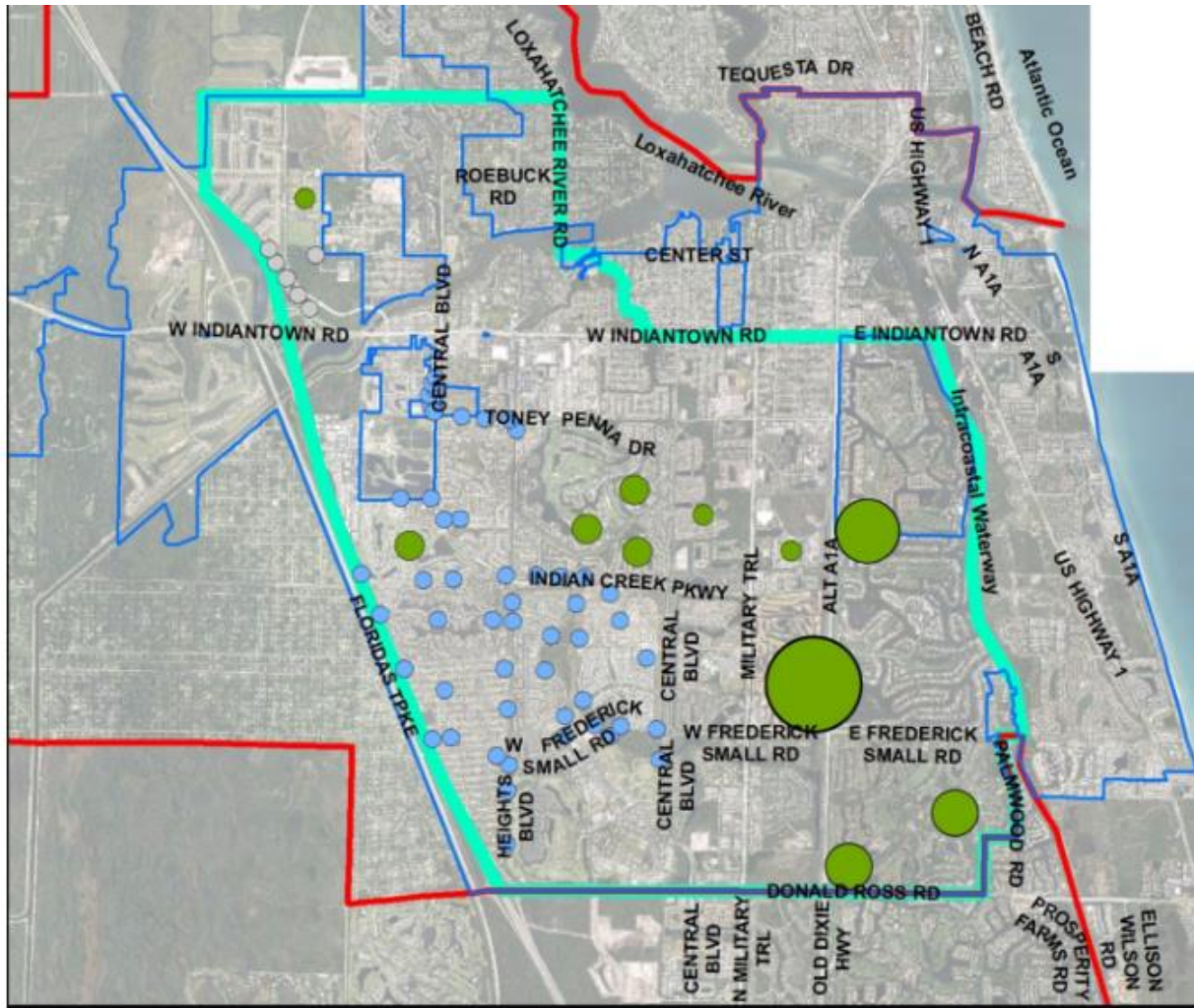
The Town's utility had carefully monitored Floridan aquifer water quality and production since investment in the raw water supply over 30 years ago. Well performance had degraded over time as evidenced by increased salinity [or total dissolved solids (TDS)] and decreased flow rates from individual wells. **Figure B-1** illustrates the trend of increasing TDS in the Floridan aquifer wells. The 2017 MPU recommended an operational strategy known as "spreading out the footprint" of aquifer withdrawals, which necessitated investment in wellfield expansion. Additionally, increasing salinity trends necessitated evaluating cost effective ways to enhance the reverse osmosis process to ensure long term treatment goals could be met. Consistent evaluation of the Floridan aquifer supply and utilization of existing resources from the SFWMD allowed the utility to maintain a proactive position to address observed degradation, predict long term impacts, and complete timely planning for investment in necessary improvements.

Sea level rise was another prominent issue explored in both the water and stormwater master plan updates. Jupiter's coastal location makes the Town's Surficial Aquifer System (SAS) wellfields vulnerable to potential impacts from a rising sea level, in particular the threat of saline intrusion. As sea levels rise, the saltwater interface is likely to move further inland. This coupled with the effects of climate change including extreme weather events and/or extended drought threatens the Surficial aquifer. Without proactive adaptation, withdrawals from the SAS will be exposed to risks including greatly compromised raw water quality and/or the full elimination of the water supply source.

To improve protection of the SAS the 2017 Master Plan Update recommended development of an Adaptation Action Area for the aquifer. Within the Adaptation Action Area, the Town would strive to eliminate major, non-municipal withdrawals from the SAS which pose a risk to saltwater interface migration into the Town’s wellfields that serve as a regional water supply source. Non-municipal SAS withdrawal facilities are depicted in **Figure B-2**. To accomplish long-term protection of the resource, the Town would partner with the private users to cooperatively seek the elimination of the SAS withdrawal facility and subsequent connection to the Town’s regional water supply system or the Loxahatchee River District’s (LRD) wastewater reuse system, where feasible.



**Figure B-1 Increasing Total Dissolved Solids in Floridan Aquifer Water Supply** (Source: Town of Jupiter 2017 MPU)



**Legend**

█ SAS Adaptation Action Area

█ Jupiter Water Service Area

█ Jupiter Town Boundary

**Jupiter Utilities Surficial Wells**

● EXISTING

● FUTURE

**Permitted Withdrawal > 0.1 MGD**

● 0.15 to 0.19 mgd

● 0.38 to 0.49 mgd

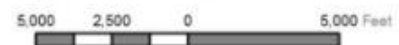
● 0.63 to 0.76 mgd

● 1.11 mgd

● 2.20 mgd



SAPAAZxy5b.mxd / PDF JupiterGIS, September, 2016



**Figure B-2 Surficial Aquifer System Adaption Action Area**

## 4.1.2 Stormwater Master Plan Update

The Stormwater Master Plan Update focused on the following primary issues:

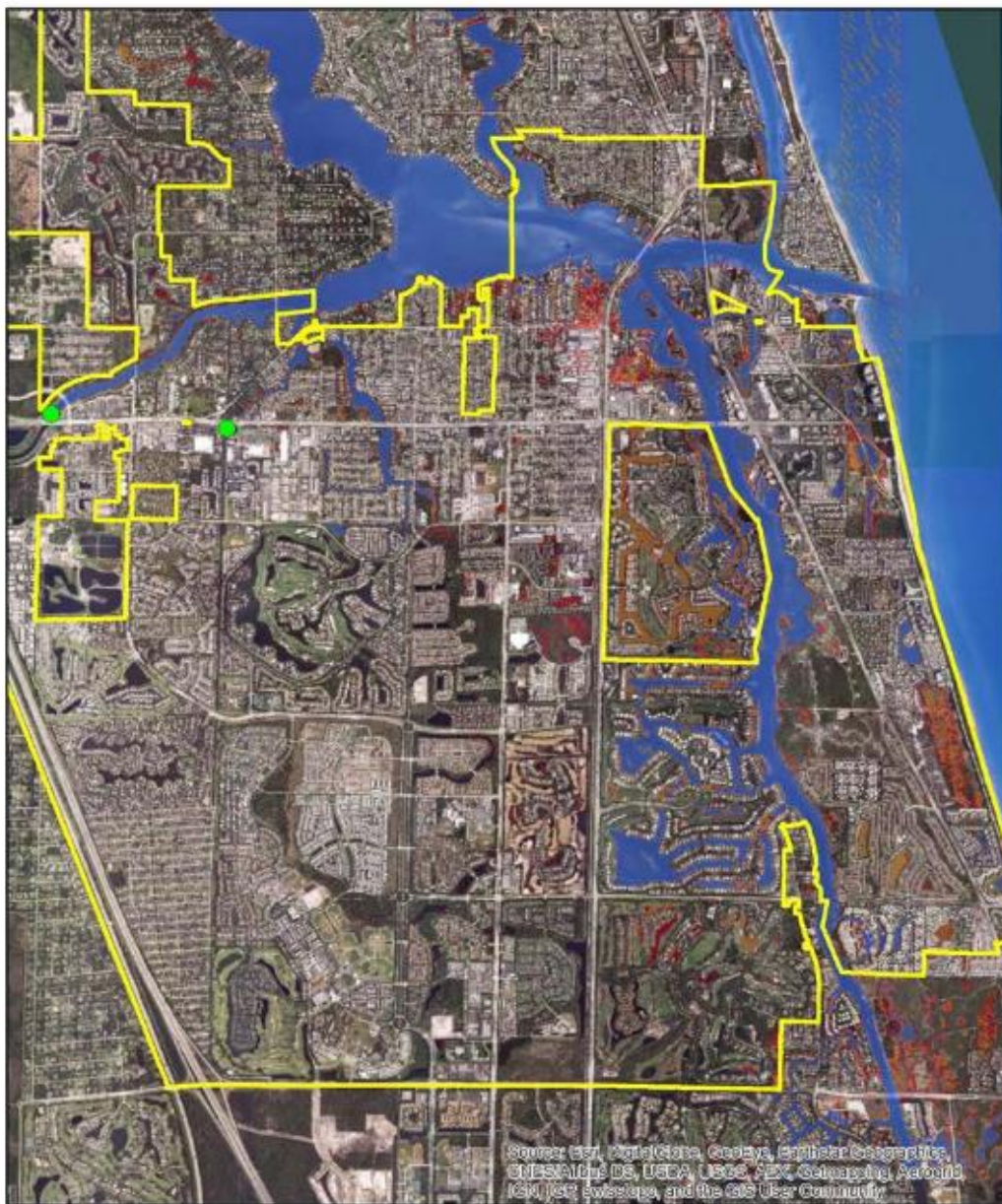
- Minimize the risk of flooding
- Development of Adaptation Action Areas within the Town most at-risk to impacts of climate change
- Improve water quality of stormwater discharges

The 2017 Stormwater Master Plan Update recommended that the Town begin proactively addressing sea level rise by investing in planning, phased infrastructure improvements, and code changes to increase resiliency and instill confidence within the community. The potential impacts of climate change and sea level rise will likely cause the Town to be faced with numerous challenges including localized flooding and resulting property damage due to tidal back flow into low lying areas, inland flooding due to reduced drainage capacity, and property damage and coastal erosion

The MPU simulated future sea level rise to identify areas of Town most susceptible to flooding where inundation was evaluated at 1, 2 and 3-ft sea level rise as depicted in **Figure B-3**. The areas of Seminole Ave Pump Station Basin and Yacht Club Estates (depicted in **Figure B-4**), portions of Sims Creek and Jones Creek, and Carlin Park were identified as most at-risk.

The sea level rise simulation combined with consideration for the criticality and function of existing assets within the vulnerable areas were used to facilitate project planning and prioritization. There is uncertainty in the magnitude and timing of sea level rise. As such, it was recommended that the Town approach in incremental steps with planned, phased improvements. Additionally, near term projects should be designed and constructed in a way that considers climate change, is adaptable and permits future additions to manage sea level rise. **Figure B-5** illustrates this concept. The Yacht Club Estates drainage improvement project represents a recent example of implementing adaptable solutions – the drainage outfall was designed to permit easy installation of a pump station should gravity conveyance be impacted by sea level rise.

The Stormwater Master Plan Update recommended completion of Town-wide vulnerability assessment and establishment of Adaptation Action Areas for areas of Town most vulnerable to impacts associated with climate change. This assessment would include development of a model that expands upon the sea level rise simulations accounting for existing stormwater infrastructure and head loss with hydrologic/hydraulic components such as rainfall intensity, and storm surge. System-wide modelling would likely predict more expansive inundation scenarios than that illustrated in Figure B-3. The vulnerability assessment would also consider asset criticality. For example, utilities, emergency response networks, or major highway systems are all critical assets requiring greater prioritization to reduce the risk of flooding. The vulnerability assessment can be used to inform the establishment of Adaptation Action Areas for areas of Town most vulnerable to impacts associated with climate change including sea level rise.



Inundation Extent Based  
on 1992 Mean Sea Level



Legend	
	1 Foot SLR
	2 Foot SLR
	3 Foot SLR
	Salinity Barrier

Figure B-3 Predicted Flood Inundation at 1, 2, and 3-ft Sea Level Rise for the Town of Jupiter

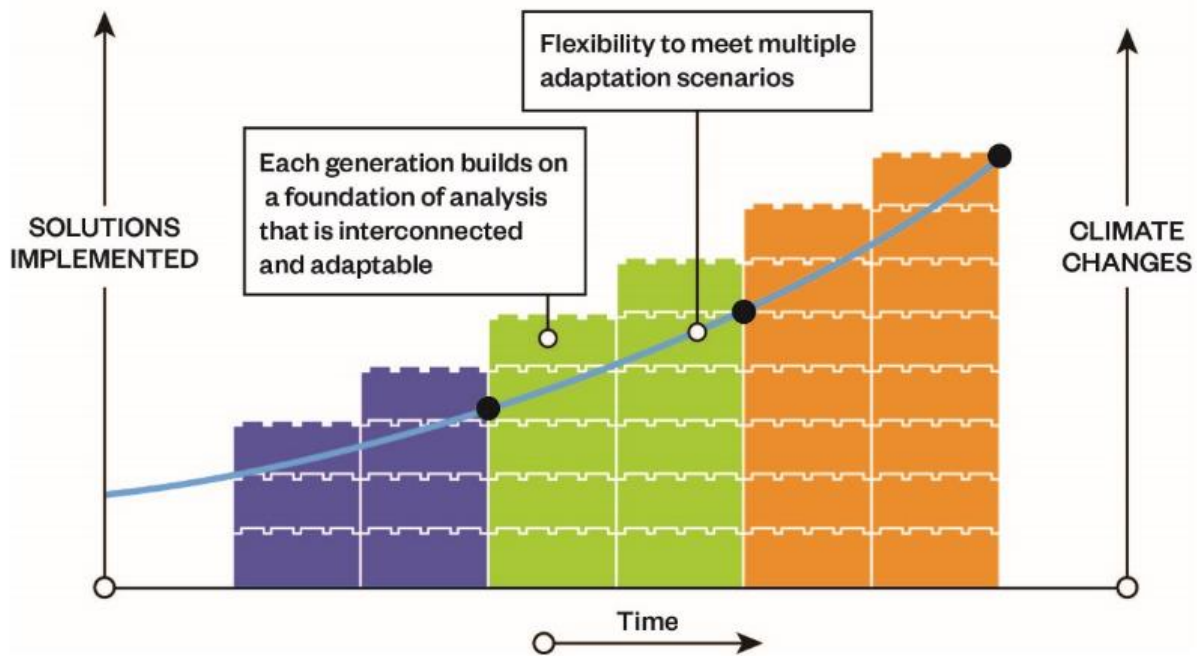


Inundation Extent Based  
on 1992 Mean Sea Level



Legend	
	1 Foot SLR
	2 Foot SLR
	3 Foot SLR

Figure B-4 Predicted Flood Inundation at 1, 2, and 3-ft Sea Level Rise for Seminole Basin and Yacht Club Estates



**Figure B-5 Implementation of Adaptable Solutions**

The Stormwater MPU also addressed ongoing regulatory process changes related to updated numeric nutrient criteria for the Loxahatchee River as well as continued requirements to improve the water quality of stormwater discharges. The Utility worked with other stakeholders in the Loxahatchee River basin to develop a Reasonable Assurance Plan (RAP) for submission to the Florida Department of Environmental Protection. The RAP outlined nutrient reduction achieved, to date, along with future projects that will offer additional water quality improvement to reasonably demonstrate that all stakeholders within the Loxahatchee watershed are moving towards compliance. As future stormwater improvement projects are in the planning and design phases, the MPU recommends review and inclusion BMPs that offer additional nutrient reductions, where applicable. Water quality enhancement was considered in the following projects proposed in the 2017 MPU:

- Juno Street Pump Station: use of an innovative Jellyfish Filter technology
- Pine Gardens North: water quality improvements with construction of exfiltration

Any water quality improvements including nutrient reductions are documented for stormwater projects which discharge to impaired water bodies in the Loxahatchee watershed for inclusion in subsequent updates to the Loxahatchee RAP.

## 4.2 2019 Water Supply Facilities Work Plan Update

The Town's water utility completed its 10-year Water Supply Facilities Work Plan update as required by Chapter 163, Part II of Florida Statutes and submitted it to SFWMD. Local governments are required to complete and adopt this Work Plan into their comprehensive plans within 18 months of SFWMD's completion of its regional water supply plan. The Town's Work Plan must address specific statutory requirements, as outlined below:

- Identify water supply sources
- Adequacy of raw water and facilities needed to serve existing and new development
- Development of traditional and alternative water supplies
- Water management strategies
- Conservation and Reuse

**Table B-6**, on the following page, summarizes the statutory requirements and utility's solution or program to comply with regulatory requirements. Improving the viability and utilization of the Town's surficial aquifer recharge system, which is limited by restrictive permit operating criteria, was the primary outstanding issue highlighted within the work plan. The recharge system provides increased surface water storage and surficial aquifer recharge utilizing freshwater that would otherwise be wasted to tide. The recharge system, when fully developed, is expected to offset some of the effects of urban groundwater withdrawals by replenishing the resource, thereby minimizing the risk of environmental harm, including wetland drawdowns and saltwater intrusion. The long-term sustainability of the region's water resources, and freshwater environment will be greatly enhanced through the operation of this system.

The Utility's Work Plan including accomplishments and future goals were submitted and accepted by SFWMD in 2019. Work Plan objectives were compared and found to be consistent with the Town's Comprehensive Plan Goals, Objectives and Policies. The Work Plan was adopted, by reference, within the Comprehensive Plan in 2019.

**Table B-6 Summary of Utility Implementation of Water Supply Work Plan Requirements**

Statutory Requirement	Utility Solution
Identify water supply sources	<ul style="list-style-type: none"> <li>The water utility relies on two (2), separate water sources to meet service area water demand: surficial and Floridan aquifers.</li> </ul>
Availability and facilities needed to serve existing and new development	<ul style="list-style-type: none"> <li>Review of population projections for the water utility service area demonstrated adequate raw water and treatment capacity was secured through 2040</li> </ul>
Development of traditional and alternative water supplies	<ul style="list-style-type: none"> <li>The Floridan aquifer is an alternative water supply that has offset demand and minimized over withdrawal from the surficial aquifer, a traditional water supply source.</li> <li>Reinforcement of projects identified in the 2017 MPU including investments in Floridan aquifer system to ensure long-term sustainability.</li> <li>Funding of asset maintenance and renewal and replacement to support sustainability of both source waters</li> </ul>
Water management strategies	<ul style="list-style-type: none"> <li>Continue with saltwater intrusion monitoring program for surficial aquifer system to provide an early warning of potential environmental harm.</li> <li>Improve viability and utilization of the existing surficial aquifer recharge system.</li> </ul>
Conservation and Reuse	<ul style="list-style-type: none"> <li>Water conservation is supported through Town code including:               <ul style="list-style-type: none"> <li>Water conservation rate structure</li> <li>Water shortage restrictions</li> <li>Landscape irrigation restrictions</li> <li>Plumbing code</li> </ul> </li> <li>Utilities department programs promote water conservation including:               <ul style="list-style-type: none"> <li>Meter replacement program</li> <li>Public outreach</li> </ul> </li> <li>Continue to partner with LRD to promote expanded use of reclaimed water, where feasible</li> </ul>

## 4.3 2020 Risk and Resilience Assessment

The Town performed a comprehensive Risk and Resilience Assessment (RRA) in 2020 with the purpose of assessing the risks to, and resilience of, their water system in support of compliance with America's Water Infrastructure Act (AWIA) of 2018. The RRA evaluated the water system, including the following elements:

- The risk to the system from malevolent acts and natural hazards
- The resilience of the infrastructure, including SCADA/cyber resilience
- The monitoring practices of the system
- The financial infrastructure of the system
- The use, storage, or handling of various chemicals by the system
- The operation and maintenance of the system

As part of the confidential RRA, the Town characterized their water system assets, identified risks/threats to those assets, and evaluated countermeasures that could be implemented to minimize risks to their water system and thereby enhance resiliency.

To address the top risks, Hazen developed an implementation plan with the Town, which contains actionable steps to improve the Town's resilience to potential threats. The confidential plan outlined proposed projects, priority level and conceptual costs that were rolled up into the Town's CIP to enhance the resilience of the water system. These projects included:

- Continued and adequate funding of the Asset Maintenance Renewal and Replacement (AMRR) CIP including:
  - Water Treatment Plant (WTP) SCADA improvements
  - Distribution system improvements including construction of redundant water supply to critical WTP chemical feed systems
- WTP Control System Cybersecurity
- WTP Hardened Server Building and Training Facility

## 4.4 2022 Master Plan Update

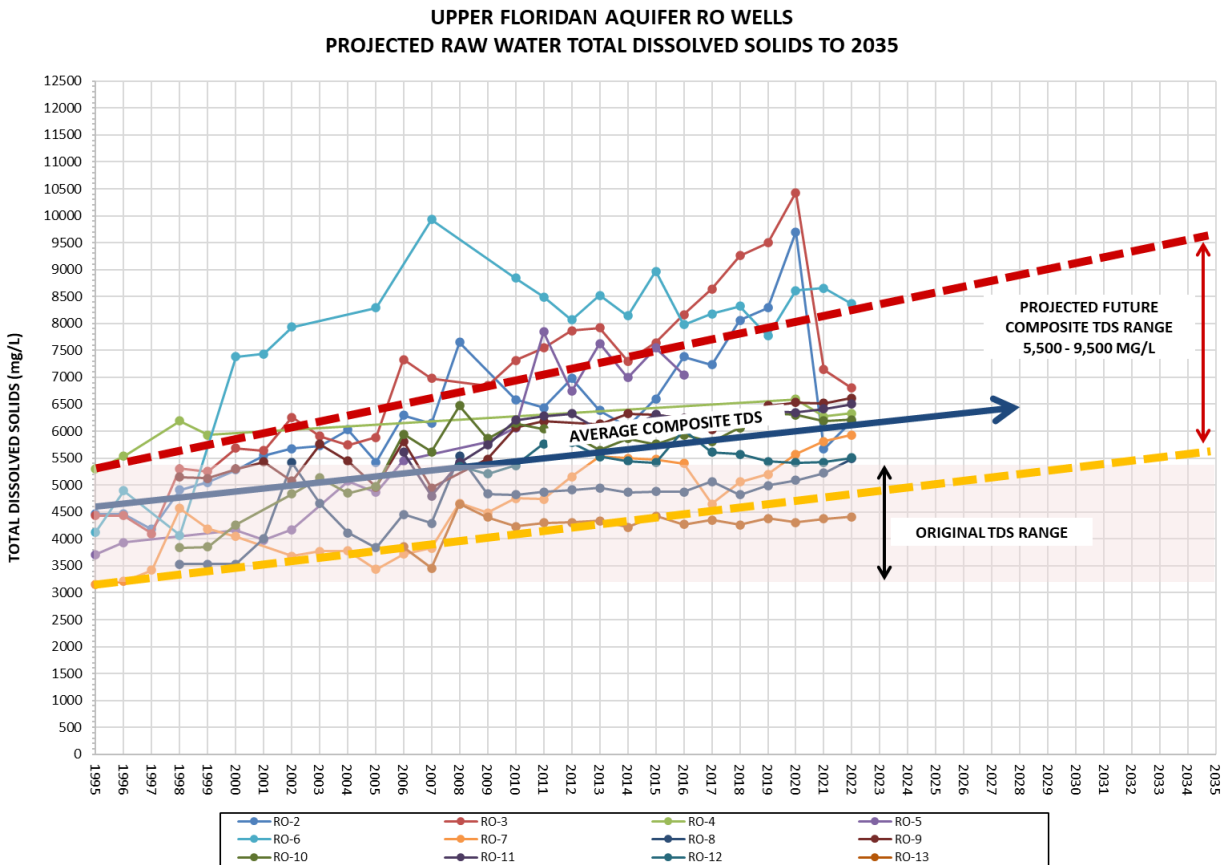
Water and stormwater master plan updates (MPU) were updated in 2022. Prevalent issues in the 2022 Water MPU included management and disposal of concentrate, continued investments to ensure the adequacy of raw water supplies and impending regulatory changes; the Stormwater MPU maintained focus on the potential impacts of climate change including sea level rise and reduction of nutrients in stormwater discharges. Both MPUs addressed cost escalation and supply chain constraints impacting both utilities' operating and CIP budgets as well as the continued need to sufficiently plan for and fund renewal and replacement of aging assets in both utilities.

### 4.4.1 Water Master Plan Update

The 2022 Water MPU focused on the following issues:

- Long term sustainability of raw water supply sources
- Climate change and coastal resiliency
- Regulatory Changes
- Concentrate management and disposal

Challenges associated with the Floridan aquifer raw water supply presented in the 2017 MPU were re-emphasized in the more recent MPU. The Utility had completed several well rehabilitation projects and water quality improvements were evident from those efforts. **Figure B-6** presents the long-term trend of wells' salinity where the rate of increase has slowed; however, investment in wellfield expansion was still required to allow individual wells to operate at a lower, safe yield that ensures their longevity. The 2022 MPU re-prioritized the schedule for future phased improvements to the RO plant to align with expected raw water degradation.



**Figure B-6 Floridan Aquifer Water Supply Water Quality Trend Update** (Source: Town of Jupiter 2022 MPU)

The 2022 MPU explored challenges associated with surficial aquifer system and recommended a suite of projects within the 25-year CIP to plan for replacement of aging wells and portions of raw water main (RWM). The developed residential areas where much of these projects are to occur increases the complexity of planned replacement projects for the surficial aquifer system. One of the more ambitious projects includes construction of a new, redundant 30-inch RWM as illustrated in **Figure B-7**. The 2022 Water MPU re-emphasized the importance of considering climate change and coastal resiliency within planning efforts. Saltwater intrusion is still the greatest potential risk to the surficial aquifer system where protection could be enhanced through development of AAAs.

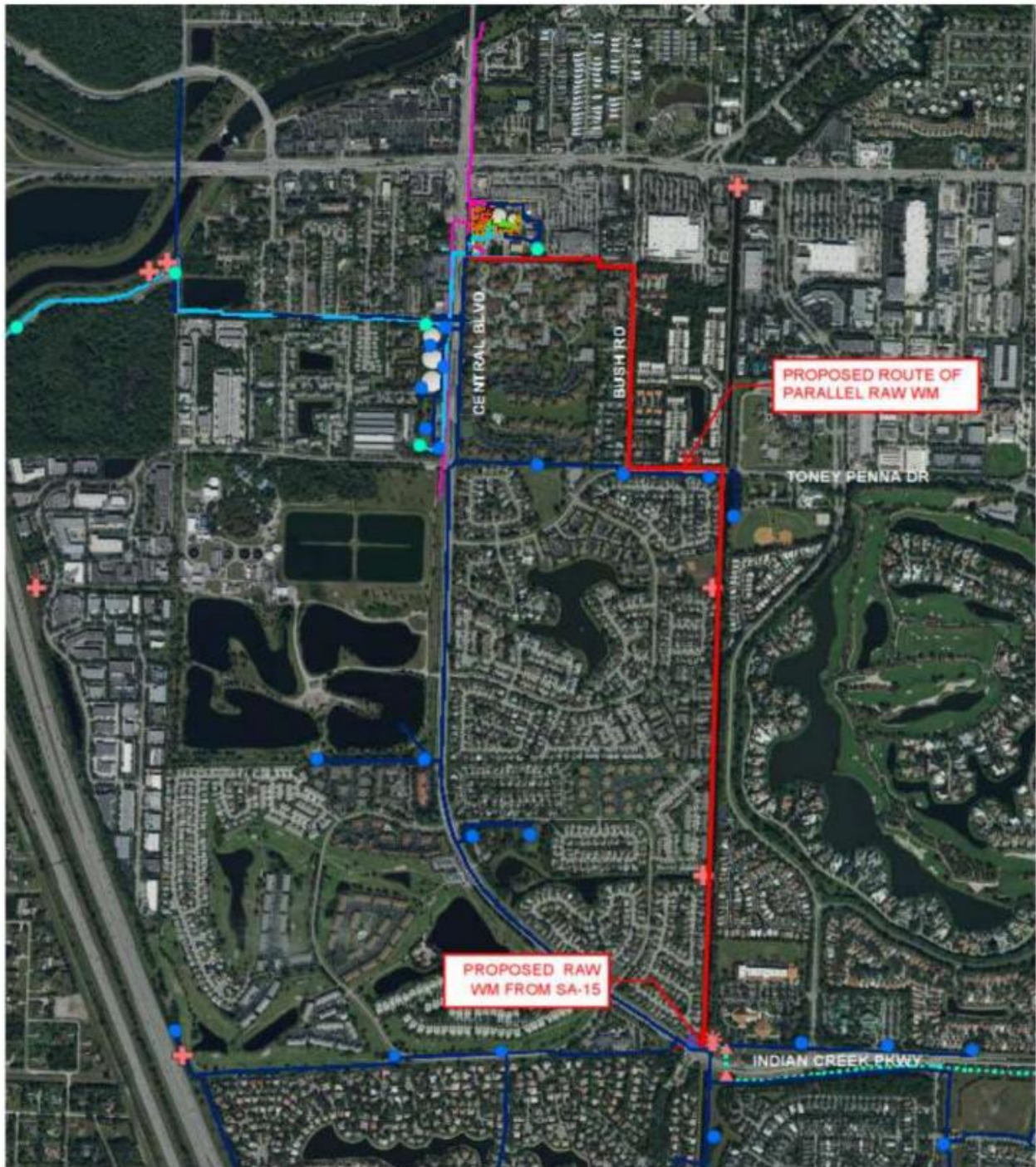


Figure B-7 Proposed Route of Replacement 30-inch Raw Water Main (Source: Town of Jupiter 2022 MPU)

The 2022 Water MPU highlighted a number of pending regulatory changes that will impact the Town's water utility including anticipated, new regulations for groups of compounds collectively referred to as per- and polyfluoroalkyl substances (PFAS). PFAS are a group of manmade chemicals used in variety of industries including fire-fighting foam, non-stick cookware and food packaging, and stain-resistant technologies. PFAS chemicals are very persistent in the environment and in the human body – meaning the chemicals do not break down and they can accumulate over time. PFAS has been detected in the surficial aquifer system where its presence is attributed to the reclaimed water system. The water utility is well positioned to address PFAS regulation due to its investment in membrane technology; however, long-term strategies are needed for public health protection and environmental remediation. The 2022 Water MPU recommended the following concerning PFAS:

- Community outreach and education to improve consumer confidence as PFAS makes national headlines
- Continued monitoring to assess the potential for accumulation of PFAS in raw water supplies
- Pilot testing evaluations to evaluate long-term treatment strategies for PFAS
- Partnership with LRD and other stakeholders to strengthen long-term environmental remediation strategies

The most complex and costly issue presented in the 2022 Water MPU included evaluation of long-term RO and NF concentrate management strategies. The Town's RO and NF treatment processes each produce a separate concentrate byproduct which requires management and disposal. Historical concentrate management is illustrated in **Figure B-8** where NF concentrate is recycled to LRD's reuse system and RO concentrate is discharged to the C-18 canal. The Town evaluated their long-term concentrate management options as renewal of an interlocal agreement with LRD to accept NF concentrate were not successful and potential regulatory changes could dictate RO concentrate discharge permit renewal requirements. The 2022 MPU explored a range of alternatives for concentrate management where final recommendations are outlined below and illustrated in **Figure B-9**.

- Construction of a deep injection well (DIW) as the primary disposal method for RO concentrate and backup disposal option for NF concentrate.
- Evaluation of the feasibility to continue NF concentrate reuse by blending with brackish, Floridan aquifer raw water and treating in the existing RO plant
- Alternative NF concentrate disposal using the proposed DIW

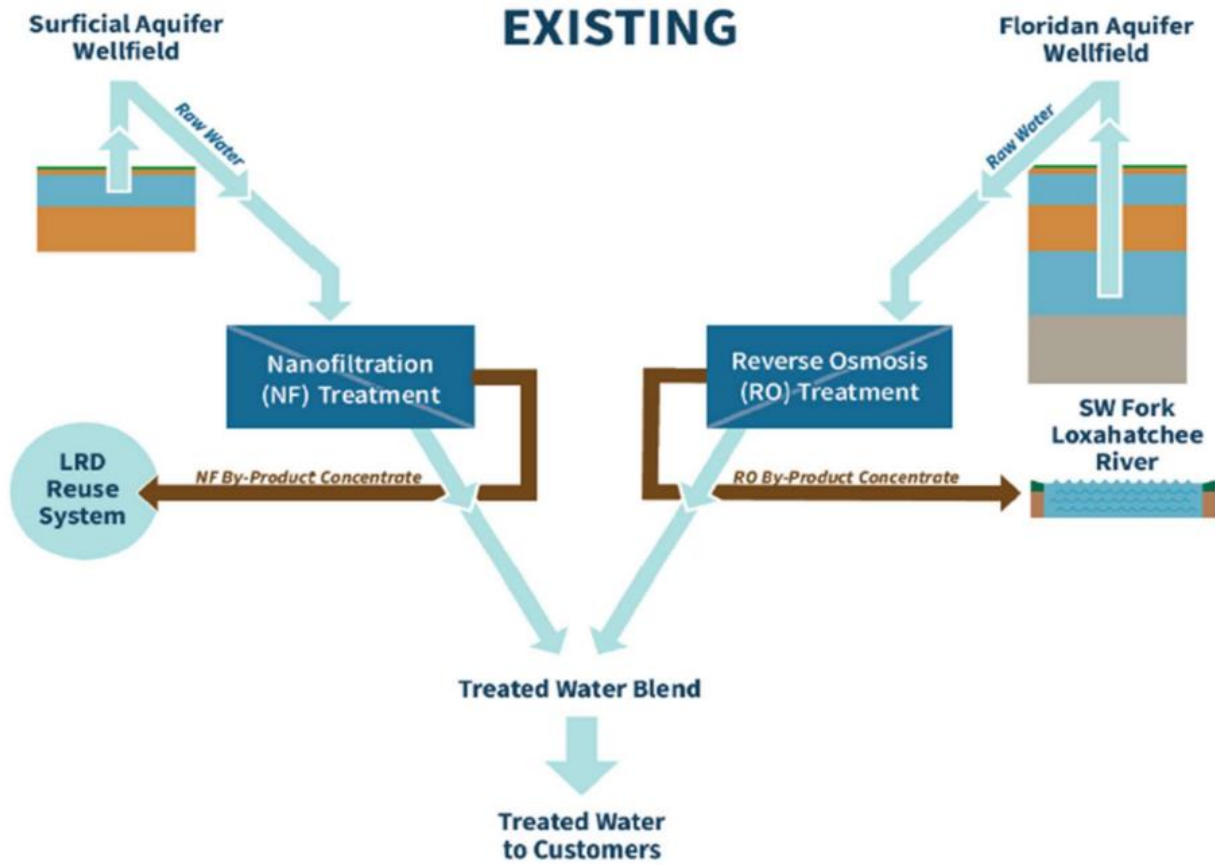
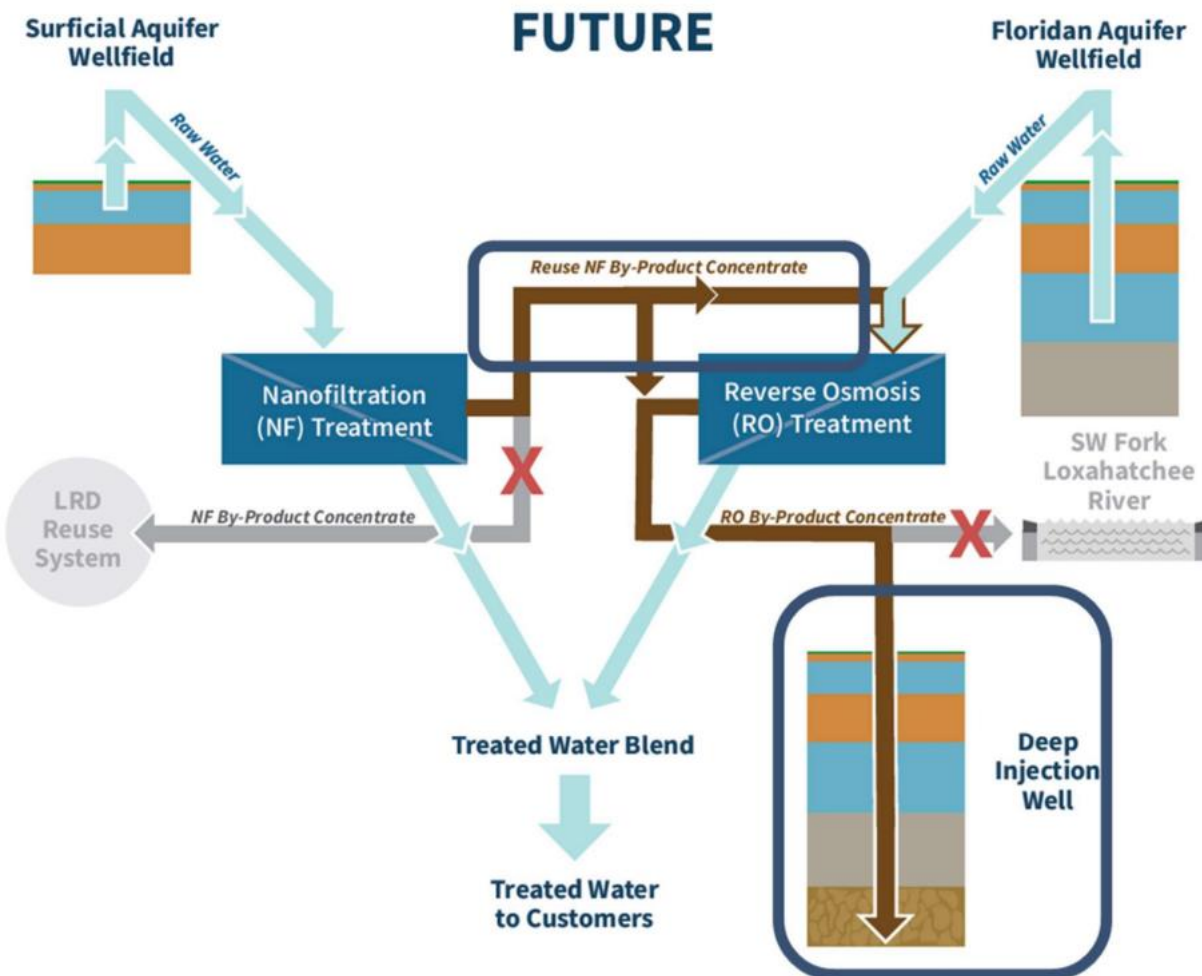


Figure B-8 Town of Jupiter Existing Concentrate Management Strategies



**Figure B-9 Town of Jupiter’s Proposed Concentrate Management Strategies**

The costs to implement the revised concentrate management strategies are significant and estimated at ~\$28M. However, the 2022 Water MPU emphasized the net positive impacts of this transition, which include:

- Disposal of the RO concentrate via the DIW will reduce nitrogen loading to the SW Fork of Loxahatchee River, which is expected to further strengthen the success of the Loxahatchee River Pollutant Reduction Plan accepted by FDEP to address impairments within the Loxahatchee watershed
- Disposal of the RO concentrate will reduce annual operating costs, in both chemical usage and energy consumption, associated with the RO concentrate treatment facility
- NF concentrate blending with the Floridan aquifer raw water will offset the expected increase in salinity over time delaying costly upgrades planned for the RO treatment process as well as operating costs associated with energy consumption

- NF concentrate blending will provide up to 2.5 to 3.0 mgd of additional raw water to the RO treatment process with potential to replace planned construction of additional Floridan aquifer water supply wells
- The DIW provides a long-term and sustainable disposal strategy for both the RO and NF treatment facilities permitting the Town to operate both facilities, as necessary, to meet regional water demands

Careful planning has allowed the Town to transform concentrate management challenges into opportunities to strengthen the utilities' future and improve environmental protection for the region.

#### 4.4.2 Stormwater Master Plan Update

Major topics explored in the 2022 Stormwater Master Plan Update (MPU) included evaluation of:

- The Town's preparedness for and resiliency to climate change including sea level rise
- Level of Service (LOS) standards and projects necessary to reduce flooding
- Improving the water quality of stormwater discharges with emphasis on outfalls to impaired waterbodies within the Loxahatchee River.

Similar to discussion included in the 2017 MPU, the impacts of climate change and sea level rise are likely to present numerous challenges to the Town of Jupiter Stormwater Utility. The 2022 Stormwater MPU revisited the sea level rise "bathtub" model using the Compact's 2019 projections, which were revised upward and included data from NOAA. The 2022 Stormwater MPU highlighted the need to not only consider the Compact's sea level rise at mean sea level (MSL), but also consider high and maximum or "king" tide elevations for planning purposes, as infrastructure would first start to be regularly impacted or inundated during the high daily tidal cycles. High level findings included:

- Areas most likely to be impacted by inundation match those identified in the 2017 MPU.
- The need to conduct detailed hydrologic/hydraulic modeling that incorporates the Town's stormwater infrastructure in order to more accurately estimate the impacts associated with rising sea levels.
- Flood inundation will likely be more expansive when taking into account head losses associated with the conveyance system than those predicted with the NOAA Sea level rise and Coastal Impacts data

The 2022 Stormwater MPU included recommendations for thirteen (13) flood control improvement projects to increase resiliency to climate change and sea level rise. Five (5) additional stormwater improvement projects have been prioritized with the CIP that offer water quality benefits where grant funding will be pursued to offset project costs. The total estimated cost for these planned improvements represents close to a \$22 million investment.

The 2022 Stormwater MPU reviewed existing flooding LOS standards, which are documented in the [Town of Jupiter Water Utilities Guide for Development Design and Construction Standards](#). The Town has higher flood protection in some instances and for certain roads when compared with other

municipalities like Palm Beach and Miami Dade Counties. Design storms for determining the Town's LOS are based on the 1990 SFWMD rainfall frequency distribution and may warrant re-consideration in lieu of climate change impacts. Broward County completed a study that evaluated increase in future rainfall where "change factors" were developed and applied to typical, design storms for use in determining critical flood elevations. A similar approach could be adopted by the Town to re-evaluate LOS standards.

The 2022 Stormwater MPU included an overview of the Town's ongoing efforts to improve the quality of stormwater discharges including nutrient reductions within the Loxahatchee Watershed. As discussed in the 2017 MPU, the Town is a key stakeholder in the Loxahatchee RAP, which was finalized into the Loxahatchee River Voluntary Pollutant Reduction (4e) Plan. The Town has responsibilities to monitor and update progress towards meeting the Pollutant Reduction Plan goals. One of the major projects identified within the Water MPU, construction of a DIW for RO concentrate disposal, will reduce total nitrogen discharge into the SW Fork of the Loxahatchee River benefiting the 4e Plan nutrient reduction goals.

## 4.5 Progress Towards Sustainability

The Water and Stormwater Master Plans recommended a number of projects to address highlighted issues, which were prioritized using various metrics including:

- Long-term performance
- Asset criticality
- Vulnerability
- Feasibility of implementation
- Cost

For example, the Stormwater MPU included development of a simple, "bathtub" model where sea level rise scenarios at 1-ft, 2-ft and 3-ft were modelled to identify the area(s) most vulnerable to flood inundation. Stormwater projects were prioritized for those communities to reduce the risk of flooding. The Water MPU evaluated non-cost factors such as constructability, ease of permitting, operational flexibility and reliability in addition to project cost when considering investment in future, Floridan well sites and concentrate management strategies. Planning included an evaluation of the financial capacity for each utility and offered funding strategies for those projects support long-term economic viability for both utilities.

Much of the utilities' progress towards a sustainable future includes investment in structural, adaptation solutions as summarized in

Table B-7 Summary of Adaptation Actions Underway or Planned for Water and Stormwater Utilities

. Project summaries do not include all Utilities' CIP projects, but those referenced within this report and/or reinforcing commitment to a sustainable and resilient future.

**Table B-7 Summary of Adaptation Actions Underway or Planned for Water and Stormwater Utilities**

Adaptation Action	Status	Description
<b>Water Utility</b>		
Floridan Wellfield Expansion	Underway / Planned	Three (3) additional Floridan aquifer wells are in the construction phase with two (2) additional planned in the future. Work includes RWM extension and an electrical building with emergency generator to power the new wellfield
RO Treatment Plant Improvements Phases I & 2	Underway / Planned	Phased improvements to the existing RO treatment facility are underway to address Floridan aquifer raw water degradation, which include replacement of membranes, energy recovery devices and process pipe to enhance resiliency of treatment process
Pilot Test Evaluations for Future Treatment Needs	Underway	The water utility conducts ongoing pilot and related research evaluations to optimize water treatment, evaluate contaminants of emerging concern like PFAS, and assess future treatment needs
Surficial Aquifer Well Replacement Program	Underway / Planned	Phased replacement of aging surficial aquifer wells is underway/planned within the CIP schedule to ensure viability of water supply as system approaches maturity
Floridan Aquifer Well Replacement Program	Underway / Planned	Phased improvements to original Floridan aquifer wells are underway/planned to address water quality degradation through rehabilitation efforts and mechanical improvements to wellheads that incorporate resilient design. These efforts are combined with wellfield expansion to ensure long term sustainability of water supply
NF Concentrate Blending with RO Raw Water	Underway	Evaluation of project feasibility using pilot testing is underway. Upon completion of pilot evaluations and confirmation of treatability requirements, improvements to the water treatment plant process will be designed and constructed to offer an alternative NF concentrate disposal strategy
Deep Injection Well System	Underway / Planned	Permitting for the DIW project is underway with construction anticipated to begin by the end of 2023. The project will consist of DIW construction and various improvements at the existing water treatment plant to modify plant piping and construct a pump station. The system is anticipated to be in service by early 2026
<b>Stormwater Utility</b>		
Elsa and Paulina Roads Drainage Improvements Phases I & 2	Completed / Planned	Elsa Road exists within the low-lying Yacht Club Estates neighborhood identified as a vulnerable area to sea level rise. Previous stormwater improvements were installed for the community in 2018, which included an adaptable wet well that could be equipped with a pumped discharge to the outfall. Phase 2 of the project includes installation of the pumps after 2027
Juno Street Pump Station	Underway	This project includes a 50CFS stormwater pump station and associated piping and structures to alleviate flooding within the surrounding community and provide redundancy to the Seminole Avenue Stormwater Pump Station.

**Table B-7 Summary of Adaptation Actions Underway or Planned for Water and Stormwater Utilities**

Adaptation Action	Status	Description
North A1A Drainage Improvements	Planned	The intersection of North A1A and Indiantown Road experiences nuisance flooding following heavy rain events. This project will consist of installation of drainage pipe, catch basins and manholes complete with water quality improvements
River Road Drainage Improvements	Planned	River Road and Killane Drive exist within the low-lying Seminole Avenue Stormwater Pump Station Basin identified as vulnerable to sea level rise. The project includes installation a 1-2 foot high berm along the north side of Killane Road, and assist the residential properties through cooperative planning on raising the road crowns of River Road
Eganfuskee Street Infrastructure Improvements	Completed / Planned	Eganfuskee Street exists within the low-lying Yacht Club Estates neighborhood identified as a vulnerable area to sea level rise. The road has historically experienced nuisance and King Tide flooding. Improvements were previously completed to install a berm near the existing outfall along with a tidal check valve. Future improvements will incorporate a hydrodynamic separator, additional inlets and underground piping to connect the system
Green Infrastructure	Completed	Elements of green, stormwater infrastructure, including permeable pavement and bioswales, have been used in Town-initiated projects at A1A/Inlet Village, Sims Creek Preserve and Cinquez Park.
Loxahatchee Backwaters Natural Area	Planned	Redevelopment plans for the 7.6-acre property acquired by the Town under the Open Space Program. Components of redevelopment may include: <ul style="list-style-type: none"> <li>• Non-motorized public access</li> <li>• Wetlands</li> <li>• Green infrastructure</li> <li>• Living shoreline</li> </ul>

## 4.6 Future Opportunities

The water and stormwater utilities have emphasized the challenges associated with climate change/ sea level rise and critical need to implement policies and adaptable solutions to help position the Town to effectively manage current and future impacts. The utilities’ master planning process along with related plans and studies, have facilitated the development of various strategies and planned infrastructure investments to offset and prepare for future challenges. Still, a series of non-structural or policy-related recommendations have been offered within these documents as summarized in **Table B-8**, which represent mitigation and/or adaptation actions that the Town can explore and implement, where feasible, within sustainability plan development.

Two (2) policy related recommendations were originally offered in the 2017 MPU associated with the need to complete a vulnerability assessment (or adaptation action plan) and consider development of Adaptation Action Areas for the Town. These were subsequently incorporated as Policies 2.6.4 and 2.6.5 within the Coastal Management Element of the Comprehensive Plan to complete an evaluation of feasibility by December 2023.

**Table B-8 Summary of Recommended Adaptation Actions for Water and Stormwater Utilities**

Adaptation Action	Description
<b>Water Utility</b>	
Improve Viability of Surficial Aquifer Recharge System	The recharge system provides increased surface water storage and surficial aquifer recharge utilizing freshwater that would otherwise be wasted to tide through a conveyance system that is largely in place. In the Loxahatchee River Watershed Restoration Project, 25 cfs of recharge flow was identified as necessary to offset impacts related to withdrawal from the aquifer; however, there has been no commitment from SFWMD, to date. The recommended strategy will require cooperation with SFWMD and permit modification
Establish Adaptation Action Areas for the Surficial Aquifer System	Development of an Adaptation Action Area for the surficial aquifer system can enhance protection of the resource from sea level rise impacts including saline intrusion. Within the Adaptation Action Area, non-Town owned surficial aquifer withdrawal facilities would be consolidated and replaced with connection to the Town's regional water supply system and/or LRD's reuse system. The recommended strategy will require significant cooperation amongst the Town, LRD, SFWMD and the applicable private entities
<b>Stormwater Utility</b>	
Complete a Vulnerability Assessment*	Complete a vulnerability assessment performed in accordance with requirements by FDEP and the Resilient Florida Grant Program. The Plan includes conducting exposure and sensitivity analyses along with hydraulic modeling to identify flood vulnerabilities and associated impacts to critical and/or significant regional assets. This Plan could be completed in partnership with other municipalities. Vulnerability assessments completed in accordance with State requirements are eligible for funding under the Resilient Florida Grant Program. Future projects planned within "vulnerable" areas may be eligible for grant funding.
Perform Hydrologic/Hydraulic Modeling Analysis	Expand upon "bathtub" sea level rise scenarios presented in the 2017 and 2022 MPUs where detailed modeling would be completed that incorporates existing stormwater infrastructure and increased rainfall duration and frequency. Detailed modeling would likely result in more expansive, predicted inundation than sea level rise scenarios alone. Modeling would be incorporated within the vulnerability assessment to identify at-risk areas of Town eligible for grant funding and complement future master planning efforts to prioritize infrastructure funding

**Table B-8 Summary of Recommended Adaptation Actions for Water and Stormwater Utilities**

Adaptation Action	Description
Establish Adaptation Action Areas for Flooding*	<p>Based on language included in Florida Statute Chapter 163, AAAs mean 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:</p> <ul style="list-style-type: none"> <li>• Prioritization for focused vulnerability assessments</li> <li>• Prioritizing funding for infrastructure needs including evaluation of grant eligibility</li> <li>• Limiting certain types of development</li> <li>• Enhanced building code requirements</li> <li>• Increased requirements for elevations of roads, parking lots, seawalls, etc.</li> </ul>
Establish Seawall Height Ordinance	<p>Investigate the feasibility of implementing minimum seawall heights for new construction, reconstruction or rehabilitation of public and private seawalls and/or mandatory improvements to seawalls observed to allow tidal flooding. The investigation would outline consequences and benefits of implementing seawall elevation requirements. Any revisions would be incorporated into the Town's code of ordinances</p>
Evaluate Rainfall Frequency Change Factors and LOS Flood Standards	<p>Design storms for determining the Town's flooding LOS are based on the SFWMD rainfall frequency distribution from 1990 and may warrant re-consideration in lieu of climate change impacts. Broward County completed a similar study to establish "change factors" applied to typical, design storms for determining critical flood elevations. Change factors can be compared with current LOS flooding standards</p>
Encourage Green Infrastructure	<p>Promote the use of green infrastructure through the creation of a suite of green infrastructure practices approved by the Town. Standard infrastructure details for use by consultants or developers including, but not limited to, bioswales, bioretention and permeable pavement for Town and private use of restored and created wetlands.</p>

\*Evaluating the feasibility of the recommended action is identified in the Town's Comprehensive Plan, Coastal Management element to be completed by 2023

## 5. Southeast Florida Regional Climate Change Compact

The Compact is a partnership between Broward, Miami-Dade, Monroe, and Palm Beach counties to foster sustainability and climate resilience at a unified regional scale. One of the initial objectives of the Compact was to unify the existing local sea level rise projections to develop a single set of regional sea level rise projections. The Institute for Sustainable Communities (ISC) serves as the secretariat for the Compact and provides implementation support for its activities. On December 15, 2015, the Town Council adopted Resolution No. 86-15 endorsing and affirming the Compact's efforts. The Town's ongoing participation with the Compact is included as Policy 2.6.1 within the Comprehensive Plan Coastal Management Element.

## 5.1 Regional Climate Action Plan Overview

The Compact first developed the Regional Climate Action Plan (RCAP) in 2012 as a guiding tool for coordinated climate action in Southeast Florida. In particular, the Compact’s guidance document, “Integrating Climate Change & Water Supply Planning in Southeast Florida,” outlines methodologies for incorporating the RCAP’s goals/recommendations into local water utility comprehensive planning. The RCAP has been updated every five (5) years since its initial development. The Town remains dedicated to the goals of the Compact by advancing water management strategies, resilience and sustainability investments, infrastructure improvements, and conservation efforts to mitigate the impacts of climate change and sea level rise on the water system. Between 2014 and 2016, the Town’s utility self-reported their implementation activities related to RCAP recommendations, which was included in the 2022 Water MPU.

## 5.2 Compact Climate Assessment Tool

The Compact recently developed the Climate Assessment tool (C-CAT) in response to stakeholder interest in a shared tool to help identify, track, and report on the priority mitigation and adaptation strategies, and provide a means for communicating resilience progress across the region. The C-CAT focuses specifically on the top priority mitigation and adaptation actions, as summarized in **Table B-9**. These 11 actions were identified by the Compact as foundational to climate resilience in Southeast Florida.

**Table B-9: Compact Climate Assessment Tool Priority Actions**

Priority Action	Priority Action Description
<b>Greenhouse Gas Emission Mitigation Priority Actions</b>	
Mitigation Action #1	Establish internal (government operations) and community-wide targets/commitments for greenhouse gas emissions reductions and renewable energy goals, measure, and publicly report progress.
Mitigation Action #2	Improve building energy efficiency and conservation in new and existing buildings, across both residential, commercial, and government buildings.
Mitigation Action #3	Advance the use and adoption of solar energy within government operations and community-wide
Mitigation Action #4	Expand the use of electric vehicles (EVs) and the installation of EV infrastructure both within government operations and community wide.
Mitigation Action #5	Reduce vehicle miles traveled. This may include major public transit investments, bike and pedestrian investments, alternative work schedules, and transit-oriented development.

**Table B-9: Compact Climate Assessment Tool Priority Actions**

Priority Action	Priority Action Description
<b>Adaptation Priority Actions</b>	
Adaptation Action #1	Conduct internal assessment of capacity to advance adaptation and resilience initiatives. This should include identifying potential staff and financial resources/capacity. In some cases, staff/resources may already support activities and projects that advance adaptation/resilience goals but are not identified as such. Should sufficient internal capacity not exist, seek support from your county, other municipalities, and other partners to develop a plan for how your local government will prioritize capacity for adaptation/resilience initiatives.
Adaptation Action #2	Conduct vulnerability analysis of hazards related to climate change including, but not limited to, sea level rise, flooding, saltwater intrusion, heat, extreme weather. The analysis should assess exposure and sensitivity of various assets including, but not limited to critical infrastructure, communities/populations, historic/cultural assets, transportation, natural resources, and economic assets. Assessment should seek to identify what factors contribute to elevated exposure and sensitivity, and what physical, social, institutional, human, and financial capacities exist to adapt, and where there are gaps.
Adaptation Action #3	Develop a community-wide adaptation/resilience plan, inclusive of specific actionable strategies and timeframes.
Adaptation Action #4	Planning: Incorporate risk reduction and equitable community resilience into planning. This may include comprehensive plans, housing initiatives, post-disaster redevelopment plans, stormwater management plans, transportation plans, and land development regulations, inclusive of low-impact development. Sea level rise projections should be included in all planning activities.
Adaptation Action #5	Policy: Advance policies that reduce risk and build equitable community resilience. This may include improving stormwater management practices, adopting urban heat policies, updating infrastructure standards, conducting remediation of contaminated sites, and updating building codes.
Adaptation Action #6	Capital Projects: Advance capital projects that reduce risk, adapt to changing climate conditions, and build equitable community resilience. This may include living shorelines, water infrastructure, resilience hubs, parks & open spaces, urban greening, tidal valves, pump stations, and road/bridge elevation.

### 5.3 Progress Towards Sustainability

Much of the water utility’s existing policies, programs and initiatives align with the Regional Climate Action Plan guidance. The following projects/programs are examples of the Water Utility’s advancement toward the Compact’s Regional Climate Action Plan recommendations:

- Ongoing development of surface water storage and surficial aquifer recharge system through construction of control structures, flow-ways and salinity barriers that seek to incorporate nature based solutions to enhance long-term sustainability of the region’s water resources and freshwater environment.

- Advocacy and leadership in restoration of the Loxahatchee River, a component of the Comprehensive Everglades Restoration Plan.
- State of the art NF and RO membrane water treatment technologies, enabling use of both the Floridan Aquifer and Surficial Aquifer raw water sources, providing water supply variability, and advancing sustainable water management.
- Ongoing wellfield water quality monitoring to continually adjust raw water production/pumping from each of the FA wells to enhance long term sustainability of the aquifer.
- Surficial aquifer saline monitoring program operated by the Town to monitor saltwater intrusion.
- Expanded use of reclaimed water through partnership with LRD to provide, on average, approximately 2 mgd of NF concentrate water to LRD for blending with reclaimed water and distribution in their reclaimed water system.
- Incorporation of the Unified Sea level rise Projection, published by the Compact, in utility planning and identification of methodologies to address sea level rise.
- Assessment of the Town's water system to proactively identify potential vulnerabilities to natural hazards, including climate change, and implement mitigation measures to enhance resilience of the system.
- Conservation strategies such as a conservation-based water rate structure, implementation of the SFWMD's Year-Round Water Conservation Rule, public outreach and advocacy of the Town's water conservation poster contest.
- Implementation of stormwater Best Management Practices and green infrastructure including wetland creation and similar strategies.
- Ongoing evaluation to determine the feasibility of implementing green infrastructure and net-zero greenhouse gas emission strategies in all future Utility projects.

## 5.4 Future Opportunities

The Compact has developed a number of tools to assist local governments with evaluating the sustainability and resiliency of their communities and identifying recommended policies to enhance climate resiliency within comprehensive and master plans. The most recent tool, C-CAT, includes five (5) key Greenhouse Gas Emission Mitigation and six (6) key Adaptation Priority Actions that are considered by the Compact to be foundational to climate resilience in Southeast Florida. Local governments can complete a self-assessment on progress towards the C-CAT for their community. The Town may consider alignment of their sustainability plan with these priority actions. An initial assessment could be conducted within the early phases of plan development; re-assessment would be completed at a specified interval to monitor progress towards building a sustainable and resilient community.

## 6. Environmental Task Force

The Environmental Task Force has offered a spectrum of contributions and insight into environmentally significant issues facing the Town. These include:

- Through formal motions, the ETF has offered their support for Town initiatives including a stormwater, pilot program on Turner Quay, implementation of the Street Tree Management Plan, Town resolution related to Glyphosate use, green local government initiatives, hydrologic stormwater projects to reduce nutrient loading,
- In 2019, the ETF compiled a list of future topics for discussion spanning a broad spectrum of relevant environmental issues
- In 2020, the ETF recommended that Town council adopt sustainability and resiliency as strategic goals, which were subsequently included in the Strategic Plan
- In 2021, offered an outline of Sustainability Plan topics to guide plan development
- In 2022, developed a memo of support for the Sims Creek Preserve and the Loxahatchee Backwaters Natural Areas Improvements and continued to participate in development of a Sustainability Plan

Additionally, they have provided a forum for the Town, businesses and other municipalities to present their ideas and progress on other related items while providing feedback and suggestions for improvement. These have included:

- Water quality and state of impairments within the Loxahatchee River and initiatives to improve River health
- The Town's ordinance to ban fertilizer during summer months
- Street tree management program
- Town of Jupiter policies and practices using Glyphosate on Town-managed property
- Jupiter's Green Local Government Initiatives
- Jupiter's solid waste management
- Ban of offshore drilling
- Jupiter's PURE campaign
- Palm Beach County Artificial Reefs
- Open space program and projects to improve acquired lands
- Per- and polyfluoroalkyl substances (PFAS) in Jupiter's water
- Solar Cooperatives

- Artificial Turf
- Sustainability and resiliency within the Town
- Partnership with Village of Tequesta Environmental Advisory Committee

The ETF has affirmed their desire to actively participate in environmental initiatives being explored by the Town while having the opportunity to provide recommendations on plans for open space property, relevant Community Investment Program (CIP) projects and construction of municipal buildings. They have indicated their desire for the Town to adopt green, local government standards that guide municipal operations and public investments through use of existing certification framework such as Leadership in Energy and Environmental Design (LEED). The ETF believes that the Town has the opportunity to lead, by example, in the pursuit of LEED or similar certifications for relevant CIP projects. The community will see this commitment, and in turn may positively influence behaviors to adopt more sustainable practices.

## Appendix C: Town of Jupiter Comprehensive Plan Elements, Objectives and Goals related to Sustainability Plan Assessment

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Goals	Sections and Objectives
<p><b>Future Land Use Element</b></p>	
<p><b>Goal 1:</b> Ensure that the future land use pattern maintains the existing low intensity, residential character, recognizes and protects the environmental quality of the Town, and allows the Town to become a full-service community serving Northern Palm Beach County.</p>	<p><u>Managed Growth</u></p> <p>Objective 1.1. The Town shall continue to implement land development regulations which encourage future growth in areas that can meet established level of service standards: support redevelopment and infill activities; help to maintain an appropriate mix of land uses; encourage upgrading of existing properties; encourage mixed use; provide density incentives for workforce and affordable housing; and will discourage urban sprawl.</p> <p><u>Land Use Compatibility</u></p> <p>Objective 1.2. The Town shall promote maintaining compatibility of land uses in the Town's land development regulations, which consider natural and historic resources, the intensities and densities of land use activities and their relationship to surrounding properties, the proper transition of land uses, and the coordination of coastal population densities with the Statewide Regional Evacuation Study Program for Palm Beach County in order to minimize their potential exposure to storm related impacts.</p> <p><u>Land Development Regulations</u></p> <p>Objective 1.3. The Town shall continue to ensure that its land development regulations are consistent with the provisions of the Comprehensive Plan, as amended and shall include residential, non-residential and mixed use categories, location and intensity criteria.</p> <p><u>Economic Development</u></p> <p>Objective 1.4. The Town's economic base shall be expanded by promoting commercial and industrial bioscience research, biotechnology uses and activities as planned on the Future Land Use Map, by ensuring adequate sites for development, providing for public utilities in a timely manner, and services to stimulate such growth.</p> <p>Objective 1.5 The Town, through its Community Redevelopment Agency (CRA), shall provide for the redevelopment of lands within the CRA boundaries, consistent with Future Land Use Objective 1.9 (U.S. Highway One/Intracoastal Waterway [US1/ICW] Corridor) and its implementing policies.</p> <p><u>Annexation</u></p> <p>Objective 1.6 The Town's annexation program shall be based on the criteria and priorities identified in the "Future Annexation Study," as amended.</p> <p><u>Urban Design Guidelines for the Indiantown Road Corridor</u></p> <p>Objective 1.7. Maintain Indiantown Road as a dynamic commercial corridor with a unifying identity that is reflective of community values, provides an economically viable setting for a balanced mixture of land uses, and has safe as well as efficient pedestrian and traffic circulation and access.</p> <p><u>Economic Development for the Indiantown Road Corridor</u></p> <p>Objective 1.8 Maintain Indiantown Road, through the implementation of the Jupiter Area Study mitigation strategies, as an attractive commercial corridor which provides a stable economic base through a variety of uses.</p> <p>Objective 1.9 The Town shall continue to maintain land development regulations for the U. S. Highway One/ Intracoastal Waterway corridor to ensure that new development and any redevelopment emphasizes and enhances the proximity of the Intracoastal Waterway and the Jupiter Inlet including the provision of public access, through the components of a riverwalk corridor and a scenic corridor. All properties located in the U.S. Highway One/Intracoastal Waterway Corridor, as depicted on the Future Land Use Map, shall be developed consistent with the objectives and policies for the corridor, and the corresponding sectors.</p> <p>Objective 1.10 The Town shall continue to maintain land development regulations for the Riverwalk Corridor (as shown on the Town's Future Land Use Map) along the Intracoastal Waterway providing for pedestrian movement, encouraging non-vehicular movement of people and complimenting the visual features and natural resources of the Intracoastal Waterway north and south of Indiantown Road</p> <p>Objective 1.11 The Town shall maintain land development regulations that provide for a Scenic Corridor which integrates a landscape and pedestrian easement along U.S. Highway One and provides for landscape enhancement, signage, pedestrian and bicycle paths and access to the natural resources in the Riverwalk Corridor and seating areas</p>

Goals	Sections and Objectives
Future Land Use Element	<p><u>Economic Development for the U.S. Highway One Corridor</u></p> <p>Objective 1.12 The Town shall maintain U. S. Highway One Corridor as an entertainment oriented activity center which will provide a stable economic base through a variety of uses.</p> <p><u>Infill Development, Redevelopment and Upgrading of Existing Properties</u></p> <p>Objective 1.13 To provide incentives that bring value to the community for infill development, desired redevelopment efforts, and upgrading of existing properties through implementation of the following policies</p> <p><u>Public Education Facilities Planning and Siting</u></p> <p>Objective 1.14 The Town and the School District shall coordinate the location of new and/or expanded sites for public educational facilities in order to ensure compatibility and consistency with the Town's Comprehensive Plan, in accordance with Section 1013.33, F.S., and to maintain and enhance the joint planning procedures for coordination and development of public school facilities in time and place with plans for residential development and other services.</p> <p><u>Neighborhood Enhancement and Preservation</u></p> <p>Objective 1.15 Provide for the protection and enhancement of the Town's neighborhoods.</p> <p><u>Guiding Future Urban Development</u></p> <p>Objective 1.16 The Town shall guide urban form and development to appropriately encourage development (infill and redevelopment) in areas with existing infrastructure and populations</p> <p><u>Bioscience Research Protection Overlay</u></p> <p>Objective 1.17 The Town shall promote a cluster of sites for bioscience research and biotechnology uses through the creation of an Overlay. The Bioscience Research Protection Overlay is intended to protect parcels of land in the Town for the development of bioscience research and biotechnology uses which are expected to be attracted to Northern Palm Beach County due to the location of the Scripps Florida Research Institute at Florida Atlantic University's Jupiter Campus. The Town shall encourage uses within the Overlay, which are supportive of and compatible with the Scripps Florida Research Institute, or which are accessory to bioscience research and biotechnology uses. The Overlay does not limit the uses currently allowed consistent with the property's land use designation including uses allowed pursuant to planned development approvals and developments of regional impact.</p> <p><u>Transit Oriented Development</u></p> <p>Objective 1.18 By December 2023, the Town shall develop criteria to require that developments located within a half-mile of a public transit will station support transit use.</p> <p><u>Design Standards</u></p> <p>Objective 1.19 The Town shall maintain professionally accepted design standards to ensure high quality design for all residential and non-residential areas of the Town.</p>

Goals	Sections and Objectives
<b>Transportation Element</b>	
<p><b>Goal 1:</b> Establish a means of coordination on transportation-related issues with Palm Beach County, Martin County, the Palm Beach County Transportation Planning Agency (TPA), the Martin County Metropolitan Planning Organizations (MPO), the Village of Tequesta, the Town of Jupiter Island, the City of Palm Beach Gardens, the Town of Juno Beach, Treasure Coast Regional Planning Council, the Florida Department of Economic Opportunity, the Florida Department of Transportation (FDOT) and other private or public, transportation-related agencies.</p>	<p>Objective 1.1. Common transportation goals, objectives, and policies shall be shared on an on-going basis with the transportation-related agencies listed in Goal 1, where common interests are involved.</p> <p>Objective 1.2 The Town shall communicate with the agencies listed in Goal 1 regarding transportation activities and planned improvements.</p> <p>Objective 1.3 Applicable agencies listed in Goal 1 shall be advised of Large-Scale Future Land Use Map amendments which may have regional impacts within their respective jurisdiction and request comments as applicable.</p>
<p><b>Goal 2:</b> Provide current and future public transportation options for residential and non-residential uses.</p>	<p>Objective 2.1 In conjunction with Palm Tran, the Town shall provide for the future operation of transit in and to new development and redevelopment, and existing developments not currently served by Palm Tran Route 10. In addition, the Town will work with Palm Tran to improve transit services to major destinations, major residential developments and major employment centers.</p> <p>Objective 2.2. Develop a safe bicycle and pedestrian transportation system accessible to all major public and private facilities.</p> <p>Objective 2.3. Provide transportation options for residential and non-residential uses. Establish a framework to create a “transit-ready” community, capable of supporting multi-modal transportation, including the development of TODs.</p> <p>Objective 2.4 To address general safety concerns along the Florida East Coast (FEC) Railroad corridor, the Town shall coordinate with FEC Industries, LLC and appropriate federal, state and county agencies to ensure that FEC Industries, LLC utilizes appropriate safety measures to protect Town residents and visitors, consistent with the Federal Rail Safety Act of 1970 (Public Law 91-458).</p>
<p><b>Goal 3:</b> Provide a safe, energy efficient, convenient, and economical multi modal transportation system, which provides adequate capacity for the movement of people, goods and services throughout the Town.</p>	<p>Objective 3.1 The Town should identify existing and future State, County and Town roadway deficiencies based on the standards adopted in this plan in conjunction with the Town’s adopted 5-year Community Investment Program and budgeting. This objective will be accomplished through an annual report based on biennial traffic counts.</p> <p>Objective 3.2 Existing and future roadway deficiencies based on adopted LOS standards established in this plan shall be mitigated through roadway improvement programs, as contained in the Town’s adopted 5-year Community Investment Program, Palm Beach County’s 5-Year Road Work Program, FDOT’s 5-Year Work Program and Palm Beach County’s TPA applicable LRTP.</p> <p>Objective 3.3 The Town shall protect rights-of-way to accommodate roadway needs indicated in the Future Traffic Circulation Plan, as shown on Figure 8.</p> <p>Objective 3.4 Provide adequate design standards to improve safety, reduce congestion, enhance visual aesthetics and reduce maintenance.</p> <p>Objective 3.5. Ensure that the circulation system for the Indiantown Road corridor is consistent with the Jupiter Area Traffic Study, to facilitate efficient and safe vehicular and pedestrian traffic, and to implement the community design goals for that roadway</p> <p>Objective 3.6 The Town shall continue to implement the mitigation strategies of the Jupiter Area Traffic Study for the Indiantown Road Corridor and/or the mitigation strategies contained in Transportation Element Policy 3.2.8 to reduce traffic congestion. The Town shall continue to coordinate with Palm Beach County and FDOT to implement the mitigation strategies.</p> <p>Objective 3.7 Continue to implement a Complete Streets system, as applicable, that promotes safety, quality of life and economic development.</p>
<p><b>Goal 4:</b> To accommodate a variety of regional, intercounty, intracounty, and local traffic demands in ways that minimize traffic congestion; encourage pedestrians; reduce the overall amount of travel for daily goods and services; and protect the integrity of existing neighborhoods.</p>	<p>Objective 4.1 The Town will continue to study and evaluate the long range transportation needs of the community while protecting the existing and proposed residential neighborhoods, infill and redevelopment areas.</p>

Goals	Sections and Objectives
<p><b>Housing Element</b></p>	<p><b>Goal 1:</b> Provide affordable, structurally-sound Workforce Housing opportunities in sufficient quantity to accommodate the housing needs of present and future residents of Jupiter.</p> <p><u>Managed Growth</u></p> <p>Objective 1.1 To provide adequate Workforce Housing to meet the future needs assessments identified in Tables 1 through 4 for very-low, low, moderate low and moderate high income households in the Town.</p> <p><u>Affordable Housing Implementation Programs</u></p> <p>Objective 1.2 To develop new funding sources and development strategies to aid in expanding the Town's Workforce Housing stock through design of creative impact fees and density criteria.</p> <p><u>Special Housing Needs</u></p> <p>Objective 1.3 To provide adequate sites and public services and facilities within identified infill and redevelopment areas to accommodate the need for low, moderate low, moderate high and middle income households, manufactured homes, group homes, and assisted living facilities within the Town, as specified by criteria in the adopted Land Development Regulations and relevant state statutes.</p> <p><u>Structural Condition</u></p> <p>Objective 1.4 The structural condition of the Town's housing stock will be maintained and where necessary improved to provide safe, sanitary housing opportunities for all residents.</p> <p><u>Demolition, Relocation, and Replacement</u></p> <p>Objective 1.5 To provide for the relocation of residents or replacement of affordable and Workforce Housing units, which are part of a federal, state or Town approved housing assistance program, lost to demolition or redevelopment activities, the Town shall adhere to the following in addition to appropriate federal and state requirements and guidelines.</p> <p><u>Preservation of Neighborhoods</u></p> <p>Objective 1.6 To provide for the protection of the neighborhood character in the community and preserve historically significant structures.</p>

Goals	Sections and Objectives
<p><b>Conservation Element</b></p>	<p><b>Goal 1:</b> To conserve, protect and enhance the functions and values of the natural resources within Jupiter to ensure the highest environmental quality possible.</p> <p><u>Environmentally Sensitive Areas</u></p> <p>Objective 1.1 To implement a program and a set of standards to protect environmentally sensitive areas from adverse impacts of urban development.</p> <p>Objective 1.2 To cooperate with and assist the South Florida Water Management District (SFWMD) and the Department of Environmental Protection (DEP) in protecting and preserving the Loxahatchee Slough/River Corridor to ensure that the quality of freshwater and estuarine water is maintained at current levels or improved as determined by the SFWMD and the DEP using DEP established criteria for water quality classifications as reported in Chapter 17-3, F.A.C.</p> <p><u>Groundwater Resources</u></p> <p>Objective 1.3 The quality and quantity of the Town's groundwater shall be maintained at current levels as determined by the Department of Environmental Protection using DEP established criteria for water quality and quantity classifications as reported in Chapter 17-3, F.A.C.</p> <p><u>Surface Water Resources</u></p> <p>Objective 1.4: The quality of the Town's surface water shall be maintained at appropriate levels as determined by the Department of Environmental Protection using DEP established criteria for water quality classifications as reported in Chapter 17-3 F.A.C.</p> <p><u>Habitats &amp; Wildlife</u></p> <p>Objective 1.5: To protect and conserve all ecological communities and wildlife, especially endangered and rare species, for present and future generations</p> <p><u>Flood Prone Areas</u></p> <p>Objective 1.6: To protect the surface and ground water supply, prevent erosion and prevent the loss of life and property through the restriction of building in the flood zone areas, the Town shall continue to enforce its adopted Flood Zone Ordinance and shall maintain requirements.</p> <p><u>Air Quality</u></p> <p>Objective 1.7 To maintain air quality standards at current or improved levels as determined by the Department of Environmental Protection using DEP established criteria for air quality classifications.</p> <p><u>Hazardous Waste</u></p> <p>Objective 1.8 The Town will continue to maintain a contract with Palm Beach County to address a hazardous waste management program for the inventory, storage, recycling, collection and disposal of hazardous waste.</p> <p><u>Greenways and Blueways</u></p> <p>Objective 1.9 Provide a linked open space program for the conservation of greenways, blueways (water corridors used for conservation or recreation), and wildlife corridors that serve as connections to environmentally significant lands and conservation areas.</p> <p><u>Green Design</u></p> <p>Objective 1.10 To encourage and promote effective green design theories and techniques for new development, redevelopment and infill projects including sustainable site development, water efficiency (including stormwater runoff), energy efficiency, sustainable material selections (including alternate paving materials to reduce heat island effects), urban agriculture and improved indoor environmental quality.</p>

Goals	Sections and Objectives
<p><b>Coastal Management Element</b></p>	
<p><b>Goal 1.</b> The protection of coastal natural resources through the development and implementation of programs and procedures that balance coastal development activities with the preservation of natural resources and provide for mitigation of development impacts.</p>	<p><u>Coastal Natural Resources Objective and Policies</u></p> <p>Objective 1.1: To protect and preserve the functions and values of coastal wetland and natural dune systems which include the creation of environmentally sensitive zoning districts in which regulations will be established for the protection of natural resources which will include the following:</p> <p>Objective 1.2 To cooperate with and assist the South Florida Water Management District (SFWMD) and the Department of Environmental Protection (DEP) in protecting and preserving the Loxahatchee Slough/River Corridor which borders on the Town of Jupiter to ensure that the quality of estuarine water is maintained at current levels as determined by the SFWMD using DEP established criteria for water quality classifications as reported in Chapter 17-2, Florida Administrative Code.</p> <p><u>Wildlife and Fisheries Objective and Policies</u></p> <p>Objective 1.3: The Town shall maintain the adopted strategies to protect and reestablish 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:</p> <p><u>Estuarine Environmental Quality Objectives &amp; Policies</u></p> <p>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.</p> <p><u>Preservation of Marine Natural Systems Objective and Policies</u></p> <p>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:</p> <p><u>Water Dependent and Water Related Objective and Policies</u></p> <p>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.</p> <p><u>Beach and Dune Systems Objective and Policies</u></p> <p>Objective 1.7: The Town shall maintain procedures and standards and continue to work with Palm Beach County and other jurisdictional agencies to protect, preserve and restore beach and dune systems and minimize constructionrelated impacts</p> <p><u>Coastal Public Access Objective and Policies</u></p> <p>Objective 1.8: To ensure the fair share contribution by the Town of needed beach access and the maintenance of this access.</p> <p><u>Historic Resources Objective and Policies</u></p> <p>Objective 1.9: There shall be no loss of historic resources on Town-owned property, and historic resources on private property shall be protected, preserved, or used in a manner that will allow their continued existence. (Additional historic preservation policies contained in Future Land Use Element [Policies 1.3.26 through 1.3.28] and Housing Element Objective 1.6).</p>
<p><b>Goal 2.</b> 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.</p>	<p><u>Hazard Mitigation and Hurricane Vulnerability Zone</u></p> <p>Objective 2.1: The Town shall direct development away from the coastal high hazard areas</p> <p><u>Hurricane Evacuation Objective and Policies</u></p> <p>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.</p> <p><u>Post-Disaster Redevelopment Objective and Policies</u></p>

Goals	Sections and Objectives
<b>Coastal Management Element</b>	
	<p>Objective 2.3: The establishment of post-disaster procedures for immediate and long term response to a hurricane or natural disaster including cleanup and redevelopment.</p> <p><u>Coastal Infrastructure Objective and Policies</u></p> <p>Objective 2.4: To establish levels of service, service areas and phasing of infrastructure to ensure that adequate public facilities and services are available to existing residents and visitors to the Town.</p> <p><u>Inter-jurisdictional Resource Management Objective and Policies</u></p> <p>Objective 2.5: To ensure that resources occurring in or affecting more than one governmental jurisdiction are effectively managed to preserve, protect and enhance coastal natural systems, wildlife, fisheries and habitat.</p> <p><u>Climate Change Objective and Policies</u></p> <p>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.</p>
<b>Recreation and Open Space Element</b>	
<p><b>Goal 1:</b> Capital Facilities: Provide a system of parks, open space and recreation sites and facilities of appropriate size and design and convenient to the use of participants; that meet adopted Town level-of-service standards; and that benefit each age group, social and economic group, and recreational preference of Town residents.</p>	<p>Objective 1.1. Ensure that enough land and facilities are available to meet the current and future recreational needs of Town residents through 2035, as measured by adopted Town standards.</p> <p>Objective 1.2. All public recreation facilities shall be accessible to Town residents and where certain program participation is limited, preference will be given to Town residents when those programs are held on Town-owned facilities.</p>
<p><b>Goal 2:</b> Recreation Programs: Work to see that a wide range of leisure activities of interest and benefit to each age group, social and economic group, and recreational preference is provided.</p>	<p>Objective 2.1 The Town shall maintain adopted LOS standards which reflect the needs of the various age groups, social and economic groups, and recreational preferences of Town residents.</p>
<p><b>Goal 3:</b> Open Space: To maximize the preservation, enjoyment, and accessibility of natural open spaces, especially those along the waterfront.</p>	<p>Objective 3.1. The Town shall maintain and strive to increase the acreage of publicly and privately-owned open space.</p>

Goals	Sections and Objectives
<p><b>Infrastructure Element</b></p>	<p><u>Facility Deficiencies</u></p> <p>Objective 1.1. The correction of existing public facility deficiencies as determined by the adopted level of service standards within this Plan according to the timetables established by the following policies.</p> <p><u>Capital Improvement Priorities</u></p> <p>Objective 1.2. The Town will maintain a five-year schedule of capital improvement needs for public facilities, to be updated annually in conformance with the review process set forth in the Capital Improvement Element of this Plan.</p> <p><u>Future Public Facility Needs</u></p> <p>Objective 1.3. The provision of sufficient public facilities to meet projected public demand and development impacts, as they are needed and as determined by the adopted level of service standards within this Plan. To implement this objective the following policies are adopted:</p> <p><u>Planning for Public Facilities</u></p> <p>Objective 1.4 The extension of, or increase in capacity of public facilities shall be coordinated by the adoption of specific criteria for such extension. These criteria shall include, at a minimum, the following policies, which shall be incorporated into the Land Development Regulations to be adopted by December 2010. To implement this objective the following policies are adopted:</p> <p><u>Conservation of Potable Water Resources</u></p> <p>Objective 1.5. Maintain a program for the conservation of potable water resources within the Town. To implement this objective the following policy is adopted:</p> <p><u>Protection of Natural Groundwater Recharge Areas and Drainage Features</u></p> <p>Objective 1.6. Protect, and where possible enhance the functions of natural recharge areas and drainage features to ensure an adequate supply of recharge waters to the surficial aquifer. To implement this objective the following policies are adopted</p>

Goals	Sections and Objectives
<p><b>Capital Investment Program Element</b></p>	
<p><b>Goal 1.</b> The provision of needed public facilities in a timely manner, which protects investments in existing facilities, maximizes the use of these facilities and promotes orderly, compact growth</p>	<p><u>Capital Facility Planning Objective and Policies</u></p> <p>Objective 1.1 The Town shall use the capital improvements element as a means to plan for its needs for capital facilities to meet existing deficiencies or accommodate future growth and replace obsolete or worn-out facilities. The measure of success in using this tool for planning capital facilities shall be the completion of capital facilities as stated in the five-year schedule of capital improvements herein and achieving and maintaining the adopted level of service standards as established in this Plan. The five-year schedule will be financially feasible</p> <p><u>Development Coordination and Regulation Objective and Policies</u></p> <p>Objective 1.2 The Town shall coordinate land-use decisions and available or projected fiscal resources with a schedule of capital improvements which maintains adopted level of service standards and meets the existing and future facility needs. The measure of success in using this tool for planning capital facilities shall be the identification of capital facilities projects necessary to ensure that adopted level-of-service standards are achieved and maintained for the five-year period. The projects shall be identified as either funded or unfunded and given a level of priority for funding</p> <p><u>Future Development Costs Objective and Policy</u></p> <p>Objective 1.3 Future development shall bear a proportionate fair-share cost of facilities improvements (transportation improvements shall be consistent with the requirements of Sections 163.3180(5)(h)2.a.-e., Florida Statutes [F.S.]) necessitated by the development in order to maintain the level of service standards adopted herein. Fees shall not exceed a pro-rata share of the reasonably anticipated costs of such improvements. The measure of success for this objective shall be achieving and maintaining the adopted level of service standards and the appropriate sharing of fiscal responsibility for the costs of maintaining level of service standards</p> <p><u>Fiscal Management Objective and Policies</u></p> <p>Objective 1.4 The Town shall manage its fiscal resources to ensure the provision of needed capital improvements for previously issued development orders and for future development and redevelopment. The Town shall utilize the annual review and update of the Capital Improvements Plan (and the associated schedule of capital improvements) along with the concurrency management system adopted herein, to continue to demonstrate its ability to finance needed improvements identified in the individual comprehensive plan elements and to manage the land development process so that public facility needs created by previously issued development orders or future development do not exceed the ability of the local government to fund and provide the needed capital improvements. The measure of success in using this tool for planning capital facilities shall be the completion of the capital facilities as stated in the five year schedule of capital improvements and the maintenance of adopted level of service standards as established in this Plan.</p> <p><u>Limiting Public Expenditures in High Hazard Areas</u></p> <p>Objective 1.5 To limit public expenditures in the identified coastal high hazard area to necessary public services and for restoration or enhancement of natural resources, and to adopt a future land use plan with this comprehensive plan which directs population concentrations away from known or predicted coastal high-hazard areas.</p>

Goals	Sections and Objectives
<b>Intergovernmental Coordination Element</b>	
<p><b>Goal 1:</b> To give the Town the maximum amount of input, control, and advisory power with other public agencies for the protection of the health, safety, and welfare of Jupiter residents and the orderly, managed growth of the Town.</p>	<p><u>All Comprehensive Plan Elements</u></p> <p>Objective 1.1: To coordinate the impact of development proposed in the local plan upon development in adjacent municipalities, counties, the region and the State. This shall be accomplished by review of the plans of said government entities and analysis of the potential impacts of the local plan on these plans and by participation on county and regional committees.</p>
<p><b>Goal 2:</b> To provide the Town with mechanisms to coordinate planning efforts with other local governments and service providers.</p>	<p>Objective 2.1: Coordination in maintaining adopted Level of Service (LOS) standards for public facilities with the entity having operational responsibility for the facility</p> <p>Objective 2.2: Establish and maintain specific means of coordination with adjacent local governments and other service providers</p> <p>Objective 2.3: The Town shall participate in intergovernmental coordination processes to insure full consideration is given to the impacts of proposed comprehensive plan amendments and future development on the ability of the Town and adjacent local governments to implement their comprehensive plans and to address areawide land use needs and justification for amendments.</p> <p>Objective 2.4 The Town shall coordinate with local governments within its Water Utility service area (Palm Beach County, Martin County and the Town of Juno Beach) to ensure that all water supply needs can be met through a 10-year planning period, as provided in its Water Supply Facilities Work Plan, consistent with the South Florida Water Management District's Lower East Coast Regional Water Supply Plan.</p>
<p><b>Goal 3:</b> To provide the Town with a framework to coordinate planning efforts with the other parties of the executed (Bioscience Research Protection Overlay) Interlocal Agreement to protect parcels of land in Northern Palm Beach County for the development of more than eight million square feet of scientific research and bio-technology uses.</p>	<p>Objective 3.1 To coordinate the protection of land for the development or redevelopment of more than eight million square feet of scientific research and bio-technology uses with the four municipalities and Palm Beach County. This shall be accomplished by adopting Comprehensive Plan policies and the assignment of a Bioscience Research Protection Overlay to land parcels within the Town to allow for functional interaction with the Scripps Florida Research Institute.</p>
<p><b>Goal 4:</b> Public School Coordinated Planning. It is the Town's GOAL to maintain and enhance joint planning and the coordination of the siting and the development of public education facilities based upon data received regarding population projections for residential development. This goal shall be accomplished recognizing the constitutional obligation of the school district to provide a uniform system of free public schools on a countywide basis.</p>	<p>Objective 4.1 To establish and maintain a cooperative relationship with the School District and other local governments so as to coordinate planning the development of public school facilities which are proximate to existing or proposed residential areas they will serve and which serve as community focal points.</p> <p>Objective 4.2 To establish a process of coordination and collaboration between Palm Beach County, other municipalities, and the School District in the planning and siting of new public school facilities to coordinate planned infrastructure and public facilities</p> <p>Objective 4.3 To establish a joint process of coordination and collaboration between the Town, Palm Beach County and the School District in the planning and decision making on population projections</p>
<b>Property Rights Element</b>	
<p><b>Goal 1:</b> It is the GOAL of the Town of Jupiter to respect judicially acknowledged and constitutionally protected private property rights.</p>	<p>Objective 1.1 In accordance with the legislative intent expressed in ss. 163.3161(10) and 187.101(3) that governmental entities respect judicially acknowledged and constitutionally protected private property rights, the Town of Jupiter shall consider the following property rights in local decision-making</p>

## Appendix D: Town of Jupiter 2023 Strategic Plan at a Glance

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# Strategic Plan at a Glance 2023-2024

**MISSION:** We provide exceptional municipal services that add value to residents' lives and businesses while assuring a long term, sustainable community.

**VISION:** Jupiter is a distinctive coastal community committed to preserving its unique character and history and vibrant, small town feel.

## Below are the "results" Jupiter aims to achieve, and a summary of their definitions



**Safety**  
Keep citizens and businesses safe.

- Use of technology and environmental design to prevent crime
- Adequate resources for the Jupiter Police Department in line with community growth
- Employ first-rate best practices to ensure safety for roadways, waterways, neighborhoods, beaches and parks



**Fiscal Responsibility**  
Prepare and manage budget; maintain fiduciary responsibility.

- Exemplify trusted stewardship of taxpayer dollars and prudent asset management
- Promote transparency and accountability
- Ensure reasonable rates and fees in line with the Consumer Price Index, as well as investments that are beneficial and cost-justified to Town residents and businesses



**Manage Growth**  
Plan for and manage growth, development and redevelopment to maintain Jupiter's small town feel and its integrity as a distinctive, vibrant coastal community.

- Support development that complements Jupiter's unique, small town feel and emphasizes preservation of natural resources and assets
- Maintain and update a comprehensive plan for development that is long-term and sustainable, and one that is regularly reviewed and impacted by public input



**Mobility**  
Improved mobility for all modes of transit.

- Effective traffic mitigation and parking management
- Ample safe paths for pedestrians and cyclists and an emphasis on alternate modes of transportation
- Practical development that complements the goal of congestion reduction



**Green, Blue, and Open Spaces**  
Continue beautification and natural areas; green spaces, parks, beaches and landscaping. Maintain Jupiter as a distinctive coastal community with open and natural environments.

- Approach development with an emphasis on preservation and sustainability
- Provide increased access and use of green and open spaces
- Ensure good stewardship and maintenance of the Town's natural resources



**Strong Local Economy**  
Support local businesses, create a business-friendly environment.

- Encourage development to ensure diversity of businesses with an emphasis on small, local business ownership, as well as the biotech and high-tech industries
- Engage in practical, mutually beneficial partnerships
- Incentivize business and tourism that is aligned with the strategic goals of the Town



**Organizational Excellence**  
Organizational governance; internal support and services.

- Ensure the Town has sufficient resources to recruit and retain top of the line employees, technologies, and facilities
- Promote a culture that is nimble, engaging, and encourages professional development
- Strive to provide world-class service to Town residents and businesses in a cost-efficient manner



**Unique, Small Town Feel**  
Maintain and enhance our vibrant small town feel by leveraging the unique combination of community, cultural and recreational assets that make Jupiter a special place to live and work.

- Promote the Town's natural resources as places for physical activity and community through increased access and maintenance
- Foster community pride and engagement through events and partnerships
- Safeguard the Town's historical sites, landmarks and special places



**Town Communication**  
Support and enhance open two-way communication between the Town and its residents and businesses.

- Provide multiple avenues for communication between the Town and its communities to share information and engage in conversation
- Practice the highest degree of honesty and transparency
- Encourage citizen involvement with a special focus on under-represented communities

# HOW WE ACHIEVE RESULTS

Below are the 2023-2024 strategic initiatives that support achieving the results.



## GREEN, BLUE AND OPEN SPACES

- **Protect Local Seagrass:** Enhance the natural vegetation and promotion of our bluewater systems by evaluating and protecting our local seagrass beds.
- **Loxahatchee River:** Improve the water quality in the Loxahatchee River.
- **Protect Open Spaces:** Enhance access and use of green space by providing more open and natural areas for protection.
- **Anchored Vessels:** Remove anchored and at-risk vessels from Jupiter's waterways.



## UNIQUE, SMALL TOWN FEEL

- **Recreation Facility Master Plan:** Develop a master plan the Town's indoor and outdoor recreational facilities and parks in support of youth and adult recreation activities, and considering opportunities for emergency uses.
- **Athletic Facility Usage:** Develop athletic facility usage policies and master plan.
- **The Arts:** Promote music and the arts.
- **Piatt Place:** Determine future use and development plan for Town-owned property



## MANAGE GROWTH

- **Development Approvals:** Review and update the development approval process.
- **Areas of Local Importance:** Explore designating distinct areas, or districts, of local significance throughout Jupiter.
- **Comprehensive Plan Revision:** Revise the Comprehensive Plan to reflect policy changes and updates.
- **CRA Plan:** Update and revise the CRA plan.



## FISCAL RESPONSIBILITY

- **Fire Rescue Strategy:** Determine a long-term strategy and financial plan for fire rescue services for Jupiter residents.
- **Legislative Agenda:** Identify legislative priorities and develop a process for securing legislative actions and funding.



## ORGANIZATIONAL EXCELLENCE

- **New Town Hall:** Construct a new Town Hall facility.
- **Municipal Complex:** Update and revise master plan and continue improvements.



## MOBILITY

- **Vehicle and Pedestrian Traffic Management & Mitigation:** Enhance and update the Town's traffic mitigation plans for roadways not meeting the Town's level of service standards and employ strategies to reduce the number of accidents and bike/pedestrian/vehicle conflicts.
- **U.S. 1 Bridge:** Monitor construction and impacts of the U.S. 1 Bridge.
- **W. Indiantown Road:** Ensure the advancement of Indiantown Road improvements between I-95 and Central Boulevard.
- **South Island Way:** Advance South Island Way.



## SAFETY

- **High-Speed Rail:** Prepare for the introduction of high-speed rail through the Town of Jupiter by investigating and advocating for appropriate safety measures.
- **Public Safety Training Facility:** Develop a conceptual plan for a training facility.

Action plans have been developed for each of the strategic initiatives listed above. To view the entire strategic plan, including those action plans, visit [jupiter.fl.us/StrategicPlan](http://jupiter.fl.us/StrategicPlan).

## Appendix E: Federal Funding Summary Green Infrastructure and Nature-Based Solutions

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Navigating Federal Funding for Green Infrastructure  
and Nature-Based Solutions  
Master Summary  
11/2/2021



AGENCY	PROGRAM	PLANNING &		OPERATIONS &	
		DESIGN	CONSTRUCTION	MAINTENANCE	MONITORING
EPA	<a href="#">Overflow and Stormwater Grants (OSG)</a>	YES	YES	NO	NO
EPA	<a href="#">Clean Water State Revolving Fund (CWSRF)</a>	YES	YES	NO	NO
EPA	<a href="#">Water Infrastructure Finance and Innovation Act (WIFIA)</a>	YES	YES	NO	NO
EPA	<a href="#">Section 319 Non-Point Source Grants</a>	YES	YES	YES	YES
EPA	<a href="#">Environmental Justice Small Grants</a>	YES	NO	NO	YES
EPA	<a href="#">Great Lakes Restoration Initiative (GLRI)</a>	YES	YES	NO	NO
EPA	<a href="#">Green Streets, Green Jobs, Green Towns (G3)</a>	YES	YES	NO	NO
USDA NRCS	<a href="#">Watershed and Flood Prevention Operations Program</a>	YES	YES	NO	NO
USDA NRCS	<a href="#">Watershed Rehabilitation Program</a>	YES	YES	NO	NO
USDA NRCS	<a href="#">Regional Conservation Partnership Program</a>	YES	YES	YES	YES
HUD	<a href="#">Community Development Block Grant (CDBG)</a>	YES	YES	NO	NO
HUD	<a href="#">CDBG Section 108</a>	YES	YES	NO	NO
FEMA	<a href="#">Building Resilient Infrastructure &amp; Communities (BRIC)</a>	YES	YES	NO	NO
NOAA	<a href="#">National Estuarine Research Reserve System Procurement and Acquisition and Construction Grants</a>	YES	YES	NO	NO
NOAA	<a href="#">Coastal and Marine Habitat Restoration Grants</a>	YES	YES	YES	YES
NOAA	<a href="#">OAA Great Lakes Habitat Restoration Regional Partnership Grants</a>	YES	YES	NO	YES
NOAA	<a href="#">Coastal and Estuarine Land Conservation Program (CELCP)</a>	NO	NO	YES	NO
NOAA	<a href="#">National Coastal Resilience Fund</a>	YES	YES	NO	NO
USACE	<a href="#">Floodplain Management Services Program - Technical Assistance</a>	YES	NO	NO	NO
USACE	<a href="#">Planning Assistance to States (PAS)</a>	YES	NO	NO	NO
USACE	<a href="#">Continuing Authorities Program (CAP) Sec 205 - Small Flood Risk Management Projects</a>	YES	YES	NO	YES
USACE	<a href="#">CAP Sec 204 - Beneficial Use of Dredged Material</a>	YES	YES	NO	YES
USACE	<a href="#">CAP Sec 1135 - Modification of Projects for the Environment</a>	YES	YES	NO	YES
USACE	<a href="#">Tribal Partnership Program (TPP)</a>	YES	YES	NO	YES
USACE	<a href="#">Individually Authorized Feasibility Studies and Projects</a>	YES	YES	YES	YES
USACE	<a href="#">Watershed Studies (Sec 729)</a>	YES	NO	NO	NO
EDA	<a href="#">Public Works &amp; Economic Adjustment Assistance Funds</a>	YES	YES	NO	NO
EDA	<a href="#">American Rescue Plan Program: Economic Adjustment Assistance Funds</a>	YES	YES	NO	NO

Note: This list represents the summary given during a webinar on November 2, 2021. There are other federal programs that fund green infrastructure not included on this list.



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**JUPITER**

**Hazen**

