Flood Mitigation Plan

TOWN OF JUNO BEACH, FLORIDA

Community ID #120208

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September 2014

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Table of Contents

Introduction . . . . . **Section 1**

Compliance with Flood Mitigation Programs and Plans . . . . . **Section 2**

Organize to Prepare the Plan . . . . . **Section 3**

Coordination with Other Organizations and Plans . . . . . **Section 4**

Assess the Flood Hazard . . . . . **Section 5**

Assess the Flood Problem . . . . . **Section 6**

Goals . . . . . **Section 7**

Review of Possible Activities . . . . . **Section 8**

Action Plan . . . . . **Section 9**

Implement, Evaluate and Revise . . . . . **Section 10**

Adoption of the Plan . . . . . **Section 11**

APPENDICES

Appendix A - Questionnaire

Appendix B – Plans, Studies, Reports

Appendix C – Storm Tide Maps

Appendix D – SFWMD Facilities Map & Juno Storm Drain Maps

Appendix E – Topographic Maps

Appendix F – Current FIRM, LOMR, Preliminary FIRMs

Appendix G – SLOSH, Storm Surge Maps

Appendix H – Emergency Operation Areas Map Coverage

Appendix I – Tsunami Hazard Map

Appendix J – Critical Facilities, Evacuation Zones & Routes, Sea Level Rise Map

Appendix K – History of Flood Insurance Claims

Appendix L – Nuisance Flooding Areas and Repetitive Loss Locations

Appendix M –Zoning Map, Future Land Use Map, Development Report

Appendix N – Juno Beach Businesses

Appendix O – *LMS* Project Submission Procedure, 2013 PPL

Appendix P – Location specific flood images, Beach Renourishment

Appendix Q – Palm Beach County Outreach Strategy

Appendix R – Capital Improvement Outlay

Exhibits

Exhibit One – Meeting Documentation

Exhibit Two – Contact with Agencies and Organizations

Exhibit Three – Explain Planning Process to the Public, Other Outreach

Exhibit Four – Juno Beach Open Space

Exhibit Five – Solicitation of Input on the Action Plan

Exhibit Six – Action Item Documents

Exhibit Seven – Resolution to Adopt

Introduction

Mitigation is defined as any sustained action taken to reduce or eliminate long-term risk to life and property by lessening the impacts of floods and other disasters. Mitigation, also known as prevention, encourages long-term reduction of hazard vulnerability. The goal of mitigation is to

- save lives and reduce property damage
- enable individuals to recover more rapidly from floods and other disasters
- lessen the financial impact on the Treasury, States, Tribes, and communities

Mitigation can accomplish this, and should be cost-effective and environmentally sound. This, in turn, can reduce the enormous cost of disasters to property owners and all levels of government. In addition, mitigation can protect critical community facilities, reduce exposure to liability, and minimize community disruption. Examples of mitigation include land use planning, adoption of building codes, and elevation of homes, or acquisition and relocation of homes away from floodplains.

More than 20,500 communities, working together with State and local agencies, actively manage their flood risk with flood hazard maps. More than 5.6 million Americans protect their homes and families from financial loss with insurance from the National Flood Insurance Program. Communities nationwide enforce strong hazard-resistant building code regulations and follow comprehensive hazard mitigation plans to guide development.

Mitigation plans are the foundation for effective hazard mitigation. A flood mitigation plan is a demonstration of the commitment to reduce risks from flood hazards and serves as a strategic guide for Town of Juno Beach decision-makers as they commit resources.

FEMA Flood Mitigation Planning Grant

The Town of Juno Beach applied for and was awarded FEMA's Flood Mitigation Assistance Planning Grant. With these funds the Town was able to hire CRS Max Consultants, Inc., to assist with the development of this *Town of Juno Beach Flood Mitigation Plan*.

FEMA's Flood Mitigation Assistance (FMA) Program is a pre-disaster grant program that provides funding to States and communities to assist in their efforts to reduce or eliminate the risk of flood damage to buildings and structures insurable under the National Flood Insurance Program (NFIP). The program provides grants for mitigation planning and projects with a goal of reducing claims under the NFIP. Planning grants are used to assess flood risks and develop Flood Mitigation Plans to reduce the risks.

Planning is the foundation of FMA. FEMA encourages communities to identify ways to reduce their risk of flood damage by preparing Flood Mitigation Plans. Communities that have Flood Mitigation Plans can request approval of their plans from their FMA State Point of Contact and FEMA. Approved plans make a community eligible to apply for FMA project grants. Plans must assess flood risk and identify actions to reduce that risk.

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The Planning Process

The mitigation planning process includes the identification of existing and future flood hazards and their causes. Such a process is intended to assist in the development of a comprehensive plan for reducing risks to life and property by implementing specific mitigation actions and projects. The Town of Juno Beach Flood Mitigation Plan (FMP) was developed considering a vast array of possible mitigation alternatives and the consequences of those alternatives using a careful, systematic process of planning. The FMP is a community-wide floodplain management plan that followed the following 10-step planning process:

Step 1: Organize
Step 2: Involve the public
Step 3: Coordinate
Step 4: Assess the hazard
Step 5: Assess the problem
Step 6: Set goals
Step 7: Review possible activities
Step 8: Draft an action plan
Step 9: Adopt the plan
Step 10: Implement, evaluate, revise

Results of Flood Mitigation Planning

History shows that the physical, financial, and emotional losses caused by disasters can be reduced significantly through hazard mitigation planning. A broad range of activities designed to reduce risk can result from the mitigation planning process. Without mitigation actions a community can jeopardize its safety, financial security, and self-reliance.

Communities with up-to-date mitigation plans will be better able to identify and articulate their needs to State and Federal officials, giving them a competitive edge when grant funding becomes available.

In December 2005, the Multihazard Mitigation Council of the National Institute of Building Sciences (NIBS) released *Natural Hazard Mitigation Saves: An Independent Study to Assess the Future Savings from Mitigation Activities*. The report was the culmination of a 3-year, Congressionally-mandated independent study. Key findings included:

- A dollar spent on mitigation saves society an average of $4.00, with positive benefit-cost ratios for all hazard types studied.
- In addition to savings to society, the Federal Treasury can redirect an average of $3.65 for each dollar spent on mitigation resulting from disaster relief costs and tax losses avoided.
- In each of the eight communities studied in-depth, FEMA mitigation grants were a significant part of the community's mitigation history and often led to additional loss reduction activities.
- Mitigation is sufficiently cost-effective to warrant federal funding both before disasters occur and during post-disaster recovery.

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There are also physical and financial benefits afforded to individual residents living within jurisdictions that implement Flood Mitigation Plans. An increase in personal safety is the foremost benefit of strategic flood mitigation planning; however there are also specific monetary incentives. In addition to earning possible flood insurance discounts though the CRS Program, an effective Flood Mitigation Plan promotes individual property protection measures which safeguard assets during a flood.

The FMP outlines specific actions, implemented by the Planning and Zoning Department that serve to educate property owners about the importance of adhering to higher building standards. Through the implementation and enforcement of codes, regulations and ordinances, local governments are able to promote responsible building practices and require residents to abide by them. Actions such as these begin providing protection to families and businesses long before a flood takes place. FEMA's *Substantial Improvement/ Substantial Damage Desk Reference* (May 2010) states that structures built according to the floodplain management requirements of the NFIP program sustain significantly less damage during floods.

According to the most recent census data, in an average American household, home equity accounts for at least 25% of family wealth. This means that the loss of a home and its contents due to a flood would have a significant financial impact on a household. The ability to safeguard homes from flood damage offers immediate asset protection and improves a family's long term financial security. Individual financial health in turn helps to support the economic health of the entire community.

The Town of Juno Beach

The Town of Juno Beach was incorporated in 1953. At that time, the vast majority of the 1500 residents were seasonal, with only about 130 residing year-round.

Prior to being incorporated, Juno Beach had a rich history. Juno, as it was referred to in the nineteenth century, was known for the "Celestial Railway" that ran between Jupiter and Juno. From 1890 to 1900, Juno served as the County Seat of what was then 7,200 square mile Dade County. However, in the 1890s, Juno lost significance in the area as Flagler began developing Palm Beach.

During the year 1929, E. F. Hutton began constructing the Town's famous Seminole Golf Club. In the 1940s Bessemer Properties developed the first subdivision in the area, laying the groundwork for planned development. After the Town of Juno Beach became incorporated in 1953, residential development flourished.

Today, Juno Beach is a seaside community of 3,181 people (2011 population) which is predominantly residential. Fine oceanfront estates, condominiums and businesses provide an ideal setting for vacation or permanent

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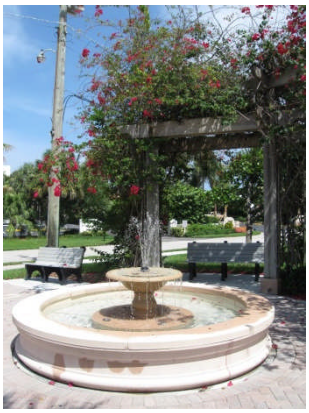
residence. Juno Beach is near many activities including the Jupiter Theatre, nationally-known golf courses, tennis courts, county parks, shopping centers and art galleries. Within Juno Beach, activities range from sunbathing, swimming, and fishing to walking, jogging and bicycling on the oceanfront bike path.



In addition to a beautiful beach, Juno has a 990 foot pier for the enjoyment of tourists, local residents and fishermen. The Marinelife Museum is located in Loggerhead Park, and Juno is home to extensive tracts of natural and beneficial land. In fact, 43% of the Town's land has been designated as Environmentally Sensitive land. The County maintains Loggerhead Park and Juno Beach Park, while the Town maintains Kagan Park, as well as the ¾ mile public walk along the shore of Pelican Lake.

The Town of Juno Beach is located in northern Palm Beach County, Florida. The entire area of Palm Beach County is 2,054 square miles, of which Juno Beach comprises 1,297.99 acres. The land area of the Town of Juno Beach is 1,274.11 acres and the water area is 23.88 acres.

The town is situated along the East Coast with 2.4 miles of Atlantic shoreline. Juno Beach extends west toward the Intracoastal Waterway, sharing portions of the Intracoastal shoreline with unincorporated sections of Palm Beach County. Juno Beach is bordered by the Jupiter Inlet to the north and Palm Beach Inlet to the south. Because it is located between the Atlantic Ocean and the Intracoastal Waterway, Juno Beach is considered a barrier island community.

Since 1985, the Town of Juno Beach has been governed by the Council-Manager form of government. The Town is currently governed by a five-member Council with a Town Manager. The Town Manager is hired by the Council and serves as the Chief Executive Officer for the municipal corporation. The Manager is responsible for all Town affairs. The Town oversees the administration of services including planning and zoning, public works, utilities, parks and recreation. Residents are protected by a 16 member police department. Palm Beach County Fire Rescue provides professional fire protection and paramedic services.

The Town of Juno Beach has a long history of excellence and is constantly striving to improve the quality of life for all of its residents. Implementing a Flood Mitigation Plan further demonstrates the Staff's commitment to the wellbeing of the community.

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Compliance with Flood Mitigation Programs and Plans

During the development of this Flood Mitigation Plan, all necessary steps required to satisfy the National Flood Insurance Program's Community Rating System Floodplain Management Planning Process, the Flood Mitigation Assistance Planning Grant, and the Disaster Mitigation Act of 2000 were purposefully followed.

As the Floodplain Manager for the Town of Juno Beach, the Director of Planning and Zoning is tasked with keeping the Town's efforts in line with the mandates of the following programs:

The Disaster Mitigation Act of 2000

Among its main features, the Disaster Mitigation Act of 2000 (DMA 2000) authorized the creation of a pre-disaster mitigation program that makes mitigation grants available to states, as well as to local and tribal governments, providing they have a FEMA approved hazard mitigation plan in effect prior to the time of the disaster. In accordance with the DMA 2000, Palm Beach County has developed the *Palm Beach County Unified Local Mitigation Strategy, which covers all of the hazards that affect the county*. The Town of Juno Beach adopted the LMS as its hazard mitigation plan in 2004 and again in 2010. This hazard mitigation plan has enabled the county and the municipalities within the county that adopted it to receive Hazard Mitigation Grant Program (HMGP) awards and a Flood Mitigation Assistance (FMA) Planning Grant, which was used to develop this Flood Mitigation Plan. The planning regulations for the DMA are consistent with the CRS process.

Flood Mitigation Assistance Program Grants

The Federal Emergency Management Agency's (FEMA's) Flood Mitigation Assistance Program (FMA) provides funding to states and communities for measures that reduce or eliminate the long-term risk of flood damage to buildings, manufactured homes, and other structures insurable under the National Flood Insurance Program (NFIP). The Program provides grants for mitigation planning, projects and technical assistance, with a goal of reducing flood insurance claims under the NFIP.

There are certain guidelines that must be followed to take advantage of the grants that are available from FEMA. In this Flood Mitigation Plan, the Town of Juno Beach has identified projects in the Action Plan section so that when funding is available, the Town can apply for grants. FMA Project Grants are available to NFIP-participating communities to implement measures to reduce flood losses. The Town of Juno Beach has been an NFIP-participating community since 1978, and will continue to comply with NFIP requirements. Communities receiving FMA project funds must have FEMA-approved Flood Mitigation Plans (or multi-hazard plans which address flood hazards) in place prior to receiving FMA Project Grant funds. This flood mitigation plan is specifically intended to assist the Town of Juno Beach to comply with this requirement. The plan enables the Town to quickly respond to state and federal funding opportunities for flood mitigation-related projects. The plan defines, justifies, and prioritizes flood mitigation initiatives that have been formulated through a flood hazard analysis and vulnerability assessment process. When applying for grants, the Town will be better prepared, using this plan, to quickly and more easily compile the necessary grant application materials for seeking state and federal funding.

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National Flood Insurance Program

In 1968, Congress created the National Flood Insurance Program (NFIP) to help provide a means for property owners to financially protect themselves, to minimize response and recovery costs and to reduce the loss of life and damage to property caused by flooding. The NFIP, a federal program, offers flood insurance to homeowners, renters, and business owners if their community participates in the NFIP. In order to qualify for flood insurance, a community must join the NFIP and agree to enforce sound floodplain management standards. Floodplain management regulations that meet minimum NFIP standards have been adopted by over 20,000 communities nationwide. Participating communities agree to adopt and enforce ordinances that meet or exceed FEMA requirements designed to protect new and existing buildings from anticipated flooding, and to prevent new developments from increasing the flood threat to existing properties.

The NFIP is administered by the Federal Emergency Management Agency (FEMA), which works closely with nearly 90 private property and casualty insurance companies to offer flood insurance to property owners and renters. Rates are set and do not differ from company to company or agent to agent. These rates depend on many factors, which include the date and type of construction of a building, along with the building's level of risk.

The primary benefits of the NFIP are to:

- ✓ Provide flood insurance coverage not generally available in the private market;
- ✓ Stimulate local floodplain management to guide future development;
- ✓ Emphasize less costly nonstructural flood control regulatory measures over structural measures; and
- ✓ Reduce costs to the federal and state governments by shifting the burden from the general taxpayer to floodplain occupants.

The Town of Juno Beach has been a participant in the National Flood Insurance Program (NFIP) since December 1978 and will continue to be compliant with the program by continuing to:

- ✓ require permits for all new development in the SFHA;
- ✓ elevate the lowest floor of all residential buildings in the SFHA to or above the Base Flood Elevation (BFE);
- ✓ restrict development in the regulatory floodway;
- ✓ ensure that construction materials and methods used will minimize future flood damage; and
- ✓ treat substantially improved structures as new buildings that must meet the minimum NFIP standards.

The success of the NFIP depends on communities' ensuring that buildings and other development within their jurisdictions are constructed and maintained according to these standards so that flood losses will be minimized. If communities do not elect to participate in the program or if they do so but fail to adequately enforce the standards, then lives and property are placed in harm's way; buildings will suffer unnecessary flood damage; the NFIP's actuarial soundness will be jeopardized; and the costs to society from future floods will be increased unnecessarily.

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The Community Rating System Program

This document has been prepared to qualify as a "floodplain management plan" under the Community Rating System (CRS). The National Flood Insurance Program's (NFIP) CRS was implemented in 1990 as a program for recognizing and encouraging community floodplain management activities that exceed the minimum NFIP standards. When communities go beyond the NFIP's minimum standards for floodplain management, the CRS can provide discounts of up to 45% off flood insurance premiums for residents of those communities. Communities apply for a CRS classification and are given credit points that reflect the impact of their activities on the three goals of the CRS:

1. Reduce flood losses,
2. Facilitate accurate insurance ratings, and
3. Promote the awareness of flood insurance

To obtain the necessary credit points to achieve lower CRS class ratings, communities implement a broad range of programs aimed at addressing the three goals of the CRS program. There are eighteen activities by which communities can accumulate points toward their class ratings. These activities, designated in the *FEMA Community Rating System Coordinator's Manual* are:

Activity Number		Maximum Points Available
310	Elevation Certificates	116
320	Map Information Service	90
330	Outreach Projects	350
340	Hazard Disclosure	80
350	Flood Protection Information	125
360	Flood Protection Assistance	110
370	Flood Insurance Promotion	110
410	Flood Plain Mapping	802
420	Open Space Preservation	2,020
430	Higher Regulatory Standards	2,042
440	Flood Data Maintenance	222
450	Stormwater Management	755
510	Floodplain Management Planning	622
520	Acquisition and Relocation	1,900
530	Flood Protection	1,600
540	Drainage System Maintenance	570
610	Flood Warning and Response	395
620	Levees	235
630	Dams	160

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The activities above, credited by the CRS provide direct benefits to the community, including:

- Enhanced public safety
- Reduction in flood damage
- Environmental protection
- Residents are reminded that the community is working to protect them from flood losses
- Public information activities will build a knowledgeable constituency interested in supporting improving flood protection measures
- Money stays in the community instead of being spent on insurance premiums.

Participating jurisdictions are classified in CRS classes. These classes range from Class 1, which requires the most credit points and provides the largest reduction in insurance premiums, to Class 10, which receives no reduction in insurance premiums. A community applies for the program using the CRS Application. The Insurance Services Office's (ISO) CRS Specialist reviews the community's program and verifies the CRS credit.

Credit Points	CRS Class	Flood Insurance Premium Discount
4500 +	1	45%
4000 – 4499	2	40%
3500 – 3999	3	35%
3000 – 3499	4	30 %
2500 – 2999	**5**	**25%**
2000 – 2499	6	20%
1500 – 1999	7	15%
1000 – 1499	8	10%
500 – 999	9	5%
0 – 499	10	0

In October 1993, Juno Beach qualified for the CRS Program. As of October 1, 2007, the Town of Juno Beach has attained a CRS rating of Class 5, resulting in a 25% reduction in flood insurance premiums for residents that purchase flood insurance in Special Flood Hazard Areas (SFHA), and a 10% premium reduction in non-SFHAs in the town.

In conjunction with the development of this Flood Mitigation / Floodplain Management Plan, Juno Beach will continue to implement other CRS activities that go beyond the minimum NFIP requirements. It is a goal of the Project Coordinator, along with the Planning and Zoning Department, to make certain that the Town maintains its current CRS rating. As a CRS program participant, the Town actively pursues a broad range of flood mitigation and management activities, including:

- Many educational outreach projects through an Outreach Program Strategy
    - Including outreach projects that make community members aware of the availability and value of flood insurance
- Mapping information, including furnishing inquirers with flood zone information and using digitized maps which are available on the Town's website
- Regulations and ordinances such as enforcing regulations for stormwater management, prohibiting dumping in the drainage system, soil and erosion control and water quality
- Flood protection information displayed on the Juno Beach website and in the Town's library
- Preserving over 190 acres in the Town as open space

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- Designating over 531 acres as environmentally sensitive land

The Town of Juno Beach will accumulate additional CRS credit by developing this Flood Mitigation / Floodplain Management Plan. While the CRS program does not dictate exactly what details are to be in a Flood Mitigation / Floodplain Management Plan, it will credit this Plan with additional points consistent with the standard 10-step planning process outlined in the *FEMA CRS Coordinator's Manual*:

1. Organize to prepare the plan (15 points maximum)
2. Involve the public (120 points max)
3. Coordinate with other agencies (35 points max)
4. Assess the hazard (35 points max)
5. Assess the problem (52 points max)
6. Set goals (2 points max)
7. Review possible activities (35 points max)
8. Draft an Action Plan (60 points max)
9. Adopt the Plan (2 points)
10. Implement, evaluate and revise (26 points max)

The *Town of Juno Beach Flood Mitigation Plan* has been prepared in accordance with the 10-step planning process.

Palm Beach County Unified Local Mitigation Strategy 2009

The Town of Juno Beach actively participates in the development and updating process of the *Palm Beach County Unified Local Mitigation Strategy (LMS)*, which was first formally adopted by the county, participating municipalities, and the LMS Steering Committee in 1999. The LMS was established and continues to operate in accordance with prevailing federal, state and local guidelines and requirements. In 2004 the plan and program were substantially modified to improve operational effectiveness and to comply with new federal guidelines established in response to the Disaster Mitigation Act of 2000. Additional revisions were made in the 2009 update.

The LMS is a unified strategy for reducing the community's vulnerability to all of the identified natural, technological, and societal hazards that may affect the County. Although the Town has found great value in the flood mitigation sections of the LMS, in 2012 the Town determined there was a need to develop its own Flood Mitigation Plan. This decision arose from the desire to strengthen the flood component of the strategy specific to Juno Beach and incorporate increased public input as part of the plan development process. Some of the items in the Action Plan in Section Nine of this Flood Mitigation Plan will be submitted for inclusion as mitigation items for scoring and prioritization in the LMS.

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Organize to Prepare the Plan

"Organize to Prepare the Plan" is the first step in FEMA's 10-step planning process that the Town of Juno Beach utilized to prepare this plan. The Town's Project Coordinator, Andrea Dobbins was in charge of the *Town of Juno Beach Flood Mitigation Plan* project. Through a bidding process, and using FEMA Flood Mitigation Assistance Planning Grant funding, the Town retained CRS Max Consultants, Inc., of Coconut Creek, Florida, to provide guidance during the planning process and to write the plan.

The process "kicked off" with the first meeting on February 5th, 2013. Attendees included the consultants, the Project Coordinator, who was in charge of the project, as well as Town staff members. The purpose of the meeting was to discuss the:

- Description of goals
- Description of the process
- First steps of the process
- Importance of staff participation

This first meeting was a "Staff Organizational" meeting, which brought the Flood Mitigation Plan to the attention of staff from all of the departments that would be crucial to the development and implementation of the FMP. For the purposes of doing more with less, reducing redundancy, and creating stronger plans and programs, it is recommended that the different departments responsible for these types of plans work together. Building bonds and bridging communication gaps helped accomplish the tasks mentioned in this document and will ultimately benefit all citizens affected by flooding. The attendees included:

- Joseph Lo Bello- Town Manager
- Andrea Dobbins- Project Coordinator
- Ruben Cruz, CFM- Director of Planning & Zoning
- Frank Davila- Planning Technician
- Matt Pazanski- Director of Finance
- Tony Meriano- Director of Public Works
- Cathy King- CRS Max Consultants, Inc.
- Earl King, CFM- CRS Max Consultants, Inc.
- Joan Van Stone, CFM- CRS Max Consultants, Inc.

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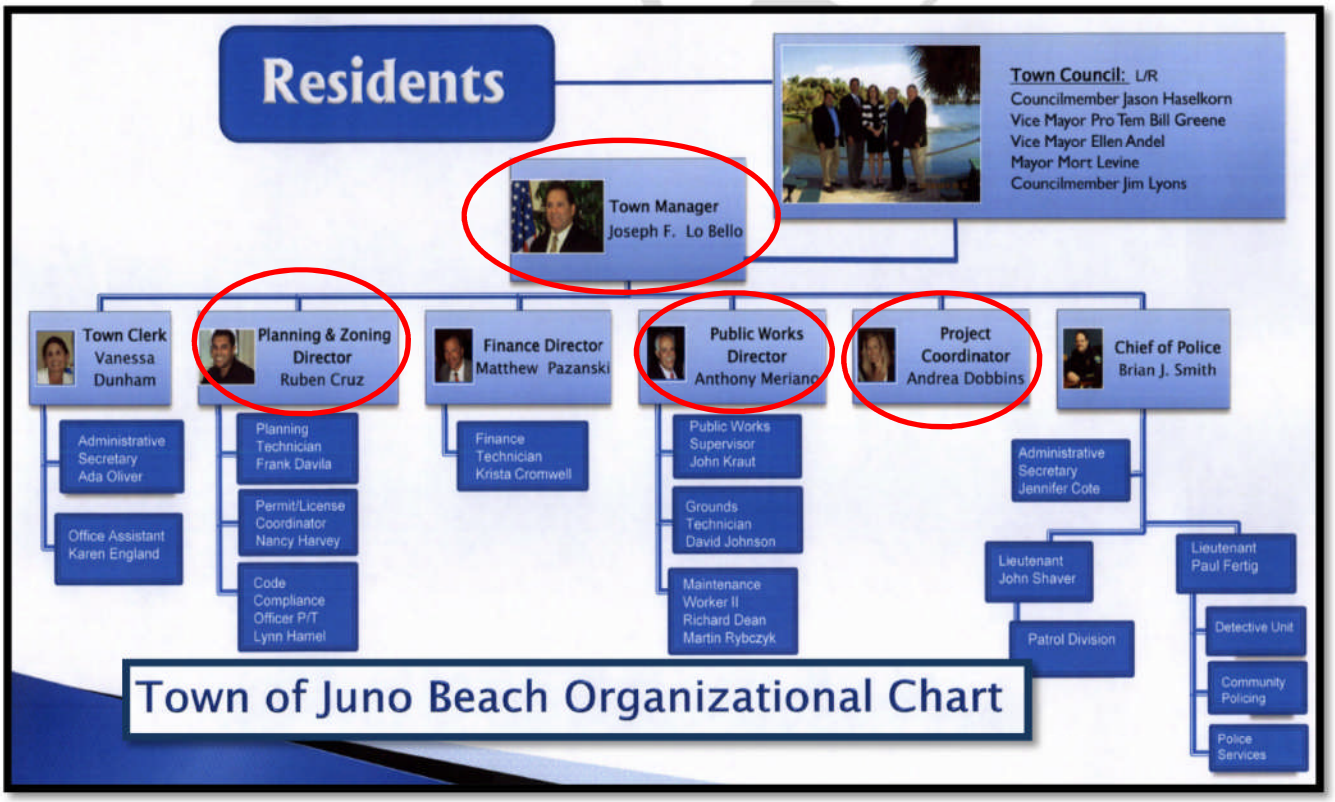
Flood Mitigation Committee

Andrea Dobbins, the Flood Mitigation Committee Chairperson, focused on assembling the resources and expertise needed for a successful mitigation planning process. This included identifying, organizing and engaging interested members of the public; as well as recruiting participation from the staff and other professionals who have the valuable technical expertise required during the planning process. Potential Flood Mitigation Committee members were targeted by placing advertisements on the Town's website. Few responses were received. Staff recommendations were then solicited and contacted. The Flood Mitigation Committee was comprised of Town Staff from those departments that will be implementing the plan's recommendations, as well as local stakeholders and residents. The committee make-up is as follows:

Flood Mitigation Committee - Town of Juno Beach Staff

- Andrea Dobbins- Juno Beach Project Coordinator
- Joseph Lo Bello- Juno Beach Town Manager
- Ruben Cruz, CFM- Juno Beach Director of Planning & Zoning
- Tony Meriano- Juno Beach Director of Public Works

The Town staff members participating on the Flood Mitigation Plan Committee and their positions within the Town organizational structure are illustrate below:



Flood Mitigation Committee - Town of Juno Beach Stakeholders and Residents

- Chris Banker- Insurance Agent/ Company President (Patriot Insurance Agency, LLC)
- Geri Brackman- Real Estate Agent (REMAX Ocean Properties), Resident representing Cote De La Mer
- Joanne Cassels Lander- HOA President representing Juno Ocean Walk RV Park
- David Cox- HOA Vice President representing The Manor Condo Community
- Tom Doyle- Resident representing Sea Oats Condo Community
- Bill Kollmer- Realtor/ Business Owner (Platinum Properties), Former Juno Beach Mayor, Former Planning & Zoning Board Member, 40 year resident
- Dave Manchester- HOA Secretary representing Juno Ocean Walk RV Park
- Cheri Sova- Engineer and Business Owner (Civil Solutions, Inc.), Resident representing Juno Ocean Walk RV Park
- Beverly Tartaglia- Resident representing Juno Ocean Walk RV Park
- Warren Turner- Resident

Committee Composition and Areas of Expertise

The Committee is composed of four Town staff members, one from each of the relevant Town Departments, and nine stakeholders (affected members of the public). Each of the Town departments represented on the Committee will be responsible for implementing action items in the following categories:

- **Preventative-** As the staff liaison to the Town Council, the Town Manager will be responsible for encouraging the Council to pursue planning practices and adopt legislation aimed at preventing future flooding issues. Through permitting and code enforcement, the Planning & Zoning Department and Building Official will then be responsible for enforcing the planning goals and building ordinances.
- **Property Protection-** The Projects Coordinator, Planning & Zoning and Public Works Departments will be responsible for assisting property owners who wish to mitigate flood losses to their properties.
- **Natural Resource Protection-** As overseer of the Town's Parks, the Public Works Department can implement some of the Natural Resource Protection measures, however the majority of these measures will most likely be enacted by the Planning and Zoning Department, or in extreme cases the Police Department, through the enforcement of ordinances established by the local, County and State government.
- **Emergency Services-** These action items will be handled by the local Police Department, which operates under the authority of the Town Manager, or by county-wide Emergency Service departments through coordination with the Town Manager and the Project Coordinator.

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- **Structural Projects-** The Public Works Department will complete all structural projects approved by the Town council and signed off by the Town Manager. The Projects Coordinator will also help coordinate large projects.
- **Public Information-** The Town Manager will oversee the general tone and frequency of public messaging efforts. However, the Project Coordinator will bear most of the responsibility for implementing the Public Outreach efforts. Additionally, each individual department will bear some responsibility for educating the public about the services and information offered.

The stakeholders on the Committee represent several key industries including insurance, real estate, engineering and property management. The Committee members also represented several affected neighborhoods, condos or developments with some members holding positions on their respective HOA Boards. The Committee provided invaluable input concerning problem identifications, goals and objectives, and mitigation actions and strategies for the plan. Members of the Committee were able to supplement the flood data that was obtained for this report with their personal knowledge and experiences concerning the flood hazard in the Town. In addition to the Committee, there were also other staff and visitors that participated in many of the meetings, providing valuable insight and raising valid concerns.

The Committee was fortunate enough to have a guest speaker that presented information at two of the meetings. During the April 2nd and April 17th meetings, Sheridan (Butch) Truesdale, Senior Planner, Emergency Management Division, and CRS Coordinator for Palm Beach County, spoke about all of the hazards that affect Palm Beach County. His presentation was interesting and well received by both the committee members and the other guests. Everyone was extremely thankful for the opportunity to discuss the issues with someone so highly regarded in the fields of Hazard Mitigation and Emergency Management.

Flood Mitigation Committee Meetings

The Committee identified the characteristics and potential consequences of the flood hazard in Juno Beach. Armed with an understanding of the risks posed by flooding, the Committee determined what the priorities should be and considered potential activities to avoid or minimize the hazard. The result is a flood mitigation plan, including a strategy for implementation.

In order to be effective, the Flood Mitigation Plan must be implemented through an Action Plan that includes a variety of activities, ranging from implementing specific mitigation projects to advocating code requirements for developers. To ensure the success of the ongoing program, it is critical that the plan remains relevant. Thus, it is important to conduct periodic evaluations and make revisions as needed.

These key steps were broken into sections that were individually presented and discussed at the Committee meetings. The breakdown of specific steps undertaken at each Committee meeting is as follows:

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Committee Meetings

Date	Planning Step(s)	Topics Covered
2/5/2013	1. Organize to Prepare the Plan	• Organize Committee, • Explain the FMP process
3/12/2013	2. Involve the Public 4. Assess the Hazard	• Gather Input, • Begin to Assess Local Hazards
4/2/2013	3. Coordinate 4. Assess the Hazard	• Continue Assessing Local Hazards, Discuss Communitywide Hazards, Introduce Mr. Truesdale
4/17/2013	4. Assess the Hazard	• Butch Truesdale Discusses Local & County Specific Flood Hazards
4/17/2013	**Community Outreach Meeting** 2. Involve the Public	• Community Outreach, Gather Input Concerning Local Problems
5/30/2013	5. Assess the Problem 6. Set Goals	• Identify Problems and Discuss Possible Goals to Correct Problems
6/27/2013	6. Set Goals	• Finish Establishing Goals in Preparation for RoPA
7/23/2013	6. Set Goals 7. Review of Possible Activities	• Approval of Goals, Explanation of RoPA and Action Plan, Begin RoPA
8/13/2013	7. Review of Possible Activities	• Continue Review of Possible Activities
9/5/2013	7. Review of Possible Activities	• Continue Review of Possible Activities
9/26/2013	7. Review of Possible Activities 8. Action Plan	• Finish Review of Possible Activities • Select Activities for Action Plan
11/7/2013	8. Action Plan	• Develop Action Plan
12/12/2013	8. Action Plan	• Review Action Plan
1/30/2014	2. Involve the Public **Community Outreach Meeting**	• Community Outreach: Public Review of Action Plan

Please see Exhibit 1 for a copy of the advertisements, agendas, sign in sheets and minutes from the Flood Mitigation Committee meetings.

Involve the Public in the Planning Process

The flood mitigation planning process is most effective when the citizens and stakeholders within the community are actively engaged. An extensive community involvement process was initiated throughout the development of this plan with opportunities provided to the citizens of Juno Beach to participate in the planning process. This direct representation and participation allowed the Committee to gain insight into current and past neighborhood-specific flood issues and possible mitigation actions.

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Having Juno Beach citizens on the planning committee had the following advantages:

- The participants recognized that they are involved and demonstrated their willingness to commit themselves to the process.
- The participants did some of the work, especially data gathering, thereby reducing the overall cost.
- The committee can prove to be an effective forum for discussing alternatives, debating goals and objectives, and matching the technical requirements of the program to local situations.
- It gave the participants a feeling of "ownership" of the plan and its recommendations, which helped build public support for it.
- Committee members form a constituency that will have a stake in ensuring that the plan is implemented.

The public was invited to every Committee meeting, by invitations on the Town's website and advertisement on the Town's marquee on Ocean Drive.

Over two thirds of the Flood Mitigation Committee members were from the public, including residents, representatives from the insurance, real estate, engineering industries, a retired mayor and members of several HOAs. Brief profiles of each of the members of the public on the Town of Juno Beach Flood Mitigation Committee are included below:

Geri Brackman- Real Estate Agent with REMAX Ocean Properties (CRS, SRES, e-PRO REALTOR®), Resident of the area since 1985, realtor since 1989, member of the North Palm Beach Chamber of Commerce, and a resident representing the Cote De La Mer Townhome Community

Warren Turner – Resident of Juno Beach Brigadoon

Cheri Sova, PE- Civil Engineer and Business Owner (Civil Solutions, Inc.), Resident representing Juno Ocean Walk RV Park

Tom Doyle- Resident representing Sea Oats Condo Community also holds a position on the Juno Beach Civic Association Board of Directors

Bill Kollmer- Realtor/ Business Owner (Platinum Properties), former Juno Beach Mayor, former Planning & Zoning Board member. Mr. Kollmer obtained experience as Project Manager for new condominiums on Singer Island and Bonita Springs, served twice as President of The Palm Beach Gardens Kiwanis Club, was a charter member of The Children's Museum of Juno Beach (now The Loggerhead Marinelife Center) board of directors and a town leader serving on the Juno Beach Planning and Zoning Board and Town Council with the position of Mayor for 11 years. In 1989, he was asked to join Celestial Realty in Juno Beach, soon becoming a partner and eventually the sole proprietor. In May, 2011 Mr. Kollmer merged Celestial Realty with Platinum Properties. His long involvement in northern Palm Beach County real estate certainly qualifies him as an expert in this local market. He is also a 40 year resident, and a Lifetime member of the Juno Beach Civic Association.

Beverly Tartaglia- Resident representing Juno Ocean Walk RV Park

David Cox- HOA Vice President representing The Manor Condominium Community

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Dave Manchester- HOA Secretary representing Juno Ocean Walk RV Park

Joanne Cassels Lander- HOA President representing Juno Ocean Walk RV Park, a highly rated Campground with privately owned lots that has become a snowbird haven, attracting seasonal residents from around the world and earning the "Woodall's" North American Campground Directory's top rating

Chris Banker- Insurance Agent/Company President (Patriot Insurance Agency, LLC), Vice President of the Juno Beach Civic Association

Community Outreach Meetings

The Flood Mitigation Committee held a community outreach meeting to obtain public input on the flood hazard, flood problems, and possible solutions to those problems. The community meeting was held early in the process, at the Town Center. Although the Town Center building is not actually in the SFHA, it is located along the banks of Pelican Lake, on a parcel directly adjoining the local SFHA. The location was both convenient and accessible to residents living within the SFHA. Opportunities were provided at this meeting for the general public to speak with representatives from the Town and with members of the Flood Mitigation Committee regarding their flooding problems, emergency response, questions, and concerns. The meeting was held on April 17, 2013. Four members of the public attended this meeting and were granted direct access to the three staff members and two consultants who were also present.

A second community meeting was held on January 30, 2014 to solicit input on the draft Action Plan. A copy of the Action Plan was sent to all members of the public that have shown an interest in flood mitigation planning and was placed on the Town's website. The community meetings were advertised on the Town's website, and in the local newspaper. Copies of these advertisements, the agenda, minutes, and sign in sheets are included in Exhibit 1. Responses from stakeholders are included in Exhibit 5.

Questionnaire Distributed to the Public

A questionnaire was developed, displayed in Town Hall at the yearly Preparedness Month display and distributed to interested parties seeking input, comments, recommendations, and information on their natural hazards, flood problems and possible solutions. The questionnaire was available at the Town

Hall and it was distributed at all public flood mitigation information meetings. The questionnaire sought the public's input regarding any past flooding problems that personally affected them or their surrounding neighborhoods, requesting information regarding:

- Location of home or business
- Flood history of the property (frequency and severity)
- Flood history of the street/neighborhood (frequency and severity)
- Concerns about natural hazards other than flooding
- Preparedness
- Use of flood insurance
- Respondent's suggestions on how to eliminate or reduce flood problems, including personal actions taken to protect themselves and their property from flooding

See Appendix A, which includes a copy of the questionnaire.

Solicitation of Comments and Recommendations

In an effort to communicate and coordinate with the public and local stakeholders, letters were sent to a number of stakeholders in the affected areas seeking their input, comments and recommendations, and asking for their support of the Town's flood mitigation efforts. These included the following:

- Neighborhood advisory groups
- Homeowners' associations
- Parent-teacher organizations
- Chamber of Commerce
- Neighboring communities
- Agencies involved in hazard mitigation activities
- Agencies that regulate development
- Businesses
- Academia
- State NFIP Coordinator
- State water resources agency
- FEMA regional office
- National Weather Service
- Red Cross
- Homebuilders' Associations
- Environmental Groups

See Exhibit 2, which includes is a list of stakeholders that represent the public in the affected areas from which comments and recommendations were solicited, and a copy of the letter that they received.

Explain the Planning Process to the Public

The Flood Mitigation Plan 10-step planning process was explained to the Town of Juno Beach staff at the first staff organizational meeting February 5th, 2013, and a handout showing the planning steps was distributed to all attendees. This process was also described and the steps completed were reviewed at each Flood Mitigation Committee meeting, as well as the public meetings on April 17th, 2013 and January 30th, 2014. The planning process was described on the Town's website, specifically outlining the ten steps of the Flood Mitigation / Floodplain Management Plan. See Exhibit 3, which includes documentation that shows how the planning process was explained and information distributed to the public.

Other Information Activities to Encourage Public Input

In an effort to communicate and coordinate with the public and stakeholders, an effort was made to encourage input to the Flood Mitigation Committee by advertisements in local newspapers, the Town's

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website, and by utilizing other means. The public was invited to every Flood Mitigation Committee Meeting via the Town's website and the Town's marquee at Town Hall. Information was also available inside the Town Hall during the month of September at the annual Preparedness Month Display. Please see Exhibit 3 for documentation of these outreach projects.

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Coordination with Other Organizations and Plans

In many communities, the prospect of undertaking a Flood Mitigation Plan is daunting. There is a misconception that the process must involve years of expensive hydrological and climatological engineering studies commissioned at the expensive of the tax payers. For larger municipalities, counties and urban epicenters with dense populations and ample tax revenues, the benefits, measured in lives saved and property protected, of undertaking such studies increases exponentially with the population, and may easily outweigh the cost. For small communities like Juno Beach, with limited resources, small tax bases and few personnel, the benefits in loss mitigation may not justify such immense expenditures. Fortunately, much of the costly work necessary to understand and mitigate the local flood hazard has already been done. This is where coordination comes into the process.

Value of Existing Resources and Information

According to the Federal Register, the United States government oversees 430 Federal Agencies that currently employ over 5 million people. Of those, the Federal Emergency Management Agency (FEMA) employs 2,131, the Department of Housing and Urban Development (HUD) employs 9,300, the Environmental Protection Agency (EPA) employs 18,879, the Department of Transportation (DOT) employs 100,000 and the Department of the Interior, which oversees Fish and Wildlife, the Geological Survey, the Land Management Bureau, and the National Park Service, employs 58,026. There are many responsibilities assigned to each of these agencies and all of them are accomplished with Federal funds. These agencies are tasked with projects such as conducting climatological, geographical and demographical research studies, completing capital improvements, preparing for calamities, planning for future development, enforcing legislation toward safer and more beneficial practices, safeguarding our natural resources and ensuring the safe transport of people and goods. Other government organizations and agencies that do valuable work related to flood mitigation are the National Oceanic and Atmospheric Administration (NOAA), the Army Corps of Engineers and the Census Bureau. Each of these agencies is a resource, and the work they all do is an extension of the broad and interconnected web of civil service.

In addition to Federal agencies, there are also state and local agencies, non-profit agencies such as the Red Cross, and private-public partnerships that are all working toward the public good. It is not necessary for small local governments to duplicate the work being done by these large agencies, nor is the result of all that work locked away in some secret vault. In this age of information technology, much of the necessary data is more up-to-date and accessible than ever before.

Beyond the capture and dissemination of critical information, collaboration between communities, agencies and organizations helps to maximize efforts toward organized, systematic and sustainable growth, magnifies the effect of small individual efforts, and allows for the most efficient use of money and manpower.

Coordination and the Flood Mitigation Planning Process

Coordination among numerous governmental agencies and organizations is beneficial for effective plan development, particularly as it relates to issues involving life and property. As a South Florida community, Juno Beach is part of a vibrant multi-jurisdictional metropolis. Throughout the Treasure Coast, people, goods, services, and utilities readily transcend and transect local town, city and county borders. Being part of a larger metropolitan area, every activity that Juno undertakes has an effect on adjacent communities and every effort undertaken by adjacent communities has the potential to affect the quality of life for the residents of Juno Beach. Palm Beach County, neighboring municipalities, the South Florida Water Management District, the Northern Palm Beach Drainage District, the School Board, regional, state and federal agencies, authorities and taxing districts are among the long list of key players who make direct or indirect decisions that impact residents, visitors, the economy and quality of life within the Town. The *Town of Juno Beach Flood Mitigation Plan* (FMP) Committee prioritized coordination with these agencies.

Hazard mitigation planning is most successful when it results in actions that also support other important community goals and objectives, so it is important that the development of a flood mitigation plan includes involving and coordinating with government agencies and private organizations for two reasons:

1. Other agencies may be implementing, or planning to implement activities that can affect flood damage, the hazards, or other local interests and concerns. The Committee needs to ensure to the greatest extent possible that its efforts and plans will not conflict with other essential government programs. Equally important, especially in this time of budget cuts, is to avoid duplication of efforts and resources.

2. Involvement of outside agencies and organizations may secure valued assistance. This assistance may be in the form of hazard data, technical information on various measures, guidance on regulatory requirements, advice in the planning effort, implementation of a recommended measure, and/or financial participation to help implement a recommended measure.

At the beginning of the planning process, a letter was sent to 41 recipients to request input on the Town's flood mitigation planning efforts. These recipients included neighboring communities, local, regional, state, and federal agencies, businesses, academia and other private and non-profit organizations that may be affected by the flood hazard or involved in flood mitigation or floodplain management. A copy of the letter and a list of recipients are included in Exhibit 2. The committee was very encouraged by the response. They received and reviewed several replies from prominent resources and stakeholders.

The following responses were received by the Committee:

- **Butch Truesdale**, Palm Beach County Emergency Management Division, Senior Planner suggested via telephone that some of the action items should be submitted to the LMS for scoring and prioritization for grant funding. He also offered to attend Flood Mitigation Planning meetings and present relevant information about the various flood hazards locally specific to Palm Beach County.

- **Alison Kearns**, Mitigation Planner, Florida Division of Emergency Management, explained that her department has been recommending that communities integrate their Flood Mitigation Plans into their Local Mitigation Strategies (LMS). She offered a link to the *Recommended Integration Practices: Strengthening the Floodplain Portions of the Local Mitigation Strategy* guide prepared by the State Emergency Management Office.

- **Francis Lewis**, PE, District Drainage Engineer, Florida Department of Transportation, discussed the FDOT US 1 project currently underway within the Town. He highlighted the drainage work being completed as a part of this project which includes the installation of an exfiltration trench and the regrading of roadside swales. He asked that the committee contact him if any additional involvement is requested.

- **Cynthia Bailey**, Hazard Mitigation Program Analyst, FEMA, Florida Division Region IV, replied to indicate that she had forward the request for information to the appropriate people and offered the contact information of the Lead Mitigation Planner, Laura Herbert.

- **Angela Usher,** Manager, Planning & Real Estate Services, Division of Support Operations, School District Palm Beach County, provided information indicating that according to their Capital Plan, the Palm Beach County School District currently has no plans of acquiring or developing real estate assets within the Town. She did, however, ask that she be kept informed of the Town's efforts and progress.

- **David Rotar**, Utility Services Manager, Town of Jupiter, offered Flood Mitigation Planning assistance, should the Town require it. He also offered insight into a locally specific flood problem affecting the Juno Ocean Walk RV Park near the border between Juno Beach and Jupiter.

- **Jeffrey Payne, PhD**, Acting Director, NOAA Coastal Services Center, responded on behalf of NOAA's Assistant Administrator for Ocean Services and Coastal Zone Management, Dr. Holly Bamford. Dr. Payne provided a detailed list of NOAA products and resources to help during the planning process and indicated that he would be available should the Town require assistance.

- **Theo Dressler**, Senior Director, Emergency Services, American Red Cross, replied with a letter explaining in detail what part the Red Cross would play in the community immediately after a disaster. From opening temporary shelters to arranging long term solutions for displaced families, the Red Cross is committed to partnering with local governments during the post-storm recovery phase. The response also indicated that the Red Cross is available for pre-storm training efforts. The organization and preparation of groups of volunteers before a flood was suggested.

Review of Existing Studies, Reports, and Plans for the Area

The Flood Mitigation Committee has access to a wide variety of information. Members, local government offices, and many other sources allow for the group to bring information together for planning purposes. This information has been compiled to address mitigation issues and establish mitigation initiatives for incorporation into this FMP.

The Town's community development goals and floodplain management / mitigation goals may be mutually supportive or they may conflict, but they must be acknowledged. Therefore, the development of this FMP has included a concerted effort to assure it is in conformance with the Town's other plans, studies and reports, many of which were used for reference or informational purposes.

This FMP conforms with and applies the principles and guidance offered by the *Town of Juno Beach Comprehensive Plan* to ensure that it considers, is consistent with, and is supportive of the Comprehensive Plan and also the related plans of neighboring municipalities and other governmental entities as well as regional, State and Federal plans and requirements. It is the intent of the Flood Mitigation Plan Committee that the FMP be consistent with and support the Town's *Comprehensive*, and *Stormwater Management Plans,* the *Palm Beach County Local Mitigation Strategy*, *Comprehensive Emergency Management*, and *Post-Disaster Redevelopment Plans*, the *Juno Dunes Natural Area Management Plan* and other studies, reports and technical information.

Plans, flood studies, reports and technical information from state agencies and neighboring counties and municipalities were reviewed in the planning process. Most of these documents can be found in their entirety on the Internet. Following is a listing of the documents that have been examined during the development of this plan to collect helpful information and to assure conformance with their goals and objectives. This listing should prove helpful to the Flood Mitigation Committee in future planning efforts, especially for annual evaluations and five-year updates of this FMP. A list of the website addresses of the following documents is included as Appendix B:

- ✓ Town of Juno Beach Comprehensive Plan Effective March 29,1997 (Update is in progress)
- ✓ Town of Juno Beach Stormwater Management Plan July 2009
- ✓ Juno Beach Development Redevelopment Opportunities Report March 2013
- ✓ Juno Beach Comprehensive Annual Financial Report 2013
- ✓ Flood Insurance Study Wave Height Analysis, Town of Juno Beach, Florida, March 1982
- ✓ Management Plan for Juno Dunes Natural Area November 2011
- ✓ Palm Beach County Unified Local Mitigation Strategy 2009 (Update is in progress)
- ✓ Countywide Post Disaster Redevelopment Plan Palm Beach County, Florida August 2006 (Update is in progress)
- ✓ Palm Beach County Comprehensive Emergency Management Plan 2011
- ✓ Palm Beach County Department of Public Safety Division of Emergency Management Recovery Plan 2011

- ✓ Palm Beach County Hurricane Survival Guide
- ✓ Flood Insurance Study, Palm Beach County, Florida, August 1978
- ✓ Preliminary Flood Insurance Study, Palm Beach County and Incorporated Areas, 2013
- ✓ Flood Insurance Study Wave Height Analysis, Palm Beach County, Florida, April 15, 1982
- ✓ State of Florida Division of Emergency Management Hurricane Ono Consequences, Version 7
- ✓ State of Florida Division of Emergency Management 2008-2013 Strategic Plan
- ✓ Integrating Hazard Mitigation into Comprehensive Planning, Palm Beach County Profile
- ✓ Extended Range Forecast of Atlantic Seasonal Hurricane Activity and Landfall Strike Probability For 2014
- ✓ NOAA Storm Event Database
- ✓ Florida Building Code Cost and Loss Reduction Benefit Comparison Study
- ✓ Impact of Hurricanes on Housing and Economic Activity: A Case Study for Florida 2006 produced by the NATIONAL ASSOCIATION OF REALTORS
- ✓ Division of Emergency Management State of Florida Enhanced Hazard Mitigation Plan
- ✓ Treasure Coast Transportation Analysis Hurricane Evacuation Study Update
- ✓ Florida Statewide Regional Evacuation Study Program
- ✓ Sea Level Rise in the Treasure Coast Region, Treasure Coast Regional Planning Council, December 2005
- ✓ Profile of General Demographic Characteristics – Treasure Coast Regional Planning Council website
- ✓ A Region Responds to a Changing Climate, Regional Climate Action Plan, October 2012
- ✓ 2013 South Florida Environmental Report prepared by SFWMD

Meeting with Other Agencies and Organizations

As a result of the Flood Mitigation Plan Committee's efforts to include stakeholders and pertinent agencies and organizations in the planning process, many helpful responses were received. Committee representatives were especially privileged to be able to discuss local hazards, common problems, mitigation strategies, and programs with a highly regarded local professional who is well versed in Emergency Management and Hazard Mitigation:

- **Sheridan "Butch" Truesdale**, Palm Beach County Emergency Management Division, Senior Planner, is known as one of the region's foremost mitigation and recovery experts. Mr. Truesdale was awarded the Lifetime Achievement Award at the 2012 Florida Governor's Hurricane Conference for his years of service in emergency management. He has served as the County's CRS Coordinator and developed the County's post-disaster redevelopment plan for catastrophic disasters through the PDRP, and has developed and implemented highly acclaimed programs and initiatives that have become standards for communities around the country. Mr. Truesdale is also involved in building a private-public partnership, endeavoring to engage the private sector in a way that will add to the capacity of the County in Emergency Management. He is working together with Miami Dade, Broward and Monroe Counties to put together a regional partnership. This group has pushed legislation through the

State government resulting in a State statute requiring emergency generators at gas stations on the evacuation routes, and has supported legislation which will protect private sector families providing refuge to first-responders and their families who have been displaced by storms. Mr. Truesdale attended two FMP Committee meetings and presented valuable hazard identification, hazard vulnerability analysis and historical flooding information.

Solicitation of Input on the Draft Action Plan

A draft of the *Town of Juno Beach Flood Mitigation Plan* Action Plan was posted on the Town's website, along with an invitation to the community outreach meeting on January 30, 2014. See Exhibit 5 for documentation supporting the committee's effort to involve the public in a review of the action plan.

Assess the Flood Hazard

Flood or flooding refers to the general or temporary conditions of partial or complete inundation of normally dry land areas from the overflow of inland or tidal water and of surface water runoff from any source. Floodplains are defined as any land areas susceptible to being inundated by water from any flooding source.

Flooding can be divided into two major categories: Coastal and Inland/Riverine. While there are no rivers in the Town of Juno Beach and little flooding has occurred in the past, Juno Beach's low-lying topography combined with its subtropical climate makes it highly vulnerable to inland flooding. Those areas lying east of Federal Highway are particularly vulnerable to coastal flooding from storm surges, and people living in those areas should be prepared if a major storm threatens.

In the Town of Juno Beach intense or prolonged, concentrated rain is the primary cause of localized flooding. Major rainfall events occur in association with hurricanes, tropical storms, and thunderstorms associated with frontal systems. According to the current Juno Beach FIRMs, the extent of flooding during a 100 year (1% chance) storm for portions of Juno Beach near Pelican Lake would be 7 feet. Other pockets of the Town could expect 5 feet of flooding. Coastal areas would be exposed to 8 feet of flooding with additional hazard due to velocity (wave action).

Flooding in the Town of Juno Beach can occur as a result of one, or a combination of two or more of the following events:

- Thunderstorms
- Tropical Cyclone
- Dam/Dike Failure
- Sea Level Rise
- Coastal Waves
  - Storm Surge
  - Tsunami

As stated in the *Relative Probability of Hazards* table, the *Palm Beach County Local Mitigation Strategy 2015* lists the relative probability of flooding in Juno Beach to be high. In the LMS, "high" is further defined as having a greater than 15% chance of occurring.

Risk, or the probability of loss, depends on three elements:

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

As stated in the *Risk Assessment by Hazard and Jurisdiction* table in the *Palm Beach County Local Mitigation Strategy 2015 (LMS),* the following describes the relative **risk of the Town** to flooding:

- the **frequency** of flooding in the Town of Juno Beach is considered to be **high**
- the **vulnerability** of the Town to the impacts of flooding is considered to be **high**
- the **exposure** of the Town to the effects of flooding is **high**
- therefore the **risk** is determined to be **high**

According to the NOAA Storm Event Database, Palm Beach County has experienced 46 flood related

events and three flood related deaths in the 10 years, from June 2004 until June 2014. Two days during this period involved both an event and a death, and two days during this period involved both an event and crop damage. The total economic cost of those events was estimated to be $10.789 billion in property damage and 100 million dollars in crop damage. Of those 46 events, 27 were issued specifically for coastal Palm Beach County communities. That would average out to 2.7 flood events per year or one event every 137 days. Being along the Atlantic Coast, Juno Beach shares similar geography, topography, infrastructure and population densities with the other Palm Beach County barrier island communities. It can thereby be concluded that county-wide coastal risk assessments can also be applied specifically to Juno Beach. Additionally, because of the individual communities' small geographical areas and close proximity to each other, most flooding events that affect Palm Beach County simultaneously affect multiple municipalities, making it difficult to isolate the data by individual community. The extent of flooding that is possible within Juno Beach is high due to the fact that virtually all of the Town lies within a Category 4 Storm Surge area. This is also supported by the number of structures located within the Special Flood Hazard Area (SFHA). By definition, and according to elevation studies, structures located within a SFHA are recognized as having a relatively high risk for flooding and are insured against a higher probability of flooding than structures located outside the SFHA. Juno Beach has a full-time population of 3,191 and 222 structures located within the SFHA. That is 1 at risk structure for every 14 people.

The following data about the flood risk assessed to Palm Beach County comes from the *2009 Palm Beach County LMS;* Appendix A- 4: Risk Assessment Hazard Evaluation for Palm Beach County:

Hazard Category	Frequency	Vulnerability
Flood	Flooding significant enough to damage property has occurred 4 times in the last decade and twice in the last 12 months (as of 2009)	Damages resulting from the 1999 flooding totaled $7,823,330 Countywide vulnerability is high, but area specific

Hazard Category	Exposure	Risk	
Flood	Property damage along the coast of Palm Beach County occurs most often in the late winter or early spring and is associated with winter storms and northeasters. Flooding in the inland portions of the county occurs most often in the fall and is often associated with tropical depressions and tropical storms. Incidences of flooding in specific areas of Palm Beach County seem to be on the increase. Flooding exposure for Palm Beach County based on the tropical storm flooding data from the TAOS database is: $373,723,710	Frequency	High
		Vulnerability	High
		Exposure	High
		Risk	High

Thunderstorms

Thunderstorms are a frequent part of Florida life. They occur in all seasons of the year in Florida, but they are more numerous during the warm season when the wind off the sea flows inland during the afternoon. On an annual basis, communities in Florida usually experience thunderstorms 75 to 105 days per year, with Juno Beach experiencing 70-80 per year. In fact, Florida leads the United States annually in the number of thunderstorm days. Out of 100,000 thunderstorms that occur within the United States each year, approximately 1 out of every 10 storms can become severe, causing damage or posing a threat to life.

Average Rainfall for Palm Beach County (30 YEAR: 1981-2010):

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Inches	2.96	2.88	4.12	3.23	4.66	8.2	6.54	8.06	8.49	5.56	4.15	2.92	61.77

Information from the South Florida Water Management District website

Average Rainfall for the Town of Juno Beach (30 YEAR: 1981-2010):

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Inches	2.72	3.43	5.58	3.81	4.59	9.08	5.76	8.04	8.14	5.55	4.7	3.62	65.02

Information from the National Climatic Data Center Website

The annual average rainfall in the United States is 38.67". The average annual rainfall in the Town of Juno Beach is 65.02", with June through September usually being the wettest months. The following table from the National Oceanic and Atmospheric Administration summarizes the daily and nightly likelihood of precipitation during each month of the year:

Climatological Probabilities of Precipitation for
South Florida from 1985-1997

Nighttime Probabilities of Precipitation*

STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Palm Bch.	**20%**	**15%**	**22%**	**17%**	**21%**	**30%**	**22%**	**31%**	**39%**	**25%**	**19%**	**13%**
Miami	16%	12%	15%	13%	18%	29%	24%	24%	33%	26%	19%	11%
Key West	14%	10%	13%	11%	17%	23%	21%	25%	35%	26%	13%	13%

Daytime Probabilities of Precipitation*

STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Palm Bch.	**24%**	**19%**	**26%**	**22%**	**22%**	**43%**	**37%**	**40%**	**42%**	**29%**	**21%**	**15%**
Miami	17%	14%	17%	18%	22%	44%	42%	46%	42%	31%	19%	13%
Key West	13%	9%	12%	12%	13%	24%	27%	31%	38%	25%	15%	11%

* From (1985-1997) for Miami and (October 1986-1997) for Palm Beach and Key West

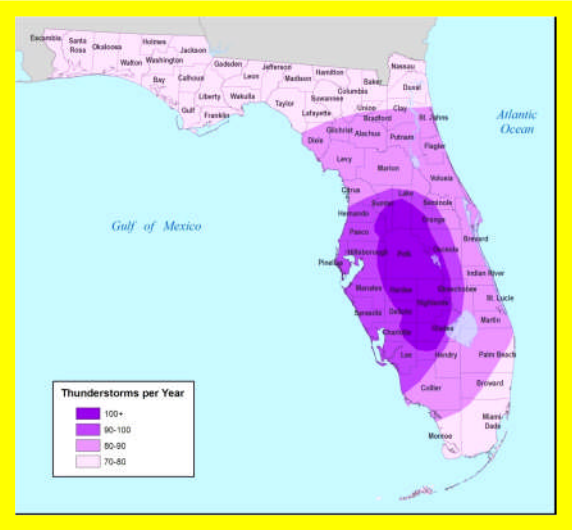
Three things need to be present in the atmosphere for a thunderstorm to form. First, the atmosphere needs to be unstable. An unstable atmosphere is essentially one in which warmer air near the ground will have a tendency to rise higher in the sky, much like a hot air balloon. Second, there needs to be a source of lift to get the air to rise. This lifting mechanism can be a cold front, winds from another nearby thunderstorm, or even a cooler breeze off the nearby sea, known as a sea breeze boundary. The sea breeze is the most common trigger for thunderstorms during the summer months in Florida. The lifting mechanism acts much like a large plow or shovel that forces the air upwards. Once the lift gets the air to move upwards, then the instability in the atmosphere accelerates the air upwards. Third, there needs

to be enough moisture in the atmosphere to help make clouds as the air rises. Without moisture, no clouds will form, even in the presence of lift and an unstable atmosphere.

Florida experiences more thunderstorms than other states because:

1. Florida is located close to large bodies of water that provide moisture. Evaporation of the warm ocean waters from the Atlantic and Gulf of Mexico contribute to Florida's humid climate and provide the necessary moisture for thunderstorms to form.
2. Florida receives plenty of sunlight, which warms the air near the ground and causes unstable air; and
3. Florida has frequent sea breezes that provide lift for the thunderstorms.

Without any one of these three elements, Florida would not have such numerous thunderstorms.



Thunderstorms affect a relatively small area when compared to a hurricane. The typical thunderstorm is 15 miles in diameter and lasts an average of 30 minutes. Despite their small size, all thunderstorms are dangerous. Nationally, more than 90 fatalities each year are attributed to the flooding caused by thunderstorms, making flash flooding the leading cause of thunderstorm-related deaths in this country. Heavy rainfalls, capable of dropping significant rain in a short period of time, may occur without warning and may not be associated with any named tropical storm.

The following table from the preliminary *2013 Palm Beach County Flood Insurance Study* highlights the likelihood of excessive amounts of rainfall during any 24 hr. period (Juno Beach is located along the North Coast):

24 Hour Rainfalls Palm Beach County (Inches)

Region	Frequency			
	10-percent annual-chance	2-percent-annual-chance	1-percent-annual-chance	0.2-percent-annual-chance
North Coast	9.5	14.0	16.0	24.0
South Coast	10.0	16.5	19.5	27.0
Central	8.0	14.0	15.0	19.0
Western	8.0	11.0	12.5	16.0

Storms severe enough to cause flooding and damage occur frequently throughout Florida, including Juno Beach, during the summer. For the safety of the public, severe thunderstorm watches and warnings are issued by the National Weather Service, as well as flood watches and warnings due to heavy rainfall that may accompany the storms.

The *Relative Probability of Hazards* table in the *Palm Beach County Local Mitigation Strategy 2015 (LMS)* lists the probability of Juno Beach experiencing a Severe Thunderstorm as greater than 15%.

Taken from the *Risk Assessment by Hazard and Jurisdiction* table in the *Palm Beach County Local Mitigation Strategy 2015 (LMS),* the following shows the relative vulnerability to the Town to the thunderstorms.

The tables in the LMS show probability of occurrence and impact. These will be rated as low = under 5% chance of occurring, medium, 5% - 15% chances of occurring, or High, greater than 15%.

• An impact rating of "Low" for any hazard type means the hazard is not likely to have any measurable or lasting detrimental impact of a particular type and consequences will likely be rectified promptly with locally available resources. The chances here are less than 5%.

• An impact rating of "Medium" means there will likely be a measurable detrimental impact which may require some time to rectify and may require outside resources and/or assistance. The chances here are between 5% - 15%.

• An impact rating of "High" means the impact will likely be severe and of longer duration, and require substantial time, resources, and/or outside assistance to rectify. The chances are greater than 15%.

- The **frequency** of thunderstorm occurrence in the Town of Juno Beach is considered to be **high-** 70-80 thunderstorm days per year.
- The **vulnerability** of the Town is considered to be **high-** Although NOAA issues Severe Thunderstorm watches and warnings there is often little time to prepare for individual thunderstorms and, unlike the area affected by storm surge which can be modeled and mapped, thunderstorms can cause flooding just about anywhere, even outside of the SFHA, making virtually every person and property within the Town vulnerable.
- The **exposure** of the Town to the impacts of thunderstorms is **medium-** Although the entire Town is subject to the *possibility* of thunderstorms, each thunderstorm generally only affects an extremely limited area as compared to the vast area affected by a Tropical Cyclone.
- Therefore the **risk** to the Town is determined to be **medium.**

Tropical Cyclones

In general terms, a hurricane is a cyclone. A cyclone is any closed circulation developing around a low pressure center in which the wind rotates counterclockwise in the Northern Hemisphere (or clockwise in the Southern Hemisphere) and whose diameter averages 10 to 30 miles across. A tropical cyclone refers to any such circulation that develops over tropical waters. They act as a safety-valve that limits the build-up of heat and energy in tropical regions by maintaining the atmospheric heat and moisture balance between the tropics and the poleward latitudes.

As a developing center moves over warm water, pressure drops (measured in millibars or inches) in the center of the storm. As the pressure drops, the system becomes better organized and the winds begin to rotate around the low pressure, pulling the warm and moist ocean air. It is this cycle that causes the wind (and rain) associated with a tropical cyclone. If all of the conditions are right (warm ocean water

and favorable high altitude winds), the system could build to a point where it has winds in excess of 155 miles per hour and could become catastrophic if it makes landfall in populated areas.

Tropical cyclones with a maximum sustained wind speed of less than 39 mph are called tropical depressions. When the maximum sustained wind speed ranges between 40-73 mph they are tropical storms. When the maximum sustained wind speed exceeds 74 mph they are called hurricanes.

Hurricanes vary greatly in size, intensity, behavior, and movement. All hurricanes are dangerous, but some are more so than others. The way storm surge, wind and other factors combine determine the hurricane's destructive power. Hurricanes are destructive because they produce damage due to high winds, large amounts of rainfall and storm surge. Storm surge is simply water that is pushed toward the shore by the force of the winds swirling around the storm. This advancing surge can combine with the normal tides to create the storm tide. An intense hurricane can send a dome of water more than 18 feet deep ashore as the storm hits land. Coastal flooding can be difficult to predict. Flooding may be worse from a direct hit by a lesser category hurricane, in comparison to a glancing hit by a larger category storm.

In the Town of Juno Beach, storm surge flooding that will occur during a hurricane or major storm will be along the Atlantic Coast, along the banks of Pelican Lake and, on the western side of the Town, along the Intracoastal Waterway and the finger canals off the Intracoastal Waterway. A further discussion of the storm surge hazard in the Town follows in the "Storm Surge and Storm Tide" section of this Flood Mitigation Plan.

In the Town of Juno Beach, damage during hurricanes may also result from inland flooding and heavy rainfall that usually accompanies these storms. This overabundance of rainfall creates saturated soil conditions that cause surface ponding or an overflow of catchment canals and ponds. In a few areas of Juno Beach the lack of proper drainage exacerbates the problem.

To make comparisons easier and to make the predicted hazards of approaching hurricanes clearer, the National Oceanic and Atmospheric Administration's hurricane forecasters use a disaster-potential scale that assigns storms to five categories. This can be used to give an estimate of the potential property damage and flooding expected along the coast with a hurricane.

The scale was formulated in 1969 by Herbert Saffir, a structural consulting engineer, and Dr. Bob Simpson, director of the National Hurricane Center. The World Meteorological Organization was preparing a report on structural damage to dwellings due to windstorms, and Dr. Simpson added information about storm surge heights that accompany hurricanes in each category.

The Saffir-Simpson Hurricane Scale is a 1-5 rating based on the hurricane's present intensity. This is used to give an estimate of the potential property damage and flooding expected along the coast from a hurricane landfall. Wind speed is the determining factor in the scale, as storm surge values are highly dependent on the slope of the continental shelf and the shape of the coastline in the landfall region. A narrow shelf, or one that drops steeply from the shoreline and subsequently produces deep water in close proximity to the shoreline, tends to produce a lower surge but higher and more powerful storm waves. This is the situation along most of the Atlantic Ocean side of the state of Florida.

SAFFIR-SIMPSON HURRICANE DAMAGE POTENTIAL SCALE

Category	Central Pressure inches	Central Pressure millibars	Winds (mph)	Surge (ft.)	Damage
1	>28.94	>980	74-95	4-5	Minimal
2	28.50-28.91	965-979	96-110	6-8	Moderate
3	27.91-28.47	945-964	111-130	9-12	Extensive
4	27.17-27.88	920-944	131-155	13-18	Extreme
5	<27.17	<920	>155	>18	Catastrophic

Category 1 Winds 74-95 mph. Storm surge generally 4 to 5 feet above normal. No real damage to building structures. Damage primarily to unanchored mobile homes, shrubbery, and trees. Some damage to poorly constructed signs. Also some coastal road flooding and minor pier damage.

Category 2 Winds 96-110 mph. Storm surge generally 6-8 feet above normal. Some roofing material, door and window damage of buildings. Considerable damage to shrubbery and trees blown down. Considerable damage to mobile homes, poorly constructed signs, and piers. Coastal and low-lying escape routes flood 2-4 hours before arrival of the hurricane center. Small crafts in unprotected anchorages break moorings.

Category 3 Winds 111-130 mph. Storm surge generally 9 to 12 feet above normal. Some structural damage to small residences and utility buildings with a minor amount of curtain wall failures. Damage to shrubbery and trees with foliage blown off trees and large trees blown down. Mobile homes and poorly constructed signs are destroyed. Low-lying escape routes are cut by rising water 3-5 hours before arrival of the center of the hurricane. Flooding near the coast destroys smaller structures with larger structures damaged by battering from floating debris. Terrain lower than 5 feet above mean sea level may be flooded inland 8 miles or more. Evacuation of low-lying residences within several blocks of the shoreline may be required.

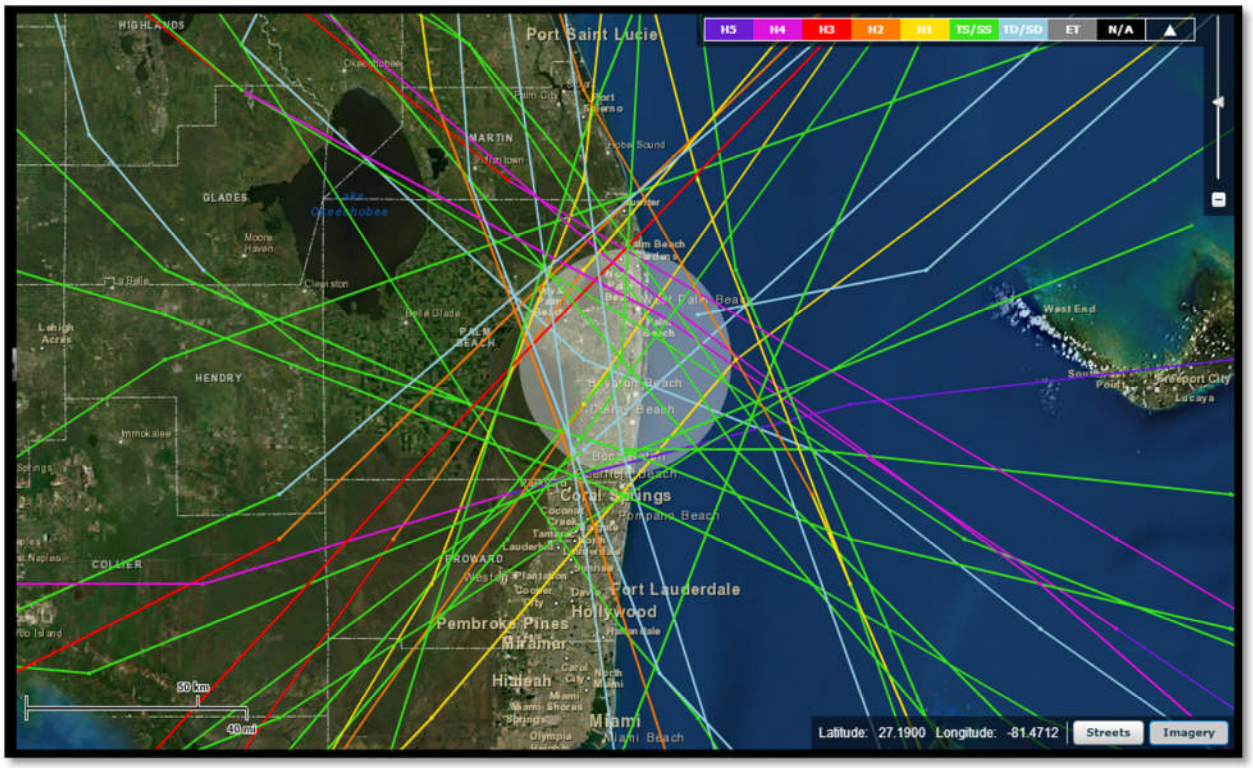
Category 4 Winds 131-155 mph. Storm surge generally 13-18 feet above normal. More extensive curtain wall failures with some complete roof structure failure on small residences. Shrubs, trees, and all signs are blown down. Complete destruction of mobile homes. Extensive damage to doors and windows. Low-lying escape routes may be cut by rising water 3 to 5 hours before arrival of the center of the hurricane. Major damage to lower floors of structures near the shore. Terrain lower than 10 feet above sea level may be flooded requiring massive evacuation of residential areas as far inland as 6 miles.

Category 5 Winds greater than 155 mph. Storm surge generally greater than 18 feet above normal. Complete roof failure on many residences and industrial buildings. Some complete building failures with small utility buildings blown over or away. All shrubs, trees, and signs blown down. Complete destruction of mobile homes. Severe and extensive window and door damage. Low-lying escape routes are cut by rising water 3 to 5 hours before arrival of the center of the hurricane. Major damage to lower floors of all structures located less than 15 feet above sea level and within 500

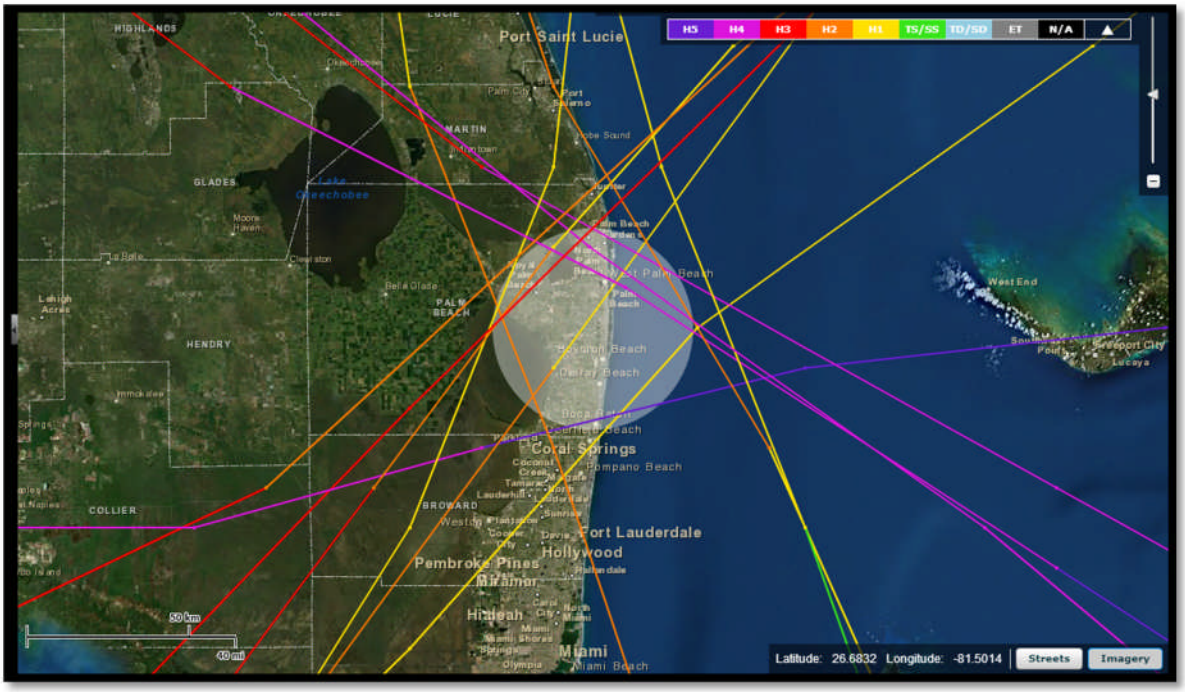
yards of the shoreline. Massive evacuation of residential areas on low ground within 5-10 miles of the shoreline may be required. Only three Category Five Hurricanes have made landfall in the United States since records began.

Being a barrier island community, all of the Town of Juno Beach could possibly be subject to flooding by storm tides. In the event that a major hurricane threatens Palm Beach County, many low-lying coastal areas would be inundated to varying depths by the storm surge and exceptionally high tides which accompany the storm. Tides 3-4' above normal could occur 24-36 hours before the eye of the hurricane reaches the coastline. Many of the causeways, as well as mainland coastal roads, could be inundated well in advance of the storm's arrival, thus restricting or denying their use as evacuation routes. The specific hazards of Storm Surge and Storm Tides are discussed in detail as part of the following Section about Coastal Waves.

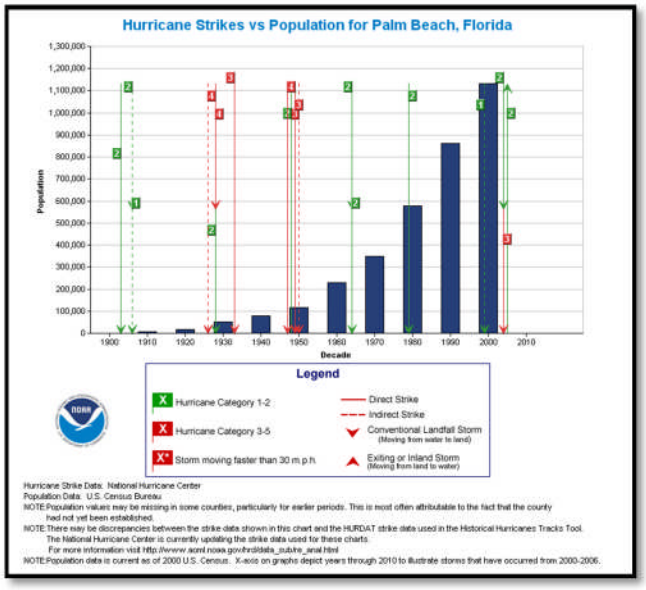
Below are the storm tracks of tropical systems that have impacted Palm Beach County:



The following image shows the storm tracks of Hurricanes (Category 1-5) that have impacted Palm Beach County:



As demonstrated by the NOAA chart below, the majority of severe Hurricanes (Category 3 or greater) to affect Palm Beach County did so when the population was relatively low (between 1925 and 1950). In 1953, the year-round population of Juno Beach (number of people residing in the Town during Hurricane Season) was only 130 and the current year-round population is 3,191 (representing an increase of over 2400%). Therefore, if equivalent Category 3 or greater landfalls were to occur today, significantly more (about 24 times more) people and property would be affected.



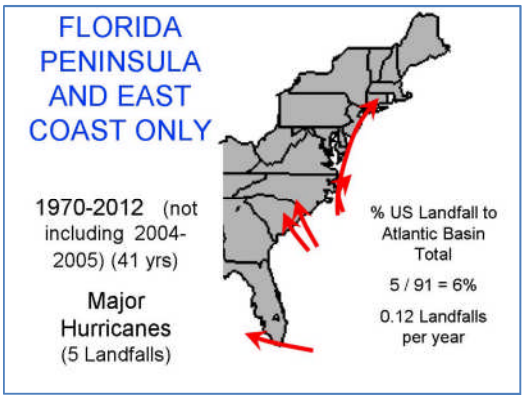
Since 1886, 51 storms of hurricane intensity have passed within 125 miles of Palm Beach County. This represents an average of one hurricane every two years. The number of direct hits on the southeastern Florida coastline between 1899 and 1999 has been as follows:

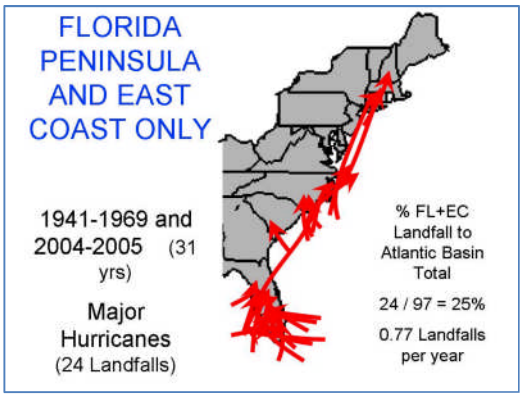
- Category 1 Storms: (winds 74 to 95 mph) = 4 storms (4 % annual probability);
- Category 2 Storms: (winds 96 to 110 mph) = 10 storms (10% annual probability);

- Category 3 Storms: (winds 111 to 130 mph) = 7 storms (7% annual probability);
- Category 4 Storms: (winds 131 to 155 mph) = 6 storms (6% annual probability);
- Category 5 Storms: (> 155 mph) = 1 storm (1% annual probability)

From 1995-2012, only four major hurricanes out of 66 (6%) that formed in the Atlantic basin have made landfall along the Florida Peninsula/East Coast. The 20th century average is that approximately 18% of all major hurricanes that form in the Atlantic basin make Florida Peninsula/East Coast landfall. There have been one-third as many major hurricanes making Florida Peninsula/East Coast landfall during the most recent active period when compared with the 20th century average.

More impressive signals can be seen if the 2004-2005 hurricane seasons are excluded, when three major hurricanes made landfall along the Florida Peninsula and East Coast. From 1941-1969 and 2004-2005, 24 major hurricanes made landfall along the Florida Peninsula/East Coast over 31 years, or 0.77 major hurricane landfalls per year. This compares with the 1970-2012 (excluding 2004-2005) average when an average of only 0.13 major hurricane landfalls per year occurred (or approximately one-sixth as many landfalls per year during the more recent period).





From Philip J. Klotzbach and William M. Gray at Colorado State University in the *Qualitative Discussion of Atlantic Basin Seasonal Hurricane Activity for 2014* (issued December 10, 2013) the statement is made that one of the big uncertainties for the 2014 Atlantic basin hurricane season is whether or not El Niño will develop. Their quantitative forecast for 2014 was issued on Thursday, April 10, 2014 and predicts below average hurricane activity due to the likelihood of the development of a moderate strength El Niño. The table below shows the climatological probabilities for the 2014 hurricane season for different Tropical Cyclone categories for the East Coast of the United States:

Region	Tropical Storm	Category 1-2 Hurricane	Category 3-4-5 Hurricane	All Hurricanes	Named Storms
Florida plus East Coast (Regions 5-11) Predicted 2014 Probability	34%	29%	20%	43%	63%
Florida plus East Coast (Regions 5-11) Long-term Mean Annual 100 Year Probability	50%	44%	31%	61%	81%

In 2014 Colorado State University also issued the following tropical cyclone landfall probabilities. Southeast Florida is considered Region 6:

April 2014 Regional Probability Data (Predicted)

Region Number	Probability of 1 or More Named Storms Making Landfall in the Region	Probability of 1 or More Hurricanes Making Landfall in the Region	Probability of 1 or More Intense Hurricanes Making Landfall in the Region
6	24.0%	17.8%	8.6%

April 2014 County Probability Data (Predicted)

County Name >>>	Palm Beach
Probability of 1 or More Named Storms Making Landfall in the County	3.6%
Probability of 1 or More Hurricanes Making Landfall in the County	2.6%
Probability of 1 or More Intense Hurricanes Making Landfall I the County	1.2%
Probability of Tropical Storm Force (≥ 40 mph) Wind Gusts in the County	21.1%
Probability of Hurricane Force (≥ 75 mph) Wind Gusts in the County	7.1%
Probability of Intense Hurricane Fore (≥ 115 mph) Wind Gusts in the County	2.7%

50 Year Regional Data

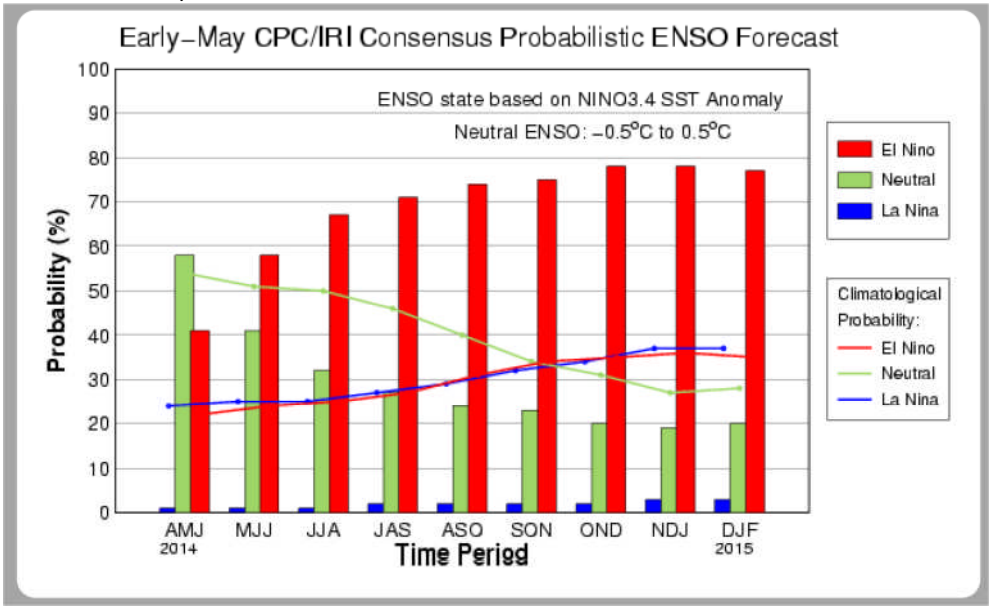
Region Number	50 Year Probability of 1 or More Named Storms Making Landfall in the Region	50 Year Probability of 1 or More Hurricanes Making Landfall in the Region	50 Year Probability of 1 or More Intense Hurricanes Making Landfall in the Region
6	>99.9%	>99.9%	>99.9%

50 Year County Data

County Name >>>	Palm Beach
50 Year Probability of 1 or More Named Storms Making Landfall in the County	95.6%
50 Year Probability of 1 or More Hurricanes Making Landfall in the County	89.1%
50 Year Probability of 1 or More Intense Hurricanes Making Landfall in the County	63.2%
50 Year Probability of Tropical Storm Force (≥ 40 mph) Wind Gusts in the County	>99.9%
50 Year Probability of Hurricane Force (≥ 75 mph) Wind Gusts in the County	99.9%
50 Year Probability of Intense Hurricane Force (≥ 115 mph) Wind Gusts in the County	90.0%

Dr. Randall Dole at the NOAA Climate Prediction Center states that when it comes to forecasting climate in the months, years and decades ahead, there are many challenges in accurately predicting what the future holds. When an El Niño-Southern Oscillation (ENSO) event – whether the warm pulse of El Niño or the cool pulse of La Niña – is identified, certain general predictions based on probability can be made at a regional level. As of May 12, 2014 ENSO-neutral conditions are currently present; however, El Niño is favored in the Northern Hemisphere for the summer of 2014. The chance of El Niño increases

throughout the year, exceeding 65% by summer (these statements are updated once a month by the Climate Prediction Center).



The State, County and local Emergency Management personnel look to El Niño /La Niña studies and advisories to help predict the future storm seasons. An explanation of the El Niño /La Niña phenomena and the latest predictions of the El Niño /La Niña patterns are as follows:

El Niño is a term originally used to describe the appearance of warm (surface) water from time to time in the eastern equatorial Pacific region along the coasts of the countries of Peru and Ecuador.

Florida El Niño Effects:

- Rainfall – Above average rainfall.
- Severe Weather – During El Niño the jet stream is oriented from west to east over the northern Gulf of Mexico and Northern Florida. Thus this region is most susceptible to severe weather.
- Temperatures – Below normal temperatures.
- Winter Storms – Increased cyclogenesis (low pressure, tropical cyclone formation systems) in the Gulf of Mexico.
- Hurricanes – El Niño almost always reduces the frequency of storms.

La Niña is defined as cooler than normal sea-surface temperatures in the central and eastern tropical Pacific Ocean that impact global weather patterns. La Niña conditions recur every few years and can persist for as long as two years.

Florida La Niña Effects:

- Rainfall – Generally dry conditions prevail during La Niña in late fall, winter and early spring.
- Hurricanes – According to research, the chances for the continental U.S. and the Caribbean Islands to experience hurricane activity increases substantially during La Niña.

Although the 2014 Hurricane Season is projected to be significantly slower than usual due to El Niño conditions, preparation and vigilance is still important. As stated by the Colorado State University Department of Atmospheric Science, "It only takes *one* hurricane making landfall to make it an active season for [coastal residents], and they need to prepare the same for every season regardless of how much activity is predicted". Additionally, despite the reduced chance of a hurricane making landfall during and El Niño year, there are increased risks associated with hurricanes seasons that follow El Niño winters. El Niño conditions during the winter and spring months often cause higher than normal rainfall totals, resulting in high soil saturation levels going into the hurricane season. Although a major hurricane making landfall during an El Niño year is less *probable*, it is still *possible,* and the saturated soil may exacerbate cyclone related flooding.

Summary of Tropical Cyclone Risk:

The following table shows the relative vulnerability of the County to the different categories of hurricanes and/or tropical storms. All text in bold is taken from the *Relative Probability of Hazards* table in the *Palm Beach County Unified Local Mitigation Strategy 2009 (LMS).*

Vulnerability of Palm Beach County to Hurricane Categories

Hurricane Category:	1	2	3	4	5
Frequency	**High***	**High**	**Moderate**	**Low**	**Very Low**
Number of hurricanes that made landfall in Palm Beach County from 1899 to 1999	4*	10	7	6	1
From 1886-2009 51 hurricanes passed within 125 miles of Palm Beach County (averaging a frequency of once every two years)					
Vulnerability	**High**	**High**	**High**	**High**	**High**
See Category specific vulnerably in the following table.					
Exposure	**High**	**High**	**High**	**High**	**High**
According to the SLOSH models, virtually all of Juno Beach and much of Coastal Palm Beach County would be exposed to the storm surge resulting from a Category 4 hurricane. Depending on the width and trajectory of the storm, the entire County could potentially be exposed to excessive rainfall as the result of a tropical cyclone.					
Risk	**High**	**High**	**High**	**Moderate**	**Low**

***NOTE:** Although the number of Category 1 hurricanes to make landfall during the hundred years from 1899-1999 was less than Categories 2, 3, or 4, the frequency is still determined to be high because, statistically speaking, 100% of all Atlantic Hurricanes reach a Category 1 strength at some point in their development, while far fewer ever reach a Category 4 or 5 strength. There is also a higher frequency of Category 1 hurricanes passing within 100 of Palm Beach County (one every 3.1 years as of 2009 data) than any other category hurricane, and since landfall is not a prerequisite for flooding and damage, this "fly by storm" data is included in the risk analysis.

The following data about the category specific hurricane risk assessed to Palm Beach County comes from the *2009 Palm Beach County LMS;* Appendix A- 4: Risk Assessment Hazard Evaluation for Palm Beach County (note that this data also includes risk derived from exposure to storm force winds):

Hazard Category	Frequency	Vulnerability
Tropical Storm	Pass within 100 miles of Palm Beach County once or twice every year	High from rain-associated flooding damages; relatively low from wind damage
Category 1	Pass within 100 miles of Palm Beach County once every 3.1 years	High from rain-associated flooding; moderate from wind damage.
Category 2	Pass within 100 miles of Palm Beach County once every 5.3 years	High from rain-associated flooding; significant from wind damage.
Category 3	Pass within 100 miles of Palm Beach County once every 11.5 years	Very high from rain-associated flooding coupled with storm surge; major from wind damage.
Category 4	Pass within 100 miles of Palm Beach County once every 202 years	Very high from rain-associated flooding coupled with storm surge; massive from wind damage
Category 5	Pass within 100 miles of Palm Beach County once every 1,500 years	High from rain-associated flooding and storm surge; catastrophic in terms of wind damage.

Hazard Category	Exposure	Risk	
Tropical Storm	The major cause of damage associated with tropical storms are heavy rain and flooding. Many communities within Palm Beach County have particularly high vulnerabilities to flooding associated with these storms. Tropical Storm Exposure for Palm Beach County based on the TAOS model is: $647,366,005	Frequency	High
		Vulnerability	High
		Exposure	Moderate
		Risk	High
Category 1	The continental shelf off Palm Beach County is the narrowest along the entire U.S. Atlantic coast. Consequently, Palm Beach County's vulnerability to storm surge from the Atlantic is relatively low. Palm Beach County is, however, extremely vulnerable to storm surge from Lake Okeechobee. Category 1 Hurricane exposure for Palm Beach County based on the TAOS model is: $3,663,876,408	Frequency	High
		Vulnerability	High
		Exposure	High
		Risk	High
Category 2	Winds in Category 2 storms range from 96 to 110 mph. Significant damage is possible in older wood frame residential construction. Category 2 hurricane exposure for Palm Beach County based on the TAOS model is: $10,587,319,465	Frequency	High
		Vulnerability	High
		Exposure	High
		Risk	High
Category 3	Winds in Category 3 storms range from 111 to 130 mph. These winds can do major damage to most residential construction. Category 3 Hurricane exposure for Palm Beach County based on the TAOS model is: $25,072,808,943	Frequency	Moderate
		Vulnerability	High
		Exposure	High
		Risk	High

Category 4	Sustained winds in a Category 4 hurricane range from 131 to 155 mph. There are very few commercial structures in Palm Beach County engineered to withstand such winds. Category 4 hurricane exposure for Palm Beach County based on the TAOS model is: $52,040,209,850	Frequency	Low
		Vulnerability	High
		Exposure	High
		Risk	Moderate
Category 5	Sustained winds in a Category 5 hurricane range upward from 155 mph. Very few structures can withstand these winds. Massive flooding may occur in the western part of the county resulting from the storm surge in Lake Okeechobee. Category 5 Hurricane exposure for Palm Beach County based on the TAOS model is: $101,344,978,155	Frequency	Very Low
		Vulnerability	High
		Exposure	High
		Risk	Low

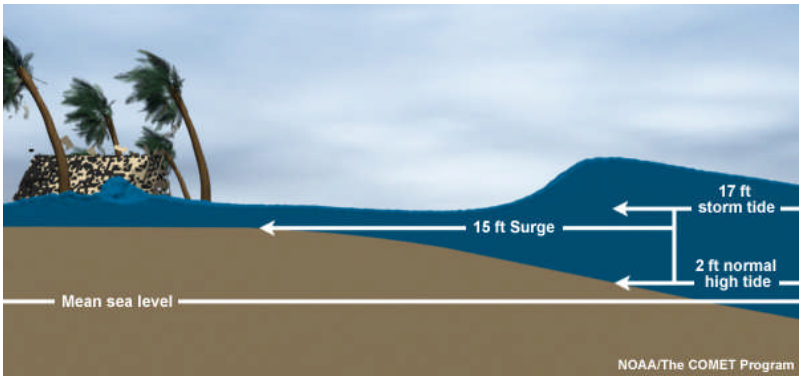
Coastal Waves

The category of Coastal Waves as presented in this plan will cover both the recurring hazard of Storm Surge and the unlikely hazard of Tsunamis. Since they both would most likely originate from the Atlantic Coast of Juno Beach and would primarily involve salt water flooding, there is significant overlap in the area and population that would be exposed to these hazards. In fact, due to the lack of locally applicable data and absence of historical records for determining the risks of Tsunamis, the modeling and predictions developed to assess the hazards of Storm Surge are among the only means by which the effects of Tsunamis on the Palm Beach County Coast can be estimated. Another type of coastal wave, known as a Rogue Wave, has been excluded from this plan, not due to the impossibility of it occurring along the coast of Juno Beach, but rather because its occurrence is a phenomenon not yet understood by science and therefore it is currently impossible to quantify the probability, extent or impacts it may have.

Storm Surge and Storm Tide

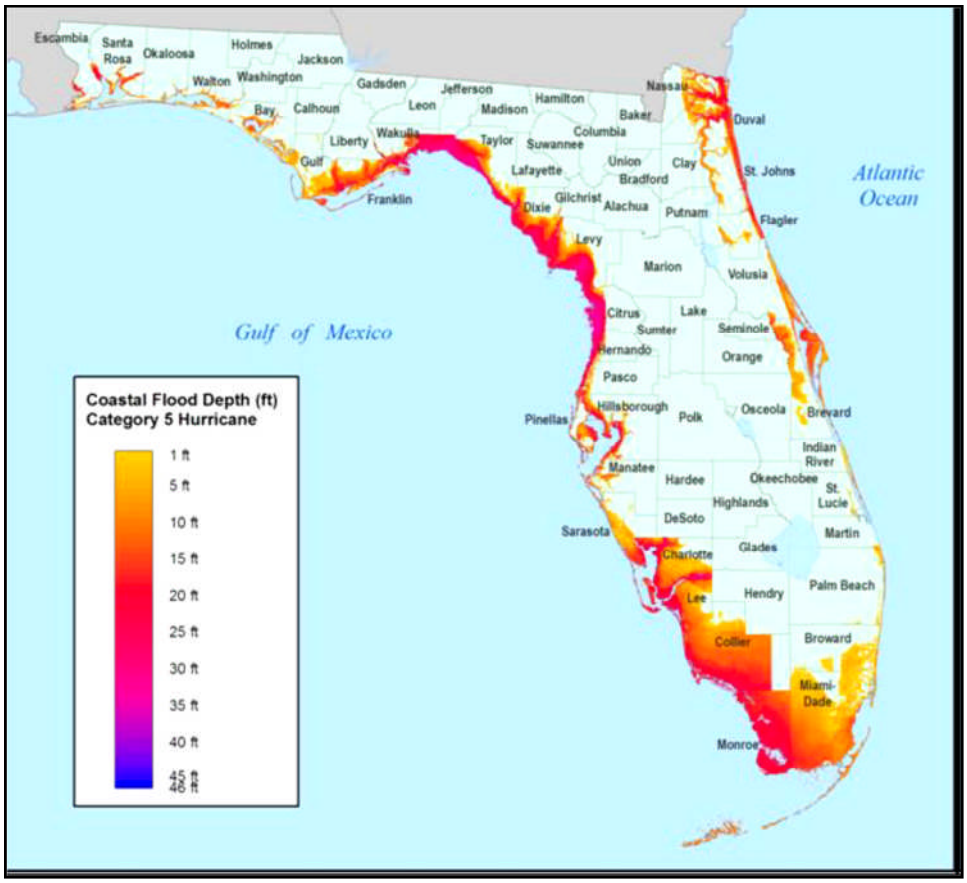
The Town of Juno Beach has 2.4 miles of wonderful beaches along the Atlantic Ocean that are susceptible to storm surge flooding: The abnormal rise of water levels generated by the force of onshore winds produced by tropical storms, hurricanes, and nor'easters. A storm surge is a large dome of water often 50 to 100 miles wide, rising anywhere from four to five feet in a Category 1 hurricane up to 20 feet in a Category 5 storm. The storm surge arrives ahead of the storm's actual landfall; the more intense the storm is, the sooner the surge arrives. Water rise can be very rapid, posing a serious threat to those who have waited to evacuate flood prone areas. After the storm surge the water rushes back into the ocean (negative tide) as tsunamis do, often with an even stronger force. A storm surge is a wave that has outrun its generating source and become a long period swell. The surge is always highest in the right-front quadrant of the direction the hurricane is moving. As the storm approaches shore the greatest storm surge will be to the north of the hurricane eye.

Such a surge of high water, topped by waves and driven by hurricane force winds, can be devastating to the Town. The severity of flooding can vary significantly based on a variety of factors such as storm intensity, forward speed, angle of attack, the slope of the continental shelf and tidal conditions. The northern and southern coastal areas of Palm Beach County are somewhat more susceptible to surge flooding than are the central sections. Storm surge heights, wind speed, fetch length, pressure and



associated waves, are dependent upon the configuration of the continental shelf (narrow or wide) and the depth of the ocean bottom (bathymetry). A narrow shelf, or one that drops steeply from the shoreline and subsequently produces deep water in close proximity to the shoreline, tends to produce a lower surge but higher and more powerful storm waves. The stronger the hurricane and the shallower the offshore water, the higher the surge will be.

Juno Beach is in a relatively vulnerable section of the county because of the shallow water offshore. At a distance of 1.8 miles offshore of Juno Beach the water is 66' deep (as opposed to 299' deep offshore of Boynton Beach). When the water is deeper, it is less likely to be forced up into storm surge. And 4.3 miles out it is 303' deep (nearly half as deep as the 590' depth offshore of Boynton Beach), so while Juno Beach has a wider shelf making it more susceptible to storm surge, a narrow shelf with deep water saves much of the rest of the County. The storm surge maps of the County still show that the storm surge can be up to 15'. The health of the recently restored coastal dunes and the existence of a seawall along the



coast of Juno Beach may help mitigate the impacts of storm surge. According to the preliminary *Palm Beach County Flood Insurance Study (2013)*, wave height may be diminished by dissipation of energy due to the presence of obstructions, such as sand dunes, dikes and seawalls, buildings, and vegetation.

A Palm Beach Basin, Sea, Lakes and Overland Surge from Hurricane (SLOSH) Model was run by the U.S. Army Corps of Engineers in 1994 and serves as the official SLOSH model and is used in determining hurricane evacuation zones. Currently the USACE is re-running the SLOSH Model based on new information and, once received by Palm Beach County, this tidal inundation information will assist in the determination of new hurricane evacuation zones.

If the storm surge arrives at the same time as the high tide, and/or a full moon, the water height will be even greater. The storm tide is the water level rise during a storm due to the combination of storm surge and the normal astronomical tide.

Storm Tide maps produced by a Statewide Regional Evacuation Study, showing the threat to the Town of Juno Beach are included in Appendix C of this Food Mitigation Plan.

The Table below shows the maximum wave crest elevation of 11.9 feet along the Atlantic coast in the Town of Juno Beach.

Transect Locations, Stillwater Starting Elevations and Maximum Wave Crest Elevations

Transect	Location	1-Percent-Annual-Chance Elevation (Feet NAVD 88 88)	
		Stillwater[1]	Wave Crest[2]
4	At the shoreline of the Atlantic Ocean, in the Town of Jupiter Inlet Colony, east of the intersection of Colony Road and Beacon Lane	9.0/7.4	13.8/12.2
	At the shoreline of Jupiter Sound, in the Unincorporated Areas of Palm Beach County, east of the intersection of East Center Street and Old Dixie Highway	6.0/4.4	7.1/5.5
5	At the shoreline of the Atlantic Ocean, in the Town of Juno Beach, southeast of the intersection of Federal Highway (US 1) and Marcinski Road	7.2[3]	11.9
6	On the Atlantic coast in the unincorporated Areas of Palm Beach County, north of Lakehouse Drive	7.2[3]	11.9
7	On the Atlantic coastline in the Village of North Palm Beach, crossing South Ocean Boulevard north of Munyon Island	7.2[3]	11.9
	On the shoreline of Lake Worth in the Village of North Palm Beach, between Gulfstream Road and Fathom Road South	5.5	7.8
8	On the Atlantic coastline in the City of Riviera Beach, crossing Ocean Boulevard north of Harbor Point Drive	7.2[3]	11.9
	On the shoreline of Lake Worth in the Town of Lake Park, crossing Lakeshore Drive north of Jasmine Drive	5.4	8.0
9	On the Atlantic coastline in the of Palm Beach Shores, crossing South Ocean Avenue just north of Cascade Lane	7.2[3]	11.9
	On the shoreline of Lake Worth in the City of Riviera Beach, crossing Avenue B at West 20th Street	5.4	8.0
10	On the Atlantic coastline in the Town of Palm Beach, crossing North County Road between La Costa Way and Tangier Avenue	7.2[3]	11.9
	On the shoreline of Lake Worth in the City of West Palm Beach, between 23rd Street and Piccadilly Street	5.6	7.5

[1]Because of map scale limitations, the 1-percent annual chance stillwater may not be shown on the FIRM.

[2]Because of map scale limitations, the maximum wave elevation may not be shown on the FIRM.

[3]Includes wave setup of 2.0 feet.

(Image of Table above is from the May 31, 2013 preliminary version of the *Palm Beach County Flood Insurance Study*)

The term "storm surge" is not isolated to surge originating from the Atlantic Ocean. Many other bodies of water can become the source of a storm surge in the event of high winds and severe storms. Among

the other bodies of water in the area that are known for the potential to produce significant storm surge are two large lakes: Lake Worth and Lake Okeechobee.

Both ocean and lake storm surges that occur within Palm Beach County have potentially far reaching effects and can impact numerous communities within the County. For instance, ocean storm surges entering Jupiter Inlet and Jupiter Sound (north of Jupiter Beach) and coming off of Pelican Lake (in Juno Beach), as well as storm surges originating from Lake Worth can increase the water levels in the Intracoastal waterway. The corresponding disruption in flow and increased water level can then prevent rainfall flood waters from properly draining out of neighboring low lying communities into the Intracoastal Waterway via the many channels, canals and control structures throughout the county (from the May 31,2013 preliminary version of the *Palm Beach County Flood Insurance Study*).

Therefore, Juno Beach, lying between the Atlantic Ocean and the Intracoastal Waterway, could potentially experience flooding as a result of both coastal storm surge (from the east) and the corresponding rise in Intracoastal Waterway water levels (affecting drainage along the western edge of the Town).

Below is a table from the *Statewide Regional Evacuation Study* showing the expected storm surge at different locations near the coast for each storm category:

Volume VII-10 Treasure Coast — Statewide Regional Evacuation Study Program

NAME	Elevation	C1 SURGE[5]	C2 SURGE	C3 SURGE	C4 SURGE	C5 SURGE	C1 DPTH[6]	C2 DPTH	C3 DPTH	C4 DPTH	C5 DPTH
CITY OF PAHOKEE - WWTP	13.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
COLUMBIA HOSPITAL	16.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DELRAY AMBULATORY SURGICAL & LASER CENTE	16.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DELRAY BEACH FD ST 1	17.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DELRAY BEACH FD ST 2	13.7	3.2	5.3	7.6	9.9	12.1	0.0	0.0	0.0	0.0	0.0
DELRAY BEACH FD ST 6	5.5	3.2	5.8	7.2	9.3	12.3	0.0	0.3	1.7	3.8	6.8
DELRAY BEACH POLICE DEPT HEADQUARTERS	15.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DELRAY MEDICAL CENTER	16.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
FLORIDA ATLANTIC UNIVERSITY POLICE DEPT	9.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
FLORIDA DEPT OF ENV PROTECT/DIV OF LAW ENFRCMNT SW PARK PATROL DIST	19.1	0.0	5.6	7.0	8.9	10.8	0.0	0.0	0.0	0.0	0.0
FLORIDA HIGHWAY PATROL TROOP L HEADQUARTERS	17.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GLADES CENTRAL HIGH SCHOOL	10.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GLADES GENERAL HOSPITAL	14.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GOOD SAMARITAN MEDICAL CENTER	2.6	3.1	5.3	7.3	9.7	12.2	0.5	2.7	4.7	7.1	9.6
GULF STREAM POLICE DEPT	14.6	3.1	5.4	7.2	9.2	12.0	0.0	0.0	0.0	0.0	0.0
INDEPENDENCE MIDDLE	14.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
JFK MEDICAL CENTER	11.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
JUNO BEACH POLICE DEPT HEADQUARTERS	7.8	0.0	5.5	7.0	8.9	10.9	0.0	0.0	0.0	1.1	3.1
JUPITER INLET COLONY POLICE DEPT HEADQUARTERS	10.3	3.2	5.4	7.6	9.8	12.2	0.0	0.0	0.0	0.0	1.9
JUPITER MEDICAL CENTER	6.2	0.0	0.0	7.3	9.6	11.1	0.0	0.0	1.1	3.4	4.9
JUPITER OUTPATIENT SURGERY CENTER, LLC	8.7	0.0	0.0	0.0	8.7	10.9	0.0	0.0	0.0	0.0	2.2

[5] SURGE refers to the storm surge value from the SLOSH Model
[6] DPTH refers to the depth of inundation at the site (storm surge value minus the ground elevation)

Page 20 — Volume VII: Storm Tide Atlas

This section was used to expand upon the scientific phenomenon of Storm Surge. As most Storm Surges that affect the Coast of Juno Beach originate from Tropical Cyclone activity, the probabilities (pages 9-11) and the hazard risk assessment discussed in the section about Tropical Cyclones is extended to encompass the Storm Surge hazard in the Town.

Tsunami

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

Earthquakes are frequently the cause for tsunami events. Tsunamis are formed as the displaced water mass moves under the influence of gravity and radiates across the ocean like ripples on a pond. These phenomena rapidly displace large volumes of water, as energy from falling debris, such as a landslide or energy expansion is transferred to the water into which the debris falls. Tsunami caused by these mechanisms, unlike the ocean-wide tsunami caused by some earthquakes, generally dissipate quickly and rarely affect coastlines distant from the source, due to the small area of sea affected. However, an extremely large landslide could generate a mega-tsunami that might have ocean-wide impacts.

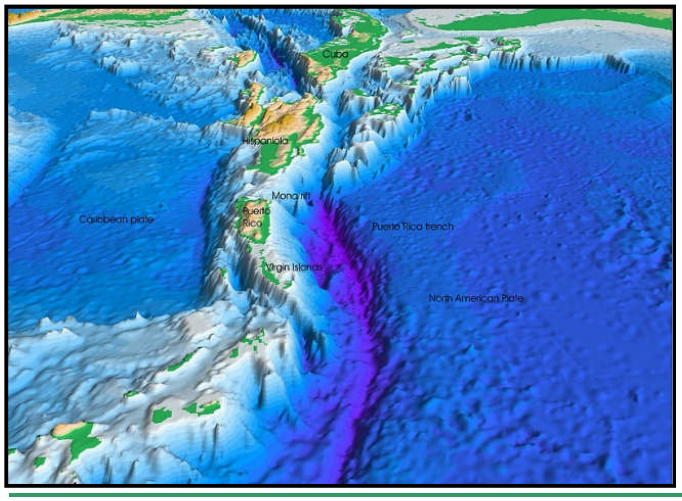
The first part of a tsunami to reach land is a trough rather than a crest of the wave. The water along the shoreline may recede dramatically, exposing areas that are normally submerged. This can serve as a warning of the approaching crest of the tsunami. The warning is very short, however, as the crest typically arrives seconds to minutes later.

Tsunami events occur most frequently in the Pacific Ocean, but they are a global phenomenon. Major tsunamis occur about once per decade. Based on historical data, about 59% of the world's tsunamis have occurred in the Pacific Ocean, 25% in the Mediterranean Sea, 12% in the Atlantic Ocean, and 4% in the Indian Ocean. All tsunamis are potentially dangerous, even though they may not damage every

coastline they strike. Analyzing the past 150 years of tsunami records shows that the most frequent and destructive tsunamis to affect the U.S. have occurred along the coasts of California, Oregon, Washington, Alaska, and Hawaii. However, the State of Florida is located within the Caribbean area, and over the past 156 years, the Caribbean has experienced tsunami events. Florida has experienced few destructive tsunami or rogue wave events, but there have been several small events. See Appendix I for the tsunami hazard area in Palm Beach County.

In response to and question about the history of tsunamis in the Atlantic, Gerard Fryer from the Hawaii Institute of Geophysics and Planetology at the University of Hawaii replied:

> "Tsunamis have hit Puerto Rico and the Virgin Islands half-a-dozen times in recorded history (most recently in 1918, when 32 people died). But by far the most famous Atlantic tsunami was generated by an earthquake nowhere near a subduction zone.
>
> Gorringe Bank is a ridge off the coast of Portugal uplifted by the northward movement of the African Plate against the Eurasian Plate (there is convergence between the plates going on, but the closest true subduction occurs far to the east, beneath Italy). On 1 November 1755 (All Saints' Day!) a magnitude 8.6 earthquake at Gorringe Bank destroyed much of Lisbon. Minutes after the earthquake, the tsunami arrived. At least three great waves about ten meters high entered the city. The waves also raked the nearby coasts of Spain and North Africa, and did extensive damage in the Azores, Madiera, and Canary Islands. Minor damage occurred as far north as Ireland and as far west as the West Indies. Gorringe Bank remains a severe tsunami threat for Portugal, and the Portuguese are now installing seafloor pressure gauges there to get advance warning.
>
> .... Many people are unaware that landslides [in addition to earthquakes] can generate tsunamis too (a landslide will suck down the sea surface behind it; the hole in the sea surface will oscillate to give a series of waves). There have been several landslide-generated tsunamis in the Atlantic. The most recent was in 1929, when glacial debris dropped at the edge of the continental shelf by the St. Lawrence River collapsed down the continental slope during the Grand Banks earthquake. That tsunami killed twenty eight people along the Burin Peninsula of Newfoundland. (There is argument about the origin of the 1929 tsunami. Some seismologists think it was generated by the slide, others argue that it was excited directly by the earthquake.)"

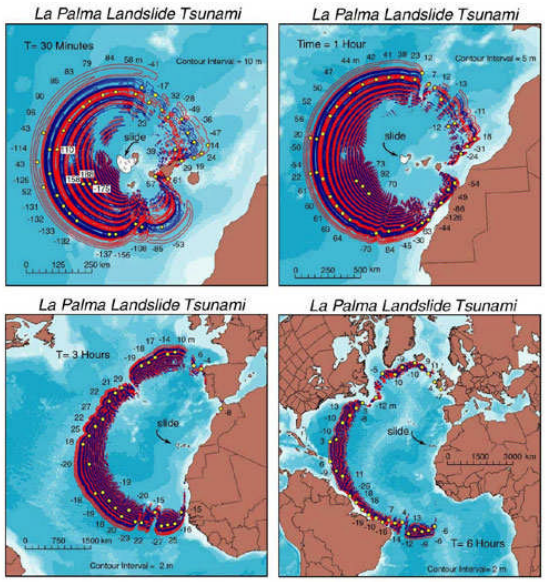


There is often no advance warning of an approaching tsunami. However, since earthquakes are often a cause of tsunamis, an earthquake felt near a body of water may be considered an indication that a tsunami will shortly follow.

The National Weather Service and NOAA report that the most likely source of earthquake or landslide-triggered tsunami that would affect the Atlantic coast of Florida is the Puerto Rican Trench, the deepest point in the Atlantic Ocean, which is an earthquake prone

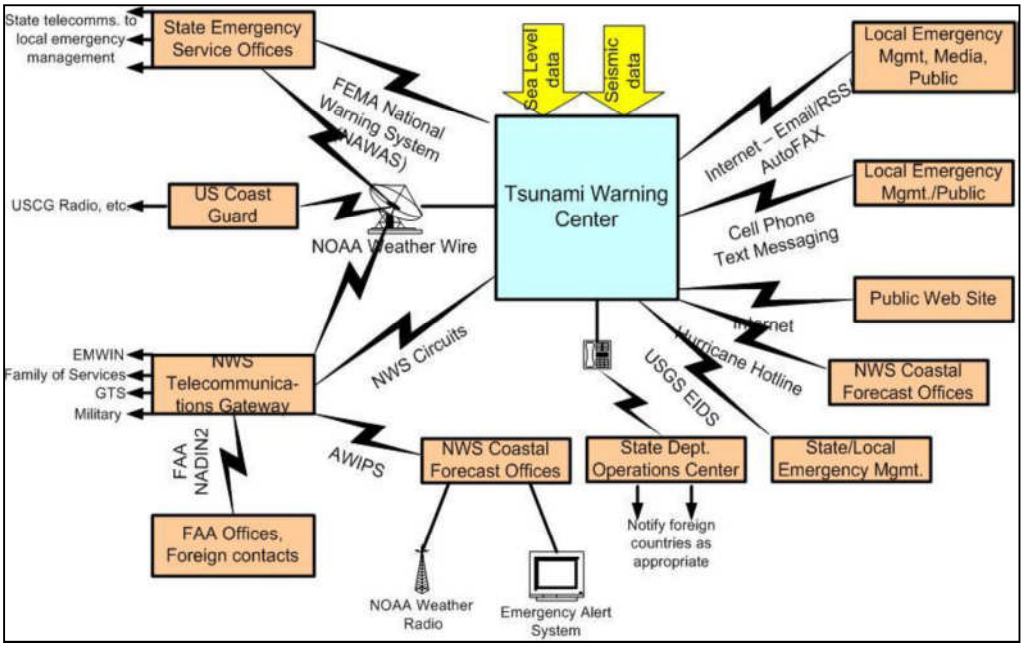
area north of Puerto Rico. In the past, tsunamis have caused fatalities in Puerto Rico as well as the U.S. Virgin Islands.

The picture to the left is a perspective view of the sea floor of the Atlantic Ocean and the Caribbean Sea. The Lesser Antilles are on the lower left side of the view and Florida is on the upper right. The purple sea floor at the center of the view is the Puerto Rican trench, the deepest part of the Atlantic Ocean and the Caribbean Sea.



Another potential cause would be the eruption of a volcano on the island of La Palma in Spain's Canary Islands, which could generate a huge landslide and trigger a tsunami that would impact the U.S. east coast. La Palma is not only the steepest island in the world but it has also been the most volcanically active of the Canary Isles in the past 500 years. If this event were to take place, it is expected that the eastern coastline of the State of Florida could suffer extensive damage and loss of life.

Following the devastating Indian Ocean Tsunami in late 2004, the West Coast and Alaska Tsunami Warning Center (WCATWC) located in Palmer, Alaska expanded its scope to the U.S. Atlantic and Gulf of Mexico coasts, Puerto Rico, the Virgin Islands, and the Atlantic coast of Canada. The WCATWC utilizes the following message communications procedures:



The tallest recorded earthquake induced ocean tsunami wave, measuring 108 feet, occurred during the 2004 Indian Ocean Tsunami. This measurement pales in comparison to megatsunamis of up to 1719 feet tall that have resulted from large landslides falling into contained bodies of water such as lakes or bays. Although Florida is home to many contained bodies of water, there is no risk of inland megatsunamis because the terrain is extremely flat, making onshore landslides nearly impossible.

As illustrated by the Tsunami Threat Area Map included in Appendix I, the wave from a possible tsunami is expected to reach as far inland as one mile from the shore. This threat area includes all of the Town with the exception of a small area including Bay Colony and Oak Harbour lying west of the intersection of Universe Blvd. and Ellison Wilson Road. The one mile tsunami threat area is equivalent to the storm surge evacuation area designated for a Category 3 or greater hurricane. According to the *Statewide Regional Evacuation Study*, a Category 3 hurricane would be expected to produce a seven foot storm surge along the coast of Juno Beach. Therefore, the extent of an equivalent tsunami hazard would be a wave of at least seven feet coming ashore and inundating an area reaching one mile inland.

According to the *Palm Beach County Local Mitigation Strategy 2015* (LMS), the probability of a tsunami impacting the Town of Juno Beach is considered to be extremely low (on the order of 5% or less per century). The risk assessment states that:

- The **frequency** of a tsunami occurring in the Town is considered to be **low-** There have been at least six tsunamis to affect the Caribbean in recorded history, however none have been recorded to cause noticeable damage to Palm Beach County.
- The **vulnerability** of the Town is considered to be **high**- This assessment can be made by applying the Town's vulnerability to large magnitude Storm Surge (discussed in the earlier section) to the tsunami hazard.
- The **exposure** of the Town to the effects of a tsunami is **high-** As illustrated by the Tsunami Threat Area map in Appendix I, the entire Town would be exposed to the effects of a tsunami.

  Therefore the **risk** to the Town is **low-** Although the likelihood of a tsunami happening is low, the vulnerability and exposure of the population merits at least a discussion of the hazard. Should mitigation efforts be possible, either through extending or applying the mitigation efforts developed for other more likely hazards, namely Storm Surge, without incurring much additional cost, they should be considered.

Sea Level Rise

Sea Level Rise is a long-term increase in mean sea level occurring in response to global climate and global tectonic changes as measured using scientific horizontal control points and benchmarks, or simply, measured rises in the sea.

There is much contention on the subject of whether increasing concentration of greenhouse gases and rising global air and oceanic water temperatures precede and contribute to sea level rise. There are those that disagree with the theory of manmade global warming. There are compelling and convincing arguments and advocates on all sides of the issue. Dissenting voices ask whether we understand the causes of sea level rise well enough to make confident projections for its course in the future. The weight of evidence would seem to support the view that with or without proof of global warming, sea

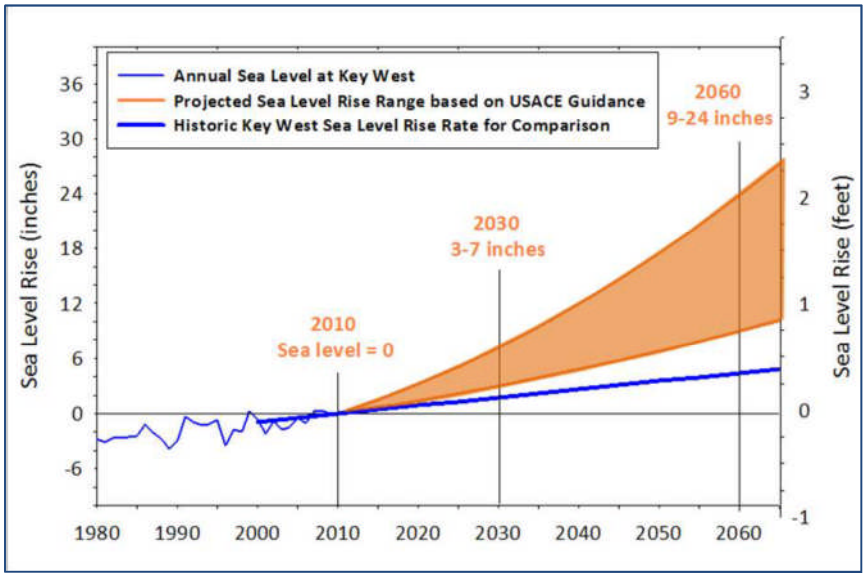
rise is real. But regardless of whether there is climate change, it is indisputable that certain areas of the sea are rising.

The rate of rise is under fire; many people say this is so slow that it is ridiculous to even worry about it. Current predictions only estimate a 3-7" inch rise by 2030, which is relatively inconsequential, but extended out to 2060, a more impactful rise of up to two feet is predicted. There is much argument over whether this is going to happen in our lifetime or even in our children's lifetime. Regardless of the disagreements, many communities in South Florida are taking the prospect of global warming and/or sea level rise seriously.

Florida is considered one of the most vulnerable areas of the country to the consequences of global climate change, with Southeast Florida being at the frontline to experience the impacts of a changing climate, especially sea level rise. In recognition of the need for immediate, coordinated and visionary action to address the impacts of a changing climate and provide for economic and environmental resilience in Southeast Florida, in 2010 the counties of Palm Beach, Broward, Miami-Dade and Monroe entered into the Southeast Florida Regional Climate Change Compact. In January 2011, the Compact Counties adopted state and federal policies related to the creation of Adaptation Action Areas and jointly advocated to the Florida Legislature for the definition of Adaptation Action Areas in Florida law. Although the Town of Juno Beach is not participating in the compact, the members of the Juno Beach Flood Mitigation Committee agreed to review the findings of the compact and, if appropriate, incorporate some of the recommended activities in the *Regional Climate Action Plan* into future revisions of the *Juno Beach Flood Mitigation Plan Action Plan.*

Specific accomplishments of the Compact include the development of regionally-consistent methodologies for mapping sea-level rise impacts, assessing vulnerability, and understanding the sources of regional greenhouse gas emissions.

Two key planning horizons are highlighted in *A Unified Sea Level Rise Projection for Southeast Florida*: Year 2030 when sea level rise is projected to be 3-7 inches and 2060 when sea level rise is projected to be 9-24 inches (see picture below). Sea level is projected to rise one foot from the 2010 level between 2040 and 2070, but a two foot rise is possible by 2060. The historic tidal data for the past few decades is



illustrated on the unified projection graphic to provide perspective on the projected rate of change of sea level.

As part of a nationwide program initiated by the Environmental Protection Agency to evaluate global climate change, in 2005 the Treasure Coast Regional Planning Council (TCRPC) published a report entitled *Sea Level Rise in the Treasure Coast Region*. The study emphasized that because of its expansive coastline, low elevations and flat topography, sea level rise is of particular concern to the State of Florida, and thus to Juno Beach.

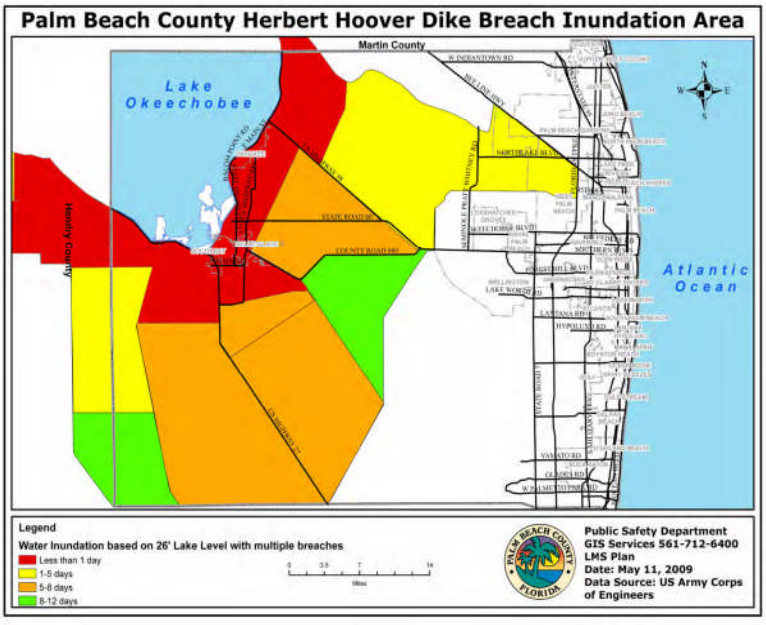
The primary areas of impact in the Town of Juno Beach are expected along the Atlantic Coast and areas along the Intracoastal Waterway and shorelines of Pelican Lake.

The Southeast Florida Regional Climate Change Compact Counties have concluded that the sea level will continue to rise even if mitigation efforts to reduce greenhouse gas emissions are successful at stabilizing or reducing atmospheric CO_2 concentrations. A substantial increase in sea level rise within this century is likely and may occur in rapid pulses rather than gradually.

Dam/Dike Failure

Dike failure is defined as an unintended, potentially catastrophic release or surge of impounded water through or over a dike onto adjacent lands.

The failure of a dam or dike can result in a flood event. The most significant risk related to dam/levee failure is flooding due to substantial rainfall. Structural and non-structural techniques to slow and contain this runoff incorporate several drainage systems, some dating back to 1919. Rainfall in excess of designed capacities could cause erosion of constructed drainage facilities and flooding of many areas including primary roadway evacuation routes.



The Herbert Hoover Dike is one of many dams in Florida and is managed by the Army Corps of Engineers. The South Florida Water Management District oversees the operation and maintenance of many other locks, dikes, canals and control structures throughout South Florida, however none of them directly impact the Town of Juno Beach.

The Herbert Hoover Dike is a 140-mile long earthen structure that surrounds and contains Lake Okeechobee (Seminole for "big water"). The large freshwater lake, roughly circular in shape, covers

approximately 730 square miles and borders Palm Beach, Martin, Okeechobee, Glades, and Hendry counties. Lake Okeechobee is the second largest freshwater lake in the U.S.

The Herbert Hoover Dike was completed in 1937 to protect Palm Beach County citizens from experiencing another flooding event similar to the occurrence in 1928. The flooding derived from the 1928 hurricane, which resulted in over 2,500 deaths and thousands more injured in the western portion of Palm Beach County. The dike protects from major flooding events occurring in Belle Glade, Pahokee and South Bay municipalities, as well as potential flooding in the Village of Wellington, Royal Palm Beach, West Palm Beach, Palm Beach Gardens and unincorporated Palm Beach County. The Herbert Hoover Dike is continuously monitored by the Army Corp of Engineers (USACE).

A number of outside forces can cause dam failure, including prolonged periods of rain or flooding, landslides into reservoirs, failure of dams upstream, high winds, and earthquakes.

Although a failure of the Herbert Hoover Dike could affect a large portion of Palm Beach County, Juno Beach lies outside of the predicted inundation area outlined by the US Army Corps of Engineers, therefore dike failure is not likely to be a direct cause of flooding within the Town. However, the dike failure scenario could become an indirect cause of flooding in portions of Juno Beach by inundating communities west of Juno, causing a large volume of runoff to enter the Intracoastal Waterway. For this reason, it is important the Town remains aware of the possibility of a failure of the Hubert Hoover Dike and is familiar with USACE Dike Failure Warning System.

USACE Dike Failure Warning System Condition Classifications

Condition Classification	Definition
Watch Condition	A potential failure situation is developing. A dike failure may eventually occur, but preplanned actions may moderate or alleviate failure. Time is still available for further analyses/decisions to be made before failure is considered a foregone conclusion. Even if failure is inevitable, time is generally available to issue warnings and/or take preparedness actions. A warning is issued when a safety situation is observed that may lead to a failure if left unattended, recognizing that there is no immediate danger.
Non-Failure Emergency Condition	There is no danger of dike failure, but flow conditions are such that flooding is expected to occur downstream of the spillways. While the amount of flooding may be beyond the control of USACE, information of releases from the spillways will be very useful to the authorities in reaching any decisions on the need for evacuation
Evacuation Condition	Failure is imminent or has occurred. A failure either has occurred, is occurring, or is obviously about to occur. There is no time available to attempt corrective measures to prevent failure. Emergency preparedness agencies are notified that the embankment or structure is failing. Due to the short time it will take for flooding to occur, evacuation of nearby downstream areas should begin immediately.

Levees

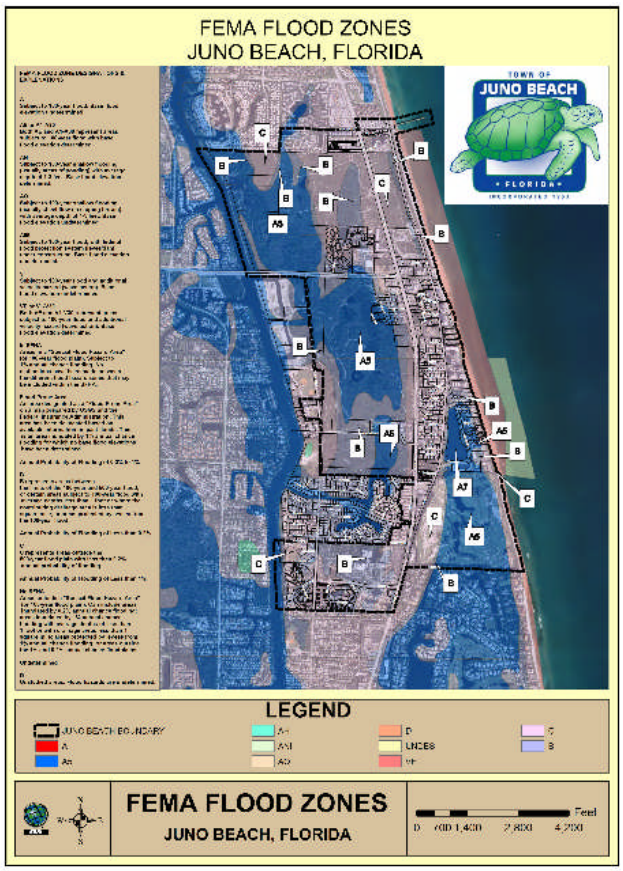
There are no levees that might threaten the Town of Juno Beach.

Sources of Floodwaters in the Town of Juno Beach

Sources of flood waters in the Town of Juno Beach include:

- The Atlantic Ocean
- The Intracoastal Waterway
- Pelican Lake

The preliminary *Palm Beach County Flood Insurance Study* (FIS) updated in 2013 provides information about the sources of flooding in the Town, including the mitigating fact that rapidly rising sand dunes and seawalls provide considerable protection along the open coast of Palm Beach County. These dunes and seawalls are expected to remain intact during the 100-year storm surge and are considered effective wave energy dissipators. Much of the shoreline along Lake Worth and the Intracoastal Waterway is protected by bulkheads. These bulkheads are capable of dissipating wave energy.



Much of Juno Beach is effected by wave action. Wave heights greater than 3 feet associated with the 100-year storm surge on the Atlantic coast are diminished near the open coast by ascending ground slope and seawalls. The maximum wave crest elevation at the Atlantic Ocean shoreline is 11.9 feet.

No waves are generated across the Intracoastal Waterway west of Juno Beach due to insufficient fetch length. The fetch is the distance a wave travels; the greater the fetch, the larger the wave. The *Palm Beach County Flood Insurance Study* does not include any wave height analysis information about Pelican Lake.

Frequently Flooded Areas in the Town of Juno Beach

Some of the areas in Juno Beach that experience nuisance flooding are listed below. Most of these flooding problems occur along the coast during times of heavy rainfall and high surf. Recently constructed neighborhoods in the Town have properly installed swales and proper underground infrastructure.

- **Juno Ocean Walk**
  - Low lying nuisance flooding beside the roadway from heavy rainfall
  - No drainage in the area

- There is environmentally protected land next to the property. Consequently drainage into that area is prohibited by Palm Beach County Environmental Resources Management (ERM).
- Proposed solution is to design and build exfiltration trench and French drains needed to capture and slow storm water drainage from the roadway to minimize localized flooding.
- The Town has planned a Stormwater Capital Improvement Project (CIP) addressing this area (See Action Plan item ranked #1).
- Not located in a SFHA

- **Zenith Lane**
  - Low lying street flooding affecting residential properties from heavy rainfall
  - No drainage in the area; runoff from street flooding with light rain
  - Proposed solution is to design and construct storm drainage structures and exfiltration trenches to facilitate the drainage of storm water.
  - The Town has planned a Stormwater Capital Improvement Project (CIP) addressing this area (See Action Plan item ranked #1)
  - Not located in a SFHA

- **Sections of US Highway 1**
  - Low lying areas adjacent to US Highway 1 experience nuisance flooding from roadway runoff during heavy rainfall
  - All stormwater runoff from US 1 should be contained and controlled by FDOT
  - There is at least one area where the storm water drainage responsibilities of the Town intersect with the responsibilities of FDOT.
  - Further study should be made to determine the best solution and all responsible parties should be collaboratively engaged to participate in solving the issue.
  - Will require structural drainage systems. Swales are being improved and are installing pervious sidewalks.
  - The Town is willing to act on this issue, and will contact FDOT about the issues.
  - Not located in a SFHA

- **Beachfront Properties from the intersection of Donald Ross Rd and A1A south to the southern end of Celestial Way**
  - Beachfront properties experience flooded parking lots, patios, pools and landscaping during times of high surf with strong onshore winds.
  - The Town has aggressively and successfully completed Dune Restoration projects to address this issue.

- **Kagan Park**
  - Due to topography it lends itself to be a kind of basin. There is a lot of runoff and ponding during heavy rainfall
  - Have an engineering plan with different options
  - Is located in the SFHA

- **Ocean Drive**
  - Ponding occurs
  - The County is responsible for the operation and maintenance of Ocean Drive where most of the ponding occurs.
  - Good soil composition in the Town helps water drain quickly, typically within 48 hours.
  - The County will respond if the water is on the roadway for more than 72 hours.
  - Not located in the SFHA

One area that had nuisance flooding problems in the past has now been mitigated. This is an area of Universe Boulevard. Large diameter drainage pipes that discharge into the Intracoastal required maintenance and repairs. FP&L lead the study of the existing pipes' condition, researched viable repair options and costs, then FP&L up-fronted much of the required funds. The project was very complex involving cleaning and requiring dies and engineers. It was made more complex because it is not possible to stop or re-route the water during the repair. The Town will assess other affected properties for their share of the cost. The project is currently underway and almost complete.

The Town has replaced some sidewalks with pervious walkways in areas that previously had ponding. As a result, the problem was resolved in those areas. Additionally, the Town has expanded the swales. Please see Appendix R for a copy of the Public Works Capital Outlay page from the *Juno Beach 2013-2014 Annual Budget.*

Flood Insurance Rate Maps

In response to mounting losses from flooding nationwide, the United States Congress initiated the National Flood Insurance Program (NFIP) in 1968. The program is administered through FEMA. Under this program, FEMA produces FIRMs (Flood Insurance Rate Maps), which show areas subject to various levels of flooding under different conditions. This flood risk information is based on historic, meteorological, hydrologic, and hydraulic data, as well as open-space conditions, flood control works, and development. The FIRMs are regulatory documents that identify the Special Flood Hazard Areas (SFHA) where land use and building requirements of the NFIP need to be enforced in order for a community to participate in the NFIP. The SFHAs identify areas of possible inundation due to both riverine flooding and coastal flooding. The FIRMs establish flood zones that are used for floodplain management regulations, to set flood insurance rates, and to identify where flood insurance is required as a condition of a federally insured mortgage.

Flood inundation areas shown on the FIRMs for coastal areas are based on the storm surge and wave action (where applicable) from the flood that has a 1% chance of being equaled or exceeded in a given year (also known as the 100-year flood or base flood). The regulatory and insurance requirements of the NFIP are based on the flood data shown on the FIRM. The maps may also show the extent of stillwater inundation (without consideration of wave height) from the flood that has a 0.2% chance of being equaled or exceeded in a given year (also known as the 500-year flood).

The FIRM for Juno Beach was revised in 1982 to incorporate the latest available information, including wave height data to assist the Town in developing the most appropriate and effective floodplain measures. FEMA included prediction of wave heights in the *Flood Insurance Study (FIS), Wave Height Analysis for the Town of Juno Beach*, and the *Palm Beach County FIS*, dated March 1982. The wave heights are included for coastal communities subject to storm surge flooding, and to report the estimated wave crest elevations as the base flood elevations on Flood Insurance Rate Maps (FIRMs). The Town of Juno Beach is located on the open coast and is subject to flooding from tidal surges associated with tropical storm systems. The purpose of the study is to revise the FIRM for Juno Beach to include the effects of wave action associated with flooding from the Intracoastal Waterway, Pelican Lake and the Atlantic Ocean at the open coast. Previously, FIRMs were produced showing only the stillwater storm-surge elevations, due to the lack of a suitable and generally applicable methodology for estimating the wave crest elevations associated with storm surges. These still water elevations were subsequently stipulated in community floodplain management ordinances as the minimum elevation of the first floor of new constructions. Communities and individuals had to consider the additional hazards of velocity waters and wave action on an ad hoc basis. Because there has been a pronounced tendency for new buildings to be constructed only to meet the minimum standards, without consideration of the additional hazard due to wave height, increasing numbers of people could unknowingly be accepting a high degree of flood-related personal and property risk in coastal areas subject to wave action.

The FIRMs for the Town of Juno Beach have an effective date of September 30, 1982. There is one map (panel) for the entire Town. Floodplains designated on the FIRM are based on the 1% annual flood chance or the 100-year flood event. The 500-year flood event with a 0.2 % annual chance of occurrence is used to designate other areas of the community, which may have some vulnerability to flooding. The Flood Zone maps for the Town of Juno Beach can be seen in Appendix F. The various flood zones are indicated on the Juno Beach map. The first two Flood Zones defined below apply to the Town of Juno Beach and are in the Special Flood Hazard Area (SFHA). This is the land area that could be covered by the floodwaters of the base flood (a flood having a 1-percent probability of being equaled or exceeded in any given year; also referred to as the 100-year flood) and where the NFIP's floodplain management regulations must be enforced. There is a mandatory purchase of flood insurance that applies for federally backed mortgages in the SFHA. The requirement also extends to private mortgage companies backed by the FDIC or other federal agencies. Therefore, many private mortgage companies also require flood insurance on properties in the SFHA.

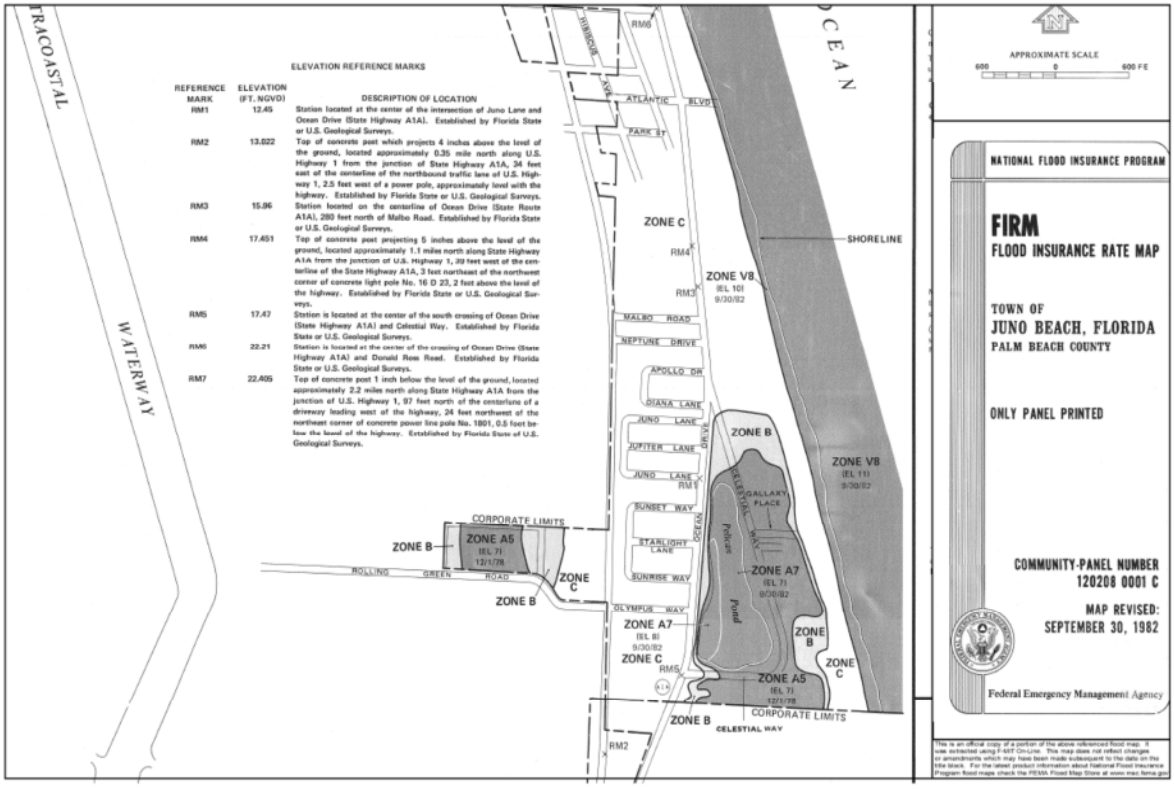
The following definitions were taken and compiled from the FIRM map, and the *2013 CRS Manual Glossary*:

- **Zones A1 - A30**: Numbered A Zones, SFHA where an older FIRM shows a base flood elevation in relation to a national datum. Areas of 100-year flood; flood elevations and flood hazard factors determined.

- **Zones V1 – V30:** Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors determined. The SFHA subject to coastal high hazard flooding. There are three types of V Zones: V, V#, and VE, and they correspond to the A-Zone designations.

- **Zone B:** An area of moderate flood hazard that is determined to be outside the SFHA between the limits of the 100-year flood (1% chance) and 500-year flood (0.2% chance); or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood. Shown on newer maps as the "X" shaded zone or the X500 zone (medium shading). Area of moderate flood hazard usually depicted on older FIRMs as between the limits of the base and 500-year floods of the primary source flooding. B Zones may have local, shallow flooding problems. B Zones are also used to designate areas protected by levees and base floodplains of little hazard, such as those with average depths of less than 1 foot.

- **Zone C:** Areas of minimal flood hazard that is determined to be outside the SFHA and higher than the elevation of 0.2% annual chance (or 500-year) flood. Shown on newer maps as the "X" zone (no shading). Area of minimal flood hazard, usually depicted on older FIRMs as above the 500-year flood level of the primary source of flooding. C Zones may have local, shallow flooding problems that to not meet the criteria to be mapped as a SFHA, especially ponding and local drainage problems.



One area of the *Town of Juno Beach FIRM*

Palm Beach County is an active participant in the Map Modernization Program. Since September 2000, the county and the 37 municipalities have been working with FEMA, their contract consultants, local engineering agencies, the South Florida Water Management District (SFWMD) and the County's contract consultant in the development of a complete new set of Flood Insurance Rate Maps (FIRMs). The data being provided to FEMA's contractor includes new accurate LIDAR developed elevation data obtained from the U.S. Army Corps of Engineers (USACE) and from a county contract with Florida International University. At this writing, the new elevation data is available for virtually all of the county's topography and covers all critical areas, including areas on barrier islands, the Intracoastal areas, riverine areas, and the District's (SFWMD) flood control canal systems and their drainage basins. In addition, SFWMD completed a hydraulic and hydrology study of the canal system and the sub-basins to establish the 100-year elevations within the system. Preparation of maps by the USACE was slowed by Hurricane Katrina and Herbert Hoover Dike repair priorities. The coordination process established between all of the agencies listed above should permit faster coordination of future changes with FEMA, and ensure continued improvement in the currency and accuracy of the FIRMs. In May 2013 FEMA released preliminary FIRM maps for the Town of Juno Beach which are currently available for viewing. However, these updated maps have not been approved and have yet to receive effective dates. These preliminary maps are included in Appendix F.

In addition to the FIRM maps there are two numerical models, which predict the effects of storm surge in Palm Beach County. The older model, developed by the National Oceanic and Atmospheric Administration, is called the Sea, Lake and Overland Surges from Hurricanes (SLOSH) model. In Appendix G, maps illustrate the areas of Palm Beach County vulnerable to this type of flooding. Recently, the State of Florida acquired another model for predicting hurricane storm surge as well as wind and property damage. This model, known as The Arbiter of Storms (TAOS) model, predicts storm surge height and wind field intensity for Category 1 through Category 5 hurricanes. Appendix G, illustrates the areas of Palm Beach County subject to flooding during a Category 5 Hurricane. It is important to remember that the TAOS model projections are based on a Maximum of Maximums (MOM) or absolute worst case scenario. For this analysis the County has considered the TAOS model projections as reflecting total, worst case exposure for Palm Beach County.

FEMA uses the most accurate flood hazard information available and applies rigorous standards in developing the FIRMs. However, because of limitations of scale or topographic definition of the source maps used to prepare a FIRM, small areas may be inadvertently shown within a Special Flood Hazard Area (SFHA) on a FIRM even though the property is on natural ground and is at or above the elevation of the 1-percent-annual-chance flood. This elevation is most commonly referred to as the Base Flood Elevation, or BFE. Such cases are referred to as "inadvertent inclusions."

For other small areas, earthen fill may have been placed during construction, thereby elevating a small area within the SFHA to an elevation that is at or above the BFE. This construction may have taken place during the time the engineering study was being performed or subsequent to that study. Because of the limited extent of the elevated area and the limitations of the map scale, it may not have been possible for FEMA to show this area as being outside the SFHA and so these areas have been incorrectly included in the SFHA on the FIRM.

Recognizing that these situations do occur, FEMA established administrative procedures to change the designation for these properties on the FIRM. These processes are referred to as the Letter of Map Amendment (or Change), or LOMA process and the Letter of Map Revision Based on Fill, or LOMR-F process. Through these processes, an individual who owns, rents, or leases property may submit certain mapping and survey information to FEMA and request that FEMA issue a document that officially removes a property and/or structure from the SFHA. In most cases, the applicant will need to hire a Licensed Land Surveyor or Registered Professional Engineer to prepare an Elevation Certificate for the property. Upon receiving a complete application forms package, FEMA will normally complete its review and issue its determination in 4 to 6 weeks. Letters of Map Change (LOMC) are issued in place of a physical alteration and re-publication of the effective map. There are no LOMCs for the Town of Juno Beach at this time, but an example from a nearby town can be seen in Appendix F.

The Town of Juno Beach's FIRM, *Flood Insurance Study,* and Letters of Map Amendment are available to the public by contacting the Building Department. These documents can also be viewed on FEMA's Map Service Center website.

Past Flood Events in Juno Beach and Palm Beach County (since 1900)

Hurricane of July 1926. A Category 1 hurricane with winds of 90 mph made landfall near Jupiter on the morning of 27 July 1926. This hurricane circled inland along Florida's east coast and exited the state at the Florida/Georgia border on 28 July. By that time it had been downgraded to a tropical storm. Palm Beach County experienced high winds and flooding.

Hurricane of September 1928. At noon on September 16, 1928, Florida received word of a hurricane moving north through the Caribbean region. This hurricane made Florida landfall near the Town of Palm Beach as a strong Category 4 hurricane with one of the lowest barometric pressures ever recorded in this area (928.9 millibars/27.43 in). This was the 5th most intense hurricane ever to make landfall in U.S. territory. It reached Lake Okeechobee with very little diminished intensity and moved across the northern shoreline. This sent a massive storm surge southward flooding lower areas on the southern and western edge of the lake. Many people in the Lake Okeechobee area gathered on large barges in the lake while 500 others sought shelter in nearby hotels. The storm hit at 6 p.m. with 160 mph winds, causing the lake waters to spill out into the low-lying fields. Dikes collapsed, nearby houses were swept away by severe flooding, and hundreds drowned in the onrushing waters. So many people died that rescue workers were forced to simply tow long lines of bodies along behind their boats. At least 700 victims were buried in a mass grave at West Palm Beach. In excess of 2,500 people were killed during this storm's passage. Nearly all the loss of life was in the Okeechobee area and was caused by overflowing of the lake along its southwestern shore. While all of central Florida was affected by this killer storm, Palm Beach County mainly experienced wind damage and flooding from the associated rains. Damage throughout the region was estimated at between $25 million and $150 million and $50 million in Puerto Rico. After the storm, the government helped begin a $5 million flood control program

for the Lake Okeechobee-Everglades region, building an 85-mile long levee, 34-38 feet high, along the southern lake shore.

Hurricane of September 1933. This major Category 3 hurricane passed over Jupiter Island with a barometric pressure of 947.5 millibars. Maximum winds recorded were 127 mph. There was considerable property damage all along the Florida east coast, mostly in the area between Jupiter and Fort Pierce. Severe waterfront damage was reported in Stuart. Minimal damage was reported from Palm Beach County, although there was some flooding in the lower areas of the county.

Hurricane of June 1945. This hurricane entered Florida from the Gulf of Mexico making landfall near Cedar Key and moving east-northeast to exit the state near St. Augustine. Palm Beach County received heavy rains and high winds from this storm.

Flood of Fall 1947. This flood is generally considered to be the most severe flood recorded in southern Florida. Heavy rainfall, including the rains from two hurricanes, occurred over a period of five months. Many parts of Palm Beach County were flooded for months and there was extensive damage to dairy pastures and agriculture in general. Such a flooding event would be much more significant today because of the increase in land development.

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

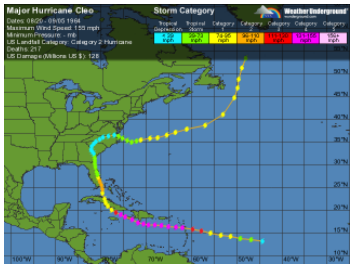
Flood of October 1953. As occurred in 1947, this flood was preceded by five months of heavier than normal rainfall which included a tropical storm in October. June through October rainfall was approximately 48 inches. Damage was heaviest in the beef cattle industry, with extensive losses of improved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

Rains of January 1957. On January 21, 1957 Palm Beach County received 9 to 21 inches of rainfall within a 24-hour period. There was severe flooding in the vegetable garden areas of the county and much crop damage. Some fields had to be pumped out. Local crop damage was estimated at $1,000,000.

Flood of June 1959. Heavy rains fell across most of central Florida from 17 June through the 21st. These rains were associated with and followed a tropical depression, and caused extensive flooding in poorly drained, low-lying agricultural areas and some residential sections. Considerable pasture land and some citrus land in Palm Beach County were inundated. Some highways also sustained damage from these flood waters.

Hurricane Donna of September 1960. Hurricane Donna was the 6th most intense U.S. Hurricane at landfall. This storm crossed the Florida

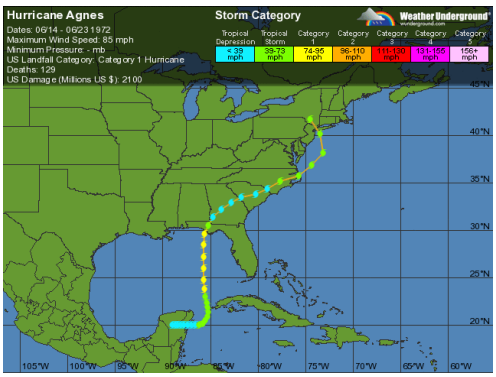
Keys into the Gulf of Mexico then turned back toward the northeast and struck the Florida mainland just south of Naples. It then turned north moved across Ft. Myers, where it turned again to the northeast, moved across the state, and exited Florida at just north of Daytona Beach. Rainfall ranged from five to ten inches in an 80 to 100-mile wide belt following this storm's track. Lakes and streams overflowed their banks and forced the evacuation of many homes throughout central Florida. The high water closed many roads and inundated considerable agricultural land. At least 12 people were killed statewide and more than 1,794 were injured.

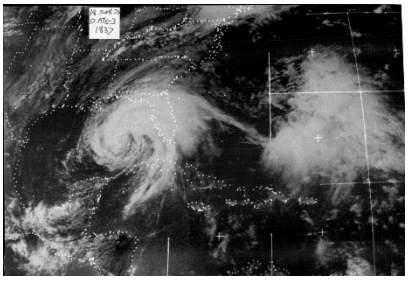


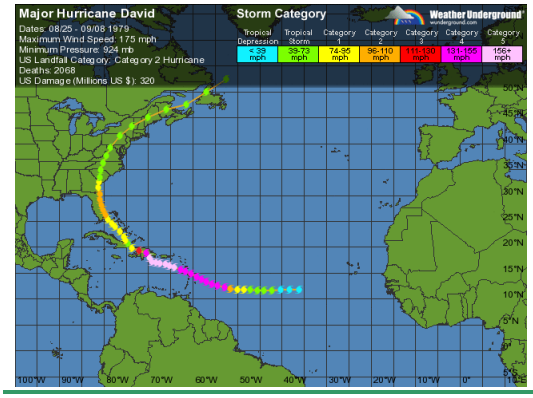
Hurricane Cleo of August 1964. This small but destructive storm moved northward into Biscayne Bay on August 27, 1964. Palm Beach County received three to five inches of rain associated with this storm, mostly in the eastern portion of the county. Most sustained damage was associated with wind rather than flooding. In the Town of Boynton Beach the Intracoastal Waterway flooded all the way to the Florida East Coast Railway where the Crossings community is now located.

Rains of October 1966. On October 22, 1966, heavy rains ranging from eight to ten inches over a 24-hour period destroyed approximately 4,300 acres of vegetable crops in Palm Beach County.

Hurricane Agnes of June 1972. Hurricane Agnes moved through the Gulf of Mexico off Florida's west coast. While it never struck central Florida mainland, it spawned the worst severe weather outbreak in Florida history. The outer rain bands covered virtually the entire peninsula and spawned numerous tornadoes. There were six people killed and 40 injured in Okeechobee, one killed and seven injured in La Belle, 40 injured at Big Coppit Key, two injured at Bassinger, three injured in Haines Town, four at Crystal Springs, 11 in Malabar, and 12 in Cape Canaveral. Most of those injured lived in manufactured housing. Damage estimates totaled $5 million to public property and $36 million to private property. A small tornado touched down in the Captain's Key subdivision adjacent to Juno Beach, but no one was hurt.







Hurricane David of September 1979. Hurricane David moved over the Dominican Republic with winds of 165 mph, but weakened drastically before reaching Florida's east coast. David raked the eastern coastline of Florida from Palm Beach County northward. Officially classed as a minimal hurricane, its strongest winds were offshore when it officially made landfall approximately 20 miles south of Melbourne. Tides were three to five feet above normal along the eye track and one to two feet above normal elsewhere along the Florida's east coast. Light to

moderate erosion was reported along the Palm Beach County coastline. Storm rainfall was quite variable from location to location. Totals generally ranged from six to nine inches, but some stations reported as much as 11 inches during the storm's passage.

Rains of March 1982. On March 28 and 29, 1982, Palm Beach County was subjected to a severe coastal storm with heavy rains and high winds. Lantana measured 16 inches of rain over a 24-hour period. High seas sunk a Haitian freighter and a total of 11 people were drowned.

Tropical Storm Isidore of September 1984. Tropical Storm Isidore made landfall near West Palm Beach on September 27, 1984 and moved inland toward Orlando. Highest winds were 73 mph and rainfall was reported to be five to seven inches over a 24-hour period. There was some flooding, but this occurred mostly in northern Florida. Juno Beach's wooden dune walkovers were twisted and broken by the storm surge and high surf.

The Great Thanksgiving Holiday East Coast Storm of 1984. A strong low pressure system developed east of Florida and coupled with a high pressure system to produce an extremely strong pressure gradient leading to gale force winds and high seas along the entire Florida east coast. Heavy rains fell over most of central Florida, and this surface runoff, coupled with the wind packing of seawater along the coast, resulted in extensive coastal erosion and flooding. Many coastal structures were damaged or destroyed, including several in Palm Beach County. The privately owned fishing pier in Juno Beach was completely destroyed.

Tropical Storm Bob of June 1985. On June 23, 1985, Tropical Storm Bob moved across south Florida in a northeasterly direction from Fort Myers to just north of Palm Beach. Rainfall from this event did minor damage, mostly along Florida's west coast. Palm Beach County suffered moderate agricultural losses.

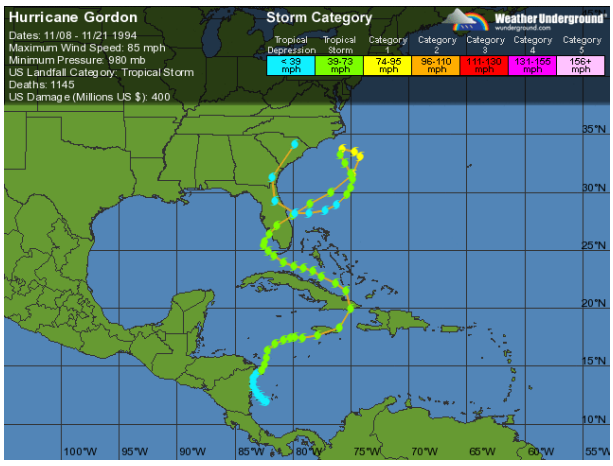
Flood of January 1989. On January 21 and 22, 1989, Palm Beach County experienced a gale with subtropical storm characteristics that caused extensive beach erosion and dropped four to six inches of rain across the county. This caused ponding of water in low-lying areas. Several homes and a motel were damaged. Road flooding caused several accidents.

High Surf of November 1993- January 1994. According to a November 25 article in the Palm Beach Post: "In Juno Beach, the high winds eroded dunes and toppled Australian pines into the surf Wednesday at Loggerhead Park near Donald Ross Road and State Road A1A. Just south of the park, worried residents of the San Remo condominium complained that a large amount of sand had washed away and water was coming within six feet of the supporting structure, town officials said."… "More coastal erosion is likely for the next few days because north to northeast winds are forecast to continue, said U.S. Weather Service spokesman Gordon McCann in West Palm Beach. A heavy surf advisory is in effect through Thanksgiving evening, he said."… "Continuing erosion at Juno Beach's Loggerhead Park has closed beach access there, although the park is still open, said Palm Beach County Beach Patrol District Supervisor Chuck Price. 'It's about as bad as it's ever been,' he said. `We've never had erosion like this at this beach. It's cut away about 10 feet of dune.' One of the park's dune walk-overs was taken out for repair because of damage from erosion, and the other walk-over has been closed because waves undermined its supports, he said. Lifeguards had to hustle to support the park's lifeguard tower from encroaching waves, but it's expected to hold until the erosion stops, he said."

As a result of the high surf, a flood insurance claim of over $25,000 was paid out to repair water damage occurring on November 27th to a beachfront structure along Juno's coast and a shipment of sand was

required to stabilize buildings whose structures were undermined by erosion. During November and December there was significant loss of ocean front dunes and vegetation along the shoreline of Jupiter and Juno Beach. An additional insurance claim dated early January 1994, most likely resulted from this same episode of erosion and high surf. An article from the Palm Beach post dated January 12th supports this possibility:

> High winds and waves continued to chew at the coast Tuesday, with sustained winds of 25 mph and gusts up to 36 mph recorded at Palm Beach International Airport.
>
> The wind speed is expected to drop to 10 or 15 mph today as a strong Arctic high-pressure system weakens and continues to move away from the coast, National Weather Service meteorologist Paul Houle said. Heavy morning surf broke through some planks and forced the newly refurbished Lake Worth Pier to close before noon. Pier manager Peter Thano said he planned to open the pier as usual today.
>
> In Juno Beach, the steadily pounding winter waves have eaten away about half the 2,000 cubic yards of sand added recently to the beach at The Surf condominium just south of Loggerhead Park.
>
> Steps leading from the 49-unit condo to the beach are dangling 7 feet off the beach, despite the $52,000 worth of sand and sea oats placed there to protect the condo in early December, said Joe Locello, association president for the condo at 900 Ocean Drive.
>
> ``The steps are hanging in midair,'' Locello said. ``We didn't lose the steps. We lost the beach.''
>
> Locello said environmental regulators have forbidden the condominium from using rocks to protect the building, fearing it would interfere with sea turtle nesting during the summer.
>
> Erosion also has forced the closing of Jupiter Beach Park just south of the Jupiter Inlet.
>
> The Jupiter Inlet District board is expected tonight to discuss emergency measures to help beaches south of the inlet. The meeting will begin at 7:30 p.m. at the district offices at 400 N. Delaware Blvd. in Jupiter.

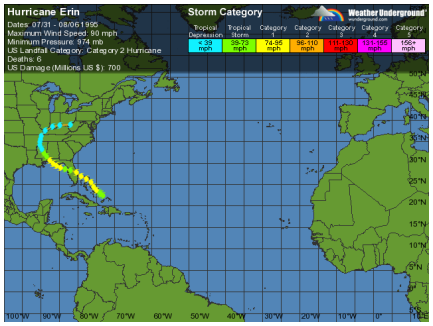


Hurricane Gordon of October 1994. Following a similar track to Hurricane Donna of 1960, Tropical Storm Gordon crossed the Florida Keys into the Gulf of Mexico then turned back to the northeast and struck the mainland Florida Peninsula near Fort Myers on October 13. It moved across the state and exited Florida into the Atlantic just north of Vero Beach on October 16. Palm Beach County had experienced a period of extensive growth during the 1970s and 1980s. Most of this growth took place in the form of residential and commercial land development in the eastern portion of the county close to the Intracoastal Waterway and the beaches. The rain event associated with Tropical Storm Gordon was the most significant rain event to occur after this period of development. Essentially, the county received 17+ inches of rain over a 3-day period. Rainfall was not evenly disbursed over the whole county. Statewide damages associated with Gordon totaled over $400 million. Agricultural interests sustained $275 million in damages primarily from the widespread flooding. Vegetable and citrus crops were hit particularly

hard. Exacerbating the flooding associated with Tropical Storm Gordon was the fact that prior to October, 1994 had been a very wet year for Palm Beach County. Rainfall recorded through September of that year had reached 74 inches before the Gordon event occurred. Altogether Palm Beach County received approximately 100 inches of rain in 1994, making that year the wettest year since 1913.

Juno Beach saw the beach erosion sustained during late 1993 and early 1994, exacerbated by Hurricane Gordon. Over $85,000 in flood insurance claims were paid out to repair Juno Beach Structures during 1994. A November 22, 1994 article in the Palm Beach Post summarizes the effect of high surf on the residents of Juno Beach:

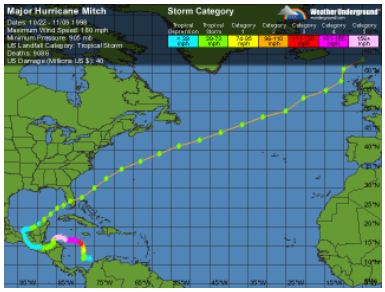
> The town and the owners of two oceanfront condominiums will ask state permission to build a steel sea wall for about $1 million to protect the structures and a town beach access from severe erosion south of Donald Ross Road.
>
> Waves from Tropical Storm Gordon and high tides have caused sand to wash away in front of the Surf and Tower condominiums, exposing support pillars under the Surf. And the town lost a $20,000 wooden dune walkover at its access point between the condominiums, after the walkover was buckled and twisted by last week's stormy weather, Mayor Frank Harris said Monday.
>
> An official with the state Bureau of Beaches and Coastal Systems in Tallahassee said Monday that his office is awaiting the application and feels the extent of the erosion probably warrants approval of the project.
>
> ``We haven't declared an emergency, but we're not going to let any structures fall in, by any means,'' said bureau special projects manager Paden Woodruff.
>
> Although the steel wall would prevent sand washout from the area, it could aggravate erosion in front of the structure, wiping out much of the beach there, Woodruff said.
>
> And if that happens, it would interfere with marine turtles because the town's oceanfront is prime turtle nesting area.
>
> Joe Lauricella, president of the Surf's condominium association, estimated the wall would cost the Surf between $500,000 and $800,000, and the Tower about $350,000. The town's share would be about $50,000, Harris estimated.
>
> Once a complete application is received, a state decision will be made in days, Woodruff said.
>
> The approval can't come soon enough, said Lauricella.
>
> The Surf's 66 unit owners had to pay $65,000 last weekend for replacement sand to be trucked in and placed in front of the building, he said.
>
> Workers continued to put sandbags Monday on a fabric cover placed on the sand to prevent it from being pulled out to sea.
>
> ``We spent $100,000 last year and about $80,000 so far this year to replace sand,'' Lauricella said. ``We've got to get a wall. The state is marking time. What is it waiting for?''
>
> Harris said he backs the idea. ``It's the only way these guys can go,'' he said.



Hurricane Erin of August 1995. Hurricane Erin made landfall near Sebastian Inlet on August 2, 1995. Brevard County bore the brunt of this storm with sustained winds of approximately 100 mph. While Palm Beach County was spared most of the damages associated with Erin's wind field, heavy rains of up to 8 inches in 3 hours were associated with the backside of this storm and flooding occurred in low-lying areas along the county's northern edge.

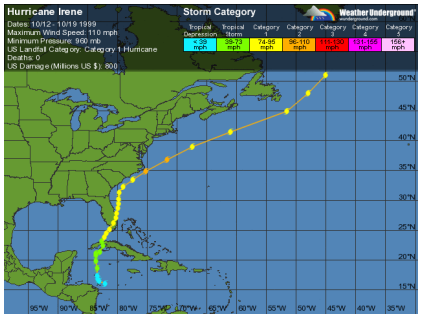
The Unnamed Storm of October 1995. Almost exactly one year after the Hurricane Gordon flooding incident in 1994, a stalled frontal system dropped over 15 inches of rain on Palm Beach County over a period of 39 hours. In the intervening year between these two events, some communities in Palm Beach County had conducted a number of mitigation projects and initiatives designed to improve drainage and prevent flooding in known flood prone areas. These mitigation projects and initiatives undoubtedly reduced the extent of flooding and flood related damages during the 1995 flooding event, nevertheless, the county did experience significant flooding again in 1995. The unnamed storm of 1995 was the worst flooding event in Palm Beach County in recent history. In the northern part of the county there was over 20 inches within a three-day period. On October 20th, 1995 the Palm Beach Post reported that "This was no ordinary storm. The 20 inches of rain that fell on parts of northern Palm Beach County between Sunday and Tuesday exceeded the amount officials expect once a century." The newspaper article goes on to state that two car accident deaths were indirectly caused by the storm and the Jupiter Town Manager reported about 630 homes in Jupiter suffered damage estimated at $7.5 million. The South Florida Water Management District said it will cost $1.7 million to fix erosion of canal banks in Palm Beach and St. Lucie counties. The Palm Beach County School District has estimated $150,000 worth of damage. Palm Beach Gardens counted at least 300 homes needing repairs, plus many roads and the Archer Creek Bridge, which collapsed. The American Red Cross was harboring flood victims for the third night, as a few residents of the Ocean Walk mobile home park in Juno Beach stayed at William T. Dwyer High School in Palm Beach Gardens.

Due to the amount of damage cause by the record breaking rainfall centered over Northern Palm Beach County, and Juno Beach specifically, and considering the large number of people who did not have flood insurance, it is likely that flood losses suffered by residents of Juno Beach due to this rain event were extensive. Over $80,000 in flood insurance claims were paid to Juno Beach property owners during 1995. The vast majority were issued for damage sustained during this October storm. Other causes for smaller 1995 claims could have included hurricane Erin in August and rain bands caused by Hurricane Opal passing to the west of Florida in late September through early October.



Tropical Storm Mitch of November 1998. Hurricane Mitch was one of the deadliest storms in Atlantic history. By the time it reached Florida on November 4th and 5th, 1998, it had been downgraded to a tropical storm. Palm Beach County received minimal rains from this storm, which passed to the north of the county. Extensive agricultural damage was reported throughout South Florida.

Unnamed Storm of January 1999. On Saturday January 2, 1999, a cold front stalled over the northern part of Palm Beach County. Warm, moist air from the Bahamas became intrained in this frontal system and produced a fairly localized, intense rain event in northern Palm Beach County. Initial reports indicated 31 inches of rain in a 12-hour period. This later turned out to be an erroneous reading from the recording instrument involved; however, it is generally recognized that between 18 and 22 inches of rain fell in the northern third of the County over a 12 to 18 hour period. Flooding was even more extensive than in the 1995 event. Flooding was extensive along Northlake Boulevard. Initial Reports indicate that between 500 and 600 homes were flooded. Erosion caused the collapse of a portion of I-95 that was under construction. It is important to note that many of the areas that experienced flooding in both the 1994 and 1995 rainfall events were not in designated flood zones. For those areas where the Flood Insurance Rate Maps (FIRM) did indicate a flooding hazard, these two events both exceeded the 100-year storm levels and occurred back-to-back. The 1999 event was extremely localized, but rainfall exceeded all previous records in specific areas, and was beyond the design capacity of virtually all drainage systems in the county.



Hurricane Irene of October 1999. Hurricane Irene weakened to Tropical Storm force winds by the time it tracked north through the Everglades, but it menaced South Florida and Palm Beach County with incessant rains and its sluggish pace. In the end it dropped 10-20 inches of rain throughout the County, causing extensive flooding in some areas. By Friday evening (October 15) 125,000 homes in Palm Beach County were without power. Over $10,000 in flood insurance claims were paid out to Juno Beach Property owners as a result of this storm. Overall the Town of Juno Beach sustained $36,750 worth of damage and had to close its beaches due to sewage contaminated stormwater flowing from the Intracoastal into the ocean.

Record Rainfall June - July 2002. On July 14, 2002 a record 37 consecutive days of rain came to a conclusion. The combined June - July rainfall total was six inches below the all-time record. June rainfall was 20.16" (12.5% above normal). The county experienced five days of one inch or more rain. The water level in Lake Okeechobee rose to 13.57 feet. Because this rainy period was preceded by an extended dry period and rains were spread over several days, flooding was limited to street flooding.

Hurricane Frances of September 4, 2004. Frances became a Category 4 Hurricane on August 28 while about 700 miles east of the Lesser Antilles, then moved generally west northwest and weakened to a Category 2 hurricane while crossing the northwest Bahamas. After stalling for about 12 hours on

September 4 in the Florida Straits between Grand Bahama Island and the southeast Florida coast, the center of the nearly 70-mile diameter eye crossed the Florida coast near Sewalls Point, at 1 A.M., September 5, 2004 with the southern eyewall affecting the extreme northeast portion of Palm Beach County. Frances moved farther inland just north of Lake Okeechobee and weakened to a tropical storm before crossing the entire Florida Peninsula and exiting into the Gulf of Mexico just north of Tampa late on September 5. A South Florida Water Management District instrument measured a peak wind gust of 92 mph over the eastern portion of Lake Okeechobee. The estimated peak wind gust in the Palm Beach metro area was 91 mph at Jupiter Inlet with a peak wind gust of 87 mph measured by a C-MAN station at Lake Worth Pier. A maximum storm-total rainfall amount of 13.56 inches was measured at Palm Beach International Airport with 10.36 inches of that occurring in a 24-hour period. Unofficial storm-total rainfalls included 9.56 inches at Boynton Beach, eight inches at Deerfield Beach and 7.18 inches at Hillsboro Canal. Rainfall flooding was mostly minor except for a few locations in Palm Beach County which had up to three feet of standing water. A section of I-95 in Palm Beach County was closed due to a large sinkhole. The maximum storm surge was estimated to have ranged from two to four feet along the northeast Palm Beach Coast to one to two feet along the northeast Broward Coast. Within the confines of the Herbert Hoover Dike, water levels on Lake Okeechobee fluctuated up to five feet above and below normal. Coastal beach erosion was moderate in Palm Beach and portions of Broward counties. Property damage at the coast occurred mainly to marinas, piers, seawalls, bridges and docks, as well as to boats. Inland structure damage included 15,000 houses and 2,400 businesses in Palm Beach County. Wind damage to house roofs, mobile homes, trees, power lines, signs, screened enclosures and outbuildings occurred over much of southeast Florida including areas near Lake Okeechobee, but was greatest in Palm Beach County. A preliminary damage estimate for Frances in south Florida was $620 million, including $500 million in Palm Beach, $80 million in Broward, and $34 million in Miami-Dade. Crop damage in Palm Beach County was estimated at an additional $70 million to sugar cane and vegetables and additional heavy losses occurred to nurseries. Florida Power and Light reported power outages for 659,000 customers in Palm Beach, 590,000 in Broward, 423,000 in Miami-Dade, 39,200 in Collier, 2,500 in Hendry and 1,700 in Collier. An estimated 17,000 persons sought refuge in public shelters in Palm Beach County and nearly 7,000 in Broward County. In Juno Beach, Damages resulting from Hurricane Frances totaled about $2 million for residences and $250,000 for commercial buildings.

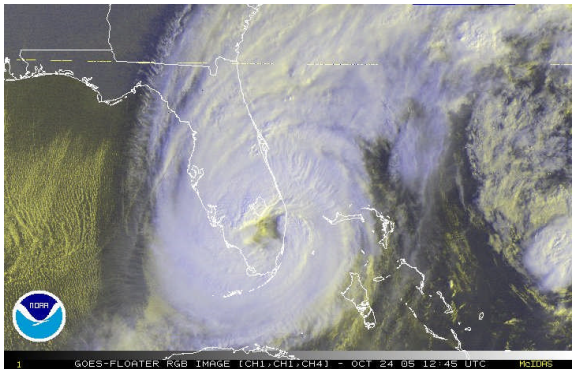
Hurricane Jeanne September 25, 2004. A SFWMD gauge measured a maximum storm-total rainfall amount of 10.22 inches over the eastern portion of Lake Okeechobee. Widespread storm-total amounts of one to four inches occurred in most of southeast and interior south Florida with Miami-Dade County and Collier County averaging one half to one inch. Mostly minor rainfall flooding was observed except locally in Palm Beach Gardens, Jupiter and in the farmlands of western Palm Beach County where it was more severe. Just three weeks after Hurricane Frances, Hurricane Jeanne struck the same area of southeast Florida. Hurricane Jeanne formed from a tropical depression just east of the Leeward Islands on September 13. Jeanne made a clockwise loop for three days in the Atlantic north of Hispaniola before moving west northwest. It strengthened to a Category 3 Hurricane while over the northwest Bahamas and then made landfall around 11 P.M., September 25 near the south end of Hutchinson Island, nearly coincident with the landfall point of Hurricane Frances just three weeks before. The 40-

mile diameter eye was not quite as large as Frances, but the southern eyewall again affected northeast Palm Beach County. After landfall, Jeanne initially moved along a track similar to Frances, just north of Lake Okeechobee as it weakened to a tropical storm then turned to the northwest and moved over the northwest Florida Peninsula. Although slightly smaller and stronger then Hurricane Frances, winds and pressures over southeast Florida were remarkably similar to Frances. A South Florida Water Management District (SFWMD) instrument in the Martin County portion of Lake Okeechobee measured a 15-minute sustained wind of 79 mph with a peak gust of 105 mph. In metropolitan Palm Beach the highest official sustained wind speed was 60 mph with a peak gust of 94 mph from the C-MAN station at Lake Worth Pier. The lowest barometric pressure of 960.4 mb was measured at a SFWMD site in the Martin County portion of Lake Okeechobee. A SFWMD gauge about four miles west of West Palm Beach International Airport measured 9.10 inches of rain with 8.79 inches of that occurring in a 24-hour period. At Moore Haven, 5.99 inches of rain was measured. Mostly minor rainfall flooding was observed except in Palm Beach Gardens, Jupiter and in the farmlands of western Palm Beach County where it was more severe. The estimated maximum storm surge ranged from two to four feet along the northeast Palm Beach Coast to one to two feet along the northeast Broward Coast. Within the confines of the Herbert Hoover Dike, water levels on Lake Okeechobee fluctuated up to seven feet above and below normal causing severe flooding of some marinas. Beach erosion was moderate in Palm Beach. There were no confirmed tornadoes. There were no known direct deaths but four persons died in the aftermath. Storm surge and winds at the coast caused damage to condos, marinas, piers, seawalls, bridges and docks, as well as to boats and a few coastal roadways. Inland wind damage to building roofs, mobile homes, trees, power lines, signs, and outbuildings occurred mainly over Palm Beach County and portions of eastern Glades and Hendry counties. Preliminary damage estimates for Jeanne in southeast Florida were $330 million, including $260 million in Palm Beach County, $50 million in Broward and $10 million in Miami-Dade. Agricultural Damage in Palm Beach County was estimated at $30 million. Florida Power and Light reported outages occurred to 591,300 customers in Palm Beach County, 165,900 in Broward, 25,100 in Miami-Dade, 5,200 in Collier, 3,000 in Hendry and 1,500 in Glades. An estimated 12,534 persons sought refuge in public shelters in Palm Beach County.

As happened during other flood events the Seminole Golf Course in Juno Beach served as a flood water storage area (see image below).

The Seminole Golf Club in Juno Beach is flooded after Hurricane Jeanne. (Allen Eyestone/The Palm Beach Post)

In Juno Beach the residential damage from Jeanne was estimated at $1.2 million; business losses about $285,000. The town incurred about $25,000 worth of damage. As a result of Hurricanes Frances and Jeanne, the Juno Beach fishing pier sustained decking damage but no structural damage. According to the *Palm Beach County Hurricane Frances and Jeanne Damage Assessment Map*, the 7.5-mile segment of coast from Jupiter Inlet south through Juno Beach all the way to Lost Tree Village on Singer Island, includes a 5.0-mile segment of critically eroded beach. Beach restoration has been conducted at Jupiter-Carlin Park and Juno Beach. Hurricane Frances caused minor erosion of the beach fill, with moderate adjustment of the horizontal berm into a sloping beach profile. 2004 was an expensive year for Juno Beach. The direct effects of Hurricanes Frances and Jeanne and the indirect effects of a more distant Hurricane Ivan, which also passed through Florida, caused extensive damage to properties in Juno. Over $70,000 in flood insurance claims were paid to Juno Beach Residents during 2004



The clearly defined eye of Wilma is visible as it enters Palm Beach County from the west.

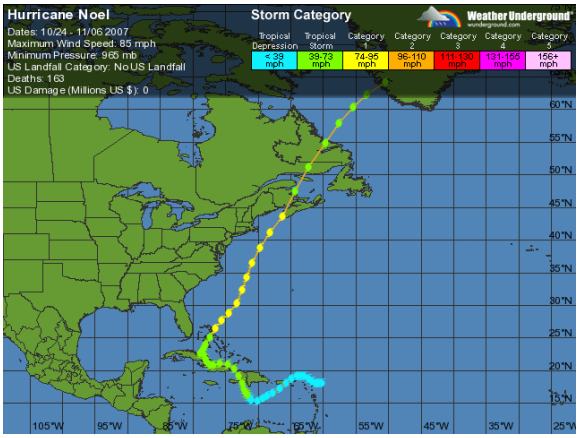
Hurricane Wilma October 24, 2005. Rainfall amounts across South Florida generally ranged from two to four inches across southern sections of the peninsula to four to six inches across western Collier County and around Lake Okeechobee, with a maximum amount of 7.31 inches in Clewiston. There was scattered street flooding. Wilma was a classic October hurricane which struck South Florida as a Category 3 hurricane on October 24th, 2005. Wilma developed from a tropical depression near Jamaica, a typical source region for October tropical cyclones, on the afternoon of October 15, 2005. It became the 21st named storm of the season during the morning hours of October 17, 2005,

which tied the record for the most named storms in one season originally set back in 1933. Wilma underwent a rapid intensification cycle which began on October 18th and ended in the early morning hours of October 19th, with a central pressure decrease of 88 mb in only 12 hours. The central pressure reached 882 mb., making Wilma the most intense hurricane ever in the Atlantic Basin, lower than Hurricane Gilbert in September 1988. Wilma went on to make landfall on Cozumel Island just off the Yucatan Peninsula as a strong category 4 hurricane on Friday, October 21st, then drifted erratically over the Yucatan Peninsula through Saturday evening October 22nd. Wilma began to move off the northeast coast of the Yucatan Peninsula on the night of the 22nd, then gradually accelerated northeast over the southern Gulf of Mexico toward South Florida as a strong mid and upper-level trough over the central United States moved south and forced a southwesterly steering flow. The hurricane made landfall as a Category 3 storm shortly before 7 AM Monday, October 24th on the southwest Florida coast between Everglades Town and Cape Romano with maximum sustained winds of 125 mph and an estimated minimum central pressure of 950 mb. Wilma exhibited a very large 55 to 65 mile-wide eye while crossing the state, and the eye covered large portions of South Florida, including the eastern two-thirds of Collier County, extreme northwestern Miami-Dade County, the southern and eastern third of Hendry County, most of Broward County, and all of Palm Beach County. The eye also clipped the southeastern shore of Lake Okeechobee. The eye wall affected virtually all of South Florida. Around 10:30 AM, a South Florida Water Management District (SFWMD) meteorological station located at the south end of Lake Okeechobee reported sustained winds of 103 mph. The highest recorded gusts were in the 100-120 mph range. The winds on the back (south/west) side of the eye wall were as strong, if not stronger, than those on the front (north/east) side. This goes against the common, but sometimes erroneous, belief that the strongest winds in a hurricane are always in the right-front quadrant of the storm. This occurred over much of South Florida, except for central and southern Miami-Dade County which barely missed the southwestern portion of the eye wall, and likely contributed to the heavier damage across Broward and Palm Beach counties compared to slightly lesser damage across much of Miami-Dade and Collier counties. Wilma moved rapidly northeast across the state, with an average forward speed of 25 mph. Wilma exited the east coast over northeastern Palm Beach County near Palm Beach Gardens around 11 AM Monday October 24th as a Category 2 hurricane with maximum sustained winds of around 105 mph. It traversed the southern peninsula in about four hours. In Collier, Miami-Dade, Broward, and Palm Beach Counties, the winds killed a total of five people. Total damage estimates from all the effects ranged from $9 to $12 billion. Extensive damage to crops was reported, with an estimated $222 million in crop damage for Miami-Dade County alone. Damage was widespread, with large trees and power lines down virtually everywhere, causing over 3 million customers to lose power. Structural damage was heaviest in Broward and Palm Beach counties where roof damage and downed or split power poles were noted in some areas. High-rise buildings suffered considerable damage, mainly in the form of broken windows. This was observed mainly along the southeast metro areas. An F1 tornado caused snapped power poles, uprooted large trees, and significant damage to mobile homes. Small swaths of greater damage elsewhere in South Florida have not been attributed to tornadoes, but were instead likely caused by "mini-swirls", small vortices within the eye wall. The *Hurricane Wilma Post-Storm Beach Conditions and Coastal Impact Report* notes that along the Palm Beach County beaches, no major structural damage was observed seaward of the Palm Beach County Coastal Construction Control Line

and, in an area including Juno Beach, from south of Jupiter Inlet to the southern portion of J.D. MacArthur State Park, there was minor beach erosion observed.
Amazingly, considering the strength of the storm and the fact that it passed directly over Juno Beach, there was only one flood insurance claim for less than $10,000 paid out for a loss in Juno Beach. The bulk of the Juno Beach losses caused by Wilma were due to wind. This small amount of flood damage was most likely due to the west to east movement of the Hurricane, which placed the strong storm surge along Florida's west coast. Also advantageous to the residents of Juno was the speed with which the storm passed over the area. It took only 4.5 hours to cross the entire state. While Wilma swept through quickly, storms that stall or linger usually cause greater rainfall totals.

Flood of December 14, 2006. A slow-moving low pressure trough caused very heavy rains and significant flooding over parts of Palm Beach County. West Palm Beach International Airport received a total of 8.21 inches of rain ending at 7 PM on the 15th. Other locations in Central and Southern Palm Beach County received between six and eight inches of rain. Northern Broward County received lesser amounts in the two to three inch range. Several streets and roads were closed in the Town of West Palm Beach, with water reaching up to three feet deep in some areas. Hardest hit was the neighborhood of Pineapple Park. Many vehicles were stranded in the deep water, with local police receiving about 120 calls for assistance. No significant damage was reported to property despite water entering homes and businesses. Florida Power and Light reported 20,000 customers without power during the afternoon and early evening hours. Shelters were opened for people left homeless by the floods, but only five people arrived as of 8:30 PM.

Tropical Storm Noel of October 30-31, 2007. Tropical Storm Noel moved north from eastern Cuba across the western Bahamas Islands from October 30 through October 31. The interaction of Noel with a strong high pressure area located over the Mid-Atlantic States produced strong winds over southeast Florida and the adjacent waters well before Noel made its closest passage to the area early on November 1. Damage was minor and mainly confined to a few downed power lines. Around 5,000 customers lost power in the three-county area of Palm Beach, Broward and Miami-Dade. Rainfall amounts were light, ranging from a half-inch (0.5) to nearly two inches. As Noel moved north across the western Bahamas, the strong winds continued across southeast Florida. The event caused severe beach erosion, coastal flooding, and minor wind damage. The event lasted into the first few days of November.



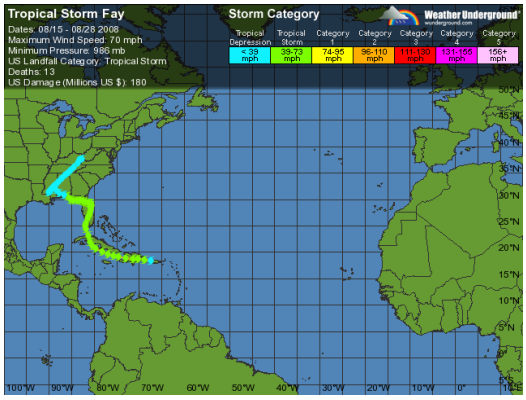
Flood of January 22, 2008. Intense rains affected Boynton Beach and the northwest section of Delray Beach during the late afternoon and evening hours of January 22nd. Maximum observed rainfall amounts were between four and six inches in Boynton Beach, although Doppler radar estimated as much as ten inches of rain fell in just over three hours. Numerous reports of flooding were reported. A trained spotter reported water flooding houses in the corridor west of Federal Highway and east of Congress Avenue between Boynton Beach Boulevard and Woolbright Road. Water rose as high as two feet along sections of Congress Avenue. Significant flooding was reported at the parking lot of Boynton Beach Mall. The I-95 on-ramp at Gateway Boulevard was closed due to the water depth, as were

sections of Boynton Beach Boulevard. Dozens of vehicles stalled and 40 traffic accidents were reported due to the rain and standing water. The combination of a mid and upper level trough moving east across South Florida and a developing warm frontal boundary provided the necessary atmospheric conditions for intense rains and flooding in the Boynton Beach area on January 22nd.

March 22, 2008. Heavy rain across the Wellington area produced multiple reports of knee deep water in yards and across roadways. Heavy rain across central portions of Palm Beach County produced flooded roads and water approaching structures.

May 24, 2008. Flooding occurred at the intersection of Linton Boulevard and Congress Avenue in Delray Beach making the intersection impassable. Flooding was also reported along Nassau Street with water intruding into some homes. Flood waters were near two feet deep at some locations. A shortwave (a disturbance in the mid or upper part of the atmosphere which induces upward motion ahead of it) moved across South Florida during the afternoon hours allowing multiple severe thunderstorms to develop across southeast Florida. A total of 8,300 customers lost power due to the severe thunderstorms in the three-county area of Palm Beach, Broward, and Miami-Dade counties.

Tropical Storm Fay of August 15-23, 2008. The center of Tropical Storm Fay moved across Key West early in the evening of August 18th and into the mainland of South Florida at Cape Romano shortly before 5 AM on the 19th. Minimum central pressure was 989 MB at landfall, but continued to decrease after landfall to 986 MB at Moore Haven on the southwest shore of Lake Okeechobee. Maximum sustained winds were estimated to be around 60 MPH at landfall, however as the storm tracked across the western Everglades and Southwest Florida the radar presentation continued to organize and winds increased to around 65 MPH around Moore Haven. A maximum wind gust of 79 MPH was recorded on a South Florida Water Management gauge on Lake Okeechobee as the storm passed. Wind gusts of tropical storm force were felt area-wide, with sustained tropical storm force winds experienced over portions of mainland Monroe, Collier, Hendry and Glades counties as well as the immediate coastal sections of Miami-Dade, Broward and Palm Beach Counties. Wind damage was most significant in the areas affected by tropical storm force sustained winds, primarily around Lake Okeechobee and interior sections of southwest Florida, with only minor wind damage elsewhere. The storm caused over $10 million in beach erosion along Palm Beach County's coastline. A maximum rainfall total of 16.17 inches was reported with this event at Moore Haven in Glades County. Flooding from these rains produced total damage estimates of $380,000, primarily in Glades and Hendry counties. Rainfall elsewhere ranged from three to six inches in southeast Florida, and six to eight inches in southwest Florida, with isolated amounts up to ten inches in coastal Palm Beach County area that includes Juno Beach. All the associated effects of Tropical Storm Fay in South Florida resulted in one fatality, four injured, and $3.949 million in property damage. Two tornadoes produced $1.25 million in damage, but caused no injuries or fatalities. The one fatality and three of the injuries were indirectly caused by Fay with a traffic accident in Palm Beach County. The direct injury occurred when a kite surfer on Fort Lauderdale Beach lost control during a squall and was slammed into a building along A1A. Fay caused tropical storm force winds, significant rainfall flooding in some areas and two



confirmed tornadoes. Just under $20,000 were paid out on flood insurance claims in Juno Beach as a result of this storm.

March 11 and 12, 2010. Heavy rain over the metropolitan sections of Palm Beach County caused flooded streets. At the Palm Beach International Airport 7.4 inches of rainfall was recorded, with Green Acres reporting 4.65 inches of rain. Portions of Australian Avenue, Banyan Boulevard and Palm Beach Lakes Boulevard and Palm Beach Lakes Boulevard were impassable during the morning of the 12th. No damage was noted from the flooding, and overall impacts were minimal due in part to the fact that the most significant flooding occurred during the overnight hours.

September 3 and 4, 2010. Swells from Hurricane Earl off the mid-Atlantic coast affected the Palm Beach County waters, causing rough conditions at local inlets. A charter boat captain died from injuries suffered when he fell off his boat as he approached Jupiter Inlet in rough seas. Northeast swells of 2 to 3 feet were observed throughout the day, although seas were likely a bit higher near Jupiter Inlet where the accident took place.

November 13, 2010. Large swells from a distant storm in the Atlantic Ocean led to large, breaking waves along the southeast Florida coast, most notably along the Palm Beach County coast. Reports from ocean Rescue personnel and off-duty NWS employees indicated breaking waves of 10 to 15 feet along the Palm Beach County coast. The last 75 feet of the pier at Juno Beach was closed after seas destroyed 10 to 12 sections of the pier and the railing. Moderate beach erosion was also noted as the surf ran up all the way to the dune line across much of the Palm Beach County coast. A small boat flipped in the rough surf near Palm Beach Inlet, but no one was hurt. A woman was also thrown into rocks alongside a jetty; however she was not hurt.

August 25, 2011. Hurricane Irene (the second of the same name to affect Florida, following the 1999 Hurricane Irene) passed over the western Bahamas about 170 miles east of the Florida coast. The western fringes of Irene impacted southeast Florida with high surf and winds bordering on tropical storm force. Sustained winds to 36 knots with gusts to 46 knots were measured near the coast from Jupiter through Juno Beach associated with intermittent squalls. High surf pounded the Palm Beach County coast as Hurricane Irene passed to the east during the day. Eight people were injured along Juno Inlet when a large wave crashed onto the jetty while onlookers were present. Maximum storm surge at Lake Worth Pier was 1.28 feet with a maximum tide of 1.55 feet. The Lake Worth pier was damaged by large waves. Railings and some break away decking planks were lost when large waves hit the pier during high tide.

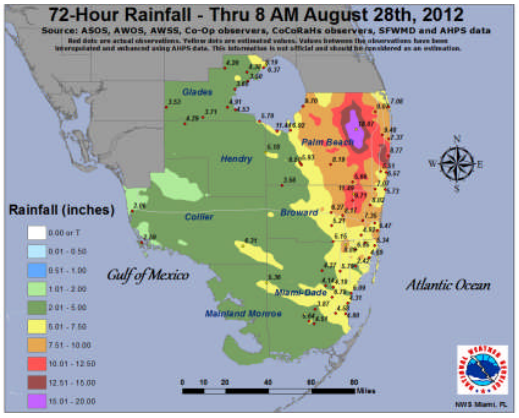
October 28 and 29, 2011. A weak frontal boundary across South Florida in combination with a flow of deep tropical moisture from the western Caribbean Sea associated with the remnant of Hurricane Rina led to periods of very heavy rain and significant flooding lasting the better part of four days. An estimated 2000 customers lost power across South Florida due to the rain. Rainfall amounts of 6 to 9 inches fell over southeastern Palm Beach County in less than 6 hours, leading to numerous reports of flooded streets and some road closures. Juno Beach received 5.09” inches of rain. No reports were

received of water entering structures, but water was deep enough to close maintained roads and threaten structures.

June 26, 2012- June 27, 2012. Tropical Storm Debby made landfall in Steinhatchee, along the north western Nature Coast of Florida and tracked east across the state dropping significant rainfall until entering the Atlantic on June 27, 2012. The precipitation associated with the storm was most severe in North Central Florida and the Panhandle, however, once in the Atlantic, the storm caused coastal erosion all the way south to Palm Beach County. Additionally, the storm bands spawned two tornados in Palm Beach County, one of which caused damage to a structure in Lake Worth. The effects of the storm on Juno Beach were described in a Palm Beach post article dated June 27th, 2012:

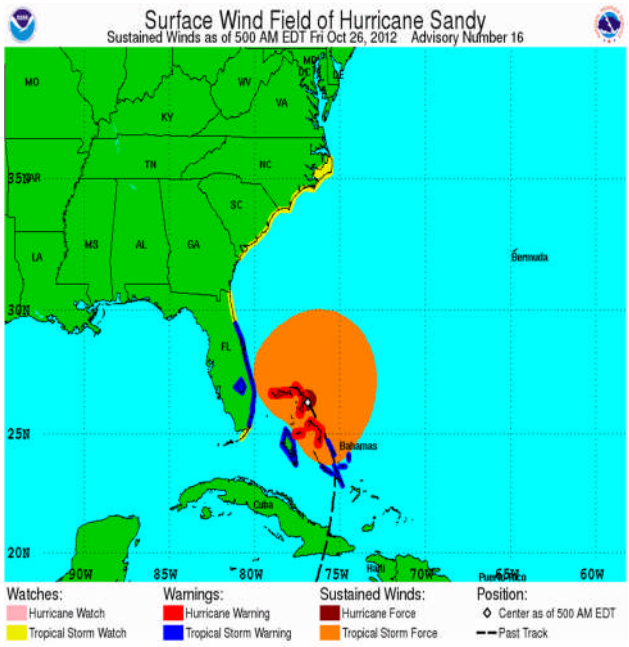
> "Kelly Martin, a biologist at the Loggerhead Marinelife Center in Juno Beach, confirmed that turtle nests were destroyed at the center, but she could not yet determine how many. She said erosion from the storm created 6-foot sand cliffs." … "Debby was even blamed for a shark biting a 6-year-old boy just north of Juno Beach on Tuesday. A Gainesville shark expert believes rough surf brought on by Debby caused the shark to come closer to shore searching for food. The boy had surgery and will be fine."

August 26, 2012. Tropical Storm Isaac moved west-northwest across the Florida Straits south of the Florida Keys on August 26. The northern edge of the wind and rain area associated with Isaac affected the South Florida peninsula throughout the day on the 26th. Isaac continued on a west-northwest track into the Gulf of Mexico on the 27th with winds, rain and flooding continuing over parts of South Florida. Rain bands and winds on the north side of the circulation of Isaac affected Southeast Florida throughout the day of the 26th and part of the 27th. Highest winds over land were recorded along and near the southeast Florida coast where the highest sustained winds ranged from 40-45 mph, with 25-35 mph sustained winds over most inland areas as well as over southwest Florida. Highest wind gusts ranged from 50-60 mph over most land areas to as high as 65 mph along the Atlantic coast and just offshore.

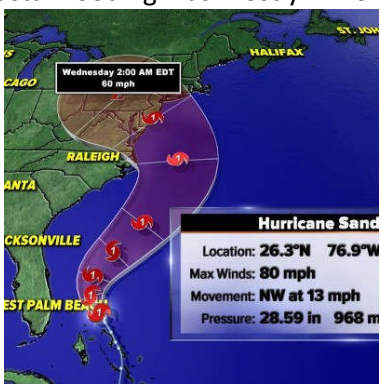


Three-day rainfall totals ending at 8 AM August 28th ranged from 5-7 inches across southeast Florida to 3-5 inches over interior and southwest Florida. The primary exception was over northern metro Broward County and much of Palm Beach County where 8 to 12 inches fell, with maximum amounts up to 15-18 inches from west of Juno Beach to Wellington, The Acreage, Royal Palm Beach and Loxahatchee in a two day period. These areas of highest rainfall amounts experienced severe flooding with communities cut off for several days after the storm. Canals were overtopped. Few homes suffered water damage, but major damage was sustained to infrastructure, including roads and water management structures. Major beach erosion was also observed along the Collier County beaches, with moderate beach erosion along the Atlantic beaches. All of the associated effects of Isaac in south Florida resulted in about $17.2 million in property damage. Specifically, Isaac's inland flood waters resulted in about $10 million in damages, mostly in Palm Beach and Broward counties. Damage from beach erosion in Collier and Broward counties was estimated at $6 million. Wind damage was estimated at $750,000. Approximately 113,000 customers lost power during the storm in South Florida.

Hurricane Sandy October 27-28, 2012. *TS* Sandy wreaked havoc along the southeast Florida coast as it paralleled the coastline on its trek to the north. Although Sandy did not make landfall across south Florida, it did have a significant impact, most notably with regard to the large swells produced by Sandy's large wind field and their impacts on coastal flooding. Sandy was a Category 1 hurricane while tracking across the Bahamas. Sandy then began to take on a slight northwestward motion near the northern Bahamas. It is during this time frame that the offshore Atlantic waters were heavily impacted by Sandy's passing. Sandy's primary impact to southeast Florida was the large surf which resulted in significant beach erosion along with some coastal flooding. The wind trajectory around Sandy produced an optimal fetch which lead to the development of a large, long period NE swell which affected the waters off of the southeast Florida coast. The swell peaked Saturday 10/27- Sunday 10/28. The pounding surf led to large breaking waves, estimated to have been as high as 10 feet at the Miami-Dade County beaches to around 20 feet, perhaps even higher, at the Palm Beaches.

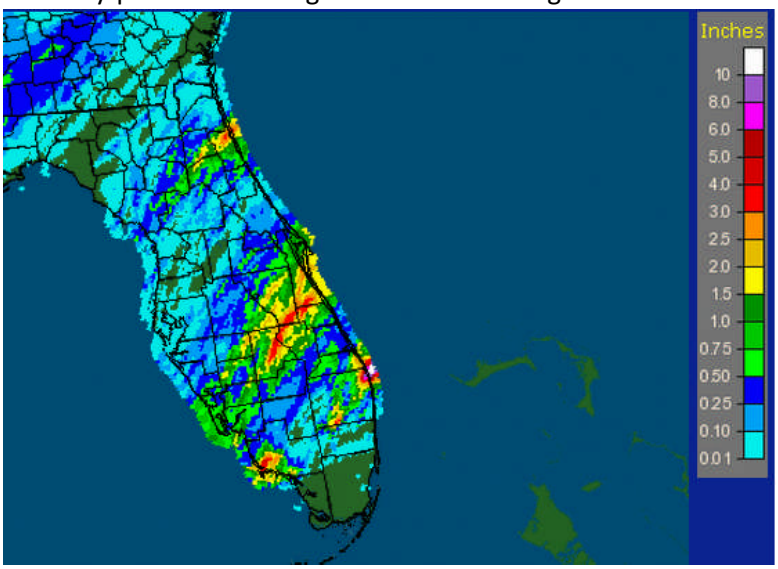


Large waves pummeled the entire Southeast Florida coast, resulting in significant beach erosion. Some coastal flooding also occurred. Along the Miami-Dade County coast, coastal flooding was mostly minor with the main impact being a few roads with minor ponding of water. However, coastal flooding was much worse along the Broward County coast. Significant coastal flooding occurred along A1A in Fort Lauderdale Beach, mainly between Las Olas Boulevard and NE 20th Street. This resulted in this stretch of road being closed the entire weekend, along with a few others, as well as some neighborhoods being cut off. In Palm Beach County, the most significant impacts were experienced in the Manalapan area where beachfront structures were threatened by water intrusion. The Lake Worth Pier also sustained damage from the large waves. In all, there was an estimated $14 million in damage sustained in Palm Beach County from Sandy. Most of the damage was to public beaches stretching from Juno Beach to Boca Raton.



The damage to Juno Beach caused the loss of some sea turtle nests. According to Kelly Martin, a biologist with the Loggerhead Marinelife Center, by the time Sandy came through, no loggerhead turtle nests were left at Juno Beach. The turtles laid 13,000 nests in the sand this season, and the majority of hatchlings were out to sea by the time the storm hit. Unfortunately, Hurricane Sandy did destroy about 50 green turtle nests. The green turtle is a federally endangered species.

December 11-12, 2012 Rain Event. A stationary pre-frontal trough was located along a line from near Naples in Southwest Florida to extreme northeast Palm Beach County which provided a convergence zone for the development of scattered showers and thunderstorms.



A nearly stationary line of thunderstorms caused very heavy rains to occur over the course of about seven hours in the town of Jupiter. Radar estimates and unofficial measurements were received of 6 to 10 inches of rain. On December 11th the rain gauge at the Seminole Golf Course in Juno Beach registered 6.22" of rain. Law enforcement and city/county officials reported 45 housing and business units receiving flooding, most of it minor. The thunderstorms ended around midnight Tuesday evening but the flooding of homes continued until early Wednesday morning. Flooding occurred in Juno Beach, but this flooding was confined to roadways with no intrusion into structures. Overall, $504,000 in damage was reported, primarily in the area of Jupiter Inlet Colony.

January 9-10 2014 Rain Event. Caused Historic Palm Beach Flooding. During the night of Thursday January 9, 2014, several mesoscale meteorological factors combined to produce torrential rainfall across portions of coastal Palm Beach County over a rather short period of time. From roughly 8pm until midnight, several locations received over 12 inches of rain in just those few hours Thursday evening with one mesonet site just west-southwest of Hypoluxo receiving an astonishing 22.21 inches during the same time frame (see Table). Steady rain rates were on the order of 3-5 inches per hour.

Location	Storm Total Rainfall Amounts (inches)
1 WSW Hypoluxo	22.21
1 SW Palm Beach	16.03
Lantana	15.04
1 ESE Lantana	14.79
Boynton Beach	13.13
1 E Lantana	12.46
2 NW Boynton Beach	11.00
Palm Beach	10.75

These staggering rain rates led to severe flooding overnight and through Friday January 10th well after the rain had stopped. This prompted the South Florida Water Management District to hold an impromptu weather briefing Friday afternoon to discuss the safest and most efficient ways of moving water out of low lying areas and into the regional flood control system. The most severely affected communities were Delray Beach, Boynton Beach, and Lantana. Severe flooding of neighborhoods led to the closing of numerous roadways, including all lanes of Interstate 95 in Boynton Beach. Several lakes and canals overflowed their banks. Flood waters entered a number of homes and businesses, but no major structural flooding was noted. All Palm Beach county schools were also closed due to the flooding. Tragically, two people perished as a result of this historic event. A 56 year old woman drowned in Delray Beach after she drove her car off of a flooded roadway and into a lake. Also in Delray Beach, a 90 year old man drowned after slipping into a canal while walking down a street. Rainfall totals of 8 to 10 inches were also experienced as far west as the Florida Turnpike in Palm Beach County.

Several meteorological factors came together to produce this rare and historic flood event. A stalled frontal boundary across south Florida edged to the north through the evening of January 9th. As it did, it placed south Florida in a moisture rich environment as was indicated by the 12z MFL sounding indicating a precipitable water amount of 1.82 inches. This amount was near the January record of 1.98 inches spanning the last 65 years, placing it in the 99th percentile of roughly 4000 observations taken in January since 1948. At the same time, a mesoscale low was slowly tracking to the south across the St. Lucie and Martin county coasts producing heavy rainfall in these areas. Fort Pierce recorded over 7 inches of rainfall on January 9th in nearly a 6-hour time span. As this low moved to the south and into Palm Beach County, storm motion slowed and eventually became nearly stationary across extreme southeastern Palm Beach County. Heavy rainfall then became enhanced as it encountered convergent flow along the coastline. The main area of convergence was driven by the low level wind flow. An area of speed convergence was also seen as strong easterly winds offshore were blowing into an onshore region of much weaker winds. Favorable vertical wind shear was also present as low level onshore flow opposed mid-level southwest flow. This also allowed for the training of storm cells over the same areas. According to the Office of Hydrologic Development plotted observations from the Boynton Beach rain gauge show that for durations between roughly 1.5 and 18 hours, the rainfall was more rare than a 1000 year Average Recurrence Interval when plotted against depth-duration frequency curves from NOAA Atlas 14 (see Figure).

NWS Miami issued the following hydrologic products during this flood event:

An Urban Flood Advisory was issued at 8:25 PM for NE Palm Beach County as reports of flooded roads were being received. This was upgraded to a Flash Flood Warning at 9:29 PM as more and more reports of more serious flooding were being received across NE Palm Beach County from the media. Three Flash Flood Statements were issued, serving to update the public on the ongoing radar trends along with the reports being received.

As the heavy rain spread further down the coast, an Urban Flood Advisory was issued for SE Palm Beach County at 11:08 PM. This was upgraded to a Flash Flood Warning at 12:46 AM as radar and observations showed excessive rainfall totals along with reports of flash flooding being received. One Flash Flood Statement was issued to update the information on the flooding.

Since flooding remained ongoing during the morning of Jan. 10th, though the rain had ended, Flood Warnings were necessitated for NE Palm Beach County (issued at 3:29 AM) and SE Palm Beach County (issued at 6:27 AM). The Flood Warning for NE Palm Beach County was allowed to expire during the morning as the flood waters subsided there. However, since SE Palm Beach County had the brunt of the excessive rainfall, flooding continued not only through the day but even during the overnight hours of Jan. 11th, so the Flood Warning remained in effect through mid-morning of Jan. 11th.

Assess the Flood Problem

Floods, like earthquakes and wildfires, occur naturally and can often have a benign, or sometimes even beneficial, effect on local ecosystems. The predisposition of an area to flood indicates that there is a flood hazard, but does not necessarily mean that there is a flood problem. A floodplain is only a problem if human development gets in the way of, or exacerbates, the natural flooding.

Overall Vulnerability to Flooding and Impact on Community

Public safety is of paramount concern for the Town of Juno Beach. The Town has made it a priority to educate its citizens on the dangers and impacts of flooding. The Town implements a public outreach strategy that provides information on flood warnings, property protection, flood safety, and flood insurance and has developed a comprehensive flood warning program that can deliver real-time data to citizens and emergency management personnel through television, radio and the Internet. The Town's approach has resulted in an educated and well-informed constituency.

As Juno Beach's population has rapidly increased since 1960, so has rapid water runoff associated with the vast areas of impervious surfaces such as asphalt roads, concrete areas, sidewalks, and structures created by new development, often creating flood prone areas where they did not previously exist.

The Town ranges in elevation from zero feet at the Atlantic Ocean to 40' NGVD. The highest elevations are on a ridge east of U.S. Highway 1, with 5' elevations at the western boundary of the Town. The west half of the Town typically drains to the Intracoastal.

The Town of Juno Beach has a limited storm drainage system designed to capture a limited amount of water in a limited area, and so requires that single-family homes must retain all stormwater on site. In most of South Florida, because of a lack of water storage area, the streets and yards are often used as part of the water retention area. This works very well and is considered nuisance flooding. The majority of Juno Beach has very permeable soil and a water table depth below six feet. The Planning and Zoning Department is currently performing a new soil plan.

Two major roadways in Juno Beach are US Highway 1 and S.R. A1A. Responsibility for operating and maintaining these roadways lies with the Florida Department of Transportation (FDOT) and Palm Beach County, respectively.

The drainage component of proposed development in the Town shall be approved if the development meets the following Level of Service (LOS) standards. For clarification, during 3, 5, and 10-year storm events, swales can usually store the rain water produced. A 25-year storm can drop approximately 10-12 inches of rain in a 24-hour period:

LOS for Capital Storm Drainage Facilities – Design Storm

Area	*Level of Service (LOS)*
Northern/southern	5-year frequency, 24-hour (1-day) duration; rainfall intensity curve
Central drainage area	3-year frequency, 24-hour (1-day) duration; rainfall intensity curve
Area	*Level of Service (LOS)*
Northern/southern drainage areas	
1.9 acres and below	5-year frequency, 24-hour (1-day) duration; rainfall intensity curve
2.0—5.9 acres	5-year frequency, 72-hour (3-day) duration; rainfall intensity curve
6.0—9.9 acres	10-year frequency, 72-hour (3-day) duration; rainfall intensity curve
10.00 acres +	25-year frequency, 72-hour (3-day) duration; rainfall intensity curve
Central drainage area	
1.9 acres and below	3-year frequency, 24-hour (1-day) duration; rainfall intensity curve
2.0—5.9 acres	5-year frequency, 24-hour (1-day) duration; rainfall intensity curve
6.0—9.9 acres	10-year frequency, 72-hour (3-day) duration; rainfall intensity curve
10.0 acres +	25-year frequency, 72-hour (3-day) duration; rainfall intensity curve

The Public Works Department of the Town of Juno Beach is responsible for managing the stormwater runoff on Town streets and Town-owned property. The Department inspects and maintains stormwater pipes, catch basins, storm drains, swales, wet and dry stormwater ponds, and outfalls within the Town limits to ensure that stormwater runoff is managed properly after storms and rain events. The performance of the stormwater system is continually monitored and improvements are made as necessary. The Town's drainage system consists of catch basins, French drains and exfiltration trenches. The water is conveyed through the Stormdrain system into Pelican Lake, just south of the Town Center. Then it flows through a storm drain system that goes through our park area and eventually into the Seminole Golf Course and into Little Lake Worth. It's controlled by a structure that allows the water to outflow from the lake. The catch basins and the weir at the end of Pelican Lake qualify as water control structures. The drainage system serving the Town is broken down into three areas designated North Town, Central Town, and South Town, described in the *Town of Juno Beach Stormwater Management Plan,* dated July 22, 2009 produced by AECOM, of West Palm Beach, Florida. The following is excerpted from that plan:

- The North Town area is located from the northern Town limits south to Donald Ross Road. The Town does not operate or maintain any stormwater facilities in the North Town basin.

- The Central Town basin consists of the area south of Donald Ross Road and north of Seminole Golf Club.

- The South Town basin is located south of Pelican Lake and extends south to the southern Town limits. Maps of the Juno Beach storm drain system can be found in Appendix D.

The majority of Juno Beach has very permeable soil and a water table depth below six feet. The Planning and Zoning Department is currently performing a new soil plan.

According to the SFWMD storm water management facilities map (Appendix D), there are no control structures within, or directly adjacent to the Town of Juno Beach for which they are responsible.

Flood damage is proportional to the volume and the velocity of the water, as with a storm surge. High volumes of water can move heavy objects and undermine roads and bridges. Flooding can have negative impacts in both rural and urban areas. Although rural flooding is dangerous to fewer people and may be less costly than urban flooding, it can cause great damage to agricultural operations.

This section of the Flood Mitigation Plan evaluates the potential impact of flooding on Juno Beach with respect to the following:

- Impact on life, safety, and health of Juno Beach residents and incident responders
- Impact on critical facilities
- Impact on existing structures at risk
- Natural and beneficial floodplain functions
- Economic impact
- Repetitive losses

- Impact of flooding and floodplain management on development and redevelopment trends

Impact on Life, Safety, Health

Although there has not been a flood-related fatality in the Town of Juno Beach, being a coastal community, the deadly hazard associated with coastal flooding is present. Generally the inland flood hazard in the Town is not considered to pose a serious risk to life.

Floods can bring a variety of health problems: disease and pollutants in the water; mold, mildew, and sediment left by the flood; and psychological impacts on flood victims.

Three general types of health problems accompany floods. The first comes from the water itself. Floodwaters carry whatever was on the ground that the stormwater runoff picked up, including dirt, oil, and farm and industrial chemicals, fertilizers, animal waste, trash, etc. The ground can become saturated with flood waters and this contaminated water eventually makes its way into the storm and sanitary sewer lines and the wastewater treatment plants Boil water orders may be instituted by the Town if the potable water supply has been, or is thought to have been contaminated. Furthermore, during floods the overloaded sewer system can back up into homes and low lying areas, creating a breeding ground for bacteria. All materials that are or have come in contact with floodwaters should be considered contaminated. Until the water recedes, the public is at immediate risk due to the insanitary and unhealthy conditions.

The second type of health problem comes after the waters have receded. Stagnant pools of water become breeding grounds for mosquitoes, while mold and mildew can develop in parts of buildings that have not been cleaned and/or dried out.

Mosquitos in Florida have been known to carry the following diseases:

- Eastern Equine Encephalitis
- West Nile Virus
- St. Louis Encephalitis

That list may become longer in the future. Due to the tropical climate and international tourism that characterize Florida's beaches, the possibility of the re-emergence or introduction of mosquito borne diseases that had either been eradicated or previously unreported in the United States is ever-present. There have been recent reports by The Florida Department of Health announcing 24 confirmed cases of dengue fever, and 18 confirmed cases of chikungunya among people who had traveled overseas. These findings have experts concerned about the possibility that Florida mosquitos may begin spreading the illnesses, which could lead to a potential outbreak.

Surveillance conducted by the Centers for Disease Control and Prevention's (CDC) Division of Vector-Borne Infectious Diseases indicates that in the absence of pre-storm epidemics, the risk of mosquito

borne illness does not usually increase after a flood or natural disaster. However, siting evidence of increased illness after the Red River flood of 1975 the CDC states:

> "The three viruses of primary concern (EEE, SLE, WEE) overlap in their distribution, but each has a distinct ecology, involving different mosquito species and avian amplifier hosts. Despite these differences, populations of primary or secondary vector species of each virus may increase significantly in response to heavy rainfall or flooding. Therefore, under certain circumstances, disasters might produce increases in disease risk."

The Palm Beach County office of Environmental Resources Management recommends the following measures to reduce the health risks associated with mosquitos:

- Remove standing water in old tires, buckets, drums, or any other containers.
- Check clogged gutters and flat roofs that may have poor drainage.
- Cover barrels and trash containers tightly with a lid or with 16-mesh screen.
- Empty plastic wading pools at least once a week. Store them indoors when not in use.
- Store boats covered or upside down.
- Treat standing water with products containing the bacteria Bacillus thuringiensis, var. israelensis.
- Fill in tree holes and hollow stumps that hold water.
- Stock your ornamental water garden with mosquito-eating fish (e.g. minnows, Gambusia spp., goldfish, or guppies).
- Repair screening on windows, doors, porches, and patios.

The Town of Juno Beach Public Works Department is tasked with providing town-wide Mosquito Control and is available to respond to resident's mosquito related concerns. After a flood or natural disaster the department will evaluate whether additional methods or more frequent pesticide application would be required to safeguard public health.

Unless confined to a Natural and Beneficial area, or removed by canals and storm drains, the standing water left after a flood can be hazardous. Standing water outdoors can encourage mosquito growth and standing water inside of a building can also cause problems. A building that is not thoroughly and properly cleaned and dried becomes a health hazard, especially for small children and the elderly.

There are two prerequisites to mold growth:

- ✓ Moisture
- ✓ Nutrients

Both of these are present in homes following a flood. The CDC's *Mold Prevention Strategies and Possible Health Effects in the Aftermath of Hurricanes and Major Floods; Recommendations and Reports June 9, 2006 states:*

> *"*Although molds can be found almost anywhere, they need moisture and nutrients to grow. The exact specifications for optimal mold growth vary by the

species of mold. However, mold grows best in damp, warm environments. The availability of nutrients in indoor environments rarely limits mold growth because wood, wallboard, wallpaper, upholstery, and dust can be nutrient sources. Similarly, the temperature of indoor environments, above freezing and below the temperature for denaturing proteins, can support mold growth, even if the actual temperature is not optimal.

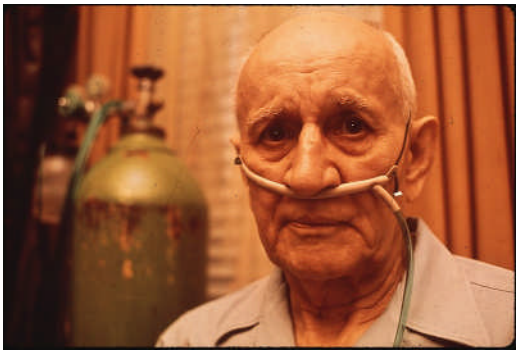
The primary factor that limits the growth of mold indoors is lack of moisture. Substantial indoor mold growth is virtually synonymous with the presence of moisture inside the building envelope. This intrusion of moisture might be from rainwater leaking through faulty gutters or a roof in disrepair, from a foundation leak, from condensation at an interface (e.g., windows or pipes), or between a cold and a warm environment. Water also can come from leaks in the plumbing or sewage system inside the structure. Studies of mold growth on building materials, such as plywood, have found that mold grows on materials that remain wet for 48--72 hours. Flooding, particularly when floodwaters remain for days or weeks, provides an almost optimal opportunity for mold growth."

In the warm humid climate of Florida, any moisture that is not properly removed from walls, furniture, carpets and other absorbent surfaces after a flood can quickly begin harboring irritating, if not dangerous, strains of mold and mildew. Although proper remediation is recommended after a storm, many homeowners forgo the option. Some who are unaware of the potential hazards and others, who are deterred by the expense or the inconvenience, opt for superficial fixes thereby compromising the long-term indoor air quality of their homes or businesses.

The CDC further emphasizes the potentially detrimental health effects of mold exposure when it summarizes the results of a study in which post-Katrina homes, residents and remediation workers were tested for mold exposure and related illnesses:

"In 2004, the Institute of Medicine (IOM) reviewed the literature regarding health outcomes related to damp indoor spaces. In addition to the risk for opportunistic fungal infections in immunocompromised persons, IOM found sufficient evidence for an association between both damp indoor spaces and mold and upper respiratory symptoms (nasal congestion and throat irritation) and lower respiratory symptoms (cough, wheeze, and exacerbation of asthma).

> The findings of this report indicate that, in the New Orleans area post-hurricane, indoor environmental conditions and personal practices provided exposures that potentially put residents and remediation workers at risk for these negative health effects."



The elderly and those with compromised immune systems are more susceptible to mold related breathing problems. Considering the fact that the 2010 US Census calculated 48.7% of the residents of Juno Beach are over the age of 65 and nearly 27.8% are over the age of 80, there is a significant percentage of the population at increased risk from mold exposure.

For properties in Juno Beach, there have been 41 historical flood claims made, and there are currently only 1,770 active policies, therefore it is probable that there were also adjacent buildings affected by floodwaters that were uninsured. Due to the high cost of remediation, it is less likely that uninsured buildings were properly repaired after incidences of water damage. Consequently, the possibility exists that a small to significant number of residents may currently be exposed to mold growth as a result of previous floods. The Town's efforts to educate the public about the dangers of flooding, including mold growth, and the importance of having flood insurance would help to reduce these numbers.

In addition to the possibility of physical illness, there is the potential for long-term psychological impacts due to seeing damage caused by a flood to one's home, business, personal belongings, etc. Unprepared and uninsured persons can often feel increased pressures due to all that accompanies the aftermath of a flood. There is also a long-term problem for those who know that their homes can be flooded again. The resulting strain on floodplain residents takes its toll in the form of aggravated health and mental health problems. Children are particularly susceptible to this post-traumatic stress. The cost and labor needed to repair a flooded home puts a severe strain on people, especially the unprepared and uninsured.

The above mentioned health hazards associated with a flood may not become apparent until days or even months after the event. More immediate dangers include the risk of injury from electricity and the increased likelihood of being involved in an automobile or other storm related accident. When people ignore basic safety precautions such as evacuations and warnings, injuries and/or accidents are more common.

Roads running through low-lying areas of Juno Beach with poor drainage that are prone to sudden and frequent flooding, can pose a serious threat. Roads covered with water may cause confusion to drivers and may affect vehicles' braking systems or leave a car disabled. Canals near roadways may be obstructed from view by flood waters on roadways, where the canal may look like a road to a driver not familiar with the area.

In the case of storm surge flooding, motorists may attempt to drive through barricaded or flooded roadways. Because only 18 to 24 inches of water moving quickly across a roadway can carry away most vehicles, floods can present significant potential safety risks. Emergency rescue assistance may be

required to remove an individual from a vehicle disabled by high flood waters, putting emergency responders at risk.

Communities such as Juno Beach that are subject to sea level rise may experience an increase in coastal vulnerability. Impacts to communities may include:

- Increased flooding and drainage problems
- Destruction of natural resource habitats
- Higher storms surge, increased evacuation areas and evacuation time frames
  - Storm surge and high tides have changed already
  - Drainage system gradually fed into the ocean or intracoastal by pipes will now cause inland flooding as a small amount of rise causes the water to back up into the pipes. The same thing happens in the canal drainage systems.
- Increased shoreline erosion
- Saltwater Intrusion
  - The salt water/fresh water line is moving further and further west in South Florida. Three wells in Palm Beach County have been closed so far including Lake Worth and Manalapan. The first desalinization plant in the County is located in the neighboring Town of Jupiter. There will be more in the future. The wells in Juno Beach are inspected regularly and tested quarterly for salt water intrusion. No such intrusion has been detected.
- Loss of infrastructure and existing development

As the Town of Juno Beach is a community that is subject to sea level rise, impacts may include higher storms surge, increased evacuation areas and evacuation time frames. Appendix J includes a map of Palm Beach County Municipalities Inundation Zones with 3 ft. Sea Level Rise.

Another potential for injuries from flooding results from people walking or playing in or near flooded areas. During or after any flood event, care must be taken when entering the waters, whether in a vehicle or by foot. In addition to dangerous road conditions that may be hidden by the flood waters, power lines may be down and obscured by the flood waters, putting people at risk of electrocution. The combination of electricity and water can prove deadly. Snakes, poisonous insects, and fire ant colonies can be present in the water, posing a serious threat.

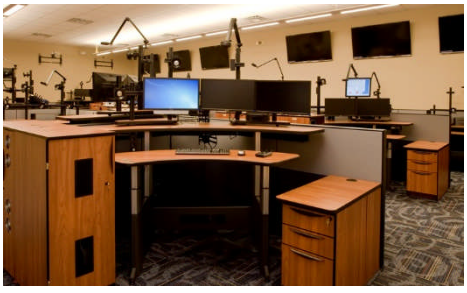
There are secondary effects on safety resulting from flooding, including damage to gas lines, structures, and bridges that may make it unsafe for emergency operations.

Following are several actions that residents of flood hazard areas in Juno Beach can take to decrease the potential of injury due to flooding. It is often wise to be overly cautious:

- ✓ Know the flood warning procedures of Juno Beach and of Palm Beach County.
- ✓ Do not attempt to cross a flowing stream where water is above your knees.
- ✓ Keep children away from floodwaters, ditches, culverts and storm drains.
- ✓ If your vehicle stalls in high water, abandon it immediately and seek higher ground.
- ✓ Evacuate the flood hazard area in times of impending flood or when advised to do so by the police and fire department. Know the evacuation routes.
- ✓ Cut off all electric circuits at the fuse panel or disconnect switches. If this is not possible, turn off or disconnect all electrical appliances.
- ✓ Shut off the water services and gas valves in your home.
- ✓ Be aware of outdoor hazards. Watch out for loose or dangling power lines, and report them immediately to proper authorities. It is not unusual in a disaster such as this for more people to be killed by carelessness in the aftermath than were killed by the event itself.
- ✓ Be sure all electric and gas services are turned off before entering buildings for the first time.
- ✓ Remove covers from all outlets and fuses or multi-breaker boxes and flush with clean water. Let dry and spray with contact cleaner/ lubricant.
- ✓ Watch for electrical shorts or live wires.
- ✓ Don't turn on any lights or appliances until an electrician has checked the system for short circuits.
- ✓ Electric motors in appliances that have been flooded should be thoroughly cleaned and reconditioned before they are put back into service.

Warning and Evacuation of Residents and Visitors

National Weather Service flood watches (when conditions are right for flooding) and flood warnings (when flooding is imminent) will be issued by local television and radio stations. Residents in flood prone areas will also be warned of an actual emergency condition by the sounding of a steady siren tone provided by Palm Beach County Fire and Juno Beach law enforcement mobile units. When these signals are sounded, residents should turn to their local television and radio stations for information. To get updated information on storm preparations, residents can call the Palm Beach County Emergency Information Center at (561) 712-6400 or additional telephone numbers announced through news outlets. Palm Beach County is the lead agency in hurricane responses and is responsible for ordering evacuations when required.



Because hurricane preparedness activities become difficult once winds reach tropical storm force, the hurricane watch is issued by the National Weather Service 48 hours in advance of the anticipated onset of tropical-storm-force winds. A hurricane warning is issued when hurricane conditions (sustained winds of 74 mph or higher) are expected somewhere within the specified area. Palm Beach County Division of Emergency Management coordinates disaster planning, preparedness, response, recovery and mitigation activities for the County. The County's Emergency Operations Center is centrally located in West Palm Beach. The Emergency Operations Center (EOC) houses 150 personnel during activations, including the

various multi-disciplinary support functions and the Executive Policy Group. Each of the 38 municipalities, including the Town of Juno Beach, has a designated emergency management contact and all have been assigned an EOC location during disaster activations. Palm Beach Gardens, Jupiter and Juno Beach share a newly constructed $4,000,000 Emergency Operations Center (EOC) located on N. Military Trail in Palm Beach Gardens. The EOC has a back-up generator and is built to withstand 205 mph winds. It is from this EOC that emergency operations will be directed during and following the storm. Because of its size, the County is divided into 6 Emergency Operating Areas (EOAs). The map in Appendix H shows the geographic coverage of each EOA. As a hurricane approaches, the Town of Juno Beach takes steps to weather the storm and to assist the community with recovery. During the hurricane season, Town departments are given daily updates on any tropical storms in the Atlantic. Town workers go on alert when a hurricane threatens Juno Beach.

In the event that a major hurricane threatens Palm Beach County, many low-lying coastal areas would be inundated to varying depths by the storm surge and exceptionally high tides which accompany the storm. Tides 3-4' above normal could occur 24-36 hours before the eye of the hurricane reaches the coastline. Many of the causeways, as well as mainland coastal roads, could be inundated well in advance of the storm's arrival, thus restricting or denying their use as evacuation routes.

A map showing the evacuation zones is included in Appendix J.

A Category 3 or greater Hurricane would trigger an evacuation of most of the Town, while a Category 4 would trigger an evacuation of the entire Town.

- Zone A/Category 1 – Residents living in manufactured homes or homes located in areas prone to flooding
- Zone C/Category 3 – Almost the entire Town of Juno Beach.
- Zone D/Category 4 – The entire Town of Juno Beach.

Residents and visitors can use the Palm Beach County Evacuation Tool to see if they are in an evacuation area at http://maps.co.palm-beach.fl.us/sams/.

Persons living or working in these areas should be prepared to evacuate as soon as hurricane watches are announced and seek shelter in hotels or motels west of the railroad tracks, an American Red Cross shelter, or in a friend's or relative's home. Evacuation should be completed early to avoid gale force winds and heavy rains that precede the storm's arrival. Palm Beach County registers individuals who will need special help during evacuations because of medical conditions or disabilities. To register or request evacuation assistance call 561-712-6400. The Town will also assist with any evacuations ordered by Palm Beach County and residents are offered a chance to pre-register with the Juno Beach Police Department for this service. At the direction of the County, the Red Cross will open local shelters. The Town also has a Reverse 911 system to notify citizens of critical evacuation notices and keeps on file the email addresses of local condo/homeowners' associations, but is often unable to collect email addresses of individual citizen who are dissuaded from providing them due to public information laws.

Radio and television broadcasts will announce the opening of shelters by the Red Cross for Juno Beach residents. Most Juno Beach residents who want to use public shelters are asked by Palm Beach County

to report to primary evacuation shelters in the County, and should remember that space is limited. Public shelters are provided for residents who are unable to find shelter elsewhere. When a primary shelter is full, newcomers will be directed to another facility that has been opened by the Red Cross to handle the overflow.

Palm Beach County is responsible for ordering evacuations. A hurricane evacuation typically is aimed at removing residents from the most dangerous areas: The barrier islands, mobile homes, and low-lying areas. If the area is threatened by a hurricane of "Category 4" intensity or greater, Palm Beach County Emergency Management plans to recommend an evacuation of the County.

As stated in the *Juno Beach Comprehensive Plan*, Objective 8, "The Town shall adopt a hurricane evacuation plan that assures that hurricane evacuation times within the Town will not exceed eight (8) hours by providing for evacuation assistance to the elderly and needy, coordinating evacuation procedures with other local agencies and providing for the continued maintenance and protection of designated evacuation routes."
The table below from the Palm Beach County Emergency Management website shows the estimated evacuation times for the county and region. These are only estimates provided to emphasize the importance of early preparedness. Residents and visitors should not wait until the last minute to make an evacuation decision. Population risks may have been exacerbated by some complacency in the general populace, due to reduced hurricane frequency.

Palm Beach County Evacuation Clearance Times (in Hours)

Type of Evacuation	Category I Storm	Category 2 & 3	Category 4 & 5
Palm Beach County Only	4 ¼ - 9 ¼	9 ¾ - 15 ¼	12 - 17 ½
PB County & Treasure Coast	7 ¾ - 11 ¼	13 ¾ - 17	16 ¼ - 22 ¼
PB County & Lower S.E. Florida	13 ½- 19 ¾	22 ½ - 20 ½	36 ½ - 44 ¾
PB County & SE Florida Treasure Coast	17 - 23 ¼	28 ¼ - 35 ½	41 ½ - 51

Mutual Aid agreements are in place with Palm Beach County and neighboring municipalities to ensure additional assistance as needed.

Impact on Critical Facilities

In order to reduce the potential loss of life and property within the Coastal High Hazard Area (CHHA) and reduce the necessity for public infrastructure development within the flood prone coastal areas, the *Town of Juno Beach Comprehensive Plan* states "the Town shall amend its Land Development regulations to prohibit future high-density residential development in the coastal high-hazard area". Policy 6.2 of the plan expands on this objective, stating that "the Town shall restrict future development in the coastal high-hazard area through regulation of building practices, prohibiting encroachment on

the dune system, providing for flood protection measures and limiting public expenditure for infrastructure in the coastal area to that necessary to protect the general health, safety and welfare of the public." The infrastructure in the Town in the CHHA is determined to be the sea wall, of which the Town is responsible for 50' at the end of Atlantic Boulevard and the dune walk-overs.

In Appendix J, maps from the *Palm Beach County LMS* show Juno Beach's critical facilities. The types of critical facilities and infrastructure in the County identified on the map are:

- schools,
- police stations,
- fire stations,
- specific government buildings,
- nursing homes,
- assisted living facilities,
- hospitals,
- shelters,
- Herbert Hoover Dike,
- Turnpike,
- I-95,
- water treatment facilities and
- airports

Critical facilities include but are not limited to law enforcement and fire rescue facilities, schools, government facilities, utility facilities, hospitals and other critical medical facilities, shelters, adult living facilities, etc.

Listed below are the figures of potential dollar losses to critical facilities in flood prone areas of Juno Beach. The estimated costs are based upon information from the Palm Beach County Property Appraiser's database. The dollar figures express the potential human and major economic impacts within the Town of Juno Beach.

There are currently three critical facilities located within the Town:

- Palm Beach County Fire Rescue Station #15 (estimated value $792,000)
  - At risk from flood hazards, but not in the SFHA

- Juno Beach Police Department (estimated value in millions: $2.1)
  - At risk from coastal erosion hazards
  - Equipped with backup generator
  - Hardened against wind and flood damage

- Waterford Health Care Center (estimated value in millions: $24.5)
  - At risk from County-wide or localized hazards

It is the responsibility of the Town of Juno Beach Police Department to annually update a critical facilities phone list and review any flood response plans that privately owned critical facilities might possess.

The Town of Juno Beach currently has an assisted (congregate) living facility within the town limits. The facility, which is located west of US1, is not in the Coastal High Hazard Area subject to evacuation during a Category 1 hurricane. This facility would, however, be subject to an evacuation during a Category 3 hurricane, and accommodations for such an evacuation must be arranged ahead of time. As stated in the Comprehensive Plan, the Town has committed to "identify residents in Juno Beach who require special assistance during emergency evacuation and provide the appropriate civil and emergency management agencies with the same."

This is one of the first facilities that the Police Department will check after a flood emergency. It is required by the County and the Town that all assisted living facilities have an emergency plan in place. This is verified annually at the same time that the Town updates the required contact information.

Impact on Infrastructure

Flooding produces a widespread direct and indirect danger to large segments of the community, potentially incurring the loss or incapacity of such critical infrastructure elements as roads, Florida Turnpike, I-95, bridges, rail beds, stormwater drainage systems, potable water and wastewater treatment and collection systems and private infrastructure, such as utilities and power companies. The Public Works Department of the Town of Juno Beach works diligently to maintain and improve the public infrastructure in the Town and has procedures in place in the event of a flood emergency.

Railroads in Southeast Florida were built on the coastal ridge with elevated beds. Because of this, most of the rails are not vulnerable to typical flooding in the Town. While some high volume roads are at elevations low enough to become inundated, the majority of impacted roadways are local moderate speed or low volume roads and parking areas.

For barrier island communities such as Juno Beach, Evacuation Routes are served by bridges which provide access across waterways to evacuate residents from coastal areas. It should be noted that the approach to these bridges may be of concern. The evacuation routes heading west out of Juno Beach utilize the following bridges:

- Donald Ross Bridge (Juno Beach) *pictured below from the Palm Beach Gardens side*
- Indiantown Road Bridge (through Jupiter to the north)
- PGA Boulevard Bridge (through Palm Beach Gardens to the south)

Impact on the Economy

Business interruptions and failures stemming from disaster events deal a severe blow to local economies in terms of lost productivity and employment. Research from a variety of sources, including the US Department of Labor Statistics, consistently reports that 50% to 70% of businesses either never reopen after a major disaster or they will fail after reopening. Small businesses are represented disproportionately higher among the business casualties. In Palm Beach County, approximately 80% of businesses have fewer than 10 employees (Truesdale, 2006). Businesses in the County are more inclined to see their problems as cutting across jurisdictional boundaries.

With the assistance of Palm Beach County Division of Emergency Management, the *Palm Beach County Unified Local Mitigation Strategy 2009* (LMS) conducted impact analyses to assess the potential for detrimental impacts from flooding hazards. Aside from direct property damage, the potential economic disruption from flooding due to hurricanes and tropical storms in Palm Beach County is significant.

Some examples of the economic impact that storms and flooding can have on specific segments of the local economy include:

- Tropical Storm Mitch dropped as much as 10 inches of rain in some south Florida areas, which resulted in approximately $20 million in direct crop damage in Palm Beach, Although the crop damage was limited to rural areas, the economic impact was far-reaching since the agriculture industry supports many urban residents and businesses.
- Hurricane Wilma caused the Palm Beach County School district, which is Palm Beach County's largest employer, to close many schools for up to two weeks, affecting the more than 21,000 employees, and causing parents to miss work in order to care for students who were home from school.
- According to Sun Sentinel articles written shortly after the storm, Hurricane Wilma also caused an estimated $12 million dollars in damage to the Boca Raton Airport and caused over $5 million dollars in losses to companies with assets located at the airport.
- According to the *Impact of Hurricanes on Housing and Economic Activity: A Case Study for Florida 2006* produced by the NATIONAL ASSOCIATION OF REALTORS®, the housing industry took an average of three to four months to return to normal levels of growth in areas affected by Hurricane Andrew and the Hurricanes of 2004 and 2005. In some areas the housing industry remained depressed for much longer periods of time due to several factors including potential buyers being deterred by the perceived risk and the rapid escalation of insurance rates that resulted from the storms.

Juno Beach is fortunate to have two major corporate headquarters located in Town. NextEra Energy, Inc., encompassing approximately one million square feet of office space in Juno Beach, is a leading clean energy company with consolidated revenues of approximately $14.3 billion, more than 42,000 megawatts of generating capacity, and nearly 15,000 employees in 26 states and Canada as of year-end 2013. Nearly two-thousand employees work in the Juno Beach headquarters. NextEra Energy is the parent company of Florida Power & Light Company (FPL) and NextEra Energy Resources, LLC. FPL serves approximately 4.6 million customer accounts in Florida and is one of the largest rate-regulated electric utilities in the Unites States.

TBC Retail Group operates nearly 800 tire and automotive service centers under the brands: Tire Kingdom, NTB – National Tire and Battery, and Merchant's Tire and Auto Centers. Approximately 350 employees work at the Juno Beach headquarters.

According to the Town of Juno Beach CAFR 2013, the top ten principal property taxpayers in the Town account for 22% of the Town taxable assessed value.

For a complete list of Juno Beach businesses see Appendix N. These businesses may have multiple locations and may not be located in a Special Flood Hazard Area. Nevertheless, the employees of these businesses may be affected if their respective employers are affected by flooding.

Not only may current industry be affected by flooding, but also industries that are being recruited to locate in the Town and County. The fourteen industries identified below are targeted by Palm Beach County and the Business Development Board of Palm Beach County, Inc. As part of the greater Palm Beach County economy, the Town of Juno Beach welcomes economic expansion, strives to maintain a business friendly environment and attempts to attract commercial interests. Specific emphasis is given to the 14 industries targeted by the countywide efforts. These industries are encouraged to relocate entirely or open a facility in Palm Beach County; or if presently located in Palm Beach County, to remain and expand in order to create jobs and to strengthen and diversify the local economy:

- Aviation
- Aerospace
- Engineering
- Agribusiness
- Business
- Financial Services
- Communications
- Medical
- Pharmaceutical
- Health Care
- Tourism
- Entertainment
- Recreation
- Information Technology

Potential developers and homebuyers may have second thoughts about buying in the community after learning of or seeing the typical types of nuisance flooding or the potential of sea level rise that can affect a business's traffic or access to a home. Local realtors have stated that, after seeing flooded streets in front of a house, potential buyers have decided they were not going to buy a particular house, regardless of the updated kitchen or spacious backyard.

The greater values reflected in the financial impacts are the low density and irregular residential properties proximate to the coast. These coastal residential properties are generally waterfront with ocean access and therefore with high taxable value. Additionally, the roads that access these residential areas are lower than the finished floor elevation of the homes and therefore subject to inundation prior to impacts to the homes.

Sea Level Rise and the Local Economy

The recommendations presented in the Southeast Florida Regional Climate Action Plan aim to serve to protect the assets of the region's unique quality of life and economy, guiding future investments, and fostering livable, sustainable and resilient communities. Additionally, the continued and enhanced role of policy advocacy through regional collaboration, especially during tumultuous economic and political times, are important to ensure that current efforts are not undermined and the Compact Counties' future efforts related to sustainability are achieved.

All of the Compact Counties are vulnerable to Sea Level Rise (SLR). However, the degree and extent of potential impacts vary across the region due to differences in land elevation and geomorphology. The southernmost counties are expected to experience the greatest direct impacts, with lessening impacts as one travels northward. Nearly 80 percent of the lands potentially affected regionally in the one-foot scenario are conservation lands, especially coastal wetlands. Low lying natural systems made up of buttonwood, mangrove, scrub mangrove, and herbaceous coastal saline and freshwater wetlands are significantly impacted in all SLR scenarios. The upper estimate of current taxable property values in Monroe, Broward, and Palm Beach Counties vulnerable in the one-foot scenario is $4 billion with values rising to more than $31 billion at the three-foot scenario. The greater values reflected in the financial impacts are coastal residential properties with ocean access and high taxable value.

The Regional Climate Compact Action Plan includes several recommendations addressing the designation and implementation of Adaptation Action Areas which are expected to aid in focusing technical assistance and funding opportunities to areas most vulnerable to the impacts of sea level rise and coastal flooding.

In 2011, the Florida Legislature amended state law to provide for Adaptation Action Areas as an optional designation in local comprehensive plans for those identified areas experiencing coastal flooding due to extreme high tides and storm surge and the related impacts of sea level rise. The law also provides for the development of adaptation policies and will maximize funding opportunities for infrastructure needs associated with Adaptation Action Areas. Subsequent to recent changes to state law, members of Congress have since requested the definition of Adaptation Action Areas in federal law to provide for appropriations for adaptation planning and infrastructure needs in designated areas. It is realistic to believe that future funding opportunities will become available through federal and state appropriations and grants for Adaptation Action Areas or areas similarly designated for adaptation planning.

While the definition and boundary of the *Coastal High-Hazard Area* (CHHA) is standardized as the category one storm surge zone as delineated by the SLOSH model (please see Appendix G), there is no standard boundary for the *Adaptation Action Area*. If a community chooses to designate an Adaptation Action Area, it is up to the local government to decide what property should be included in the

boundary. The main difference between the CHHA and the Adaptation Action Area is that the CHHA considers current coastal flooding conditions while the Adaptation Action Area encourages planning for future vulnerability as well. Since 2003, Palm Beach County has maintained a more stringent definition of the CHHA, which includes evacuation zones for hurricane categories one and two.

Buildings Subject to Flooding

Because the National Flood Insurance Program insures buildings, the impact of flooding on buildings is a prime concern of the Community Rating System. A count of the number of buildings affected by each type of flooding informs planners of the magnitude of the problem. The building count should be done by use or type of building because flooding affects different types differently. For example, a commercial or industrial building is likely to suffer more dollar damage than a house and have a bigger impact on the community if it has to close because of flooding or flood damage.

Based on analyses of property records, values for residential contents at risk are assumed to be approximately 80% of the appraised value of the structure. Values for commercial contents and inventory at risk are assumed to be 175% of the appraised value of the structure.

This can result in street and yard flooding, which is regarded as nuisance flooding. There is rarely any damage done to buildings, as most buildings are required to be elevated above the base flood elevation.

While the concern for human life is always of utmost importance in preparing for a natural disaster, there also are large economic impacts when property damages are incurred. To be truly sustainable in the face of flooding, the Town of Juno Beach must work to protect the residents and also to limit, as much as possible, property losses that slow down a community's ability to recover from a disaster.
The damaging effects to structures in the beach areas are caused by a combination of higher levels of storm surge, winds, waves, rains, erosion, sea level rise and battering by debris. Sea walls and jetties, as well as the beach area, are all affected and the loss over a period of time becomes costly. Loss of life and property damage are often more severe because a storm surge involves velocity wave action and accompanying winds. The Town has benefited from the State of Florida's beach re-nourishment projects in 2001 and 2009 with no Town contributions. This is not the case in all municipalities where they have to share in these project costs.

The 2001 Nourishment Project was constructed between November 2000 and March 2001. A total of 52 acres of new beach was created from south of the Jupiter Reef Club to the Juno Ocean Club. The project included widening of the dune by 30 feet which equals an additional 8 acres of dune. Over 280,000 native dune-stabilizing plants were planted including sea oats, and 30 shade trees were planted.

The 2009 Renourishment Project was completed in March 2010. Several major storm events had accelerated shoreline erosion in Juno Beach. Nourished beaches typically have a life of 5 to 10 years before renourishment is required. This project was located from one mile north to 1.4 miles south of the Juno Pier in the Towns of Jupiter and Juno Beach. The project added approximately 1 million cubic yards of sand to the coastal system to act as a sacrificial berm. Over 50,000 native sea oats were planted to restore the eroded dune south of Juno Pier. Please see Appendix P for photographs of beach erosion and renourishment in progress.

Palm Beach County started another beach re-nourishment project in November 2013, funded by federal money, which will have to be matched by local and state government. The project stretches from Tequesta to Boca Raton. U.S. Representative Lois Frankel stated in a news release in May 2014, "Beaches protect our property, they are home to natural habitats, and they attract visitors from all over the world. This means millions of dollars in property taxes and tourist dollars to our region." Beach re-nourishment brings economic and ecological benefits to the community.

A report by the Florida Department of Environmental Protection titled, *Critically Eroded Beaches in Florida*, which was updated June, 2014, it is stated that Juno Beach has no critically eroded areas. At the south end of Juno Beach (Reference Markers), the erosion area continues south for 0.4 mile with no current threat. Select pages from this report can be seen in Appendix P. The report can be seen in its entirety at the website http://www.dep.state.fl.us/beaches/publications/pdf/CriticalErosionReport.pdf .

Florida not only has the most people at risk from hurricanes, but it also has the most coastal property exposed to these storms and the rainfall and storm surge that accompanies them. Over the fourteen year period between 1980 and 1993, Florida's population increased by 37% while the value of insured

residential property rose from $178 billion in 1980 to $418 billion in 1993, an increase of 135%. During this same time period, the insured value of commercial property rose from $155 billion to $453 billion, an increase of 192%. Miami Dade, Broward, and Palm Beach Counties alone account for $370 billion in insured property (42% of Florida's total).

The methodology used to estimate the value of residential property at risk involved a number of compromises using best available data. After considering the advantages and limitations of the Hazards U.S. Multi-Hazard (HAZUS-MH) modeling software, the *Palm Beach County Unified Local Mitigation Strateg*y (LMS) Committee decided instead to use the local Property Appraisal Database (PAPA), GIS mapping capabilities and hazard environment profiles as the basis for identifying and quantifying property and dollars at risk from key hazards. Those figures were used for this *Town of Juno Beach Flood Mitigation Plan*. The LMS concluded that the PAPA database is not well suited for purposes of vulnerability assessments but it is the best data available.

Deriving an accurate estimate of residential property values at risk from hazards is complicated by a number of factors. Property Appraiser data is maintained on a parcel by parcel basis, not by structures. Certain gaps in values occur because of the diversity of property types. Land values had to be backed out of assessed property values. Assessments represent market values, not replacement costs. Homestead exemptions were also backed out of analyses. Multifamily residential structures (like high rise condominiums, co-ops, townhouses, zero lot line units) are considered to be understated in the results. The methodology used to estimate the value of residential property at risk involved a number of compromises using best available data.

Keeping in mind that an insurable building may be comprised of more than one address, the number of addresses in Special Flood Hazard Areas (A Zones) in the Town is 222.

Since 2003, the Palm Beach County definition of the CHHA includes evacuation zones for hurricane categories one and two and in 2007, the number of Juno Beach addresses in the Coastal High Hazard Area, as defined by Palm Beach County, was 1,023.

Taken from the *Palm Beach County Unified Local Mitigation Strategy 2009*, the paragraphs below provide a brief summary of existing residential and commercial properties in the County:

> According to Property Appraiser data, nearly 77 percent of the county's single family residential units are single story structures, 17 percent are multi-story, and 6.2 percent are manufactured homes. The residential housing stock is well distributed throughout the eastern portion of the County. Forty-seven (47) percent of residential units reside in the unincorporated areas of the county. The seven municipalities of West Palm Beach, Boca Raton, Boynton Beach, Palm Beach Gardens, Jupiter, Wellington and Delray Beach collectively have about 35% of the county's residential units.
>
> The southern municipalities of Boca Raton, Delray Beach and Boynton Beach collectively have an estimated 46,348 residential units; the northern municipalities of Palm Beach Gardens and Jupiter have 25,622 units; West Palm

Beach in the central county has 20,377 units; and the communities of Wellington and Royal Palm Beach have 24,696 units. The western communities of Belle Glade, Pahokee and South Bay have approximately 4,850 total residential units.

The overwhelming majority of residential structures (79%) are of CB Stucco construction. Thirteen and a half (13-1/2) percent have exterior walls of wood in the form of wood siding, wood frame stucco or board batten. The balance is constructed of a variety of other materials. The County's database consists of approximately 25 categories, many of which have a multiplicity of variations.

In the Town of Juno Beach none of the residential stock was built before 1929; 2.7% (88 units) was built between 1929 and 1959; 63.5% (2,067) between 1960 and 1989; and 33.8% (1,098) between 1990 and 2008. Over 73% of residential units were built before "post-Andrew" building codes were put into effect (damage caused by Hurricane Andrew in August 1992 caused the building codes to be reviewed, and eventually amended to require higher storm resistance standards).

The Town of Juno Beach owns three warehouses that serve the Public Works Department, which are located at 685 Rolling Green Road, and the Town Center, located at 340 Ocean Drive. The warehouses are in flood zone X500, as is the Town Center. The Town Center is covered by a NFIP flood insurance policy in the amount of $500,000 building and $500,000 contents. These buildings are equipped with back-up generators. The Town Center is protected with high- impact glass plus roll-up shutters.

The tables below illustrate the type and age of buildings in Juno Beach (information from the 2009 *Palm Beach County LMS*)

Residential Units by Year Built

Year Built	# of Units
Before 1929	0
1929 – 1959	88
1960 – 1989	2,067
1990 – 2008	1,098
Total before 6/1970	350
Total before 6/1994	2,383

Condos, Town Houses, Co-Ops, Commercial Condos, Single-Family Residence Condos, Zero Lot Line (Units)

Type	# of Unit
Condo	1,868
Condo Commerci	46
Co-Op	0
Townhouse	256
SFR-C	0
Zero Lot Line	0

Town of Juno Beach
Residential Structures by Type
Source: Palm Beach County Property Appraiser

Type	# of Units
Single-Family/ Single Story	219
Single Family/ Multi-Story	126
Manufactured	351
Total	**696**

Non-Residential Units by Year Built

Year Built	# of Units
Before 1929	2
1929 – 1959	6
1960 – 1989	52
1990 – 2008	31
Total before 6/1970	20
Total before 6/1994	68

Source: Palm Beach County Property Appraiser

Non-Residential Building Stock by Use

Type	# of Units
Commercial	53
Industrial	21
Government	1
Education	0
Healthcare	0
Other	15

Source: Palm Beach County Property Appraiser

Average Value & Age of All Structures

Average Value	$378,949
Average Year Built	1985
Average Age (as of 2008)	23

Source: Palm Beach County Property Appraiser

Although the overall value of many of the newer buildings is significantly higher, the vulnerability of buildings built after implementation of the 2002 Florida Building Code is significantly lower. According to the *Palm Beach County LMS*, buildings constructed to current building codes have performed well in recent severe wind events. Additionally, after evaluating Post-Andrew updates to the Florida Building Code the 2002 *Florida Building Code Cost and Loss Reduction Benefit Comparison Study* prepared for the Florida Department of Community Affairs "has shown that the new Florida Building Code designs are beneficial both to the individual homeowner as well as society as a whole." The study further states that "by adopting the FBC [Florida Building Code], reductions in losses from hurricanes will decrease by about 50-55% relative to a house designed to the minimum standards of the SBC [Standard building Code 1997 edition]."

The following tables provide assessments of the dollar values of existing properties at risk of flooding in the Town of Juno Beach.

Improved Property Values

Commercial Properties	**66**
Improved Value (millions)	**$183.87**
Residential Property	**704**
Improved Value (millions)	**$274.13**
Total Improved Value	**$458,001,590**

Value of Parcels at Risk in Evacuation Areas

Type	# of Parcels	Assessed Value (millions)
Commercial Property	**66**	**$183.87**
Residential Property	**704**	**$274.13**
Vacant Property	**102**	**$28.26**
Ag/Open Space Property	**60**	**$0**

Value of Parcels at Risk from Historical Flooding

Type	# of Parcels	Assessed Value (millions)
Commercial Property	**17**	**$8.8**
Residential Property	**284**	**$118.1**
Vacant Property	**38**	**$9.5**
Ag/Open Space Property	**21**	**$0**

Value of Parcels at Risk from Storm Surge

Type	# of Parcels	Assessed Value (millions)
Commercial Property	**66**	**$183.87**
Residential Property	**704**	**$274.13**
Vacant Property	**102**	**$28.26**
Ag/Open Space Property	**60**	**$0**

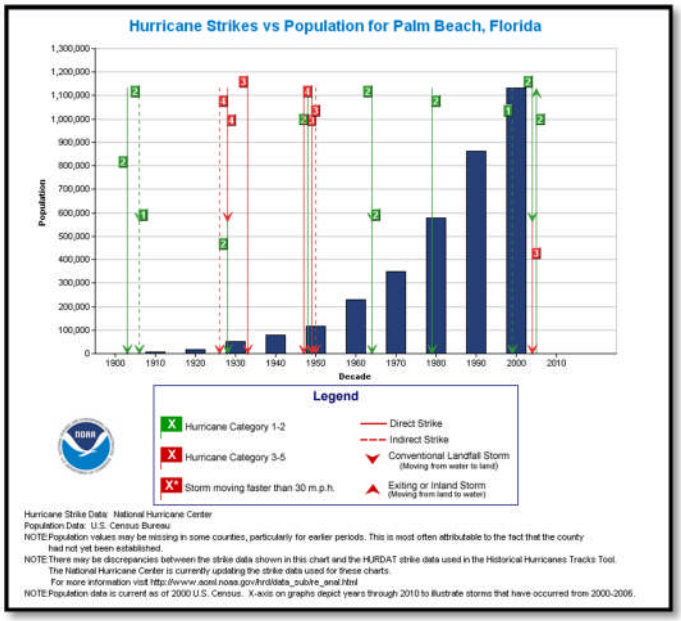
Value of Parcels at Risk from Tsunamis

Type	# of Parcels	Assessed Value (millions)
Commercial Property	**59**	**$87.2**
Residential Property	**552**	**$209.8**
Vacant Property	**102**	**$28.26**
Ag/Open Space Property	**44**	**$0**

The above figures indicate that the total value of the 713 properties exposed coastal flooding is $325,260,000. This potential cost of coastal flooding is applied to both the storm surge and tsunami threats. The value of property at risk from coastal flooding caused by a rogue wave (similar to the Daytona Wave of 1992) would be limited to the value of the pier, the dunes, the dune walkovers, people, boats and vehicles on the beach and in beachfront parking areas, vegetation, sea turtle nests and possibly the pools, patios and out buildings of beachfront condos. Due the inability of science to accurately model the possible effects of a rogue wave, this value has not yet been assessed, but it would be substantially lower than the value listed for the two more extreme causes of coastal flooding listed above.

Historical Flood Insurance Claims

As illustrated in the image below, all but one of the Major Hurricanes (Category 3-5) to impact Palm Beach County did so when the population was relatively low and the county was relatively undeveloped. For many years, the risk of significant loss of life and property due to hurricanes seemed small. Many existing homes and businesses along the U.S. Atlantic and Gulf Coasts were constructed during the 1970s and 1980s, a period of relatively inactive hurricane formation.

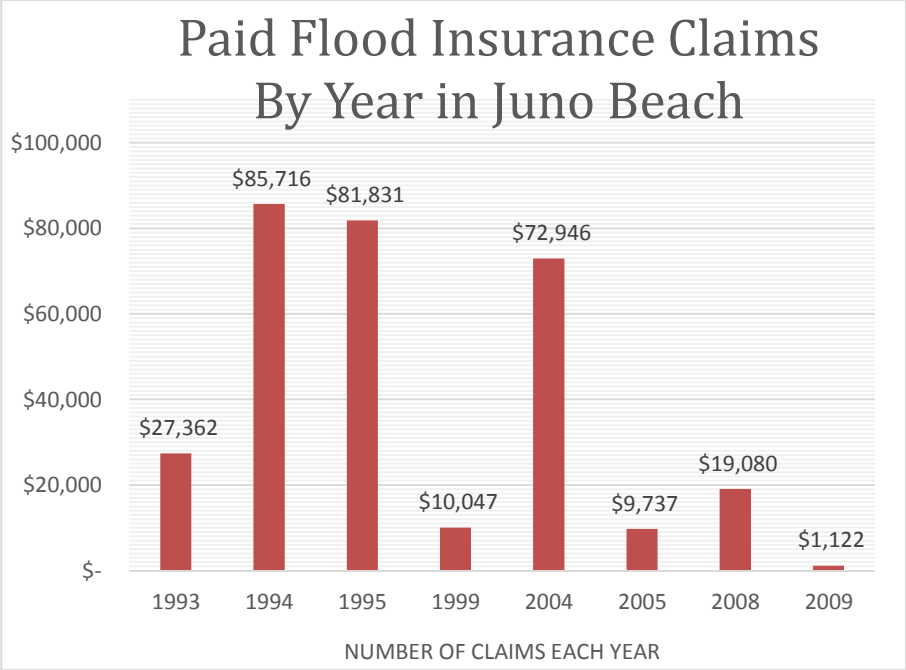


Hurricanes that impacted Florida during the 1970s and '80s were infrequent and of relatively low intensity. Because most of the people living and working in coastal areas had never experienced the impact of a major hurricane, homeowners, business interests, and government officials grew to regard hurricane risk as

manageable by private insurance, supplemented occasionally by federal disaster funding and subsidized flood insurance. The hurricane risk did not seem sufficient to warrant increased investment in mitigation. Two major hurricanes, Hugo in 1989 and Andrew in 1992, forced a re-evaluation of this risk assessment.

There are 1,770 flood insurance policies in force in the Town of Juno Beach, with total annual premiums of $455,463. The average annual premium paid is $257. Because the Town exceeds the requirements of the NFIP, earning an impressive Class 5 in the Community Rating System program, policyholders can receive up to a 25% discount on their annual flood insurance premiums. The total annual savings for the residents in premium discounts is $67,313.

FEMA provides every community that participates in the Community Rating System (CRS) with a list of flood insurance claims filed on properties in its jurisdiction, with dates of the claims filed and claim payment amounts. This information is analyzed in the two tables below and on a spreadsheet in Appendix K.



Year	Number of Paid Claims Filed	Total $ Amount Paid	Notes
1993	1	$ 27,362	Date: Nov 27 (high surf reported that day)
1994	5	$ 85,716	Dates: Jan 8, Oct 21, Nov 14 Average Claim = $17,143
1995	7	$ 81,831	Includes 1 @ $36,925 and 1 @ $13,873 (Dates of Events: Oct 9 - Oct 17 -unnamed storm of 1995)
1999	2	$ 10,047	$1264 - $8783 (Both claims dated Oct 15 from Irene)

Year	Number of Paid Claims Filed	Total $ Amount Paid	Notes
2004	3	$ 72,946	$48,218 (Sept 5) - $4685 (Sept 16) - $20,043 (Sept 26) from Frances & Ivan & Jeanne
2005	1	$ 9,737	Oct 24 from Wilma
2008	1	$ 19,080	Aug 19 from Tropical Storm Fay
2009	1	$ 1,122	Dec 16

Repetitive Loss Properties

Although a small portion of the Town, and an extremely low percentage of the buildings, falls within FEMA designated Special Flood Hazard Areas, flooding can and does occur outside this area. Because of elevated slabs (finished floor elevation for all buildings shall be above the 100-year frequency, 72-hour duration rainfall intensity curve in the Town) and effective drainage systems, structural flooding is not common in the Town of Juno Beach. Nevertheless, the Town has three structures listed by FEMA as repetitive flood loss properties. These are properties that have had two or more "insured" flood losses of more than $1000 during a rolling ten year period since 1978.

FEMA provides every community that participates in the Community Rating System (CRS) with a list of Repetitive Loss (RL) properties in its jurisdiction with dates of the claims filed. Use of flood insurance claim data is subject to the Privacy Act of 1974, which prohibits public release of the names of policy holders, the addresses, or the amount of the claim payment. Averages or totals and maps showing *areas* where claims have been paid can be made public. Therefore the addresses and ownership of these three properties will be referred to in this document as Property #1, Property #2, and Property #3. Please see Appendix L, which includes a map of the Repetitive Loss areas.

The flood insurance claims for these RL properties were isolated incidents. Some facts about the three Repetitive Loss properties in the Town of Juno Beach follow:

Property #1

- Rainfall and/or High Surf
- Is not located in SFHA
- Community swimming pool building in condo development; very close to beach
- Claims dated:
  - 10/17/1995 (unnamed storm)
  - 10/15/1999 (Hurricane Irene)

Property #2

- Rainfall and/or High Surf
- Is not located in SFHA; very close to beach
- Unit in residential condo building
- Claims dated:
  - 09/16/2004 (Rain bands from Hurricane Ivan)
  - 10/24/2005 (Hurricane Wilma)

Property #3

- Commercial building is below the crown of the road.
- Heavy rain
- Is not located in a SFHA
- Claims dated:
  - 09/26/2004 (Hurricane Jeanne)
  - 08/19/2008 (Tropical Storm Fay)

For the three RL properties in the Town, the most recent flood insurance payment was a claim for an event in 2008. RL flood insurance claims paid:

- Year 2008: 1 Repetitive Loss claim,
  - (1) August 19; Rainfall from Tropical Storm Fay
- Year 2005: 1 Repetitive Loss claim,
  - (1) October 24; Rainfall from Hurricane Wilma
- Year 2004: 2 Repetitive Loss claims,
  - (1) September 16; Rain bands from Hurricane Ivan
  - (1) September 26; Hurricane Jeanne
- Year 1999: 1 Repetitive Loss claim,
  - October 15; Hurricane Irene
- Year 1995: 1 Repetitive Loss claim,
  - October 17; unnamed storm of October 1995

At one time there were four Repetitive Loss structures in the Town. One of those has been mitigated, or flood protection has been provided and documentation of such protection has been provided to FEMA. Once confirmed by FEMA, that property was removed from the Town's RL list. The structure was mitigated as follows:

- ✓ The building was protected by a flood control/stormwater management project at the property owner's expense.

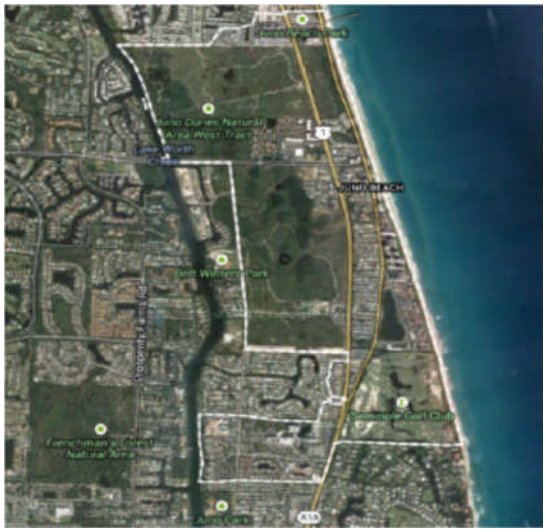
In accordance with CRS guidelines, letters are mailed annually to repetitive loss property owners by the Town of Juno Beach explaining National Flood Insurance Program benefits, the availability of mitigation assistance funding through the Flood Mitigation Assistance program and other mitigation assistance programs. Letters are also mailed to other properties in the areas of the RL properties that are subject to the same flood hazard as the RL properties.

Natural and Beneficial Functions of Flood Prone Areas

Using floodprone areas for parks and conservation purposes is a strong flood mitigation strategy since development can be limited in these areas. Existing vacant land allows the Town an opportunity to regulate or limit development before it occurs. Open and natural areas absorb much more rain and floodwaters than urbanized areas, reducing flood flows on downstream properties, and recharge the drinking water supply. These open spaces also serve as filters of stormwater runoff as it seeps through the ground and into the aquifer. This aquifer is the only source of drinking water for the Town and this filtering helps contain pollution before it reaches the aquifer. It is important that we appreciate our open spaces and try to maintain, preserve and keep these areas clean. Protecting and preserving these natural and beneficial floodplain functions provides the major benefit of protecting development from natural disasters and also helps integrate floodplain management efforts with other community goals and objectives.

In addition to storing and filtering stormwater, which allows for the natural recharge of ground water aquifers, preserving natural and beneficial open space provides numerous advantages to a community. Among them are the economic benefits that result from an influx of people who are looking to re-locate from barren and congested urban centers to areas with healthy ecosystems, outdoor recreation and scenic landscapes. According to the report titled *Endangered Ecosystems; A Status Report on America's Vanishing Habitat and Wildlife* By Reed F. Noss and Robert L. Peters released in December 1995, "In Florida and elsewhere, people pay handsomely to live and play in natural surroundings. They want to see natural forests with a full complement of birds, flowers, and other wild things". The same report ranks the South Florida landscape as number one on the list of most endangered ecosystems in the United States. In this report "the South Florida Landscape is defined geographically… [as] a mixture of many different habitats and plant communities, such as the Everglades and the pine rocklands, which have the misfortune to occur in an area with burgeoning human population growth." Coastal Strand communities and the Florida scrub are also ranked on their list of the 21 Most Endangered US Ecosystems. Noss and Peters highlight the fact that 6% of all plants and vertebrates native to Florida are classified as endangered. Overall, the report found Florida to be the state at most risk for the disappearance or destruction of its unique and endangered natural ecosystems. Florida scored 23 points on their Overall Risk Index with California and Hawaii tied for second with 19 points. Anything above 15 points was determined to indicate "extreme" risk.

The same report emphasizes the high growth and development rate experienced by Florida. As of 1992 over 12% of the state was developed, with the ten years between 1982 and 1992 experiencing a 34.6% increase in growth. In the years since the report was issued, specifically the years between 1992 and 2007, extremely high growth rates continued until the recession caused them to level off. Communities such as the Town of Juno Beach can help mitigate the environmentally damaging effects of development on the Natural and Beneficial ecosystems by integrating conservation and preservation into their comprehensive and future land use plans. Juno's efforts to do so are explained later in this section.



Of the 1,298 acres that make up the Town of Juno Beach, 190.89 acres are reserved for recreation and open space, while 531.86 are preserved as conservation/ environmentally sensitive lands and 23.88 acres are covered by bodies of water. By preserving over 55% of its land mass in an open, natural or protected state (which can be seen in the aerial view), the Town of Juno Beach is actively attempting to subvert the current trend of ecologically destructive development, while also mitigating the effects of excess stormwater.

Among the ecosystems present and protected within the Town of Juno Beach are beach dune, coastal strand, maritime hammock, hydric hammock, scrub, scrubby flatwoods, xeric hammock, mesic flatwoods, wet flatwoods, basin marsh, depression marsh, and mangrove swamp. Of those, the protected portions of the Coastal High Hazard Area have special significance as the preferred breeding ground for several species of endangered and protected sea turtles. In fact, the Town's coastline is one of the highest density nesting areas for sea turtles in the world. The Loggerhead Marinelife Center, a not-for-profit organization located in Juno Beach, monitors the nests, promotes conservation, provides education, conducts research and rehabilitates

injured sea turtles. The real-time data displayed on the Loggerhead Marine Life Center website indicates that by mid-July 2014 they have already identified 264 Leatherback nests, 7,717 Loggerhead nests and 274 Green Sea Turtle nests along the 9.5 miles of beaches from Jupiter to Juno Beach. The 2014 nesting season will continue until October 31. Of those three endangered species of sea turtles, the Leatherback is classified by the World Conservation Union as "critically endangered". Reaching lengths of up to 7 feet long and weighing as much as 2000 pounds, the Leatherback sea turtle feeds primarily on jellyfish and seeks out undeveloped stretches of soft sand beach for nesting. In addition to mitigating the effects of storm surge, Juno Beach's recently completed dune restoration projects have also helped to improve the quality of the Leatherback sea turtle nesting grounds. Protection of Juno's coastal strand not only serves to minimize storm related property damage, but also helps to safeguard the future of this spectacular species.

Among other endangered species present and protected within the Juno Dunes natural area are the four-petal pawpaw, the gopher tortoise and the Florida scrub jay. The *Juno Dunes Natural Area Management Plan* states:

> "All portions of the natural area are important to preserving natural resource values. Because virtually every acre of the site provides habitat for at least one rare or endangered plant species, animal species, or natural community, there are no portions of the property that can be declared as surplus."

The following tables, from the *Juno Dunes Natural Area Management Plan*, list some of the threatened or endangered plant and animal species that thrive when natural and beneficial areas within the Town of Juno Beach are maintained in their undeveloped state:

Plant Species of Concern Recorded at the Juno Dunes Natural Area

		STATUS/RANK DESIGNATIONS		
SCIENTIFIC NAME	**COMMON NAME**	**USFWS**	**FDACS**	**FNAI**
Acrostichum aureum	Golden leather fern	N	T	G5/S3
Asclepias curtissii	Curtiss's milkweed	N	E	N
Asimina tetramera	Four-petal pawpaw	E	E	G1/S1
Conradina grandiflora	Large-flowered rosemary	N	T	G3/S3
Encyclia tampensis	Butterfly orchid	N	CE	N
Jacquemontia reclinata	Beach jacquemontia	E	E	G1/S1
Lantana depressa var. floridana	Atlantic Coast Florida lantana	N	E	G2T1/S1
Lechea cernua	Scrub pinweed	N	T	G3/S3
Lechea divaricata	Spreading pinweed	N	E	G2/S2
Linum carteri var. smallii	Small's flax	N	E	G2T2/S2
Lycopodium cernuum	Nodding club-moss	N	CE	N

FDACS = Florida Department of Agriculture and Consumer Services

FNAI = Florida Natural Areas Inventory

USFWS = United

Plant Species of Concern Recorded at the Juno Dunes Natural Area		STATUS/RANK DESIGNATIONS		
SCIENTIFIC NAME	**COMMON NAME**	**USFWS**	**FDACS**	**FNAI**
Okenia hypogaea	Burrowing four-o'clock	N	E	G3?/S2
Ophioglossum palmatum	Hand fern	N	E	G4/S2
Opuntia stricta	Shell mound prickly-pear	N	T	N
Osmunda cinnamomea	Cinnamon fern	N	CE	N
Osmunda regalis	Royal fern	N	CE	N
Pithecellobium keyense	Keys' blackbead	N	T	N
Remirea maritima	Beach-star	N	E	N
Scaevola plumieri	nkberry	N	T	N
Swietenia mahagoni	Mahogany	N	T	G3G4/S3
Tillandsia balbisiana	Inflated & reflexed wild pine	N	T	N
Tillandsia fasciculata	Common wild pine	N	E	N
Tillandsia flexuosa	Banded airplant	N	T	G5/S3
Tillandsia utriculata	Giant wild pine	N	E	N

States Fish and Wildlife Service

N = Not listed

T = Threatened

E = Endangered

CE = Commercially exploited

1Butterfly Orchid "Encyliatampiensis2" by Mmcknigt Licensed under Public domain via Mikimedia Commons

Animal Species of Concern Recorded at the Juno Dunes Natural Area		STATUS/RANK DESIGNATIONS		
SCIENTIFIC NAME	**COMMON NAME**	**USFWS**	**FWC**	**FNAI**
Aethecerinus hornii	Horn's Aethecerinus long-horned beetle	N	N	2G4/S2S4
Alligator mississippiensis	American alligator	T(S/A)	FT(S/A)	G5/S4
Aphelocoma coerulescens	Florida scrub-jay	T	FT	G2/S2
Aphrissa statira	Statira sulphur	N	N	G5/S2S3
Ardea alba	Great egret	N	N	G5/S4
Athene cunicularia floridana	Florida burrowing owl	N	SSC	G4T3/S3
Caretta caretta	Loggerhead sea turtle	T	FT	G3/S3
Chelonia mydas	Green sea turtle	E	FE	G3/S2
Dermochelys coriacea	Leatherback sea turtle	E	FE	G2/S2
Drymarchon corais couperi	Eastern indigo snake	T	FT	G3/S3
Egretta caerulea	Little blue heron	N	SSC	G5/S4
Egretta thula	Snowy egret	N	SSC	G5/S3
Egretta tricolor	Tricolored heron	N	SSC	G5/S4
Eudocimus albus	White ibis	N	SSC	G5/S4
Falco columbarius	Merlin	N	N	G5/S2
Falco peregrinus	Peregrine falcon	N	N	G4/S2
Falco sparverius paulus	Southeastern American kestrel	N	ST	G5T4/S3
Fregata magnificens	Magnificent frigatebird	N	N	G5/S1
Gobiomorus dormitor	Bigmouth sleeper	N	N	G4/S2
Gopherus polyphemus	Gopher tortoise	N	ST	G3/S3
Grus canadensis pratensis	Florida sandhill crane	N	ST	G5T2T3/S2S3
Latrodectus bishopi	Red widow spider	N	N	G3G4/S3S4
Lithobates capito	Gopher frog	N	SSC	G3/S3
Mycteria americana	Wood stork	E	FE	G4/S2
Nyctanassa violacea	Yellow-crowned night-heron	N	N	G5/S3
Nycticorax nycticorax	Black-crowned night-heron	N	N	G5/S3
Pandion haliaetus	Osprey	N	SSC	G5/S3S4
Passerina ciris	Painted bunting	N	N	G5/S3
Pelecanus occidentalis	Brown pelican	N	SSC	G4/S3
Platalea ajaja	Roseate spoonbill	N	SSC	G5/S2
Plegadis falcinellus	Glossy ibis	N	N	G5/S3
Sceloporus woodi	Florida scrub lizard	N	N	G3/S3
Setophaga ruticilla	American redstart	N	N	G5/S2
Sterna antillarum	Least tern	N	ST	G4/S3
Thalasseus maximus	Royal tern	N	N	G5/S3
Trichechus manatus	West Indian manatee	E	FE	G2/S2

E = Endangered

FT = Federal Threatened

FE = Federal Endangered

FT(S/A) = Federal Threatened due to Similarity of Appearance

FWC = Florida Fish and Wildlife Conservation Commission

FNAI = Florida Natural Areas Inventory

N = Not listed

T = Threatened

T(S/A) = Threatened due to Similarity of Appearance

USFWS = United States Fish and Wildlife Service

SSC = Species of Special Concern

ST = State Threatened

One method of preserving the natural make-up of open and environmentally sensitive land is to control the spread of non-native and invasive species. Invasive species can crowd out and compete for resources with native species wreaking havoc on an ecosystem. Through legislation and the strict enforcement of codes/ ordinances related to the removal of invasive species, the Town of Juno Beach is aggressively working to prevent the spread of these nuisance species and thereby protect the natural state of its open areas. As cited on page 1-38 of the *Juno Dunes Natural Area Management Plan,* the elimination of the aggressively invasive Brazilian Pepper plant that once colonized much of the Juno Dunes Natural Area from sections of basin marsh is one example of how "non-native vegetation removal efforts" can be extremely successful.

Some of the codes and ordinances Juno Beach has adopted regarding native and non-native vegetation are included below:

Sec.34-1084 Landscape Requirements

g) The use of native vegetation plantings shall be maximized, and at a minimum all plant materials of each type, including trees, shrubs and ground cover, shall be at least 50 percent native. In addition, xeriscape principles shall be utilized in all landscape designs and installations

h) Existing native vegetation shall be preserved to the maximum extent practicable. The town encourages applicants to make all native vegetation to be removed from the site available, either by fee or donation, to the town and its residents for reuse. The developer shall notify the town three weeks prior to vegetation removal, so that the town may notify residents by notice at town hall and phone message of such vegetation availability. Upon such notice residents shall have two weeks to contact the developer regarding removal of native vegetation.

i) The type and location of landscaping shall take into consideration the preservation of native vegetation areas, and the director may make exceptions to the regulations in this division to ensure the preservation of such native vegetation areas.

j) All conditions and requirements of the Environmentally Sensitive Lands Ordinance, article IV, division 14 of this chapter, and section 34-1123 shall be complied with.

Sec.34-1085 Removal of Invasive Plants

East of the Coastal Construction Control Line (CCCL), invasive exotic pest plants, including the Brazilian pepper, Australian pine, and melaleuca, shall be removed and replaced with appropriate native coastal vegetation. Any exotic plant recurrence shall be required to be removed and replaced with appropriate vegetation. Such native coastal vegetation shall serve to stabilize the coastal dune area. This provision shall apply to all properties.

Sec.34-1085 Recommended plant list

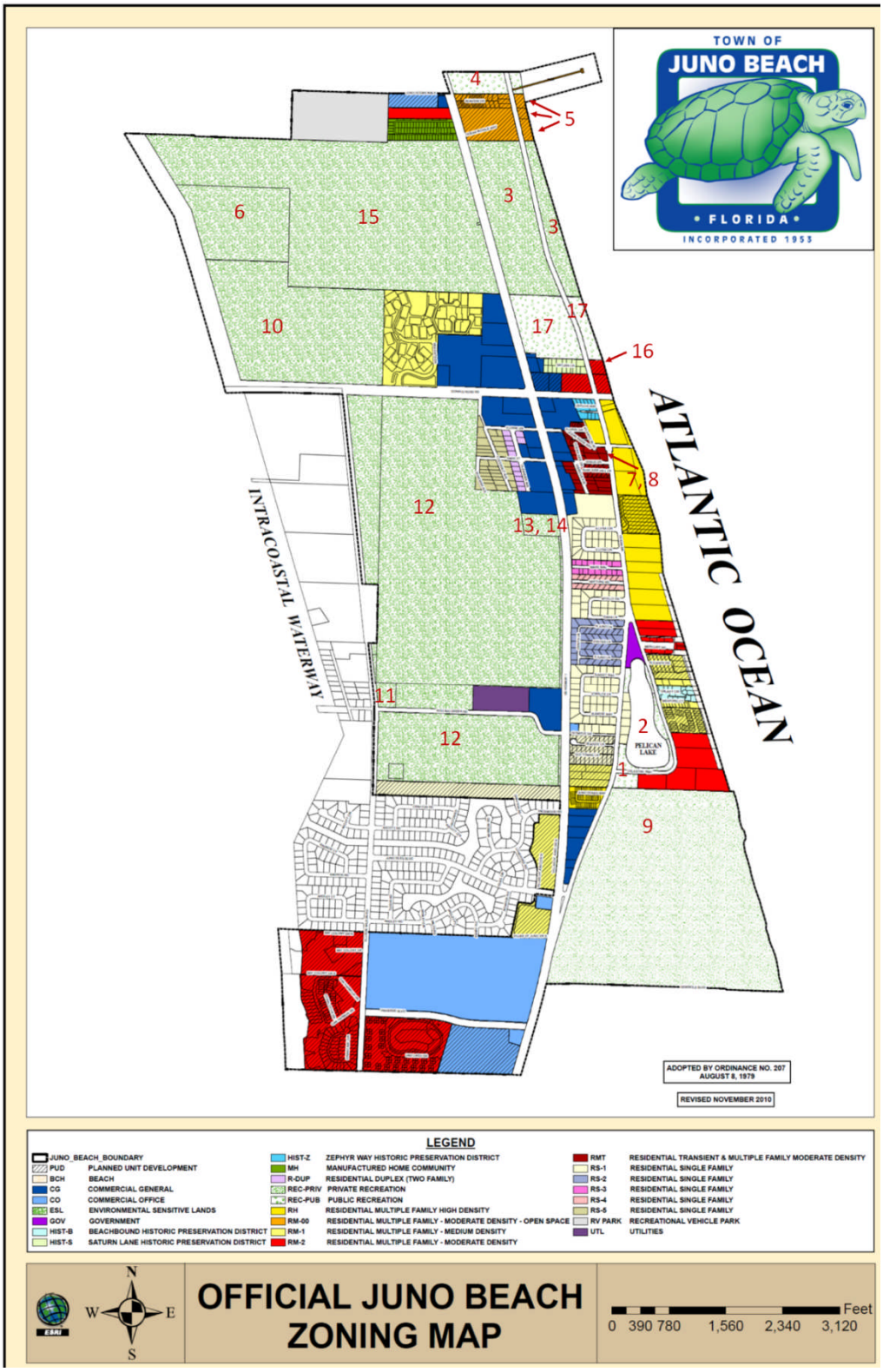
The town's recommended plant list will be kept on file and will be available to the public in the planning and zoning department. This list will be continuously updated to eliminate those plants identified by the state as invasive, or otherwise detrimental to healthy local environments. It will include plants that are recommended and not identified as detrimental.

In the Town of Juno Beach approximately 243 acres in the Special Flood Hazard Area (SFHA) are preserved as open space. A portion of this open space is deed restricted to ensure that it remains in a natural state. The table below provides details of these areas:

Open Space Areas (areas in "A" Flood Zones are highlighted and bold)

# on Ma	Name of Area	Property Owner	Flood Zone	Approx Acreage	Type of Area	Protection	Parcel Control Number
1	**Kagan Park**	**Town**	**A7, C**	**Included in Pelican Lake Parcel**	**Open Space/ Recreation**		**Included in Pelican Lake Parcel**
2	**Pelican Lake & Pelican Lake Walk**	**Town**	**A7**	**18.64**	**Open Space/ Recreation**		**28-43-41-28-01-000-0440**
3	Juno Dunes East including Loggerhe	PB County	B, C	42.9274	Open Space/ Natural & Beneficial	Yes- Lease	28-43-41-20-13-002-0000
4	Juno Beach Park	PB County	C	6.2727	Beachfront Open Space/ Recreational		28-43-41-21-00-001-0011
5	PB County Tracts on Ocean Drive South of Juno Beach Park	PB County	C	0.59, 0.44, 0.92 (Total:1.95)	Vacant Beachfront/ Open Space		28-43-41-21-15-015-0000 & 28-43-41-21-00-002-0042 & 28-43-41-21-03-002-0000
6	**Juno Dunes Intracoastal Access w/ Recreational Boat Docks**	**Florida Inland Navigation District**	**A5, B, C**	**30.15**	**Open Space/ Recreation**	**Yes- Lease**	**28-43-41-20-00-000-7090**
7	Surfside Hills Right of Way	Town	B	0.0454	Right of Way/ Buffer		28-43-41-28-51-018-0000
8	Surfside Park	Town	B	0.31	Open Space		28-43-41-28-14-000-0150
9	**Seminole Golf Club**	**Seminole Golf Club**	**A5, C**	**149.21**	**Private Recreation**		**28-43-41-33-00-001-0000**
10	**Juno Dunes Parcel at the NE corner of Donald Ross and Intracoastal**	**TIITF State of Florida**	**A5, B**	**72.17**	**Environmentally Sensitive**	Yes- Lease	**28-43-41-20-00-000-5030**
11	Juno Dunes NE corner of Rolling Green & Ellison Wilson	Town & TIIFT Counties	C	2.1	Environmentally Sensitive	Yes- Lease	28434128000007070
12	**Juno Dunes DEP Tract From Donald Ross to Rolling Green**	**Town & TIITF State of Florida**	**A5, B**	**240.61**	**Environmentally Sensitive**	Yes- Lease	**28434128000020020**
13	Parcel adjoining DEP Tract	PB County	B	2.5661	Vacant	None: Currently vacant but available for development	28-43-41-28-00-004-00
14	Parcel adjoining DEP Tract	PB County	B	3.39	Vacant		28-43-41-28-00-004-0020
15	**Juno Dunes Natural Area North of Donald Ross**	**PB County**	**A5, B, C**	**148.44**	**Open Space/N&B**	Yes- Lease	**28434120130010000**
16	Juno Bch Ocean Cay Karatinos Settlement	TIITF Counties	B	0.88	Beachfront Open Space		28-43-41-21-01-000-0011
17	Loggerhead Park Marine Life Center	PB County	B	17.26	Parks and Recreation	Yes- Lease	28434121000050031

The areas listed in the table above can be located (by number) on the Juno Beach Zoning Map (following page).


TOWN OF
JUNO BEACH
FLORIDA
INCORPORATED 1953
ATLANTIC OCEAN
INTRACOASTAL WATERWAY
PELICAN LAKE
4
5
6
15
3
3
10
17
17
16
7, 8
12
13, 14
11
12
2
1
9
ADOPTED BY ORDINANCE NO. 207
AUGUST 8, 1979
REVISED NOVEMBER 2010
LEGEND
JUNO_BEACH_BOUNDARY
PUD PLANNED UNIT DEVELOPMENT
BCH BEACH
CG COMMERCIAL GENERAL
CO COMMERCIAL OFFICE
ESL ENVIRONMENTAL SENSITIVE LANDS
GOV GOVERNMENT
HIST-B BEACHBOUND HISTORIC PRESERVATION DISTRICT
HIST-S SATURN LANE HISTORIC PRESERVATION DISTRICT
HIST-Z ZEPHYR WAY HISTORIC PRESERVATION DISTRICT
MH MANUFACTURED HOME COMMUNITY
R-DUP RESIDENTIAL DUPLEX (TWO FAMILY)
REC-PRIV PRIVATE RECREATION
REC-PUB PUBLIC RECREATION
RH RESIDENTIAL MULTIPLE FAMILY HIGH DENSITY
RM-00 RESIDENTIAL MULTIPLE FAMILY - MODERATE DENSITY - OPEN SPACE
RM-1 RESIDENTIAL MULTIPLE FAMILY - MEDIUM DENSITY
RM-2 RESIDENTIAL MULTIPLE FAMILY - MODERATE DENSITY
RMT RESIDENTIAL TRANSIENT & MULTIPLE FAMILY MODERATE DENSITY
RS-1 RESIDENTIAL SINGLE FAMILY
RS-2 RESIDENTIAL SINGLE FAMILY
RS-3 RESIDENTIAL SINGLE FAMILY
RS-4 RESIDENTIAL SINGLE FAMILY
RS-5 RESIDENTIAL SINGLE FAMILY
RV PARK RECREATIONAL VEHICLE PARK
UTL UTILITIES
N
W
E
S
OFFICIAL JUNO BEACH
ZONING MAP
0 390 780 1,560 2,340 3,120
Feet

Conservation lands in the Town are those properties that include environmental elements that require protection. These lands usually are not developed or are developed with interpretive features only. Conservation land in Juno Beach includes the expansive Juno Dunes Natural Area The parcels numbered 3, 6, 10, 11, 12 and 15 on the previous map (and table) are all part of the Juno Dunes Natural Area.

> **Juno Dunes Natural Area-** Encompassing a total of 569 acres, this natural area contains 12 native ecosystems: beach dune, coastal strand, maritime hammock, hydric hammock, scrub, scrubby flatwoods, xeric hammock, mesic flatwoods, wet flatwoods, basin marsh, depression marsh, and mangrove swamp. Palm Beach County owns 203 acres of the natural area and leases 336 acres from the State and 30 acres from the Florida Inland Navigation District. The site is managed with the assistance of the Town of Juno Beach. The natural area is part of the Northeast Everglades Natural Area.

The Juno Dunes Natural Area drains into the Intracoastal Waterway.

The Town Comp Plan defines Conservation Land as “Land uses and activities within land areas with high ecological value, and where native habitat restoration/preservation, passive recreation, environmental education and environmental research are the primary uses” and defines Recreational Land as “Land uses and activities within areas where recreation occurs and lands are either developed or vacant and concerned with active or passive recreational use. These uses may also be suitable for conservation uses.”

Conservation and Open Space (from the Comprehensive Plan)
Objective 2 of the Future Land Use Element of the Comp Plan further addresses the Town’s commitment to conservation:

> OBJECTIVE 2: To protect the natural, environmental and historic resources and the Character of Juno Beach, as prescribed in the Future Land Use Goal, when undertaking development or redevelopment activities in Town.

The Future Land Use Goal designates 184.96 acres for Recreation and Open Space and 151.44 acres for Conservation while aiming to accomplish:

> "A Town characterized by a community spirit that recognizes its historical development patterns and styles; maintains its established neighborhoods in a safe, secure, beautified and efficient manner by providing for both vehicular and pedestrian movement in, and around, Town; which promotes future growth and development that is creative and enhances historical values and architectural styles that are indigenous to Juno Beach; which protects natural environmental features; and which reflects those development values by well-defined neighborhoods and public areas that create an overall continuity to the Town, while providing effective and efficient community services."

Land development in the Town will be governed in a manner which preserves wetland, minimizes erosion, flooding, and other problems due to topography, including:

Policy 6.8- Develop regulations, as necessary and appropriate, that conserve the upland, coastal and wetland vegetative communities existing in Juno Beach.

Policy 6.9- Protect endangered and/or threatened plant and vegetative communities from future development.

Policy 6.10- Maintain and enforce land development regulations so that development is planned in accordance with natural characteristics of the land such as slope, elevation, drainage patterns and natural vegetation.

As stated in the Town of Juno Beach Comprehensive Plan, "the developer/owner of any site shall be responsible for the on-site management of stormwater runoff in a manner so that post-development runoff rates, volumes and pollutant loads do not exceed those prescribed by the South Florida Water Management District."

The Conservation Goal of the Comprehensive Plan aims to develop a "quality natural environment which protects, conserves and enhances the natural resources of the community, and which is compatible with the development of Juno Beach" by outlining the following objectives:

- ✓ The Town shall develop and begin a program to protect, enhance and improve water quality of surface waters (Pelican Lake) within the Town.
- ✓ To protect and conserve potable water supplies.
- ✓ To protect and maintain a level of air quality which, as a minimum, complies with federal, state, and regional pollution control standards.
- ✓ The Town shall amend its land development regulations to provide for the protection and preservation of native vegetative communities by establishing minimum preservation standards in the Land Development Regulations for all future development.
- ✓ The Town shall amend its land development regulations the protection of wildlife habitats by regulating activities that disrupt turtle nesting through adoption of the Sea Turtle Protection Ordinance (Palm Beach County), requiring minimum preservation standards for upland wildlife habitats, adopting provisions of the Palm Beach County Mangrove Protection Ordinance and requiring the submittal and review of environmental impact studies as part of the development review process.
- ✓ To ensure that land development and lands use activities be compatible with environmental characteristics of Juno Beach.
- ✓ The Town shall amend its Code of Ordinances to provide for the future protection and conservation of fisheries, wildlife and marine habitats by regulating development and redevelopment that may directly or indirectly threaten these natural resources.

- ✓ The Town will protect and conserve mangroves and wetlands to ensure that there will be no net loss of the existing wetlands within the Town. The following policies shall apply to all wetland areas (including mangroves).

The Recreation and Open Space Goal of the Comprehensive Plan aims to develop "an integrated system of recreation and open space areas and facilities that encourages Town residents to interact with each other by providing well defined, landscaped, and enhanced public open spaces that promote leisurely and comfortable strolling, jogging, and bicycling in, around, and through Juno Beach." This is to be accomplished according to the following objectives:

- ✓ To ensure that parks and recreation facilities are adequately and efficiently provided within Juno Beach through the coordination of both private and public resources. This shall be accomplished through the site plan review and land development processes.
- ✓ To provide open spaces, and natural reservations throughout Town which link recreation, open space, and other public space areas into a cohesive, interrelated overall system.
- ✓ During the five (5) year planning period provide for access to and preservation and maintenance of the public beaches and shores within Juno Beach.
- ✓ To further promote the development of the Promenade, by supporting the annexation of Juno Beach Park into the corporate limits of the Town of Juno Beach.
- ✓ To ensure the adequate provision of parks, recreation and open space areas in Juno Beach through a strong public/private coordination interaction and relationship.

The Coastal Management Goal of the Comprehensive Plan is intended to accomplish "A coastal area that preserves the integrity of natural coastal features and resources, while providing for the general health and welfare of Juno Beach citizens and protection from storms and other natural disasters." This is to be accomplished according to the following objectives:

- ✓ The Town shall provide for the conservation, enhancement and maintenance of existing coastal resources by incorporating restrictive measures into the land development review process.
- ✓ To prioritize future development in Juno Beach with emphasis along the shorelines given to mixed use, residential, recreational, water dependent and public use purposes.
- ✓ The Town shall develop regulations to ensure that future development along its Atlantic beaches protects the fragile dune system while at the same time providing for public access in accordance with the level of service standards established in this and other elements of the Plan.
- ✓ The Town shall amend its land development regulations to assure that development along its estuarine shoreline that would not degrade water quality or destroy valuable coastal habitats.

- ✓ To increase the amount of public access to the Atlantic beach and ICWW shoreline consistent with the public need.
- ✓ The Town shall amend its land development regulations to prohibit future high-density residential development in the coastal high-hazard area as defined in the Support Documentation.
- ✓ To limit public expenditure of funds that subsidizes development in the "coastal high hazard area", except for restoration or enhancement of natural resources.
- ✓ The Town shall adopt a hurricane evacuation plan that assures that hurricane evacuation times within the Town will not exceed eight (8) hours by providing for evacuation assistance to the elderly and needy, coordinating evacuation procedures with other local agencies and providing for the continued maintenance and protection of designated evacuation
- ✓ The Town shall amend its Code of Ordinances to provide for the protection, preservation and sensitive reuse of historic resources by identifying existing structures and areas deemed to have local historic significance.
- ✓ The Town shall adopt Level of Service standards for development in the coastal and entire Town area per requirements of the State Planning law.
- ✓ The Town shall develop a post-disaster redevelopment plan and incorporate this plan into its Code of Ordinances.
- ✓ To institute and maintain policies which are specifically designed to retain and enhance the existing beach and dune areas within the Town.

Through the use of a variety of funding sources such as the general fund, developer commitments, County, State and Federal grants, bonds, user fees and impact fees, the Town intends to continue to fund the acquisition and development of parks, open space, recreational facilities, native habitat and habitat of endangered, threatened and species of special concern.

In conjunction with the State of Florida, the South Florida Water Management District, the Nature Conservancy, the Trust for Public Lands, and other appropriate agencies involved in conservation lands to create a Town wide open space.

Future Development

Between 2008 and 2011, Juno Beach, like many other US cities, was adversely affected by the economic downturn. The population experienced an annual average growth of 2% during 2000-2006 followed by a two year decline in 2007 and 2008. The 2010 census resulted in a 13% decrease in the Town's population, supporting the notion that more property owners are choosing Juno Beach as their seasonal residence as opposed to their permanent residence. During the seasonal months (November through May) the population of the Town increases dramatically, nearly tripling. This influx of residents also brings an increase in tourists in the Town and neighboring cities which help support many local businesses.

Any estimates of future building in Palm Beach County have been difficult to project due to the recent general decline in relocations into South Florida and the nation-wide economic downturn which brought new construction to a standstill starting in 2008. The Palm Beach County Unified Local Mitigation Strategy 2009 has recommended that quantitative and evaluative analyses of the vulnerability of future residential, commercial and critical services structures is considered to best be tabled until these factors stabilize or are reversed.

Overall, the property value of the Town decreased from $1.6 billion in 2008 to $1.1 billion for Fiscal Year 2013, representing a 29.7% decrease over that time period. Signs of economic stabilization appear to be materializing in various reporting models, however, unemployment is still an issue, but is improving.

More recently, however, the local economy has been rebounding. Since 2009 the Town's population has been growing, thus generating an ongoing mix of development and redevelopment activities. This is an indication that the economic outlook remains bright. There are many reasons to support a positive economic outlook for the future of the Town. One local element that justifies an upbeat economic forecast is the Town's commitment to financial responsibility demonstrated by fiscally conservative policies. The outstanding fiscal health of the local government makes Juno Beach an attractive community to potential property owners. After a concerted effort to become debt-free, the Town recently succeeded in satisfying all of its outstanding debts while maintaining a sizable reserve capable of funding 50% of the yearly operating budget. Amazingly, during the worst recession in US history the Town has proven its commitment to a responsible reserve policy by leaving the reserves untouched and faithfully maintaining its reserve fund every year. Additionally the Town has followed a sound investment strategy, outpacing returns as measured against yearly benchmarks without incurring additional or unnecessary risks.

The Town of Juno Beach Planning and Zoning Department has identified some of the many highlights of residing in the Town:

- Positive marketing aspect to potential clients in the real estate market because of location and amenities;
- Juno Beach is viewed as being an affluent community that prides itself in having a "home town" feel to it by offering its residents special events such as an annual Town Picnic, and Ice Cream Social, Holiday Parties and bus trips for residents;
- Stronger local government voice, including land use, planning and zoning, and community programs;
- Superior Police protection (response time, vacation check, community policing, police involvement with business and Homeowner Associations, etc.)
- The financial "health" of the Town; fiscally responsible, and conservative. The Town maintains itself in a very favorable financial position with the Town millage rate at 2.8786;
- 25% discount of flood insurance due to Class 5 rating in FEMA's Community Rating System program.

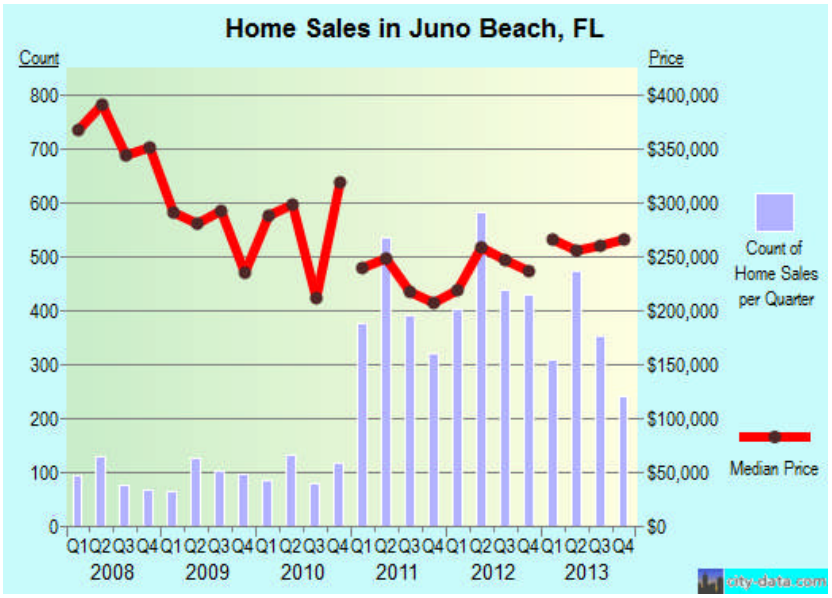
For a number of years, Juno Beach lagged behind other municipalities in redevelopment activities. In fact between 2003 and 2008 the Town did not issue any permits for the construction of single-family residences. However, between 2009 and 2012 the Town granted a total of 11 permits for new construction of single-family homes, seven in 2009 (with an average cost of $500,700), two in 2011 (with

an average cost of $312,500) and two in 2012 (with an average cost of $384,300). The Town of Juno Beach continues to make sustained development, in accordance with the Comprehensive Plan, a top priority.

Recent and continuing projects in the Town include:

- Bike lane at North Ocean and Donald Ross Road is pervious.
- A diver grouted the stormwater drainage system that extends on Universe Boulevard that ultimately discharges into the Intracoastal in order to prevent sinkholes. A developer owns the land and has agreed to maintain.
- Kagan Park- Installation of park playground equipment, parking lot improvements maintenance. Replaced culvert and drainpipe.
- Pelican Lake Improvement Program- Design and implementation of littoral zone plantings in the lake; installation of bollards; completion of pedestrian path improvements, lighting, park landscaping, park furniture, and irrigation system.
- US Highway 1 Project- drainage improvements, sidewalk installation, retaining walls, curbing, pavement overlay and crosswalk enhancements
- Approval was granted for several real estate projects-
  - 121 Condo units in Bay Colony along the Intracoastal, with a 2015 completion date
  - 16,388 square foot auditorium addition to FP &L facility
  - 29-lot single-family home subdivision to be constructed in the Preserve at Juno Beach
  - A 4-unit townhouse project, Mercury Rising
  - Several new single-family homes throughout Town
  - Ocean Breeze townhouse project with 24 units

Like much of Florida, the number of home sales along with home values in Juno Beach declined during the recent recession. However, a rebound has begun. According to the most recently released report by the Realtors Association of the Palm Beaches, the estimated median home value for 2012 was $352,500 compared to a value of $340,000 in 2011. The value has been increasing since 2009 when, during the depth of the recession, the estimated median home value was $252,500. This figure indicates that 2009 median home prices were just 50% of their 2007 peak. (Zillow Research lists the median sale price of an existing home in Juno Beach during the summer of 2007 as $507,000).



The Town of Juno Beach is working toward cultivating a business-friendly atmosphere and encouraging economic growth. Once the commercial base grows, the residential base will recover. The Town has made a commitment to retain and expand current business, attract new business and strengthen the local economy through job creation. The Town Council has formally expressed these priorities in a Commitment Statement that reads:

> The Town of Juno Beach's Town Council and Staff are committed to providing unmatched expedient services with a professional welcoming environment. The Town has a long standing reputation for supporting and working with developers and property owners to enhance the quality of life for both the business and residential communities. The Town is committed to sound superior development and will make ourselves available to meet and surpass your expectations.

One objective of the Planning and Zoning Department is to notify potential businesses of the advantages of re-locating to Juno Beach. Among the most distinct advantages is the small size of the community, which affords each business owner enhanced access to the local government and an opportunity to voice concerns, interact with the local representatives and participate in the decision making process. As of March 2013, the Town had six vacant commercial parcels and 44 vacant residential parcels available for development. For a detailed description of the vacant properties please see the copy of the 2013 Juno Beach Development/ Redevelopment Opportunities Report included in Appendix M.

The Town manages growth and development through the preparation, adoption, implementation and enforcement of land development regulations which coordinate future land uses with the appropriate topography, soil conditions and the availability of facilities and services. The Town Planning and Zoning Department is tasked with enforcing all land use legislation developed by the Town. Both the department and the Town are responsible for confirming that all proposed land uses are in accordance with the Future Land Use Map (FLUM) and administering the coordination of future land uses with the appropriate topography and soil conditions. Please see Appendix M for a copy of the Zoning map and Future Land Use Map for the Town.

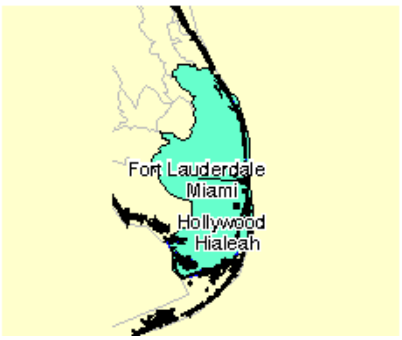
The Town will assure that undeveloped land designated for future park and recreation sites shall be protected from encroachment by adjacent development. With regard to future facilities, the Palm Beach County Unified Local Mitigation Strategy 2009 suggests that the following must be considered:

- Developable coastal areas of the County are substantially built out. Future development is likely to be replacement and upgrading of existing facilities.
- Development in the Coastal High Area is strictly limited and managed by local ordinances and codes which tend to meet or exceed those recommended of the State.
- Future growth throughout the county is guided by the managed growth tiers described in Land Use section of Special Appendix II of the Palm Beach County LMS, which consider hazard vulnerability.
- Virtually the whole county is potentially vulnerable to isolated flooding during excessive rain events, even areas lying outside Special Flood Hazard Areas.
- All new residential, commercial and critical service facilities will be built to meet or exceed South Florida Building hurricane standards. Several local developers are now building Category 5 type structures.

Southeast Florida's residents share a common history, economy, watershed, and transportation network that knows no city or county lines. Palm Beach County is a partner in Seven50, a seven county, 50 year, SE Florida Prosperity Plan for sustainable development and prosperity. The County was the first urban area to adopt the Six Pillars framework and officially become a Florida Chamber Foundation Six Pillars Community. This planning process and final plan offer a model framework for other communities to follow.

The six pillars of Florida's future economy are:

- Talent Supply and Education
- Innovation and Economic Development
- Infrastructure and Growth Leadership
- Business Climate and Competitiveness
- Civic and Governance Systems
- Quality of Life and Quality Places



1 Everglades Watershed includes Juno Beach

Population growth in Florida continues to rebound but at relatively low levels and rates of growth. Historically, Florida's population growth has been driven by net migration (more people permanently moving into the state than leaving). However, net migration fell to record low levels during much of 2008 and into 2009. During that time period, natural increase (births minus deaths) actually exceeded net migration. The low levels of net migration were largely due to national economic conditions, including weakened housing markets and other lingering effects from the Great Recession that make it difficult for people to relocate.

Town Demographics

Population (June- October)	3,191
Population (November - May)	7,500+
Housing Units (occupied)	2,936
Median household income	$80,043
Median age	64.2
Education level (Bachelor's degree or higher)	45%

Source: U.S. Census Bureau and Town of Juno Beach

In 2013 the Town's permanent population was 3,191. The Town's population showed a 13% decrease in permanent residents, however Juno Beach remains a predominately seasonal community. The annual influx of seasonal residents and tourists nearly triples the population and helps to support the local businesses. The tremendous growth that characterized the area over the last few decades was halted by the recent economic difficulties, however there are signs that the population and local economy is stabilizing. Recent upticks in real estate activity and home building indicate a promising outlook in the near future.

In addition to referencing the Town's expected growth and development trends, it is worth noting here that the Town also has specific guidelines governing re-development after exceptional events such as a

flood or other natural disaster. This is addressed in the Coastal Management Goal of the Town's comprehensive plan:

Objective 11: The Town shall develop a post-disaster redevelopment plan and incorporate this plan into its Code of Ordinances.

Policy 11.1- The Town shall prohibit development in the coastal high hazard area and identify existing developments and infrastructure that encroach into the coastal high-hazard area

Policy 11.2- The Town shall identify existing sources of Federal and State funding available for post-disaster redevelopment and provide public information that will assist in determining a facility's potential for redevelopment.

Policy 11.3- The town shall evaluate the potential for post-disaster redevelopment by developing an inventory of threatened infrastructure, setting redevelopment priorities and distinguishing between cleanup actions and immediate repair.

Policy 11.4- The Town shall evaluate and, where appropriate, incorporate the recommendations of inter-agency hazard mitigation reports into the Comprehensive Development Plan.

Policy 11.5- The Town shall continue to evaluate the potential for redevelopment in areas where unsafe conditions or inappropriate land uses exist and incorporate these findings into amendments to the post-disaster redevelopment plan.

Conclusion

The Town of Juno Beach is, by geography and climate, exposed to several flood hazards which may cause flood related damages (problems) within the Town. For the benefit of its residents, for the health of the local economy, and for the financial solvency of FEMA and the NFIP, the Town of Juno Beach is actively identifying flood related problems within the Town, attempting to ascertain causes, mitigating losses and legislating toward a future with minimal flood related damages. From replenishing coastal dunes, to preserving open space, to completing structural capital improvement projects, to educating citizens about the local flood related hazards and problems, the Town of Juno Beach continues to address the problem of the community's flood hazard and to pursue activities to reduce flood losses.

Identifying the problems is only part of the process. The following sections of this Flood Mitigation Plan will expand upon the progression of steps that include identifying goals, discussing possible solutions, developing an action plan, adopting the plan, implementing improvements and evaluating progress.

Goals

In keeping with the goals and mission of both the NFIP and the Community Rating System (CRS) Program, the goals set forth by the Town of Juno Beach are to protect the people, property and quality of life for both residents and visitors alike. The overarching goal is to reduce the vulnerabilities to rain and other storm events that cause flooding in the Town. The following goals and objectives will serve to provide guidance to that end.

Goal 1: Protect the public's safety and health from the effects caused by natural hazards and for the purpose of this plan, as a result of flooding, flash flooding and storm surge incidents.

Objective 1.1: Promote awareness and preparedness through the distribution of information.

Objective 1.2: Ensure that residents are given adequate notification and warning of floods, hurricanes and other natural hazards that may cause flooding.

Objective 1.3: Provide appropriate assistance before, during and after major flooding events, particularly to the most vulnerable community members.

Objective 1.4: Provide continuous appropriate education and information regarding flooding to the community through appropriate and pre-established methods.

Goal 2: Protect public and private property from damage by floods.

Objective 2.1: Continue the implementation of effective procedures and processes that advance local government jurisdictions' and the public's ability to accomplish mitigation activities in the Town of Juno Beach.

Objective 2.2: Reduce or eliminate the impact of flooding hazards to identified at-risk locations, including repetitive loss areas and critical facilities through mitigation or acquisition.

Objective 2.3: Ensure that new development reduces the possibility of property damage from flooding by retaining and managing stormwater, by building to safe elevations, and by enforcing all NFIP regulations.

Objective 2.4: Reduce flooding hazard through strategic planning and implementation of the *Town of Juno Beach Flood Mitigation Plan*.

Objective 2.5: Reduce the impact of flooding through funding, engineering, constructing, maintaining, and improving stormwater management.

Objective 2.6: Assist property owners, residents, businesses, non-profits and others in understanding and knowing of their eligibility for grants, loans and services that may help to mitigate hazards that directly affect their interests.

Objective 2.7: Maintain and continue to improve a safe and fiscally sound community through thoughtful long-range planning of the natural and man-made environment.

Objective 2.8: Analyze and take preventative actions if possible to reduce the number of properties that are listed annually by FEMA on the list of "Repetitive Loss Properties."

Objective 2.9: The Town of Juno Beach will strive to compete effectively and productively for pre- and post-disaster mitigation funding assistance.

Goal 3: Improve the quality of life in the Town of Juno Beach by maintaining, enhancing, and restoring the natural environment's capacity to deal with the impacts of rain events and flooding.

Objective 3.1: Protect existing natural areas by regulation, acquisition and/or restoration, particularly in the floodplain.

Objective 3.2: Ensure preservation of open space.

Objective 3.3: Seek expansion or addition of open space.

Objective 3.4: Minimize destructive erosion.

Objective 3.5: Optimize utilization of flood mitigation methodologies that enhance stormwater quality.

Review of Possible Activities

The Flood Mitigation Plan Task Force considered a number of different floodplain management and hazard mitigation activities. They were organized under six primary categories:

Preventative:

These items keep problems from getting worse. The use and development of floodprone areas is limited through planning, land acquisition, or regulation. Building, zoning, planning and/or enforcement offices usually administer them.

1. Pursue appropriate grants to enhance flood mitigation, including one or more of the following:
    - Flood Mitigation Assistance Grant
    - Hazard Mitigation Grant
    - Pre-Disaster Mitigation Grant
    - Repetitive Flood Claims
    - Severe Repetitive Loss

2. Review Town Code of Ordinances to strengthen maintenance requirements of private stormwater management facilities, including structures controlling flow.

3. Encourage FEMA to update Flood Insurance Rate Maps (FIRMs) to include base flood elevations in all Special Flood Hazard Areas.

4. Continue City's periodic inspection program of stormwater control structures to ensure the proper functioning of such structures.

5. Continue practice of correcting localized drainage problems so that the Level of Service standards are maintained.

6. Consider the relocation, mitigation or replacement of infrastructure currently present within the Coastal High Hazard Area where state funding is anticipated to be needed, as identified in the *Local Mitigation Strategy Priority List*.

7. Maintain the town's strong regulatory flood prevention standards, including:
    - Utilization of 1% chance storms for development
    - Closed basin design
    - Lot grading plan
    - Freeboard in all SFHA's

The Floodplain Manager will be responsible to identify any proposed ordinance that could weaken the Town's strong standards to coordinate with other Town staff as needed to follow up as needed.

8. Incorporate into the Town's review process for infrastructure planning an assessment of the appropriateness of public capital improvements in coastal high hazard areas as identified in the Coastal Management Element of the Comprehensive Plan.

9. Maintain the Town's practice of denying development permits for projects that do not meet the design criteria for correcting existing deficiencies, or do not meet future drainage requirement.

10. Continue to require that installation of stormwater management facilities made necessary by new development is the responsibility of the developer.

11. Evaluate the *Flood Mitigation Plan*, particularly the Action Plan, annually.

12. Update the *Flood Mitigation Plan* every five years.

13. Identify Town parks that could be for permanent open space and encourage such designation where possible.

14. Require designation of open space property for all major development.

15. Encourage drainage solutions such as the use of pervious concrete and pavement.

16. Look for areas that can be used for storage of floodwaters, such as public rights of way, parks, ball fields in locations that have flooding problems.

17. Continue to require new commercial development to incorporate historical drainage patterns in the analysis of the required stormwater storage.

18. Encourage developing provisions for stormwater design management practices in low-impact development.

19. Complete an inventory of the Town's drainage structures.

20. Continue the Town's maintenance program to clear debris from the stormwater drainage areas.

21. As part of the Town's NPDES program, continue sediment control to prevent clogged drainage systems such as street sweeping, curb and gutter cleaning and planting vegetation on bare ground.

22. Encourage the use of flood prone areas as open space.

23. Continue to support the Town's efforts to improve its classification in the Community Rating System, thus enhancing the Town's flood mitigation efforts while securing insurance premium rewards for its residents and businesses.

24. Following the model set by Monroe County, link rate of new construction permit insurance to conservation land acquisition rate.

Property Protection

Property owners, on the building-by-building or parcel basis, usually undertake these items.

25. Research the benefits of including base flood finished floor elevations on Certificates of Occupancy, implement within one year if possible.

26. Continue to prioritize the reduction of repetitive loss properties through various means of mitigation, update repetitive loss forms and remove properties from the Repetitive Loss List. This is an ongoing activity that will continue as a top priority of the Town's CRS Coordinator, the results of which will be reported annually to the Flood Mitigation Task Force.

27. Include notification of grants, loans and service availability and all Town media publications, seminars and websites that addressed flood mitigation.

28. Collaborate with Florida Communities' Trust to assist with funds in acquiring properties in the SFHA.

29. Collaborate with the Southeast Florida Regional Climate Change Compact as they make recommendations for land development standards with respect to low-lying coastal areas.

30. Encourage all property owners to purchase flood insurance.

31. Consider the following forms of retrofitting for areas or buildings with major flooding issues:

    - Install backflow valves on sewer systems
    - Elevation of structures by piers, posts and columns, and pilings
    - Create a secondary water barrier
    - Elevate the lowest floor above the 100 year flood level
    - Wet flood proofing (allowing water to enter uninhabited areas of the structure)
    - Dry flood proofing (sealing the structure to prevent floodwaters from entering)
    - Levees and flood walls (constructing a barrier around the structure to keep out floodwaters)
    - Demolition (tearing down the structure and rebuilding with appropriate flood proof techniques or relocating the structure)
    - Elevate the main breaker or fuse box

32. Encourage flood proofing techniques in order to preserve and revitalize neighborhoods.

33. Encourage property owners to use qualified hazard mitigation professionals to inspect building foundation and access damage after flood events. FEMA, Insurance agents, the State NFIP office and the local building department can provide contact information.

Natural Resource Protection

These activities preserve or restore natural areas or the natural functions of floodplain and watershed areas. Parks, recreation, or conservation agencies or organizations usually implement them.

34. Implement the following project ranked as #47 on the Palm Beach County Local Mitigation Strategy Prioritized Project List (January 2009) Not included in 2012 Priority List:
    - Purchase 18 vacant lots - restore wetlands ($430,000 unfunded) Potential funding sources Primary Funds (PDA, HMGP, FMA) and Flood Mitigation Funds.

35. Consider dune restoration programs.

36. There are no plans for changes to the Town's policy to encourage designation, protection and maintenance of wetlands, mangroves and environmental sensitive lands.

37. Identify, inform and encourage homeowners' associations to install littoral/upland buffer plantings around lakes.

38. Identify privately-owned and public natural and beneficial areas in the Town and consider expansion of the Town's properties that are designated natural and beneficial areas.

39. Maintain and enforce designation of Coastal Barrier Resources Act (CBRA) property.

40. Maintain strong enforcement of South Florida Water Management District regulations pertaining to floodplain management.

41. Encourage individual property owners to pursue percolation-oriented drainage improvements using best management practices through outreach and education. Drainage that seeps into the soil, rather than being direct it out to the ocean, provides multiple benefits. Not only does it mitigate flooding, but it also recharges the aquifer, enhances water quality, and reduces erosion.

42. Implement strict enforcement of best management practices for reducing erosion during development activity.

43. Examine water control structures to ensure that they can provide for in land or upstream migration of riparian species as freshwater habitats become more saline.

Emergency Services

These measures are taken during an emergency to minimize its impact. These measures are the responsibility of city or County emergency management staff and owners or operators of major or critical facilities.

44. Assign an individual to continually update information pertaining to hurricane and flood warnings. This update responsibility will include, but not limited to, the following media:

- Town website
- Email advertisements
- Television Government Access Channel
- Reverse 911 telephone system
- e-breaking news
- Public Service Announcements through local media (radio, newspapers, etc.)

45. Ensure adherence to the Town's Emergency Procedures Manual, particularly in the event of evacuation orders. Key components of the procedures should be reviewed before June 1st of each year.

46. In May of each year, Juno Beach Police Department will confirm and update *Hurricane Evacuation Assistance; Juno Beach Residents Evacuation Assistance Forms* submitted by residents and review evacuation procedures.

47. Immediately prior to, during and after a hurricane or flood event, post pertinent information concerning major points of interest, such as bridge and road closures, evacuation orders, emergency shelter locations and electrical outages, utilizing the following media:

    - City website
    - Email advertisements
    - Television Government Access Channel
    - Electronic message boards
    - Reverse 911 telephone system
    - e-breaking news
    - Public Service Announcements through local media
    - Brochure handouts at PODs
    - Department of Health Emergency Health Inoculations

48. Ensure optimal staffing of emergency management personnel to receive and respond to emergency events. This practice will continue as in the past, in accordance with Incident Command System (ICS) standards.

49. Integrate response to flooded homes with appropriate response organizations (Read Cross, faith-based organizations, other non-profit entities, CERT etc.)

50. Advertise evacuation routes.

51. Identify all critical facilities located within SFHAs and make contingency plans for each, in the event of flooding.

52. Ensure that all public buildings that serve first response and critical emergency/public needs, include record/data collection and communication centers/infrastructure, are located outside of flood zones or flood prone areas.

53. Training and evaluation of the CERT program.

54. Explore funding opportunities to retrofit critical facilities to be more flood and wind resistant.

55. Annually update the list of nursing homes and smaller home centers (Type 1 group homes) in the Town and the priority list of critical facilities.

56. Confirm that all nursing homes have an emergency plan.

57. Implement The Following Unranked Project On The Upon Beach County LMS space Prioritized Project List (January 2009):

    - Communication Console System, microprocessor-based ($50,000)

Structural projects

These activities keep floodwaters away from an area with a levy, reservoir, or other flood control measure. They are usually designed by engineers and managed or maintained by public works staff.

58. Implement the following Capital Improvement Program projects:

    - Sidewalk Projects: Concrete and paver sidewalks throughout the Town (not funded)
    - Capital Improvement- Street/Drainage (not funded)
    - Major Repairs and Equipment: Various major repairs and equipment

59. Implement the following project ranked #16 on the Palm Beach County LMS Prioritized Project List (January 2009) Not included in 2012 Priority List:

    - Drainage System Development on US 1 ($700,000 unfunded). Potential funding sources: Primary Funds (PDA, HMGP, FMA) and Flood Mitigation Funds- Completed

60. Prioritize addressing of flooding issues in repetitive loss areas and implement capital projects to mitigate flooding. Drainage issues should continue to be given top priority in the capital improvement program, particularly in areas containing repetitive loss properties in repetitive loss areas. To supplement funding, the City must continue to be proactive in obtaining funding for this program. The following sources are recommended:

    - Community Development Block Program
    - Community Redevelopment Agency
    - Flood Mitigation Assistance Grant
    - Hazard Mitigation Grant Program

61. Contact FDOT about drainage problems on US 1, especially if their projects do not work to alleviate flooding.

62. The catchment areas, swales have grown out and the water can't come off the road into the swales because the grass has overgrown. Develop a maintenance program to address this.

63. Coordinate with the South Florida Water Management District, Drainage/ Water Control Districts, and public works officials to identify flood control and stormwater management infrastructure already operating below the design capacity.

Public Information

These activities advise property owners, potential property owners, and visitors about the hazards, ways to protect people and property from the hazards, and the natural and beneficial functions of local floodplains. A public information office usually implements them.

64. Ensure that citizens know how to contact FEMA post-flood.

65. Based on availability and prioritized needs, provide knowledgeable staff to assist citizens before, during and after a flood event to help them understand their repair/rebuilding/flooding/mitigation options.

66. Assure annual distribution of *Palm Beach County Hurricane Survival Guide* in multiple languages.

67. Post the *Palm Beach County Hurricane Survival Guide* on that Town website in a location that is easily accessed by the community.

68. Advertise the availability of evacuation assistance provided by the Juno Beach Police Department. The *Hurricane Evacuation Assistance, Juno Beach Residents Evacuation Assistance Form* is available on the Town's website.

69. Implement the Town's Public Information Outreach Strategy, a copy of which can be found in Appendix Q.

70. The Town should continue its current policy of conducting a public outreach campaign.
    - chambers, civic groups, etc.
    - handouts, brochures, newspapers in Town Center lobby
    - same handouts available during Town public events

71. Work with County Housing Program to provide education to home buyers regarding flood information.

72. Recruit local business owners to assist with the distribution of flood and disaster outreach projects.

73. Provide flood property protection, safety information on the Town's website.

74. Educate residents on the care and proper use of swales.

75. Develop early warning systems and social media applications to both inform residents and visitors of extreme high-tied events and raise overall awareness on sea level rise and climate change issues. Also consider roadway signage for tidal flooding zones.

76. Initiate a regional public education campaign to educate residents, business owners, policymakers on the merits of preserving open land as an “insurance policy” for adaptation to sea level rise in South Florida.

Action Plan

A key component of the Town of Juno Beach Flood Mitigation Plan (FMP) is the Action Plan. The Action Plan transforms the goals and objectives into actual activities; this moves the process of flood mitigation from theory to practicality.

In the course of developing the Action Plan, the Committee listed and discussed over 78 possible activities covering all of the activity types listed below:

- Preventative
- Property protection
- Natural resource protection
- Emergency services
- Structural projects
- Public information

As a direct result of the discussions and deliberations concerning possible activities, the activity descriptions were revised and a total of 60 activities were chosen for the Action Plan, several from each of the activity types listed.

****

Action Plan

The following are flood mitigation activities recommended by the Town of Juno Beach Flood Mitigation Committee in December 2013. The activities have been prioritized based on the following criteria:

1. Overall effectiveness to mitigate flooding
2. Feasibility and affordability
3. Reduction of repetitive losses
4. Urgency of need

The Committee reviewed the initial prioritization, discussed the implications, and revised the initial prioritization by consensus.

Particular attention was given to the projects that can also be included in the Palm Beach County Local Mitigation Strategy (LMS). Twice a year, April 1st and October 1st, the LMS Evaluation Panel for Palm Beach County reviews projects submitted by participating municipalities and releases an updated Project Prioritization List (PPL) 30 days later; however, mitigation initiatives are accepted year round. If unexpected or multiple funding sources become available throughout the year that necessitate ranking, the LMS Evaluation Panel will meet and score submitted projects accordingly. For example this would occur in the case of Hazard Mitigation Grant Program (HMGP) funding, which could become available anytime of the year, depending on Presidential Declarations. The Panel encourages mitigation to be a year-round process of planning and implementing. Please see Appendix # O which includes the LMS project list, the description of the submission process, and the required project submission forms.

Many of the Town of Juno Beach FMP Action Items are currently being implemented, and the action item calls for its continuation. These activities are purposely included in the Action Plan to ensure that they are continued in the future, through the annual FMP evaluation process.

Please see Exhibit VI which includes a table illustrating the link between the Action Items and the Goals of the Flood Mitigation Plan.

The activities have been prioritized; however, the priority of each activity may change due to urgency of need, current events, and funding.

1. Implement the following 5-Year Capital Improvement Program Street/Drainage Projects, contingent on the ability to secure funding:

   a) Two unfunded Capital Improvement Projects are on an ongoing improvement list.

      - **Juno Ocean Walk**- Design and build exfiltration trench and French drains needed to capture and slow storm water drainage from the roadway to minimize localized flooding. ($23,000)

      - **Zenith Lane** – Design and construct storm drainage structures and exfiltration trenches to facilitate the drainage of storm water. ($60,000)

   Action: Director of Public Works will implement these projects within the next five years should funding become available.

   Funding: Need to secure funding for both Capital Improvement Projects.

   b) A $50,000 unfunded Capital Improvement Project is in progress:

      - **Universe Boulevard Project -** Large diameter drainage pipes that discharge into the Intracoastal required maintenance and repairs. FP&L lead the study of the existing pipes' condition, researched viable repair options and costs.

   Action: Public Works Director worked with FP&L to move this project forward. Project is currently underway.

   Funding: Stakeholder properties (abutters) will share the costs for improvements to the infrastructure into which they discharge. The payment schedule is a work in progress.

2. Prioritize flooding issues and implement capital projects to mitigate flooding. Drainage issues should continue to be given top priority in the Capital Improvement Program, particularly in areas containing repetitive loss properties. To supplement funding, the Town must continue to be proactive in obtaining funding for this program. The following sources are recommended:

   - Community Development Block Program
   - Community Redevelopment Agency
   - Flood Mitigation Assistance Grant
   - Hazard Mitigation Grant Program
   - Repetitive Flood Claims
   - Severe Repetitive Loss

   Action: The Director of Public Works may provide flood documentation and designate areas of concern. The Project Coordinator can assist with the grant applications. A yearly report of all efforts and findings will be presented to the Flood Mitigation Committee.

Funding: Staff time (operating funds). Matching funds, if required, will have to be budgeted or will be assumed by the homeowner, if agreed.

3. Encourage all property owners and renters to purchase flood insurance.

   Action: This is the ongoing responsibility of the Town CRS Coordinator through public education and outreach.

   Funding: Staff time (operating funds)

4. Encourage individual property owners, homeowner associations and other stakeholders to pursue percolation-oriented drainage improvements using best management practices through outreach and education. Stormwater runoff that seeps into the soil, rather than being discharged to waterways provides multiple benefits. Not only does it mitigate flooding, but it also recharges the aquifer, enhances water quality, and reduces erosion.

   Action: The Director of Planning and Zoning enforces these best management practices via Town Codes, Ordinances, and the State Building Codes. Furthermore, all Town Staff participates in encouraging and educating residents, including homeowner associations.

   Funding: Staff time (operating funds)

5. Contact FDOT about drainage problems emanating from US 1.

   Action: The Public Works Director will continue to work with FDOT to resolve drainage problems. If FDOT is unable to address the issue and/or alleviate the problem, the Town will consider commissioning an engineering study to determine the scope of FDOT's responsibilities under current water management regulations.

   Funding: Staff time (operating funds)

6. Develop proactive response to Biggert-Waters Flood Insurance Reform Act of 2012 (BW-12).

   Action: CRS Coordinator will explore the possible effects of BW-12 provisions eliminating "Grandfathered" property exemptions to existing homes where base flood and finished floor elevations are concerned and will work to educate homeowners about these new laws. Develop actions to mitigate the financial burdens of the new law on homeowners, if such action is deemed appropriate, working together with the Palm Beach County CRS Users' Group. This is typically discussed at every monthly CRS User Group meeting.

   Funding: Staff time and operating funds

7. Continue Town participation in and compliance with the National Flood Insurance Program (NFIP) and support the Town's efforts to improve its classification in the Community Rating System, thus enhancing the Town's flood mitigation efforts while securing insurance premium rewards for its residents and businesses.

Action: NFIP compliance is the responsibility of the Building Official, while the CRS is the responsibility of the CRS Coordinator. This is an ongoing policy and the Town will continue its current approach.

Funding: Staff time (operating funds)

8. Consider the following forms of retrofitting for areas or buildings with major flooding issues:

- Install backflow valves on sewer and drain systems
- Elevation of structures by piers, posts and columns, and pilings
- Create a secondary water barrier
- Elevate the lowest floor above the 1% Chance of Flood Level
- Wet flood proofing (allowing water to enter uninhabited areas of the structure)
- Dry flood proofing (sealing the structure to prevent floodwaters from entering)
- Levees and flood walls (constructing a barrier around the structure to keep out floodwaters)
- Demolition (tearing down the structure and rebuilding with appropriate flood proof techniques or relocating the structure)
- Elevate the main breaker or fuse box above the 1% Chance of Flood Level

Action: This is the responsibility of the Planning and Zoning/Building Department. This is an ongoing policy and the Town will continue its current approach.

Funding: Staff time (operating funds)

9. Continue to require designation of open space property for all major development.

Action: This is current Town policy and will continue as is. The Director of Planning and Zoning will identify any proposed ordinance that could weaken the Town's strong open space requirements and coordinate with other Senior Town staff to follow up if strengthening is required.

Funding: Staff time (operating funds)

10. The Town should continue its current policy of conducting a public outreach campaign.

- Chambers, civic groups, etc.
- Town Newsletters
- Handouts, brochures, newspapers in Town Center lobby
- Handouts available during Town events

Action: This is the responsibility of the CRS Coordinator. This is an ongoing effort and the Town will continue its current approach.

Funding: Staff time (operating funds)

11. Review all of the Juno Beach permits issued by South Florida Water Management District to private entities within the Town limits. Require those entities with special conditions to submit all

monitoring reports on water management systems to the Town, in addition to the South Florida Water Management District.

Action: As part of the Site Plan review process, the Planning and Zoning Department will continue to require copies of all permits issued by South Florida Water Management District and any associated monitoring reports, as a condition of Site Plan approval.

Funding: Staff Time (operating funds)

12. Identify Town-owned land that could be reserved for permanent open space and encourage such designation where possible. Apply deed restrictions where applicable.

    Action: This responsibility will be a collaboration of the Planning and Zoning Department and the Public Works Department; the locations identified will be presented to the Town Manager. This should be presented to the Council as areas are identified within the next three years.

    Funding: Staff time (operating funds)

13. Continue practice of improving localized drainage system problems so the Level of Service standards are maintained.

    Action: The Public Works Department is actively looking for ways in which the function of the localized drainage systems can be improved. If opportunities for improvement are noted, the proposed improvements will be documented and presented to the Town Manager. This is an ongoing activity.

    Funding: Funding sources vary. Should the opportunity for improvements be noted, the Project Coordinator will then seek appropriate funding sources which may include Capital Improvement funds, grants, operating funds or other applicable/available funding.

14. Explore the practicality of using the environmentally sensitive areas to capture and manage stormwater runoff from flood prone areas, thus recharging the natural water supply.

    Action: Proper stormwater filtering mechanisms must be researched and the required government agencies will be consulted, including the Palm Beach County Environmental Resource Management Division and the Florida Department of Environmental Protection and included in the process of developing and implementing such practices, if they are deemed viable. This activity is the responsibility of the Public Works Director.

    Funding: Cost not yet evaluated and funding not yet secured. Possible sources include Capital Improvement Program funds, State/County Funds, FEMA grant funds, or collaborate funding with other government agency such as the Environmental Protection Agency.

15. Continue to prioritize the reduction of repetitive loss properties through various means of mitigation, update repetitive loss forms and remove properties from the Repetitive Loss List. This is an ongoing activity that will continue as a priority of the Town's CRS Coordinator, the results of which will be reported annually to the Flood Mitigation Committee.

Action: The CRS Coordinator is currently in charge of researching and following up on all properties listed on the Repetitive Loss List, and is actively trying to mitigate any known conditions which may contribute to future flood losses. Where applicable, the CRS Coordinator will work with private property owners to address these conditions and notify Public Works Director for potential resolution. All progress will be reported to the Flood Mitigation Committee on a yearly basis.

Funding: Staff time (operating funds)

16. Assign an individual to continually update information pertaining to hurricane and flood warnings. This update responsibility will include, but not be limited to, the following media:

    - Town website
    - Door to door, and bullhorn (notification of evacuation orders)
    - Television Government Access Channel (conducted by Palm Beach County)
    - Reverse 911 telephone system
    - Public Service Announcements through local media (radio, newspapers, etc.)

    Action: This is a current ongoing Town procedure and will continue as is as a responsibility of the Palm Beach County Emergency Management Division. The Standard Operating Procedure written for emergency information dissemination shall include the items listed above.

    Funding: Staff time (operating funds)

17. Incorporate an assessment of public capital improvements within the Coastal High Hazard areas (as identified in the Coastal Management Element of the Comprehensive Plan) into the Town's review process for infrastructure planning.

    Action: The Planning and Zoning Department will continue to ensure that the Coastal Management Element provides objectives and policies that will correspond with the Capital Improvement Element of the Comprehensive Plan to allow for adequate infrastructure planning within the Coastal High Hazard areas. This is an ongoing activity.

    Funding: Staff time (operating funds)

18. Immediately prior to, during and after a hurricane or flood event, post pertinent information concerning major points of interest, such as bridge and road closures, evacuation orders, emergency shelter locations and electrical outages utilizing the following media:

    - Town website
    - Television Government Access Channel
    - Electronic message boards
    - Reverse 911 telephone system
    - Public Service Announcements through local media (conducted by Palm Beach County)

    Action: This is the responsibility of the Police Department. This is an ongoing policy and the Town will continue its current approach.

    Funding: Staff time (operating funds)

19. Maintain the Town's strong regulatory flood mitigation standards, including:

    - Utilization of 1% chance storm for development
    - Closed basin design
    - Lot grading plan
    - Requirement of 18" freeboard over crown of road, if under 7.5' elevation

    Action: The Director of Planning and Zoning will be responsible to identify any proposed ordinance that could weaken the Town's strong standards and coordinate with other Town staff to follow up as needed. This is an ongoing activity.

    Funding: Staff time (operating funds)

20. As part of the Town's National Pollutant Discharge Elimination System (NPDES) program, continue sediment control, drainage systems maintenance including street sweeping, and planting vegetation on bare ground.

    Action: This is current, ongoing policy and the Public Works Department will continue the current approach.

    Funding: Staff time (operating funds)

21. Regularly evaluate the condition of infrastructure such as dune walkovers and the sea wall, currently present within the Coastal High Hazard Area. State funding for this infrastructure is anticipated, as identified in the *Local Mitigation Strategy Prioritized Project List*. Develop an improvement program, if warranted.

    Action: The Town Manager may consider replacement or rehabilitation of the Town's 50-foot portion of the Atlantic Avenue seawall should funding be secured. The Town is currently performing dune walkover maintenance with operational budget funds and grant funding.

    Funding: Need to seek funding sources, possibly State funding.

22. Implement equipment purchase and maintenance.

    Action: Within the next two years, the Director of Public Works will secure a new portable emergency pump. The Director will also continue to properly repair/maintain existing equipment required for storm water emergencies.

    Funding: Town budget allocation

23. Continue to implement strict enforcement of best management practices for reducing erosion during development activity.

    Action: This is the responsibility of the Planning and Zoning Department and Code Enforcement. All permit applicants are held to the highest standards of compliance. In addition, the Public Works Department does and will continue to implement these practices during all Capital Improvement and Town maintenance projects.

    Funding: Staff time (operating funds)

24. Continue to support strong enforcement of South Florida Water Management District regulations pertaining to floodplain management.

    Action: This is the responsibility of Code Enforcement. The Director of Planning and Zoning will ensure that the Town's commitment to enforce SFWMD regulations is upheld. This is an ongoing activity.

    Funding: Staff time (operating funds)

25. Encourage FEMA to update Flood Insurance Rate Maps (FIRMs) to include base flood elevations in all Special Flood Hazard Areas. (Map updating is already in progress.) Incorporate those base flood elevations into building development recommendations as they become available.

    Action: Project Coordinator will review the new draft FIRMs to determine whether or not base flood elevations are included. If not, the appropriate FEMA representatives who are receiving input from the communities will be contacted and recommendation will be made for inclusion of base flood elevation in all Special Flood Hazard Areas. This is an ongoing activity until the maps are finalized by FEMA.

    Funding: Staff Time (operating funds)

26. Continue hosting the annual National Preparedness Month display and event every September in the Town Center lobby in order to provide the public with pertinent flood and emergency preparedness information.

    Action: This is the responsibility of the CRS Coordinator. This is an annual event and the Town will continue its current approach.

    Funding: Staff time (operating funds)

27. Continue to educate residents of the permitting process, particularly where it relates to water management on adjacent properties.

    Action: Through various outreach projects, the Planning and Zoning Department in coordination with the CRS Coordinator will educate residents/homeowners about the permitting process so that they may actively participate in public discussion, and voice any concerns they may have about permit applications, permit issuance and other proposed land use projects. The Planning and Zoning Department uses the Town website to inform residents about all the information available (and the locations for obtaining that information) and encourages them to stay up-to-date on projects that may affect them. This is an ongoing activity.

    Funding: Staff time (operating funds)

28. Maintain swales within the right-of-way.

    Action: The Public Works Department will continue to inspect and maintain all swales within the Town's jurisdiction. This is an ongoing activity.

Funding: Staff Time (operating funds)

29. Integrate response to flooded homes with appropriate response organizations (Red Cross, faith-based organizations, other non-profit entities, etc.).

    Action: This is the responsibility of the Police Department in collaboration with Palm Beach County Emergency Management. This is an ongoing activity.

    Funding: Staff time (operating funds)

30. Continue the Town's ongoing practice of high standard design criteria for approval of permits for development projects for correcting existing deficiencies and meeting future drainage requirements.

    Action: This is current Town policy and will continue as is. This is the responsibility of the Planning and Zoning Department.

    Funding: Staff time (operating funds)

31. Include notification of grants, loans and service availability in all Town media publications, seminars and websites that address flood mitigation.

    Action: CRS Coordinator will be responsible for publishing this information in the two local newsletters and on the Town's website. This will be considered as an outreach project for the CRS verification visit in 2015.

    Funding: Staff time (operating funds)

32. Identify areas that can be used for storage of floodwaters, such as public rights of way, parks, and open spaces, in locations that have flooding problems.

    Action: The Director of Planning and Zoning will notify the Town Manager should any suitable locations be identified. This will be an ongoing activity.

    Funding: Staff time (operating funds)

33. Continue semi-annual inspection and maintenance program of Town-owned stormwater control structures to ensure their proper functioning.

    Action: This inspection is performed by the Public Works Department twice a year and any required maintenance will be performed as needed. Code Enforcement will coordinate with property owners when necessary.

    Funding: Staff time (operating funds)

34. Continue to require that installation of stormwater management facilities made necessary by new development is the responsibility of the developer.

Action: This is current Town policy and is enforced by the Planning and Zoning Department. The Town Council and Town Manager, with the help of the Floodplain Manager, will review all proposed ordinance changes to ensure that this requirement remains intact and complies with all NPDES requirements.

Funding: Staff time (operating funds)

35. Advertise evacuation routes.

Action: Assignment of the evacuation routes is the responsibility of Palm Beach County Emergency Management. All road signs advertising the routes have been removed by the County. However the Town will continue to advertise the evacuation routes as part of its outreach program, under the direction of the CRS Coordinator.

Funding: Staff time (operating funds)

36. Solicit Federal, State and County agencies to continue dune restoration and maintenance programs.

Action: CRS Coordinator will coordinate with Palm Beach County to continue inclusion of Juno Beach in its dune restoration program. Dune restoration to date has been very successful. This is an ongoing activity.

Funding: Funding is provided by other governmental agencies.

37. Initiate a regional public education campaign to educate residents, business owners, policymakers on the merits of preserving open land as an “insurance policy” for adaptation to sea level rise in South Florida.

Action: The Planning and Zoning Department will work in coordination with other regional public educational efforts to implement this within the next two years.

Funding: Staff time (operating funds)

38. Continue to encourage environmentally-beneficial drainage solutions, including the use of pervious concrete and pavement.

Action: This is current Town policy and will continue. This is the ongoing responsibility of the Planning and Zoning Director.

Funding: Staff time (operating funds)

39. Identify areas where water drainage and ground permeation can be improved through soil replacement, as has been done and proven successful along US 1.

Action: The Director of Public Works will identify properties that meet these criteria. The process may require engaging, educating and seeking the support of adjacent property owners. These areas should be identified within the next two years.

Funding: Staff time (operating funds)

40. Encourage flood proofing techniques.

    Action: This is the responsibility of the Planning and Zoning Department. This can be implemented through outreach and education. This is an ongoing activity.

    Funding: Staff time (operating funds)

41. The Town's policy to encourage designation, protection and maintenance of wetlands, mangroves and environmental sensitive lands will remain unchanged.

    Action: This is the responsibility of the Planning and Zoning Department. This is an ongoing policy and the Town will continue its current approach.

    Funding: Staff time (operating funds)

42. Ensure adherence to the Town's "Emergency Management Hurricane Plan," particularly in the event of evacuation orders. Key components of the procedures will be reviewed beginning June 1st of each year.

    Action: This is the responsibility of the Senior Staff. This is an ongoing policy and the Town will continue its current approach.

    Funding: Staff time (operating funds)

43. At the start of each Hurricane Season, Juno Beach Police Department will confirm and update *Hurricane Evacuation Assistance; Juno Beach Residents Evacuation Assistance Forms* submitted by residents, review evacuation procedures, and advertise the availability of evacuation assistance.

    Action: This is the responsibility of the Juno Beach Police Department. The CRS Coordinator can also assist with advertising. This is an ongoing policy and the Town will continue its current approach.

    Funding: Staff time (operating funds)

44. Based on availability and prioritized needs, continue to provide knowledgeable staff to assist citizens before, during and after a flood event to help them understand their repair, rebuilding and mitigation options.

    Action: This is the responsibility of the Planning and Zoning Department. This is an ongoing policy and the Town will continue its current approach.

    Funding: Staff time (operating funds)

45. Ensure optimal staffing of emergency management personnel to receive and respond to emergency events. This practice will continue as in the past, in accordance with Incident Command System (ICS) standards.

    Action: This is the responsibility of the Juno Beach Police Department. This is an ongoing policy and the Town will continue its current approach.

    Funding: Staff time (operating funds)

46. Continue to encourage developers to incorporate historical drainage patterns in the analysis of the required stormwater storage.

    Action: This is current Town policy and the ongoing responsibility of the Planning and Zoning Director.

    Funding: Staff time (operating funds)

47. Ensure that citizens know how to contact FEMA post-flood.

    Action: This is the responsibility of the CRS Coordinator. This is an ongoing policy and the Town will continue its current approach.

    Funding: Staff time (operating funds)

48. Evaluate the *Flood Mitigation Plan*, particularly the Action Plan each year.

    Action: The CRS Coordinator will prepare an evaluation of the Flood Mitigation Plan in July for every annual meeting of the Flood Mitigation Plan Committee. This responsibility will be ongoing.

    Funding: Staff time (operating funds)

49. Update the *Flood Mitigation Plan* every five years.

    Action: The CRS Coordinator will be responsible for ensuring that the Flood Mitigation Plan is updated every five years and coordinate the update with the *Palm Beach County Unified Local Mitigation Strategy's* five-year update committee.

    Funding: Staff time (operating funds)

50. Regularly inspect stormwater control structures to ensure they function as designed.

    Action: The weir on Pelican Lake, a water control structure, will continue to be inspected annually by the Public Works Department.

    Funding: Staff time (operating funds)

51. Maintain an inventory of the Town's drainage structures and review it annually.

    Action: This function is the responsibility of the Public Works Director.

    Funding: Staff time (operating funds)

52. Identify, inform and encourage homeowners' associations to install littoral/upland buffer plantings around lakes.

    Action: An article in the Town's newsletter is recommended to serve this purpose. The Planning and Zoning Department and the Public Works Department can continue to encourage older developments, and require new developments to plant native species surrounding lakes and waterways. These outreach projects will be prepared within one year.

    Funding: Staff time (operating funds)

53. Implement the following project ranked as #47 on the *Palm Beach County Local Mitigation Strategy (LMS)* Prioritized Project List (PPL), (January 2009).

    Action: Purchase 18 vacant, privately-owned lots in New Palm Beach Heights (funding and owners permitting) to restore wetlands ($430,000 unfunded). Consider adding this project to the 2014 LMS PPL. Because this is dependent on funding that is not yet available, its completion cannot be scheduled.

    Funding: Potential funding sources FEMA Grants: (Hazard Mitigation Grant Program and Flood Mitigation Assistance Grant).

54. Identify all critical facilities located in the Town and make contingency plans for each, in the event of flooding. This activity is performed annually as part of the CRS Recertification.

    Action: This is the responsibility of the Town Manager. The Town does not currently operate any facilities within a Special Flood Hazard Area.

    Funding: Staff time (operating funds)

55. Confirm that the town's nursing home continues to have an emergency plan.

    Action: This is the responsibility of the Police Department and is performed annually as part of the CRS Recertification.

    Funding: Staff time (operating funds)

56. Recruit local business owners and leaders of civic organizations to assist with the distribution of flood and disaster outreach projects.

    Action: Because all of the various departments within the Town have contact with different citizens, this should be a joint effort. The proposed development of a Program for Public

Information will assist in making this activity successful. This should be completed within one year.

Funding: Staff time (operating funds)

57. Identify privately-owned and public natural and beneficial areas in the Town and consider expansion of the Town's properties that are designated natural and beneficial areas. Currently 43% are designated as such.

    Action: This is the responsibility of the Planning and Zoning Department. All properties identified as eligible will be presented to the Town Manager. This should be completed in the next two years.

    Funding: Should eligible properties be identified, the Town Project Coordinator would then seek purchase funding sources.

58. Implement the Town's Public Information Outreach Strategy, a copy of which can be found in Appendix Q.

    Action: This is the responsibility of the CRS Coordinator. This is an ongoing effort and the Town will continue its current approach. A progress report is completed annually as part of the CRS Recertification.

    Funding: Staff time (operating funds)

59. Continue to provide education to home buyers regarding flood information.

    Action: This is the responsibility of the CRS Coordinator. This is an ongoing policy and the Town will continue its current approach.

    Funding: Staff time (operating funds)

60. Encourage property owners to use qualified hazard mitigation professionals to inspect building foundations and assess damage after flood events. FEMA, Insurance agents, the State NFIP office and the local building department can provide contact information.

    Action: This is the responsibility of the Planning and Zoning Department. This is an ongoing policy and the Town will continue its current approach.

    Funding: Staff time (operating funds)

Post Disaster Redevelopment

The Town of Juno Beach, like all communities in Florida, is vulnerable to flooding due to hurricanes, tropical storms, storm surge, and rain. The Town of Juno Beach, Palm Beach County, and the State of Florida have prepared post-disaster plans in anticipation of a catastrophic disaster event.

State of Florida Redevelopment Plan Requirement

Chapter 163, Part II, F.S. (Florida Statute), requires that each general purpose local government with jurisdiction over coastal lands include a coastal management element in its comprehensive plan based on studies, surveys, and data. It further requires that the coastal element contain a redevelopment component outlining the principles to be used to eliminate inappropriate and unsafe development in the coastal areas when opportunities arise. Data and analysis for the coastal management element must include natural disaster concerns with several specific post-disaster redevelopment analyses, also requires that the coastal management element include policies on post-disaster redevelopment that accomplish the following:

- Distinguish between immediate repair and clean-up actions needed to protect public health and safety and long-term repair and redevelopment activities;
- Address the removal, relocation, or structural modification of damaged infrastructure as determined appropriate by the local government but consistent with Federal funding provisions and unsafe structures;
- Limit redevelopment in areas of repeated damage; and
- Incorporate the recommendations of interagency hazard mitigation reports, as deemed appropriate by the local government, into the local government's comprehensive plan when it is revised during the evaluation and appraisal process.

The Town of Juno Beach Comprehensive Plan meets the requirements of the Florida Statutes with the following excerpts from the Town of Juno Beach Comprehensive Development Plan:

Town of Juno Beach Comprehensive Development Plan

Coastal Management Element

Policy 1.3 Preserve unique, physical features in future development and redevelopment of the coastal area in Juno Beach.

Policy 3.2: Prohibit alteration to the beach area and dune system in future development and redevelopment that are in violation of the CCCL established by the State or local regulations, unless it provides necessary access to coastal resources, abates serious and significant beach erosion and does not significantly impact dune stabilization or marine and wildlife habitats.

Policy 3.3 Require the rebuilding of the dune by property owners in areas where it has been destroyed at such time as those areas are developed or redeveloped.

Policy 4.2 In the development or redevelopment of the estuarine shoreline, assure that natural conditions are restored or enhanced.

Policy 6.1 New residential developments and redevelopment areas that are not "grandfathered" uses in the "coastal high hazard areas" shall not exceed densities that will adversely impact the coastal environs.

Policy 7.3 Inventory and identify all reimbursable improvements in the "coastal high hazard area" that are potentially eligible for funding under provisions of the Federal Disaster Assistance Plan. The Town should map such reimbursable improvements for identification purposes.

Policy 8.2 During natural disaster emergencies, provide input to the emergency management center with regard to road conditions, accidents, flooding and other concerns.

Policy 8.3 Coordinate with the County in the implementation of the Palm Beach County Peacetime Emergency Management Plan.

Policy 10.1 Level of Service standards shall be met in future development and redevelopment in the coastal area. Future development and redevelopment shall not be permitted in the coastal high-hazard area, unless where such redevelopment is necessary for the continued health, safety and welfare of the public.

Objective 11: The Town shall develop a post-disaster redevelopment plan and incorporate this plan into its Code of Ordinances.

Policy 11.1 The Town shall prohibit development in the coastal high hazard area and identify existing developments and infrastructure that encroach into the coastal high-hazard area.

Policy 11.2 The Town shall identify existing sources of Federal and State funding available for post-disaster redevelopment and provide public information that will assist in determining a facility's potential for redevelopment.

Policy 11.3 The Town shall evaluate the potential post-disaster redevelopment by developing an inventory of threatened infrastructure, setting redevelopment priorities and distinguishing between cleanup actions and immediate repair.

Policy 11.4 The Town shall evaluate and, where appropriate, incorporate the recommendations of inter-agency hazard mitigation reports into the Comprehensive Development Plan.

Policy 11.5 The Town shall continue to evaluate the potential for redevelopment in areas where unsafe conditions or inappropriate land uses exist and incorporate these findings into amendments to the post-disaster redevelopment plan.

Future Land Use Element

Policy 6.1 The Town Manager shall provide up-to-date population estimates and densities of the population in Juno Beach upon request, to Palm Beach County for consideration and inclusion in its Peacetime Emergency Plan.

Palm Beach County Disaster Recovery Plan and Post Disaster Redevelopment Plan

Palm Beach County has developed both a Disaster Recovery Plan and a Post Disaster Redevelopment Plan (PDRP).

The Palm Beach County Disaster Recovery Plan (Plan) provides an operational overview and organizational framework which will be implemented during the four phases of the disaster recovery process. This Disaster Recovery Plan details a coordinated system for recovery operations; identifies the operational concepts; and provides an overview of organizational structures.

The Plan addresses policies that promote an expedited, all-hazards disaster recovery process among all stakeholders, including public-sector agencies and organizations; nonprofit and faith-based organizations; municipal jurisdiction and independent districts, including water control districts; fire districts; and school districts. Comprehensive community recovery must address recovery in four areas including the residential sector, the economic sector, public services and facilities, and quality-of-life components. This Plan also details the processes and systems to employ State, Federal, and private-sector disaster assistance.

Palm Beach County was one of the first jurisdictions in Florida to draft a Post Disaster Redevelopment Plan (PDRP) in 1996. Palm Beach County has received national attention as a leader in this effort. The 2013 Countywide Post Disaster Redevelopment Plan is the product of extensive research of best planning practices, lessons learned from recent catastrophic disaster events, and information gathered from participative public workshops. Of the county plans, Palm Beach is the one of the few in Florida with a process for including the incorporated areas of the county into the plan.

Palm Beach County's Post Disaster Redevelopment Plan (PDRP) is a guidance document that identifies and lays out policies, operational strategies, and roles and responsibilities to help guide the decisions and actions of community leaders relative to long-term recovery and redevelopment following a major or catastrophic disaster. It serves as a blue print for rebuilding the physical, social, and economic fabrics of our community. The PDRP also encourages capitalizing on the unique window of opportunity for hazard mitigation and community improvement provided by the post disaster environment, for strengthening communities and working toward disaster resilience. With a strong plan in place, Palm Beach County can take advantage of those opportunities and more quickly recover from a disaster should it experience one.

The PDRP is action-oriented and outlines a countywide implementation approach. Through an Executive Committee representing county, municipal, non-profit, private stakeholders and a flexible Working Group structure, actions outlined in the plan can be implemented as needed regardless of jurisdictional boundaries and possible staffing fluctuations in a post-disaster environment. Pre-disaster actions and annual maintenance of the plan allow the PDRP Executive Committee and Working Groups to actively prepare for a possible disaster. Expanded municipal and public involvements are ongoing objectives of the PDRP Executive Committee. City Managers and League of Cities forums will be important platforms for increased future municipal engagement.

Post-disaster actions create a strategy for dealing with minor, major, or catastrophic disasters and are activated by the county's Executive Policy Group in concert with the PDRP Executive Committee and Recovery Branch Chief. The format of the plan allows new actions to be easily included and new participants to become involved immediately through the Working Groups. The success of the plan relies on the ease of implementation in the aftermath of a disaster and on the participants' commitment to continually strengthen it by performing "blue skies" preparations.

Key recovery and redevelopment topics emphasized in the PDRP include, but are not limited to:

- Business resumption and economic redevelopment
- Housing repair and reconstruction
- Infrastructure restoration and mitigation
- Governance and financial management
- Sustainable land use
- Environmental preservation and restoration, and
- Short-term recovery actions that affect long-term redevelopment

The 38 municipalities of Palm Beach County, including Juno Beach will be encouraged to adopt the Plan.

Action Item ID #LG-21 of the PDRP reads: "Budget outlays for new designs and reconstruction: Considering the high cost and necessary function infrastructure systems provide, special budget outlays should be established as a contingency fund for post-disaster reconstruction……" The Town of Juno Beach's policy regarding reserve funds has remained stable over the years. Reserve funds are intended to smooth out economic downturns, deal with unexpected situations, and purchase major capital items without incurring debt. However, the most important reason for adequate reserves is for catastrophes, such as a major storm. A major storm could substantially reduce the town's tax base for up to several years, Also, during this "rebuilding period" property tax revenues could drastically decrease during a period when more services will be demanded.

Due to the small size of the Town's budget, the high percentage of the budgeted revenues derived from property taxes, about 50% (excluding grants and non-cash revenues) and the fact that the Town is located on a barrier island, Town Council and staff continue to recommend keeping a goal for funding the reserve account to 50% of operating budget. This entails keeping with the current philosophy of managing the town's fiscal activities as efficiently as possible and funding the reserve with any unusual, non-repeating revenue source, such as the sale of town property.

Recent developments concerning Reserve Funding include:

- In recent years, communities have experience cash flow issues with debris cleanup and property repair costs from the 2004 and 2005 hurricane seasons, these issues led to financing concerns and costs.
- Additionally, due to past hurricanes it has become much more difficult to secure debt for many municipal projects, especially for coastal communities.
- The recent credit crisis has affected rating agencies and debt reinsurance companies.
- In addition to these issues, the credit crisis and past hurricanes have led to increased rate costs for municipal debt instruments, especially for coastal communities.

The 38 municipalities of Palm Beach County, including Juno Beach will be encouraged to adopt the Plan.

Town of Juno Beach Emergency Management Hurricane Plan

I. POLICY STATEMENT: It shall be the policy of the Town of Juno Beach to implement plans of action before, during and after a hurricane to help minimize personal injury or property damage. This will be the overall general plan of action for the Town; however, each department may have a more detailed operational plan if required or if needed.

II. BACKGROUND: Contingency plans are guides used to implement coverage for unusual circumstances that may never happen or that may occur tomorrow. Such plans must be flexible in order to meet those particular demands that may arise. We must adhere, as closely as possible, to any plan that is worthwhile; in order to avoid the sin of omission that could occur in that hectic period of time, when a major catastrophe is impending or has just taken place. This plan of action indicates what we have considered as alternatives, before we act in a deviate manner.

IX. POST STORM:

A. Protection of life will be the first consideration.

B Post storm activities will be largely dependent upon the extent of the intensity of the storm itself, and the effects on the Town.

C. Only essential personnel will be allowed in areas of damage.

D. Planning and Zoning personnel will be responsible for damage assessment throughout the Town as well as all Town facilities. Once the damage assessment is completed it will be turned into the Town's Emergency Operation Center.

E. It will be determined after the storm if checkpoints are needed to facilitate residents. If needed, post storm activities may require additional personnel, that request can be accessed under mutual aid through the Palm Beach County Emergency Operations Center.

F. Due to the fact that a declaration of emergency is in existence, personnel may be assigned to duties that are not normally a part of their job description.

G. Due to the extent of damage and unknown communication issues, the Town will use cell phones, e-mail, website, satellite phones, media, information line or other communication sources at hand to communicate and inform residents and the Town staff of updates as needed. If possible, informational flyers will be made available at news stand locations including the Town Center and Universe/Ellison Wilson.

H. Town personnel who are not ordered for duty prior to the storm making landfall shall be prepared. Prior to a storm they shall make sure to protect, secure and have supplies for their homes and families. They shall check in with their supervisor for a designated senior staff member if unable to reach their supervisor); call or text supervisor (or designee) to let them know they are safe. They will be told when they're needed at work. They are to show up to work the day following the storm unless instructed otherwise by their supervisor (i.e., should a storm hit on a Friday, plan to come to work

Saturday morning unless instructed otherwise.) If they are unable to contact a supervisor (or designee) come to work the day following the storm. They shall work out a return to work plan. Prior to the storm their supervisor will inform them of their duties for post storm recovery

I. Public Works will be responsible for overseeing all debris collection and removal as outlined in the Debris Management Plan.

J. The Finance Department will be responsible to submit all documentation for reimbursement from the State or Federal Government.

K. The Town will resume normal operations as quickly as possible.

X. After Action Reports: An after action report is a chronological sequence of events that occur during any catastrophic incident. All departments are required to complete an after action report. This report will be forwarded to the Town Manager via the Chief of Police. An after action report is a must, to avoid unnecessary liability, and to properly analyze the situation for any improvement in future catastrophes. Reports should include the following:

A. Occurrence
B. Deployment of Personnel
C. Use of Equipment
D. Failure of Equipment
E. Damages – Internal/External
F. Injuries
G. Arrests
H. Special Tactics

Implement, Evaluate and Revise

Once implemented, this Flood Mitigation Plan should never be considered final, perfect or unchangeable, but rather every effort should be made to keep it up-to-date and ensure that it can be executed efficiently.

The flood mitigation planning process must be dynamic and able to accommodate changes and encourage improvement. In order to keep the plan current and relevant, it is important that it be monitored, reviewed and revised regularly. There are a number of things that may merit an update or revision, such as unforeseen weather events that cause damage and drainage issues where previously there were none, changes made to Flood Insurance Rate Maps, or new concerns raised by residents. There may be adjustments made to the goals and objectives of the plan or a reprioritization of action items. In an effort to ensure that the planning process is responsive, and the Flood Mitigation Plan Committee remains actively engaged in the practical implementation of the plan, the following steps are included in the *Town of Juno Beach Flood Mitigation Plan* for monitoring, evaluating and revising the document. The key to this step is the annual evaluation report on progress in implementing the plan. The process of conducting an annual evaluation gives the Town a framework for monitoring the plan's effectiveness and the community's progress in implementing it. The Town Project Coordinator will monitor the progress of mitigation projects and actions based on inputs and periodic requests (at least once per year) from key staff and Town department directors. All departments will be surveyed periodically for information relating to:

- hazard occurrences
- new mitigation initiatives
- changes in resources and assets
- any involvement with flood mitigation

Annual Evaluation

The Town's efforts to evaluate the effectiveness and appropriateness of the flood mitigation plan will center around an annual evaluation report. The report will gauge the progress the Town has made toward implementing the flood mitigation plan and provide the Committee an opportunity to identify any action items that have not been (or cannot be) accomplished as defined in the plan. This annual evaluation will require the Committee to conduct research, collect information, solicit feedback and schedule at least one meeting. In order to accomplish this, the original Committee, or a subsequent Committee of similar membership, will meet at least annually. Such meetings are a means by which the Committee members and the Public are given a chance to introduce new ideas, strengthen efforts in areas deemed currently effective and address shortfalls. The diverse make-up of the Committee, being composed of both staff members and stakeholders, allows for a well-rounded review of the Plan and a broad knowledge of community needs. Additionally, a specific effort will be made to directly engage the public. All Committee meetings will be publicly noticed through the Town's website and other outlets, encouraging the participation of the whole community. The annual Committee meeting will take place in early July. The documentation of this meeting, including advertisements inviting the public to each meeting, minutes, and sign-in sheets will be collected by the Committee Chair for submission to the CRS program. The FMP Committee Chair is tasked with supervising and evaluating the implementation process throughout the year and conducting meetings with more frequency if necessary.

Prior to the July meeting, the Committee Chair is responsible for preparing a draft *FMP Evaluation Report* (progress report) that will be presented at the July meeting. The Committee will review and discuss the report, after which it may be revised before the Committee adopts it.

The report shall include:

- A description of how the evaluation report was prepared and how it will be submitted to the Council, released to the media, and made available to the public.
    - The Committee meeting notices and evaluation report can be made available to the public by a notice on the Town website's homepage, through the Town newsletters, bulletin boards in HOA offices, etc.
- A discussion of why any objectives were not reached or why implementation is behind schedule.
- A review of each action item in the action plan, including a statement on how much was accomplished during the previous year, or why implementation is behind schedule.
- Recommendations for new projects or revised action items. Such recommendations shall be subject to approval by the Town Council as amendments to the adopted plan.

Following approval of the annual FMP Evaluation Report by the Committee, it will be submitted to the Town Council, released to the media, and made available to the public for comment. The CRS Coordinator must submit a copy of the annual evaluation report with the Town's CRS recertification by October 1st of each year.

The Town Project Coordinator will assure that the Flood Mitigation Plan Committee continues to be comprised of high-level staff that will likely be responsible for implementing the plan, and at a minimum, an equal number of members of the public as stakeholders. This was the makeup of the FMP Committee that developed the original *Town of Juno Beach Flood Mitigation Plan* in 2014.

Five-Year Update

An update to the FMP must be prepared every five years. The first update will be prepared five years after adoption of the original FMP.

As with the annual evaluations, the Committee chairperson will be responsible to conduct the five-year update. The process for the update will commence no less than 6 months prior to the five-year anniversary date. The Committee chairperson will have the descriptive elements of the plan updated in accordance with current information, studies, etc. The Committee will meet no less than three times. The first meeting will entail a review of the updated flood mitigation plan. The second meeting will examine the Action Plan, evaluating those activities that have been successfully completed and discussing the reasons why any activities may not have been completed. This meeting will also begin the process of identifying new or revised Action Plan activities. The third meeting will complete the identification of new or revised activities for the Action Plan and prioritize all of the activities. Following the preliminary adoption by the Committee, the plan will be presented to the community for its input and sent by email to stakeholders and appropriate agencies both within the community and outside the community.

The 5-year update must include the following steps:

- ❑ Because the original planning process included a Committee for which points were received in the CRS program, then in order to keep those CRS credit points the update must be conducted by a Committee of equivalent make-up.

- ❑ Because the original planning process received CRS credit points for a final community meeting to comment on the draft Action Plan, then in order to keep those points there must be a public meeting to comment on the draft Update.
  - The public meeting must be advertised in the local newspaper article or advertisement.

- ❑ The Update must include a review of new studies, reports and technical information and of the community's needs, goals and plans for the Town that have been published since the plan was originally prepared.

- ❑ The hazard and problem assessments must be reviewed and brought up to date. The assessments must account for:

  - New floodplain or hazard mapping
  - Annexation of floodprone areas
  - Additional repetitive loss properties
  - Increased development in the floodplain or watershed
  - New flood control projects
  - Lack of maintenance of flood control projects
  - Major floods or other disasters that occurred since the plan was adopted
  - Any other change in flooding conditions and/or development exposed to flooding

- ❑ The original plan's goals must be reviewed to determine if they are still appropriate.

- ❑ The Action Plan must be revised to account for projects that have been completed, dropped, or changed and for changes in the hazard and problem assessments as appropriate.

- ❑ The Update must be adopted by the Town Council.

- ❑ The updated Flood Mitigation Plan must be submitted to the State Hazard Mitigation Officer for initial review and coordination every five years. The State will then send the plan to the Region IV FEMA office for formal review and approval.

- ❑ The updated Flood Mitigation Plan must be submitted to the ISO/CRS Specialist with the Town's CRS recertification package every five years by October 1st. The five-year plan update will be scored by the Community Rating System according to the Coordinator's Manual currently in effect at that time, not the version used when the original plan was scored.

Integration into Other Plans and Documents

The Town of Juno Beach Projects Coordinator will ensure that the Flood Mitigation Plan Committee Chair and CRS Coordinator interface with appropriate governmental and nongovernmental agencies and offices to ensure that the flood mitigation goals, objectives, and priorities are consistent with and cross-referenced with those articulated in other existing plans, such as the *Palm Beach County Comprehensive Emergency Management Plan*, and the *Palm Beach County Unified Local Mitigation Strategy*. The make-up of the original Flood Mitigation Committee included the Town of Juno Beach Projects Coordinator (chairperson), the Town Manager, and the Public Works Director, the Director of Planning and Zoning, several realtors / property managers as well as two representatives of the local HOAs**.**

Through the Committee meetings and other communications with Committee members, the Committee Chairperson will seek opportunities to communicate the importance of:

- updating plans, policies, regulations and other directives to include flood hazard mitigation priorities
- encouraging the adoption of mitigation priorities within capital and operational budgets and grant applications
- sharing information on grant funding opportunities
- offering guidance for carrying out mitigation actions
- exploring opportunities for collaborative mitigation projects and initiatives among Town departments.

Appendix A

Questionnaire

Public Hazard Mitigation Questionnaire

The Town of Juno Beach is developing the town's first ever stand-alone flood mitigation plan. The plan is intended to assess natural hazard risks to our community and identify ways to minimize and manage those risks. In order to identify and plan for future natural disasters, we need assistance from the residents of Juno Beach. This questionnaire provides an opportunity for you to share your opinions and participate in the mitigation planning process. The information you provide will help us better understand your hazard concerns and can lead to mitigation activities that reduce the risk of injury or property damage in the future.

This survey consists of 19 questions and will take approximately 10 minutes to complete.

1. How long have you lived in or owned a business in Juno Beach?

___ Less than 1 year
___ 1 to 5 years
___ 6 to 9 years
___ 10 to 19 years
___ 20 years or more

2. Are you responding on behalf of a residential or commercial property?

___ Residential
___ Commercial

3. Do you own or rent your place of residence/business?

___ Own
___ Rent

4. What is the address of your residence/business? (OPTIONAL)

Street Address (OPTIONAL) _____

ZIP Code (REQUIRED) _____

If you would like to be contacted regarding the county's mitigation efforts, please provide your name and telephone number (OPTIONAL):

_____ _____-_____
Name Phone

FLOOD HAZARD INFORMATION

5. To the best of your knowledge, is your property located in a designated floodplain?

___ Yes
___ No

6. Do you have flood insurance?

___ Yes
___ No

7. Do you or have you had problems getting homeowners or flood insurance due to the cost of insurance, location of your property, age of your home, or any other reason?

___ Yes
___ No

8. Are you aware of any areas on your property or in your neighborhood that have experienced flooding? Description such as date of flood, area of flooding (yard, building), depth of flooding (1 foot, 2 feet, etc) would be helpful.

_____
_____
_____
_____

9. Please describe any past flooding damage to your property (please include damage estimate if known).

_____
_____
_____
_____

10. Is your property about the same, less or more prone to flooding now than it was 5 years ago?

___ More
___ Less
_____ About the Same
_____ Don't Know

What do you feel are the possible reasons for any change?

_____
_____
_____
_____

NATURAL HAZARD INFORMATION

11. In the past 10 years, which of the following types of natural hazard events have you or someone in your household experienced within Juno Beach and how concerned are you about the following natural hazards impacting Juno Beach? **(Please place check mark or X in all that apply)**

Natural Hazard	Have Experienced		Not Concerned	Somewhat Concerned	Very Concerned	Extremely Concerned
	YES	NO				
EXAMPLE - HURRICANE	√			√		
Drought						
Erosion – Stream Bed/Coastal						
Flooding – Property						
Flooding – Basement						
Flooding – First Floor						
Flooding – Street						
Hurricane/Tropical Storm						
Severe Storms (wind, lightening, hail)						
Severe Winter Storm						
Tornado						
Excessive Temperatures						
Groundwater Contamination						
Expansive Soils (due to ground swelling)						
Landslide						
Groundwater seepage						
Sink Holes						
Wildfires						
Other _____						

12. Please rank how prepared you feel your household is for impacts of natural hazard events likely to occur in Juno Beach.

_____ Not prepared
_____ Slightly prepared
_____ Somewhat prepared
_____ Significantly prepared
_____ Most Prepared

13. Why do you feel prepared? **(Please check all that apply)**

_____ Emergency preparedness information from a government source (e.g., federal, state, or local emergency management)
_____ Locally provided news or other media information
_____ Schools and other academic institutions
_____ Attended meetings that have dealt with disaster preparedness
_____ Past experiences with natural hazards
_____ Other _____(please specify)

14. Have you taken any actions to make your home, business or neighborhood more resistant to natural hazards?

_____ Yes
_____ No

15. Are you interested in making your home, business or neighborhood more resistant to natural hazards?

_____ Yes
_____ No

16. Information on the impacts or how to prepare for a natural disaster can be disseminated to the public in various ways. Of the methods described below please identify the top ways which would be MOST EFFECTIVE in helping you make your home safer and better able to withstand the impact of natural hazard events. **(Place a check mark or X beside all that apply).**

Printed Media	**Public Forums**	**Television**	**Radio**
_____ Newspaper	_____ Public Meetings	_____ TV News	_____Radio News
_____ Telephone Book	_____ Workshops	_____ TV Advertisements	_____Radio Advertisments
_____ Information Brochures	_____ Schools		

Technology

_____ Email Notification
_____ Social Networking (i.e., Facebook, Twitter)

Other Methods

_____ Outdoor Advertisements	_____Fire Department/EMS Agency	_____Church
_____ Internet	_____ Academic Institutions	_____ Public Library
_____ Books	_____ Chamber of Commerce	

_____ Public Awareness Timeframe (i.e. Flood Awareness Week, Hurricane Expo)
_____ Other (please specify) _____

17. In your opinion, what are some steps your local government could take to reduce or eliminate the risk of future hazard damages in your neighborhood?

_____
_____
_____
_____

18. Are there any other issues regarding the reduction of risk and loss associated with hazards or disasters in the community that you think are important?

_____
_____
_____
_____

NATURAL HAZARD MITIGATION

The term mitigation means to make something become less harsh or severe, to alleviate. Mitigation activities are those types of actions you can take to protect your home and property from natural hazard events such as floods, severe storms and excessive temperatures. The flood mitigation plan will include mitigation strategies that will aid our community in protecting life and property from the impacts of future natural disasters.

19. If your property were located in a designated "high hazard" area, or had received repeated damages from a natural hazard event, would you consider a "buyout", elevation of the structure, or relocation, if offered by a public agency?

_____ Yes
_____ No

Other Comments:

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Thank you for filling out this questionnaire. The information you provided will be used for mitigation planning purposes and will be kept confidential. If you have any questions regarding this questionnaire or about the city's mitigation efforts, please contact Andrea Dobbins, Town of Juno Beach Project Coordinator at (561)656-0326 or by email, adobbins@juno-beach.fl.us

Appendix B

Plans, Studies, & Reports

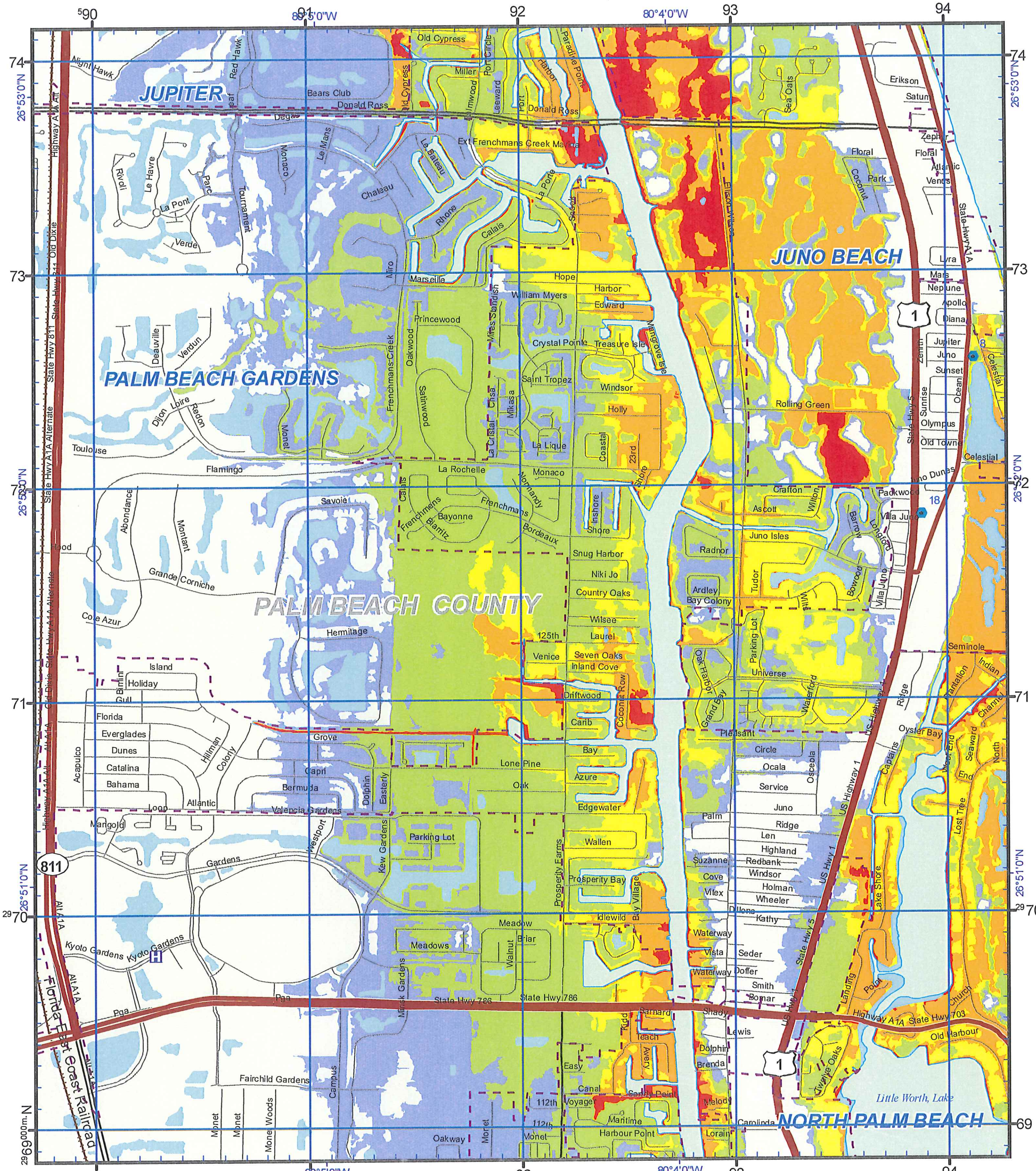
Plans and Studies Reviewed in the Planning Process

- Town of Juno Beach Comprehensive Plan effective March 29,1997
  - Available at the Juno Beach Planning and Zoning Department
- Town of Juno Beach Stormwater Management Plan July 2009
  - Available at the Juno Beach Planning and Zoning Department
- Juno Beach Comprehensive Annual Financial Report 2013
  - http://www.juno-beach.fl.us/vertical/sites/%7B88BB90E0-AD94-4F43-B7CD-B77B19081932%7D/uploads/Town_of_Juno_-_CAFR_2013.pdf
- Flood Insurance Study Wave Height Analysis, Town of Juno Beach, Florida, March 31, 1982
  - Available from the FEMA Map Servicing Center
- Management Plan for Juno Dunes Natural Area November 2011
  - http://www.co.palm-beach.fl.us/erm/natural/natural-areas/pdf/juno-dunesmgmtplan.pdf
- Palm Beach County Unified Local Mitigation Strategy 2009
  - http://www.pbcgov.com/dem/publications/pdf/2009LMSPlan.pdf
- Countywide Post Disaster Redevelopment Plan Palm Beach County, Florida August 2006
  - http://www.pbcgov.com/dem/publications/pdf/pdrp_AUG_06.pdf
- Palm Beach County Comprehensive Emergency Management Plan
  - http://www.pbcgov.com/dem/publications/pdf/CEMP_2011.pdf
- Palm Beach County Department of Public Safety Division of Emergency Management Recovery Plan 2011
  - http://www.pbcgov.com/dem/publications/pdf/Recovery_Plan_2011.pdf
- Palm Beach County Hurricane Survival Guide
  - http://www.pbcgov.com/dem/hurricane/pdf/hurricane_guide.pdf
- Flood Insurance Study, Palm Beach County, Florida, August 1978
  - Available from the FEMA Map Servicing Center
- Flood Insurance Study Wave Height Analysis, Palm Beach County, Florida, April 15, 1982
  - Available from the FEMA Map Servicing Center
- State of Florida Division of Emergency Management Hurricane Ono Consequences, Version 7
  - http://www.floridadisaster.org/CatastrophicPlanning/documents/Consequence_Projections_Full.pdf
- State of Florida Division of Emergency Management 2008-2013 Strategic Plan
  - http://www.floridadisaster.org/documents/FDEM%202008-2013%20Strategic%20Plan.pdf
- Integrating Hazard Mitigation into Comprehensive Planning, Palm Beach County Profile
  - http://www.floridajobs.org/fdcp/dcp/hazardmitigation/MapsProfiles/PalmBeach/PalmBeachCountyPro
- Extended Range Forecast of Atlantic Seasonal Hurricane Activity and Landfall Strike Probability For 2014
  - http://.ahurricanetmos.colostate.edu/Forecasts/
- NOAA Storm Event Database
  - http://www.ncdc.noaa.gov/stormevents/

- Florida Building Code Cost and Loss Reduction Benefit Comparison Study
  - http://www.floridabuilding.org/fbc/bcis/demo_report/0876%20Main%20report.pdf
- Juno Beach Development Redevelopment Opportunities Report March 2013
  - http://www.juno-beach.fl.us/vertical/sites/%7B88BB90E0-AD94-4F43-B7CD-B77B19081932%7D/uploads/Development_Redevelopmet_Opportunities_Report_Presentation_Backup_Material-.pdf
- Impact of Hurricanes on Housing and Economic Activity: A Case Study for Florida 2006 produced by the NATIONAL ASSOCIATION OF REALTORS
  - http://www.realtor.org/sites/default/files/hurricanes-impact-on-housing-and-economic-activity-case-study-florida-2006-04.pdf
- Division of Emergency Management State of Florida Enhanced Hazard Mitigation Plan
  - http://www.floridadisaster.org/mitigation/State/documents/2010stateplan/Section%201.0%20and%20
- Treasure Coast Transportation Analysis Hurricane Evacuation Study Update
  - http://www.tcrpc.org/publications/tcrpc_reports/hurricane_study.pdf
- Florida Statewide Regional Evacuation Study Program
  - http://www.tcrpc.org/publications/tcrpc_reports/hurricane_study.pdf
- Sea Level Rise in the Treasure Coast Region, Treasure Coast Regional Planning Council, December 2005
  - http://www.tcrpc.org/publications/tcrpc_reports/hurricane_study.pdf
- Profile of General Demographic Characteristics – Treasure Coast Regional Planning Council website
  - http://tcrpc.org/council_meetings/2011/JUNE11/12%20Regional%20Demographic%20Profile.pdf
- A Region Responds to a Changing Climate, Regional Climate Action Plan, October 2012
  - http://southeastfloridaclimatecompact.org/pdf/Regional%20Climate%20Action%20Plan%20FINAL
    - 2013 South Florida Environmental Report prepared by SFWMD
      - http://my.sfwmd.gov/SFER/

Appendix C

Storm Tide Maps



US National Grid

100,000-m Square ID

NK

Grid Zone Designation

17R

Datum = NAD 1983, 1,000-m USNG

Page Index by Delta State University 2009

GN

Diagram Not to Scale

This map is for reference and planning purposes only. Hurricane evacuation decision-making and growth management implementation are local responsibilities. Please consult with local authorities.

Notes:

1. Surge limits are based on still water storm tide height elevation above NAVD88 at high tide with no wave setup.
2. Total Storm Tide limits were derived from Maximum of Maximums surge heights over LIDAR based digital elevation.
3. The Points of Reference are locations determined to be relevant to emergency management officials.

Legend

- Hospital
- Points of Reference
- Evacuation Route
- City Limits
- Lakes
- Major Water

Cat
1
2
3
4
5

Storm Tide Zones

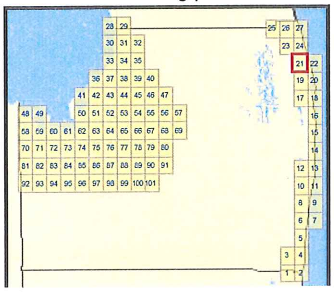
Palm Beach County, 2009

Scale - 1:24,000

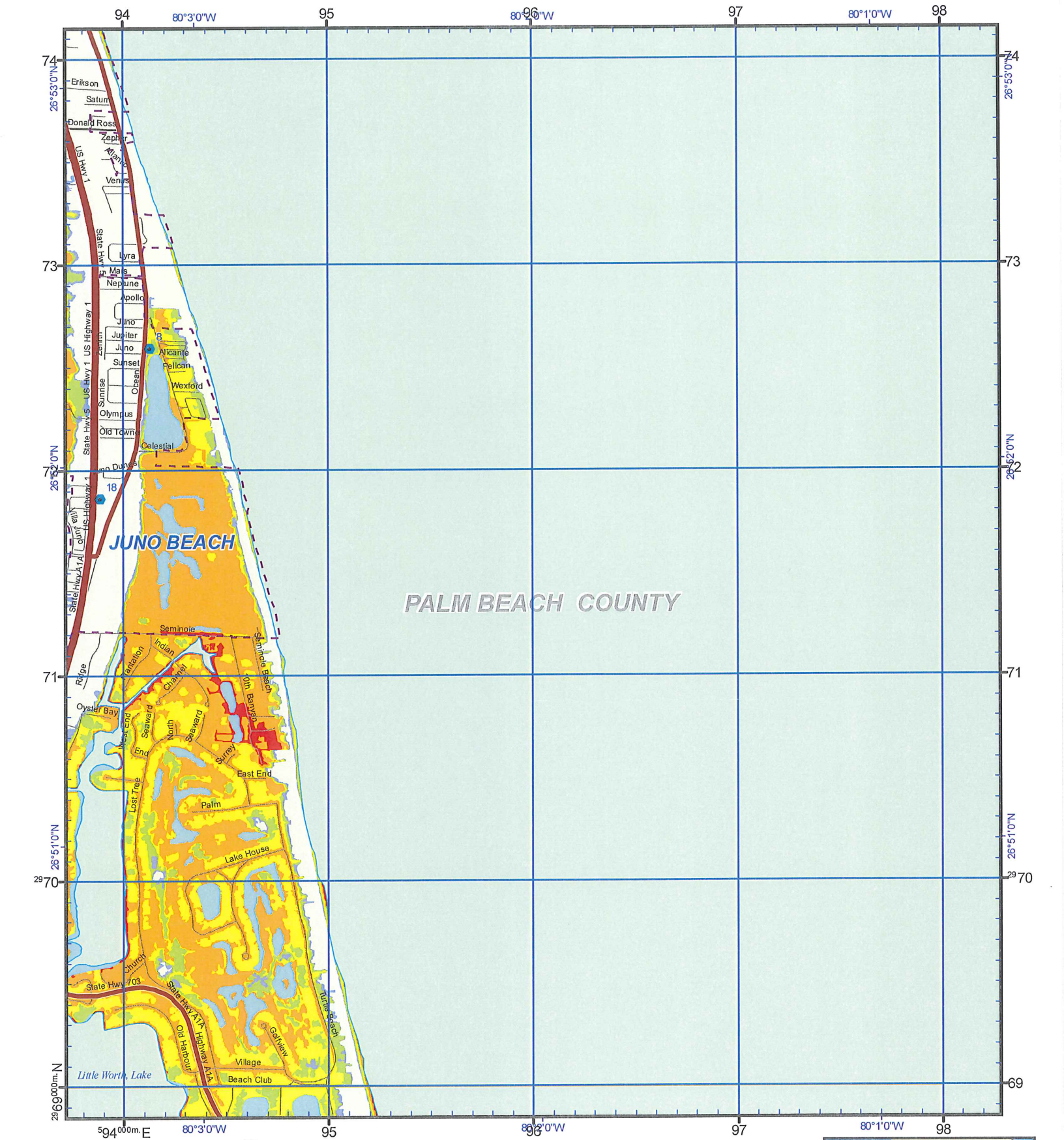
0 — 2,000 Feet

USNG Page **17R NK 9370**

Map Plate **21**



Produced by Treasure Coast Regional Planning Council for Florida Division of Emergency Management, 2009-2010



US National Grid
100,000-m Square ID
NK

Grid Zone Designation
17R

Datum = NAD 1983, 1,000-m USNG
Page Index by Delta State University 2009

GN

Diagram Not to Scale

Notes:
1. Surge limits are based on still water storm tide height elevation above NAVD88 at high tide with no wave setup.
2. Total Storm Tide limits were derived from Maximum of Maximums surge heights over LIDAR based digital elevation.
3. The Points of Reference are locations determined to be relevant to emergency management officials.

Legend

- Hospital
- Points of Reference
- Evacuation Route
- City Limits
- Lakes
- Major Water

Cat: 1, 2, 3, 4, 5

Storm Tide Zones

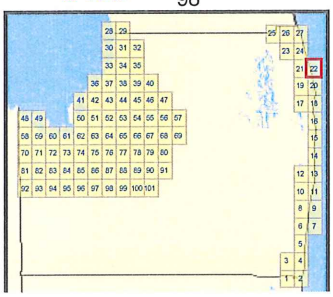
Palm Beach County, 2009

Scale - 1:24,000

0 — Feet — 2,000

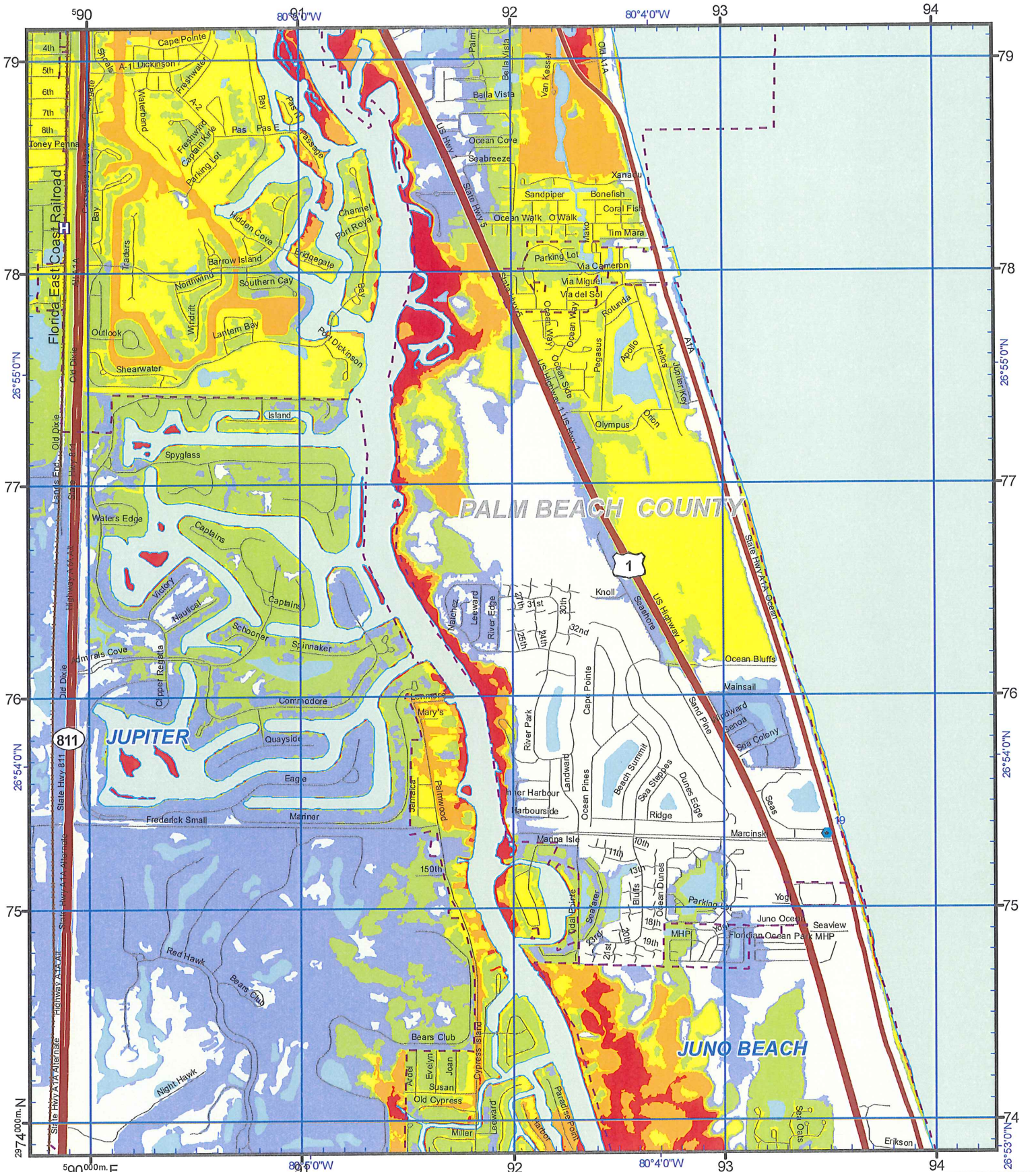
USNG Page **17R NK 9773**

Map Plate **22**



This map is for reference and planning purposes only. Hurricane evacuation decision-making and growth management implementation are local responsibilities. Please consult with local authorities.

Produced by Treasure Coast Regional Planning Council for Florida Division of Emergency Management, 2009-2010



US National Grid	
100,000-m Square ID	**NK**
Grid Zone Designation	**17R**

Datum = NAD 1983, 1,000-m USNG
Page Index by Delta State University 2009

GN

Diagram Not to Scale

Notes:
1. Surge limits are based on still water storm tide height elevation above NAVD88 at high tide with no wave setup.
2. Total Storm Tide limits were derived from Maximum of Maximums surge heights over LIDAR based digital elevation.
3. The Points of Reference are locations determined to be relevant to emergency management officials.

Legend

- Hospital
- Points of Reference
- Evacuation Route
- City Limits
- Lakes
- Major Water

Cat
1
2
3
4
5

Storm Tide Zones

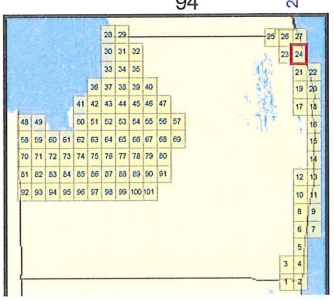
Palm Beach County, 2009

Scale - 1:24,000

0 — Feet — 2,000

USNG Page **17R NK 9377**

Map Plate **24**



This map is for reference and planning purposes only. Hurricane evacuation decision-making and growth management implementation are local responsibilities. Please consult with local authorities.

Produced by Treasure Coast Regional Planning Council for Florida Division of Emergency Management, 2009-2010

Appendix D

SFWMD Facilities Map & Juno Beach Drainage System Maps

ID NUMBER	PIPE SIZE IN	PIPE SIZE OUT	TYPE	LENGTH	LOCATION
CENTRAL TOWN					
J801C	15"	15"S	RCP		500 OCEAN DR.
J802C	15"N	15"W	RCP	199 FT.	450 OCEAN DR.
J803C	15"E	15"S	RCP	35 FT.	340 OCEAN DR.
J804C	15"W	15"S	RCP	302 FT.	340 OCEAN DR.
J805C	15"W/E	24"W	CAP	262 FT.	340 OCEAN DR.
J806C	24"W/S	24"W	CAP	40 FT.	320 CELESTIAL
J805-1N	24"E	24"W	CAP	40 FT.	340 OCEAN DR.
J808C	24"W/S	24"W	CAP		300 CELESTIAL
J807C	24"S	24"W	CAP	135 FT.	320 CELESTIAL
J808C	24"S	24"W	CAP	10 FT.	300 CELESTIAL
J809C		15"S	RCP	95 FT.	300 CELESTIAL
J810C		15"S	RCP	95 FT.	300 CELESTIAL
J811C		12"W	PVC	79 FT.	BEACH DR.
J812C		15"W	RCP	100 FT.	NEIGHBORS
J813C		18"W	CAP	300 FT.	CUTE DE LAMER
J814C		15"W	PVC	110 FT.	CUTE DE LAMER
J815C		15"W	CAP	100 FT.	BARCLAY
J816C		15"W	CAP	100 FT.	BESSEMER
J817C		15"W	CAP	24 FT.	BESSEMER
J818C		15"E	CAP	10 FT.	SEA SIDE
J819C		15"E	POLY	100 FT.	NEPTUNE WAY
J820C		18"S	RCP	100 FT.	340 OCEAN DR.
J837C	18"N	18"W	CAP	40 FT.	340 OCEAN DR.
J838C	18"E	18"S	RCP	150 FT.	340 OCEAN DR.
J839C		15"W	CAP	97 FT.	340 OCEAN DR.
J840C	15"E	15"W	CAP	40 FT.	340 OCEAN DR.
J841C	18"W/S15"E	24"E	CAP	110 FT.	340 OCEAN DR.
J842C&S	24"N	24"E	CAP	100 FT.	340 OCEAN DR.
SOUTH TOWN					
J822C		18"W	CAP		GOLD COAST
J821N	18"S	18"W	CAP	81 FT.	FP&L
J823N	18"E	18"W	CAP	146 FT.	FP&L
J823C	18"E/S	18"W	CAP	66 FT.	FP&L
J827C	18"E/S	18"W	CAP	240 FT.	FP&L
J823C	18"E/S	18"W	CAP		FP&L
J824C		18"N	CAP	80 FT.	WATERFORD
J825C		18"N	CAP		WATERFORD
J826C	18"E	18"N	CAP	62 FT.	WATERFORD
J827C	18"E/S	18"W	CAP	81 FT.	FP&L
J827-1N	18"E	18"W	CAP	200 FT.	FP&L
J828C	18"E/S	18"W	CAP	200 FT.	FP&L
J828C		18"N	CAP		UNO LAGO
J829C	18"E/S	18"W	CAP	70 FT.	FP&L
J830N	18"E	18"W	CAP	196 FT.	FP&L
J831C	18"E/S	18"W	CAP	342 FT.	FP&L

ID NUMBER	PIPE SIZE IN	PIPE SIZE OUT	TYPE	LENGTH	LOCATION
SOUTH TOWN					
J832C	18"S	18"N	CAP	78 FT.	UNO LAGO
J831C	18"E/S	18"W	CAP		UNO LAGO
J834C	18"E/S	36"W	CAP	180 FT.	FP&L
J833C		18"N	CAP		UNO LAGO
J836C	18"E/S	36"W	CAP	80 FT.	UNO LAGO
J838M	36"E	36"N	CAP	80 FT.	ELL WILL RD.
J838M	36"E/S	36"E/S	RCP	334 FT.	ELL WILL RD.
J837M	60"E	60"S	CAP	100 FT.	SEACOAST L/S
J838M	60"W	60"W	CAP	20 FT.	SEACOAST L/S
J839M	60"E	60"W	CAP	456 FT.	BAY COLONY
J840M	60"E	60"W	CAP	340 FT.	BAY COLONY
J841CS	60"W			172 FT.	INTRACOASTAL
NEW PALM BEACH HEIGHTS					
J842C		18"N	RCP		PARK STREET
J843C	18"S	18"N	RCP	35 FT.	PARK STREET
J843C		18"W	CAP	Distance to end not known	
J844C		15"N	RCP		PARK STREET
J845C	15"E	20"W	RCP	67 FT.	PARK STREET
J846C	20"E	24"N	RCP	25 FT.	COCONUT AVE.
J847M	24"E	24"E	RCP	388 FT.	COCONUT AVE.
J848C	24"W/N	24"E	RCP	60 FT.	FLORAL AVE.
J849S		15"S	RCP	42 FT.	FLORAL AVE.
J850M	24"W	24"E	RCP	74 FT.	FLORAL AVE.
J851C	24"W	24"N	RCP	75 FT.	FLORAL AVE.
J852C	24"S	24"E	RCP	30 FT.	FLORAL AVE.
J853C	20"W	20"E	RCP	89 FT.	FLORAL AVE.
J854C	20"W	15"E	RCP	110 FT.	FLORAL AVE.
J855C		15"N	RCP	35 FT.	FLORAL AVE.
PALM BEACH COUNTY					
P8C01C		15"N	CAP		SUNRISE WAY
P8C02C		15"S	CAP	62 FT.	SUNRISE WAY
P8C03C		15"N	CAP		SUNSET WAY
P8C04C		15"S	CAP	62 FT.	SUNSET WAY
P8C05C		15"N	CAP		DIANA LA.
P8C06C		15"S	CAP	87 FT.	DIANA LA.
P8C07C		24"E	SCP		OCEAN DR.
P8C08CU		24"W	SCP	80 FT.	OCEAN DR.
P8C09C		15"N	CAP		APOLLO DR.
P8C10C		12"S	CAP	115 FT.	APOLLO DR.

STRUCTURE TYPE DESIGNATIONS C-CATCH BASIN M-MANHOLE S-SPILLWAY
CI-CATCH BASIN W/FLOW CS-CONTROL STRUCTURE

ELEVATION REFERENCE MONUMENT LOCATIONS

RM1 33 FT. EAST OF CENTERLINE OF OCEAN DRIVE AND 43 FT. SOUTH OF CENTERLINE OF SOUTH JUNO LANE. ALSO 20 FT. SOUTH OF SOUTH ENTRANCE TO TOWN CENTER AND 3 FT. OFF EAST SIDE OF SIDEWALK.

RM2 CENTER OF GRASS ISLAND IN FRONT OF PBC FIRE RESCUE STATION #15. 85 FT. EAST OF CENTERLINE OF US HWY 1.

RM3 35 FT. EAST OF CENTERLINE OF OCEAN DRIVE, ACROSS FROM CENTERLINE OF SOUTH LYRA. 1 FT. FROM EAST SIDE OF SIDEWALK.

RM4 33 FT. EAST OF THE CENTERLINE OF OCEAN DRIVE, 175 FT. NORTH OF THE CENTERLINE OF NORTH LYRA CIRCLE AND 1 FT. OFF EAST SIDE OF SIDEWALK.

RM5 27 FT. EAST OF THE CENTERLINE OF OCEAN DRIVE, 56 FT. SOUTH OF THE CENTERLINE OF THE SOUTH TURNOUT OF CELESTIAL WAY AND 3 FT. OFF EAST SIDE OF SIDEWALK.

RM6 30 FT. EAST OF THE CENTERLINE OF OCEAN DRIVE, 28 FT. SOUTH OF THE CENTERLINE OF EDWARD ROSS RD. AND 1 FT. OFF EAST SIDE OF SIDEWALK.

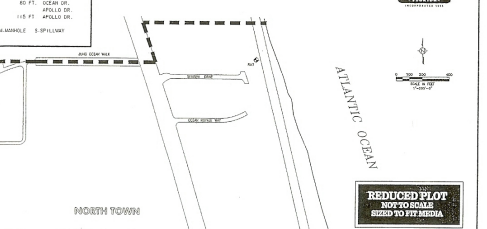
RM7 WEST SIDE OF OCEAN DRIVE. 19.70 +2 FT. SOUTH OF JUNO BEACH PARK AND 1 TO 2 FT. WEST OF SIDEWALK.

RM8 EAST OF CELESTIAL WAY ON THE STORM DRAIN HEAD WALL IN FRONT OF COLONY COND.

DIANA LA. 21 FT. EAST OF THE CENTERLINE OF OCEAN DRIVE, 13 FT. SOUTH OF THE CENTERLINE OF DIANA LANE AND 6 FT. WEST OF THE SIDEWALK.

OHW IS THE DUNES TO THE NORTH SIDE OF ATLANTIC DUNE WALK OVER 6 TO 8 FT. NORTH OF THE TOP OF STAIRS

VERIFICATION – MAY, 2002



REDUCED PLOT
NOT TO SCALE
SIZED TO FIT MEDIA

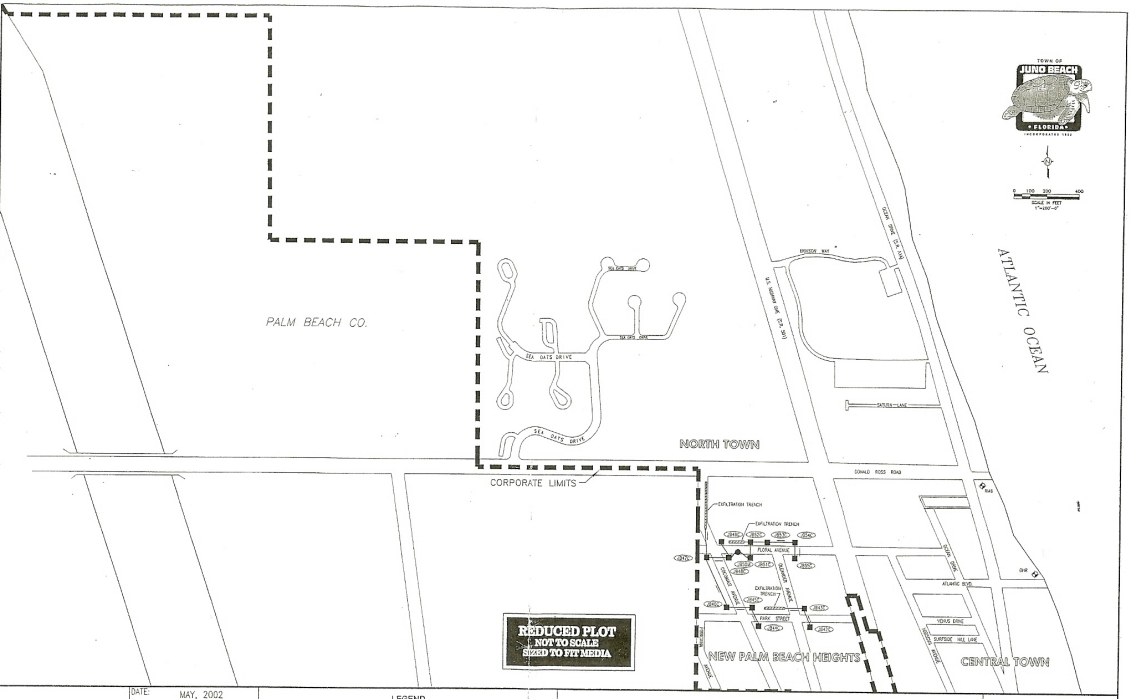
MAP COURTESY OF
Jay Nelson Cadd

DATE: MAY, 2002
FILE: JB02ED1A.DWG
REVISED: MAY, 2003

LEGEND
■ CATCH BASIN (VALET) ▲ CONTROL STRUCTURE
● MANHOLE —→ FLOW ARROW
□ CATCH BASIN FRENCH DRAIN ⊕ ELEVATION REFERENCE MARK

STORM DRAINAGE SYSTEM MAP
TOWN OF JUNO BEACH

SHEET 1 OF FOUR



MAP COURTESY OF
Jay Nelson Cadd

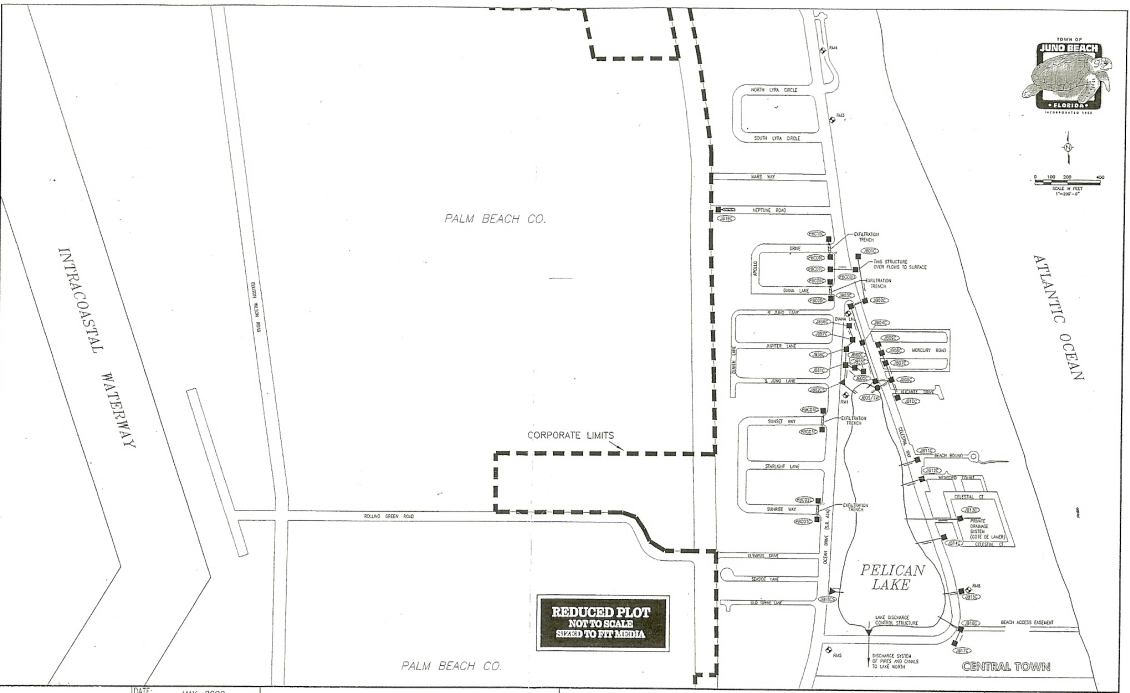
DATE:	MAY, 2002
FILE:	JB02E01A.DWG
REVISED:	MAY, 2003

LEGEND

- CATCH BASIN (INLET)
- MANHOLE
- CATCH BASIN FRENCH DRAIN
- CONTROL STRUCTURE
- FLOW ARROW
- ELEVATION REFERENCE MARK

STORM DRAINAGE SYSTEM MAP
TOWN OF JUNO BEACH

SHEET 2 OF FOUR



MAP COURTESY OF
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DATE:	MAY, 2002
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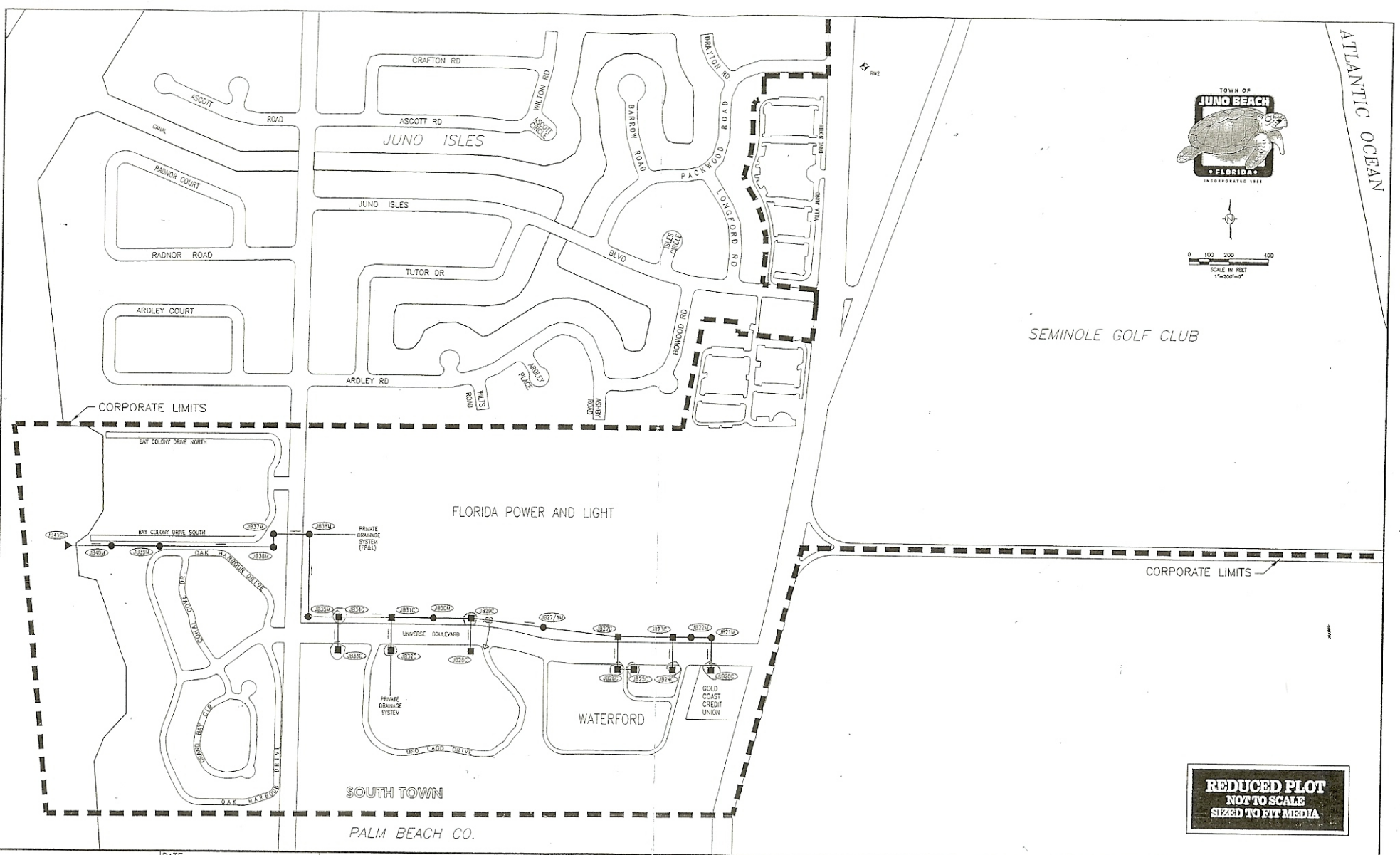
REVISED:	MAY, 2003

LEGEND

- CATCH BASIN (INLET)
- MANHOLE
- CATCH BASIN FRENCH DRAIN
- CONTROL STRUCTURE
- FLOW ARROW
- ELEVATION REFERENCE MARK

STORM DRAINAGE SYSTEM MAP
TOWN OF JUNO BEACH

SHEET 3 OF FOUR



MAP COURTESY OF
Jay Nelson Cadd

DATE:	MAY, 2002
FILE:	JB02E01A.DWG
REVISED:	MAY, 2003

LEGEND

- CATCH BASIN (INLET)
- MANHOLE
- CATCH BASIN FRENCH DRAIN
- CONTROL STRUCTURE
- FLOW ARROW
- ELEVATION REFERENCE MARK

STORM DRAINAGE SYSTEM MAP
TOWN OF JUNO BEACH

SHEET 4 OF FOUR

FACILITY AND INFRASTRUCTURE LOCATION INDEX MAP

STRUCTURE INDEX

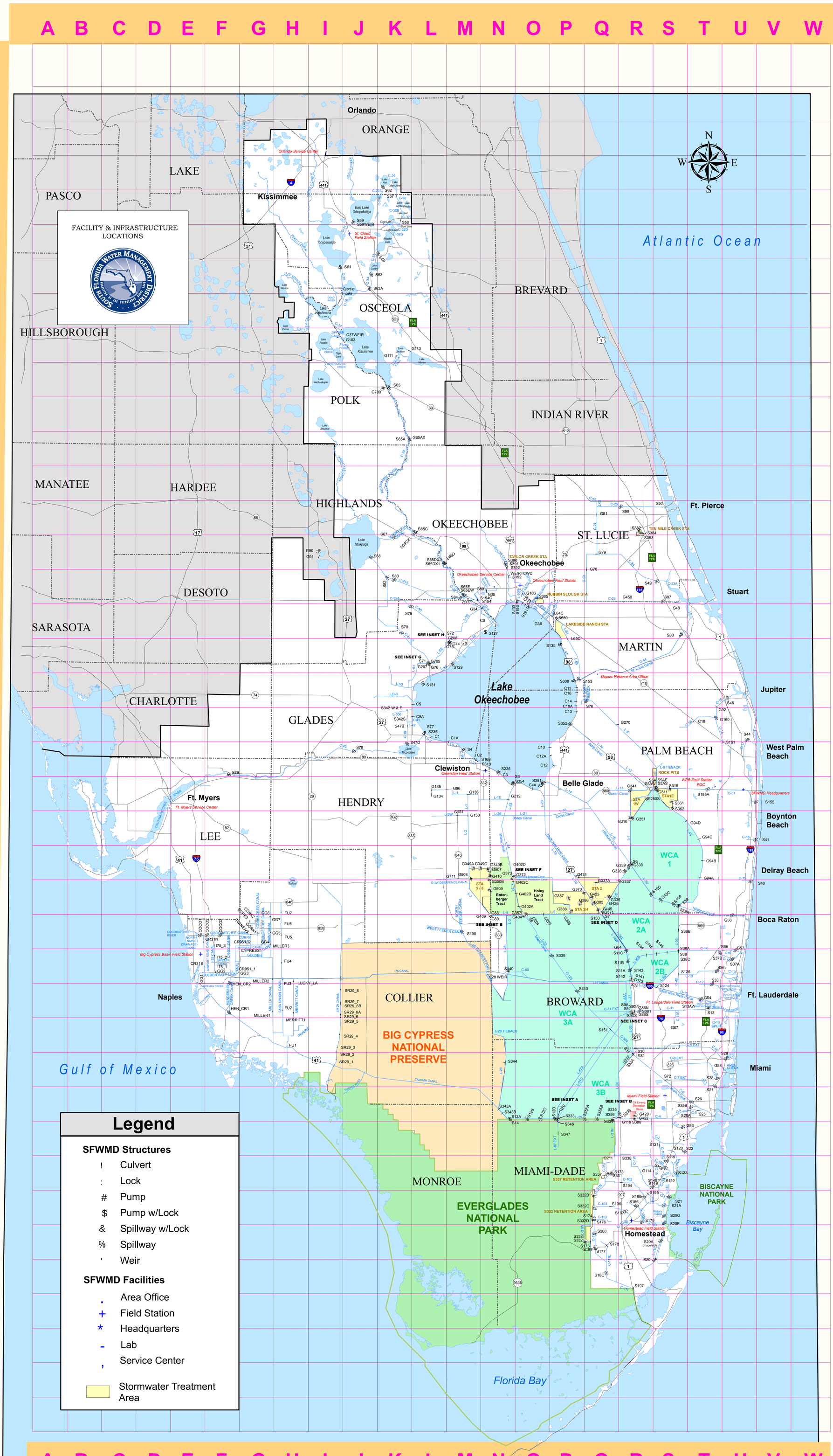
COCO1	E	26
COCO2	F	26
COCO3	F	26
CORK1	G	26
CORK2	G	26
CORK3	G	26
CR31N	E	26
CR31S	E	27
CR951_1	F	27
CR951_2	F	26
CYPRESS1	G	26
C1	L	20
C1A	M	20
C2	M	21
C3	N	21
C4A	O	22
C5	L	19
C5A	L	20
C6	N	17
C8	O	16
C9	O	17
C10	O	21
C10A	P	19
C11	P	19
C12	P	21
C12A	P	21
C13	P	20
C14	P	19
C16	P	19
C18	T	20
C37WEIR	I	9
FU1	H	29
FU2	H	28
FU3	H	27
FU4	H	27
FU5	H	26
FU6	H	26
FU7	H	25
G33	M	16
G34	N	17
G35	N	16
G36	O	17
G54	T	28
G56	U	26
G57	U	27
G58	U	30
G64	R	27
G65	U	27
G70	P	31
G72	S	30
G74	M	18
G75	M	18
G76	L	18
G78	Q	16
G79	Q	15
G80	N	16
G81	Q	14
G86N	R	28
G86S	R	28
G87	S	29
G88	N	26
G89	N	26
G90	I	15
G91	I	15
G92	T	19
G93	S	32
G94A	T	24
G94B	T	24
G94C	T	23
G94D	S	23
G96	M	22
G103	I	9
G106	O	16
G111	K	9
G113	K	9
G114	S	33
G119	R	31
G123	R	27
G134	L	22
G135	L	22
G136	M	22
G150	M	23
G151	M	23
G160	T	20
G161	U	20
G204	O	26
G205	O	26
G206	P	25
G207	L	18
G208	M	18
G211	Q	32
G212	N	22
G248A-D	R	22 STA1W
G249A-H	R	22 STA1W
G250S	R	22 STA1W
G251	R	23 STA1W
G252H-J	R	22 STA1W
G253A-J	R	22 STA1W
G254A-A1	R	22 STA1W
G254B-B1	R	22 STA1W
G254C-C1	R	22 STA1W
G254D-D1	R	22 STA1W
G254E	R	22 STA1W
G255	R	22 STA1W
G258	R	22 STA1W
G259	R	23 STA1W
G270	Q	20
G300	S	22 STA1W
G301	R	22 STA1W
G302	R	22 STA1W
G303	R	22 STA1W
G304A-J	R	22 STA1W
G305A-V	R	22 STA1W
G306A-J	R	22 STA1W
G307	R	23 STA1W
G308	R	23 STA1W
G309	R	22 STA1W
G310	R	23 STA1W
G311	S	22 STA1E
G327A-C	R	22 STA1W
G328	R	24 STA2
G329A-D	Q	25 STA2
G330A-E	Q	25 STA2
G331A-G	Q	25 STA2
G332	Q	25 STA2
G333A-E	Q	25 STA2
G334	Q	25 STA2
G335	Q	25 STA2
G336A-F	R	24 STA2
G336G	Q	25 STA2
G337	Q	25 STA2
G337A	Q	25 STA2
G338	R	24 STA2
G339	R	24 STA2
G341	R	22
G342A-D	M	24 STA5/6
G342E-N	M	25 STA5/6
G343A-H	M	24 STA5/6
G343I-O	N	25 STA5/6
G344A-D	N	24 STA5/6
G344E-K	N	25 STA5/6
G345	N	24 STA5/6
G348	N	24 STA5/6
G349A	N	24 STA5/6
G349B	N	24 STA5/6
G349C	M	24 STA5/6
G350B	N	24 STA5/6
G351	N	25 STA5/6
G352A-C	N	25 STA5/6
G353A-C	N	25 STA5/6
G354A-C	N	25 STA5/6
G357	O	25
G360B	M	24 STA5/6
G367A-F	Q	25 STA2
G368	Q	25 STA2
G370	Q	25 STA3/4
G370S	P	25 STA3/4
G371	Q	25 STA3/4
G372	N	24 STA3/4
G372S	N	24 STA3/4
G372HL	N	24 STA3/4
G373	N	24 STA3/4
G374A-F	P	25 STA3/4
G375A-D	Q	25 STA3/4
G375E-F	P	25 STA3/4
G376A-F	Q	25 STA3/4
G377A-E	P	25 STA3/4
G378A-E	P	25 STA3/4
G379A-E	P	25 STA3/4
G380A-F	P	25 STA3/4
G381A-F	P	25 STA3/4
G382A-B	P	25 STA3/4
G383	P	25 STA3/4
G384A-F	P	25 STA3/4
G385	Q	25 STA3/4
G386	P	25 STA3/4
G387	P	25 STA3/4
G388	P	25 STA3/4
G389A-B	P	25 STA3/4
G390A-B	P	25 STA3/4
G393A-C	N	25 STA5/6
G396A-C	N	25 STA5/6
G402A	O	25
G402B	O	25
G402C	N	25
G402D	N	24
G404	O	26
G406	M	24 STA5/5
G407	N	25 STA5/6
G408	N	26 STA5/6
G409	N	26
G410	N	24 STA5/6
G411	N	24 STA5/6
G420	R	31
G420S	R	31
G421	R	31
G422	R	31
G423	R	31
G434	P	24 STA2
G435	Q	25 STA2
G436	Q	25 STA2
G438A-C	P	24 STA2
G438D-J	Q	24 STA2
G440A-F	Q	25 STA2
G441	Q	25 STA2
G443A-B	Q	25 STA2
G445	Q	25 STA2
G450	R	16
G507	N	24 STA5/6
G508	M	24 STA5/6
G509	N	25 STA5/6
G510	N	24 STA5/6
G511	N	25 STA5/6
G603	N	25 STA5/6
G700	K	10
G707	S	22
G709	L	18
G711	M	24
GG1	E	27
GG2	F	27
GG3	F	27
GG4	G	26
GG5	G	26
GG6	G	26
GG7	G	26
HC1	F	28
HEN_CR2	F	28
I75_1	F	27
I75_2	F	27
I75_3	F	26
L28WEIR	N	27
L64C	P	17
L65C	P	17
LUCKY_LA	H	27
MERRITT1	H	28
MILLER1	G	28
MILLER2	G	27
MILLER3	G	26
S2	O	22
S3	N	22
S4	M	21
S5A	S	22
S5AE	S	22
S5AS	S	22
S5AW	S	22
S6	R	24
S7	O	25
S8	O	26
S9	R	28
S9A	R	28
S9XN	R	28
S9XS	R	28
S10A	S	25
S10C	S	25
S10D	R	25
S11A	R	27
S11B	R	27
S11C	R	27
S12A	N	31
S12B	O	31
S12C	O	31
S12D	P	31
S13	T	28
S13AW	S	28
S14	N	31
S18C	Q	36
S20	S	36
S20A	S	35
S20F	S	34
S20G	S	34
S21	S	34
S21A	S	34
S22	S	32
S25	T	31
S25A	T	31
S25B	T	31
S25BP	T	31
S26	T	31
S26P	T	31
S27	T	30
S28	T	30
S29	U	30
S30	R	29
S31	R	30
S32	R	30
S32A	R	30
S33	T	28
S34	R	27
S36	T	27
S37A	U	27
S37B	T	27
S38	S	27
S38A	S	27
S38B	S	26
S38C	S	27
S39	S	25
S39A	S	25
S40	U	25
S41	U	23
S44	U	20
S46	U	19
S47B	K	20
S47D	K	21
S48	S	16
S49	S	16
S50	S	14
S57	K	5
S58	K	5
S59	J	5
S59WEIR	J	5
S60	K	6
S61	I	7
S62	K	4
S63	J	7
S63A	J	7
S65	K	10
S65A	K	12
S65AX	K	12
S65C	L	14
S65CX	L	14
S65D	L	15
S65DX1	L	15
S65DX2	L	15
S65E	M	16
S65EW	M	16
S67	K	15
S67X	K	15
S68	J	15
S70	K	17
S71	L	18
S71W	L	18
S72	M	18
S72W	M	18
S75	K	17
S76	Q	19
S77	L	20
S78	J	21
S79	F	21
S80	S	17
S82	K	16
S83	K	16
S83X	K	16
S84	M	16
S84X	M	16
S97	S	16
S99	R	14
S118	S	33
S119	S	33
S120	S	32
S121	S	32
S122	S	33
S123	S	33
S124	S	28
S125	S	27

STRUCTURE INDEX (Cont'd.)

S127	N	17
S129	M	18
S131	L	19
S133	O	16
S135	P	18
S140	N	27
S141	R	27
S142	R	27
S143	R	27
S144	R	27
S145	S	27
S146	S	27
S148	R	33
S149	S	33
S150	Q	25
S151	Q	29
S153	P	19
S154	M	16
S154C	M	16
S155	U	22
S155A	T	22
S165	R	34
S166	R	34
S167	R	34
S169	M	21
S173	Q	33
S174	Q	34
S175	Q	35
S176	Q	34
S177	Q	35
S178	Q	35
S179	R	34
S190	M	26
S191	O	17
S192	N	16
S193	O	16
S194	R	33
S195	R	34
S196	Q	34
S197	R	34
S199	Q	35
S200	Q	35
S235	L	20
S236	N	21
S308	P	19
S310	M	21
S319	S	22 STA1E
S331	Q	33
S332	Q	35
S332B	Q	34
S332C	Q	34
S332D	Q	34
S332DX1	Q	34
S333	P	31
S334	Q	31
S335	R	31
S336	Q	31
S337	R	30
S338	R	32
S339	P	27
S340	P	28
S342E	K	20
S342S	K	20
S342W	K	20
S343A	N	31
S343B	N	31
S344	N	30
S346	P	31
S347	P	32
S351	O	22
S352	P	20
S354	N	22
S355A	O	31
S355B	Q	31
S356	Q	31
S357	Q	33
S361	S	22 STA1E
S362	S	22 STA1E
S363A-C	S	22 STA1E
S364A-C	S	22 STA1E
S365A-B	S	22 STA1E
S366A-E	S	22 STA1E
S367A-E	S	22 STA1E
S368A-E	S	22 STA1E
S369A-D	S	22 STA1E
S370A-C	S	22 STA1E
S371A-C	S	22 STA1E
S372A-E	S	22 STA1E
S373A-B	S	22 STA1E
S374A-C	S	22 STA1E
S375	S	22 STA1E
S376	S	22 STA1E
S377	S	22 STA1E
S380	R	31
S381	R	28
S382	R	14
S383	R	15
S384	R	14
S385	O	16 NUBSL
S386A-C	O	16 NUBSL
S387A-C	O	16 NUBSL
S390	N	15
S391	N	15
S392	N	15
S650	P	17 LR
S651	P	17 LR
S652A	P	17 LR
S653	P	17 LR
S654A	P	17 LR
S655	P	17 LR
S656A	P	17 LR
S660	P	17 LR
SR29_1	I	30
SR29_2	I	30
SR29_3	I	29
SR29_4	I	29
SR29_5	I	29
SR29_6	I	28
SR29_6A	I	28
SR29_6B	I	28
SR29_7	I	28
SR29_8	I	28
TWINEAG	G	26
WIERTCWC	N	16

CANAL / LEVEE INDEX

AIRPORT ROAD CANAL	E27
ARBUCKLE CREEK	I12
ARCH CREEK	U30
BARRON RIVER	I30
BOGGY CREEK	J4
C-1	S34
C-1 CONNECTOR CANAL	G27
C-10	U29
C-100	S33
C-100A	S33
C-100B	S33
C-100C	S32
C-102	R33
C-102N	R34
C-103	R34
C-103N	R34
C-103S	R34
C-11	S28
C11 EXT	Q28
C-110	Q36
C-111	Q35
C-111E	Q36
C-113	Q34
C-11S	S28
C-12	T28
C-12	T28
C-12	T28
C-123	P27
C-13	T27
C-14	T27
C-15	U25
C-16	U23
C-17	U21
C-18	T20
C-19	K20
C-1N	S33
C-1W	R33
C-2	S32
C-20	M21
C-21	M21
C-23	Q16
C-23A	S16
C-24	Q14
C-25	Q14
C-25 EXT	Q14
C-29	K4
C-29A	K4
C-29B	K5
C-3	S32
C-30	K5
C-304	R29
C-31	J6
C-32B	K5
C-32C	K5
C-32F	K5
C-32G	K6
C-33	J6
C-34	J7
C-35	I7
C-357	Q33
C-36	J8
C-37	I8
C-38	K12
C-39A	K16
C-4	S31
C-40	L17
C-41	K17
C-41A	K16
C-42	S27
C-43	T21
C-44	R18
C-5	T31
C-51	U22
C-59	O17
C-6	S31
C-60	O27
C-7	T30
C-7 EXT	S30
C-8	T30
C-8 EXT	S30
C-9	T29
C-9 EXT	R29
CATFISH CREEK	H9
COCOHATCHEE RIVER	E26
CORKSCREW CANAL	G26
CR-951 CANAL	F27
CURRY CANAL	G26
CYPRESS CANAL	G26
DANIA CUT-OFF CANAL	U28
DEAD RIVER	I8
DEERFENCE CANAL (G-3W)	M24
ENR COLLECTION 2 CANAL	R22
ENR COLLECTION 3 CANAL	R23
ENR COLLECTION 4 CANAL	R23
ENR COLLECTION 5 CANAL	R23
ENR COLLECTION CANAL	R22
ENR DISCHARGE 2 CANAL	R23
ENR DISTRIBUTION CANAL	R22
ENR SUPPLY CANAL	R22
FAKA UNION CANAL	H28
G-16	U27
GOLDEN GATE MAIN CANAL	F27
GORDON RIVER	E27
GREEN CANAL	F27
HALDEMAN CREEK	E28
HENDERSON CREEK CANAL	F28
HENRY CREEK	O17
HILLSBORO CANAL	T25
HOLEYLAND DISTRIBUTION	O24
HOLEYLAND SEEPAGE CANAL	O24
I-75 CANAL	K27
ISTOKPOGA CANAL	K14
JACKSON CANAL	K9
KISSIMMEE RIVER	K13
L-1	M22
L-10	Q21
L-12	R21
L-13	Q22
L-14	P22
L-15	Q23
L-16	P23
L-18	P24
L-19	P23
L-1E	N22
L-2	M23
L-20	O22
L-21	O23
L-23	N25
L-24	N23
L-25	N22
L-26	N23
L-28	N27
L-28 INTERCEPTER CANAL	N27
L-29	P31
L-2W	M23
L-3	M25
L-30	Q30
L306	K20
L-31E	S35
L-31N	Q33
L-31W	Q35
L-33	R29
L-35	R28
L-35A	S27
L-35B	R27
L-36	S26
L-37	R28
L-38E	Q26
L-38W	Q26
L-39	R25
L-4	N25
L-40	T23
L-41	L20
L-42	K20
L-47	P18
L-48	M18
L-49	L18
L-5	P25
L-50	K19
L-59	M17
L-6	Q25
L-60	L18
L-61	L18
L-62	N16
L-63N	O16
L-63S	O17
L-64	P17
L-65	P18
L-67 EXT	P32
L-67A	P30
L-67C	P30
L-68A	R28
L-7	R23
L-8	R20
LAKE MARION CREEK	H7
LD-1	M21
LD-3	K19
LD-4	N17
LELY CANAL	E28
LETTUCE CREEK	O17
MERRITT CANAL	H28
MILITARY CANAL	S34
MILLER CANAL	G28
MOSQUITO CREEK	O16
NORTH FEEDER CANAL	M26
NORTH FORK NEW RIVER	U28
NORTH NAPLE DRAINAGE	E26
NORTH NEW RIVER CANAL	S28
NUBBIN SLOUGH	O16
ORANGE TREE CANAL	G26
POPASH SLOUGH	N16
PRAIRIE CANAL	H28
REEDY CREEK	H6
ROSALIE CREEK	I9
SHINGLE CREEK	I4
SOUTH FORK NEW RIVER	U28
SOUTH NEW RIVER CANAL	T28
SR 29 CANAL	I28
TAMIAMI CANAL	L30
TAYLOR CREEK	N15
TIGER CREEK	I9
TURNER RIVER	J31
WEOHYAKAPKA CREEK	I10
WEST FEEDER CANAL	L26
ZIPPRER CANAL	I9



BCB FIELD STATION
(239) 597-2236

CLEWISTON FIELD STATION
(863) 983-1431

DUPUIS RESERVE AREA OFFICE
(561) 924-5310

FIELD OPERATIONS CENTER (FOC)
(561) 753-2400

FT. LAUDERDALE FIELD STATION
(954) 452-4814

FT. MYERS SERVICE CENTER
(239) 338-2929

HOMESTEAD FIELD STATION
(305) 242-5933

MIAMI FIELD STATION
(305) 513-3420

OKEECHOBEE FIELD STATION
(863) 462-5280

OKEECHOBEE SERVICE CENTER
(863) 462-5260

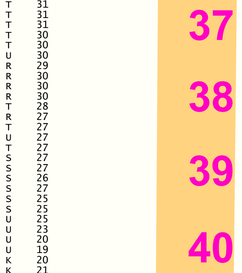
ORLANDO SERVICE CENTER
(407) 858-6100

SFWMD HEADQUARTERS
(561) 686-8800

ST. CLOUD FIELD STATION
(407) 891-3550

WPB FIELD STATION
(561) 791-4100

Inset A



Inset B

Inset C

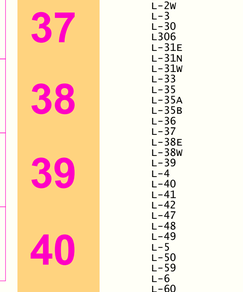
Inset D

Inset E

Inset F

Inset G

Inset H



Imagery in all Insets = 2004, 1 meter, DOQ

07-22-2013

Appendix E

Topographic Maps of the Town

U.S. DEPARTMENT OF THE INTERIOR
U. S. GEOLOGICAL SURVEY

The National Map US Topo

JUPITER QUADRANGLE
FLORIDA
7.5-MINUTE SERIES

80°07'30" E | 80°00' | 980 000 FEET | 970 000 FEET | 27°00' | 26°52'30" | 930 000 FEET | 950 000 FEET

Produced by the United States Geological Survey

North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and 1 000-meter grid: Universal Transverse Mercator, Zone 17R
10 000-foot ticks: Florida Coordinate System of 1983 (east zone)

Imagery.....NAIP, October 2010
Roads.....©2006-2011 TomTom
Names.....GNIS, 2011
Hydrography.....National Hydrography Dataset, 2010
Contours.....National Elevation Dataset, 1999
Boundaries.....Census, IBWC, IBC, USGS, 1972 - 2010

MN 6° 25' 114 MILS | GN 0° 25' 8 MILS

UTM GRID AND 2012 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000-m Square ID: NK
Grid Zone Designation: 17R

SCALE 1:24 000

1 0.5 0 KILOMETERS 1 2
1000 500 0 METERS 1000 2000
1 0.5 0 MILES 1
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 FEET

CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with the
National Geospatial Program US Topo Product Standard, 2011.
A metadata file associated with this product is draft version 0.6.3

FLORIDA
QUADRANGLE LOCATION

Gomez	Hobe Sound	
Rood	Jupiter	
Delta	Riviera Beach	

ADJOINING 7.5' QUADRANGLES

ROAD CLASSIFICATION

Interstate Route	State Route
US Route	Local Road
Ramp	4WD

Interstate Route | US Route | State Route

JUPITER, FL
2012

U.S. DEPARTMENT OF THE INTERIOR
U. S. GEOLOGICAL SURVEY

The National Map US Topo

RIVIERA BEACH QUADRANGLE
FLORIDA-PALM BEACH CO.
7.5-MINUTE SERIES

80°07'30" 5'88 000mE 5'89 5'90 5'92 5'93 5'94 5'95 2'30" 5'96 5'97 5'98 980 000 FEET 80°00'
26°52'30" 29°72 000mN 29°71 29°70 29°69 50' 29°68 29°67 29°66 29°65 29°64 47'30" 29°63 29°62 29°61 880 000 FEET 29°60 000mN 26°45'

Rock Springs Ridge Golf Course
Juno Beach
Juno Isles
Juno Ridge
Palm Beach Community College at Palm Beach Gardens Eissey Campus Theatre
Monet
PALM BEACH GARDENS
NORTH PALM BEACH
Munyon Island
Little Munyon Island
Lake Worth Inner Channel
LAKE PARK
Parker Bridge
Palm Beach Isles
Singer Island
Sherman Point
Riviera Beach Bridge
RIVIERA BEACH
Palm Beach Shores
Peanut Island
Lake Worth Inlet
Entrance Channel
ATLANTIC OCEAN
Square Lake
Riviera Beach Siding
Port of Palm Beach Junction
Royal Palm Memorial Gardens
Glenwood Memorial Cem
Gramercy Park
Mangonia Park
PALM BEACH
WEST PALM BEACH
Loxahatchee Canal
Thompson

HOOD RD · EAGLE LAKE DR · VICTORIA FALLS BLVD · CENTRAL BLVD · ELM AVE · MAGNOLIA BAY CIR · HOLLY LN · WINDSOR RD · ROLLING GREEN RD · CELESTIAL WAY · FLAMINGO RD · HOOD RD · MONTANT DR · CHARROUX DR · SAVOIE DR · GRANDE CORNICHE · LES JARDINS DR · PROSPERITY FARMS RD · ASCOTT RD · TUDOR RD · NIKI JO LN · WILSEE RD · LAUREL LN · ISLAND RD · HOLIDAY RD · GULL RD · HILLMAN DR · HERMITAGE CIR · UNIVERSE BLVD · PLEASANT DR · CIRCLE DR · OCALA RD · SERVICE RD · JUNO RD · RIDGE RD · LEN DR · GROVE RD · FLORIDA BLVD · DUNES RD · CAPRI RD · BERMUDA RD · BAHAMA RD · N LOOP RD · ATLANTIC RD · VALENCIA GARDENS AVE · LONE PINE RD · BAY CIR · OAK DR · NIEMEN DR · LINDEN AVE · PALMA DR · TILLINGHAST CIR · MARQUESA DR · OLD PALM DR · HUDSON BAY DR · GARDENS BLVD · GARDENS PKWY · IDLEWILD RD · HOLMAN DR · WHEELER RD · SMITH DR · BOMAR DR · 117TH CT N · BENT TREE DR · WOODVIEW CIR · GREEN BAYBERRY DR · FICUS ST · FIR ST · BANYAN ST · BIRCH ST · KEW GARDENS AVE · GARDEN LAKES CIR · SPICE OR THYME DR · MONET TER · RCA BLVD · MONET LN · CANAL RD · MARITIME WAY · MONET RD · MCLAREN RD · GUNNISON WILLITS · MAGNOLIA ST · LARCH AVE · OAK ST · HICKORY DR · AVENUE OF P G A · SALINAS DR · E PARK DR · BURNS RD · ALLAMANDA LN · TEAL WAY · GREENWAY DR · COUNTRY CLUB DR · PARKVIEW DR · LAKESIDE DR · PRIVATEER RD · OYSTER RD · MARLIN RD · INLET RD · GULF RD · FLOTILLA RD · EBBTIDE DR · BAY RD · ANCHORAGE DR · IBIS WAY · HINDA RD · RICHARD RD · HONEY RD · CONROY DR · EAGLE WAY · PARK RD · AKEE ST · HI DR · OLD DIXIE HWY · LAUREL RD · CINNAMON RD · JUNIPER DR · ALLAMANDA DR · SIENA OAKS CIR W · SIENA OAKS CIR E · ALLAMANDA BLVD · RIO VISTA BLVD · GARDENS E DR · IRONWOOD RD · RIVERSIDE DR · DOGWOOD AVE · DAPHNE AVE · DAISY AVE · DAHLIA AVE · FLAG DR · PLANT DR · LILAC ST · SEAGRAPE WAY · HOLLY DR · CHERRY ST · BALSAM ST · AZALEA ST · FIRETREE RD · WESTWIND DR · LAGOON DR · GARDENIA DR · ALTHEA WAY · EMPRESS ST · ROAN CT · BEDFORD AVE · SUNRISE DR · SUN CT · SILVERTHORNE DR · MCARTHUR BLVD · BRADY LN · ARTHUR ST · APPLECREST DR · KEATING DR · BIRMINGHAM DR · ROAN LN · ARBOR WAY · HOWELL LN · NORTHLAKE BLVD · DANIA DR · SANDTREE DR · LYNDALL LN · BURMA RD · S MARY CIR · SUNSET DR · 49TH TER N · N ELIZABETH AVE · N BATES RD · N VIRGINIA AVE · SQUARE LAKE DR · DAMASCUS DR · KELSO DR · NASHUA DR · S ELIZABETH AVE · S BATES RD · S VIRGINIA AVE · NEEDLES DR · LILLIAN AVE · S FOUR SEASONS RD · WILLIAM ST · CONSUMER ST · ROYAL FERN WAY · INVESTMENT LN · FISCAL CT · SHARES PL · LEO LN · GARDEN RD · ENTERPRISE DR · CENTRAL INDUSTRIAL DR · BYRON DR · 74TH ST N · 42ND WAY N · Z TER · AVENUE 2 · 70TH CT N · 69TH LN N · 41ST AVE N · HAVERHILL RD N · 49TH TER N · INTERPACE RD · DYER BLVD · WHITE DR · CANTERBURY DR N · HOLIDAY BLVD · MANIKI DR · WESTCHESTER DR · PORT W BLVD · CANTERBURY DR W · CANTERBURY DR S · CHENEY WAY · NORTHPOINT PKWY · UP-THE-GROVE LN · EADIE PL · HELENE PL · PAT PL · MARCIA PL · RAE AVE · 45TH ST · TEMPLE ST · HEATH CIR S · SHILOH DR · VILLAGE BLVD · N CONGRESS AVE · WAIVERLY DR · LATONA AVE · PINEHURST DR · N SHORE DR · JEFFERY AVE · HILL AVE · GILLER AVE · FAIRFIELD DR · 53RD ST · 53RD CT N · 53RD CT · 52ND ST · E AVE · FOSTER RD · 45TH ST · 43RD ST · 42ND ST · 54TH ST · 50TH ST · 49TH ST · 48TH ST · 47TH ST · 44TH ST · N FLAGLER DR · 59TH ST · 58TH ST · S ST · REEF RD · N LAKE WAY · COLONIAL LN · LIST RD · VIA MARILA · LAURIAN LN · N OCEAN BLVD · POPLAR DR · NORTHERN DR · FLAGLER BLVD · TEAK DR · CRESCENT DR · PALMETTO DR · N KILLIAN DR · S KILLIAN DR · GATEWAY RD · WATERTOWER RD · CONGRESS AVE · 15TH ST · 14TH ST · 13TH ST · 12TH ST · 9TH ST · 7TH ST · 10TH ST · 2ND ST · LAKE SHORE DR · DATE PALM DR · 7TH CT · 6TH ST · SILVER BEACH RD · W 37TH ST · W 37TH CT · W 36TH ST · W 35TH ST · W 34TH ST · W 33RD ST · W 32ND ST · W 31ST ST · W 30TH ST · W 29TH ST · W 28TH ST · W 27TH ST · W 26TH CT · W 26TH ST · W 25TH ST · W 24TH ST · E 24TH ST · W 23RD ST · W 22ND ST · W 20TH ST · W 19TH ST · W 17TH ST · W 16TH WAY · W 15TH ST · W 14TH ST · W 13TH ST · W 13TH CT · W 12TH ST · W 12TH ST · W 11TH ST · W 10TH ST · W 9TH ST · W 7TH ST · W 6TH ST · W 4TH ST · W 3RD ST · W 2ND ST · W 1ST ST · AVENUE T · AVENUE Q · AVENUE P · AVENUE R · AVENUE U · AVENUE S · AVENUE K · AVENUE J · AVENUE I · AVENUE H W · AVENUE H E · AVENUE F · AVENUE L · AVENUE C · AZALEA DR · CITRUS DR · PARK ST · ALLEN ST · GULFSTREAM WAY · FAIRVIEW LN · EMERALD LN · DOLPHIN RD · CORAL WAY · BIMINI LN · MORSE BLVD · POWELL DR · SINGER DR · SUGAR SANDS BLVD · PARK AVE · BEACH RD · BAMBOO RD · SANDAL LN · BLOSSOM LN · S OCEAN AVE · LAKE DR · PINE RD

Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and 1 000-meter grid: Universal Transverse Mercator, Zone 17R
10 000-foot ticks: Florida Coordinate System of 1983 (east zone)

Imagery.....NAIP, October 2010
Roads.....©2006-2011 TomTom
Names.....GNIS, 2011
Hydrography.....National Hydrography Dataset, 2010
Contours.....National Elevation Dataset, 1999
Boundaries.....Census, IBWC, IBC, USGS, 1972 - 2010

MN 6° 24' 114 MILS · GN 0° 25' 8 MILS
UTM GRID AND 2012 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000-m Square ID
NK
Grid Zone Designation
17R

SCALE 1:24 000
1 0.5 0 KILOMETERS 1 2
1000 500 0 METERS 1000 2000
1 0.5 0 1 MILES
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 FEET

CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with the National Geospatial Program US Topo Product Standard, 2011.
A metadata file associated with this product is draft version 0.6.3

FLORIDA
QUADRANGLE LOCATION

Rood	Jupiter	
Delta	Riviera Beach	
Palm Beach Farms	Palm Beach	

ADJOINING 7.5' QUADRANGLES

ROAD CLASSIFICATION

Interstate Route	State Route
US Route	Local Road
Ramp	4WD

Interstate Route · US Route · State Route

RIVIERA BEACH, FL
2012

Appendix F

Juno Beach FIRM, Example LoMR (Letter of Map Revision), & Preliminary FIRM Maps (May 2013)

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded tenth-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations (BFEs) shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Transverse Mercator State Plane Florida East FIPS Zone 0901 Feet. The **horizontal datum** was NAD83 HARN, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov/ or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242** or visit its website at http://www.ngs.noaa.gov/.

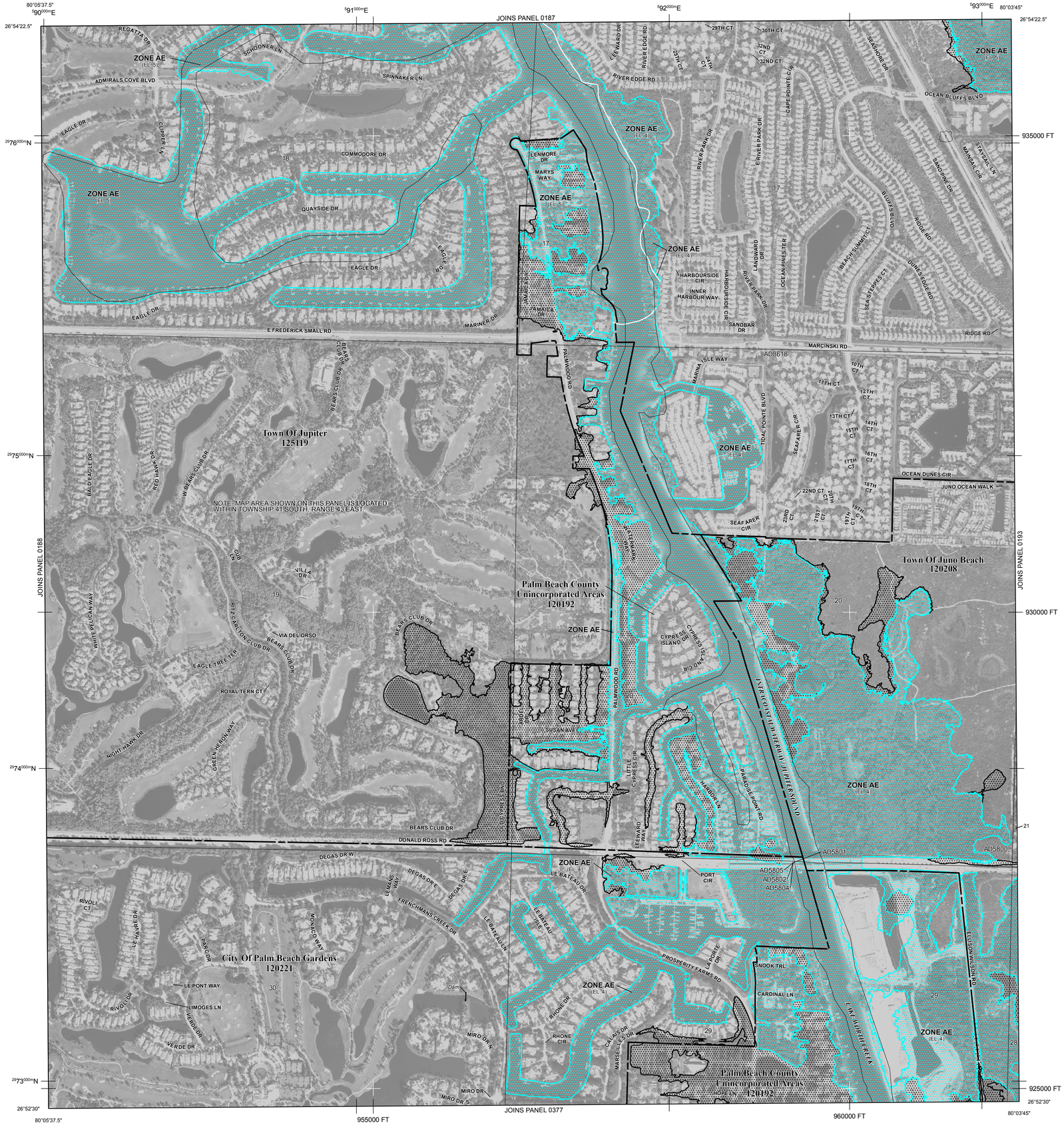
Base map information shown on this FIRM was provided in digital format by Palm Beach County. The original orthophotographic base imagery was provided in color with a one-foot pixel resolution at a scale of 1" = 200' from photography flown November 2010 - January 2011.

This map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

For information and questions about this map, available products associated with this FIRM including historic versions of this FIRM, how to order products or the National Flood Insurance Program in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Map Service Center website at http://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website. Users may determine the current map date for each FIRM panel by visiting the FEMA Map Service Center website or by calling the FEMA Map Information eXchange.



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A No Base Flood Elevations determined.

ZONE AE Base Flood Elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

ZONE A99 Areas to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no Base Flood Elevations determined.

ZONE V Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities
- 513 — Base Flood Elevation line and value; elevation in feet*
- (EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988

- A — A — Cross section line
- 23 — 23 — Transect line
- 97°07'30", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
- 4275000mE — 1000-meter Universal Transverse Mercator grid ticks, zone 17
- 6000000 FT — 5000-foot grid values: Florida State Plane coordinate system, East Zone (FIPSZONE = 901), Transverse Mercator projection
- DX5510 — Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 — River Mile

MAP REPOSITORIES
Refer to Map Repositories List on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250 0 250 500 750 1,000 FEET
150 0 150 300 METERS

NFIP
NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0189F

FIRM

FLOOD INSURANCE RATE MAP

PALM BEACH COUNTY, FLORIDA AND INCORPORATED AREAS

PANEL 189 OF 1200

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
JUNO BEACH, TOWN OF	120208	0189	F
JUPITER, TOWN OF	125119	0189	F
PALM BEACH COUNTY	120192	0189	F
PALM BEACH GARDENS, CITY OF	120221	0189	F

PRELIMINARY
MAY 31 2013

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
12099C0189F

EFFECTIVE DATE

Federal Emergency Management Agency

NOTES TO USERS

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Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov/ or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242** or visit its website at http://www.ngs.noaa.gov/.

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This map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

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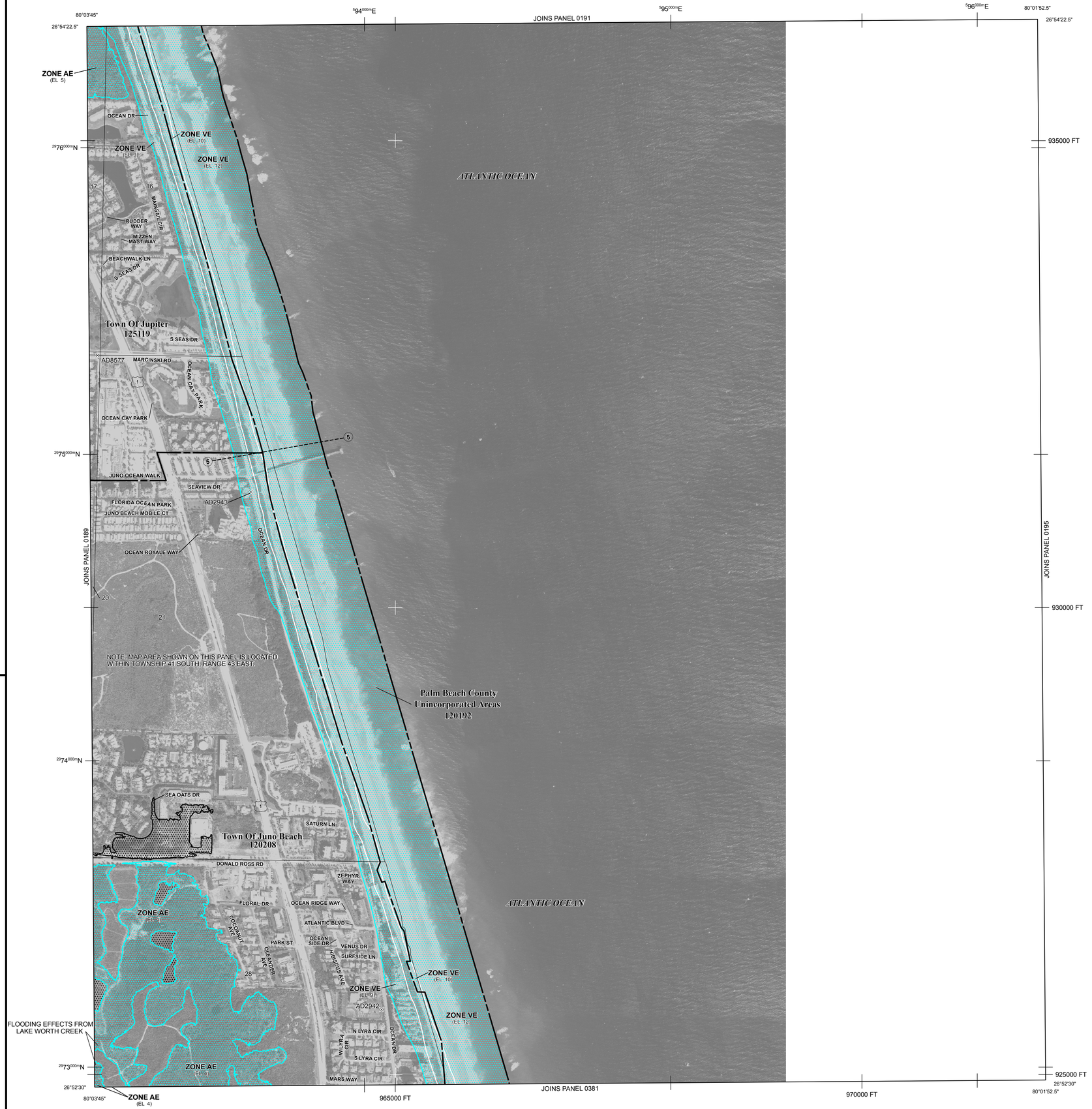
For information and questions about this map, available products associated with this FIRM including historic versions of this FIRM, how to order products or the National Flood Insurance Program in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Map Service Center website at http://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website. Users may determine the current map date for each FIRM panel by visiting the FEMA Map Service Center website or by calling the FEMA Map Information eXchange.



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A No Base Flood Elevations determined.

ZONE AE Base Flood Elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

ZONE A99 Areas to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no Base Flood Elevations determined.

ZONE V Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% annual chance floodplain boundary
0.2% annual chance floodplain boundary
Floodway boundary
Zone D boundary
CBRS and OPA boundary
Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities
513 — Base Flood Elevation line and value; elevation in feet*
(EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988

A — A — Cross section line
23 — 23 — Transect line
97°07'30", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
4275000mE — 1000-meter Universal Transverse Mercator grid ticks, zone 17
6000000 FT — 5000-foot grid values: Florida State Plane coordinate system, East Zone (FIPSZONE = 901), Transverse Mercator projection
DX5510 — Bench mark (see explanation in Notes to Users section of this FIRM panel)
M1.5 — River Mile

MAP REPOSITORIES
Refer to Map Repositories List on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250 0 250 500 750 1,000 FEET
150 0 150 300 METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0193F

FIRM

FLOOD INSURANCE RATE MAP

PALM BEACH COUNTY, FLORIDA

AND INCORPORATED AREAS

PANEL 193 OF 1200

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
JUNO BEACH, TOWN OF	120208	0193	F
JUPITER, TOWN OF	125119	0193	F

PRELIMINARY
MAY 31 2013

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
12099C0193F

EFFECTIVE DATE

Federal Emergency Management Agency

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded tenth-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations (BFEs) shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Transverse Mercator State Plane Florida East FIPS Zone 0901 Feet. The **horizontal datum** was NAD83 HARN, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

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NGS Information Services
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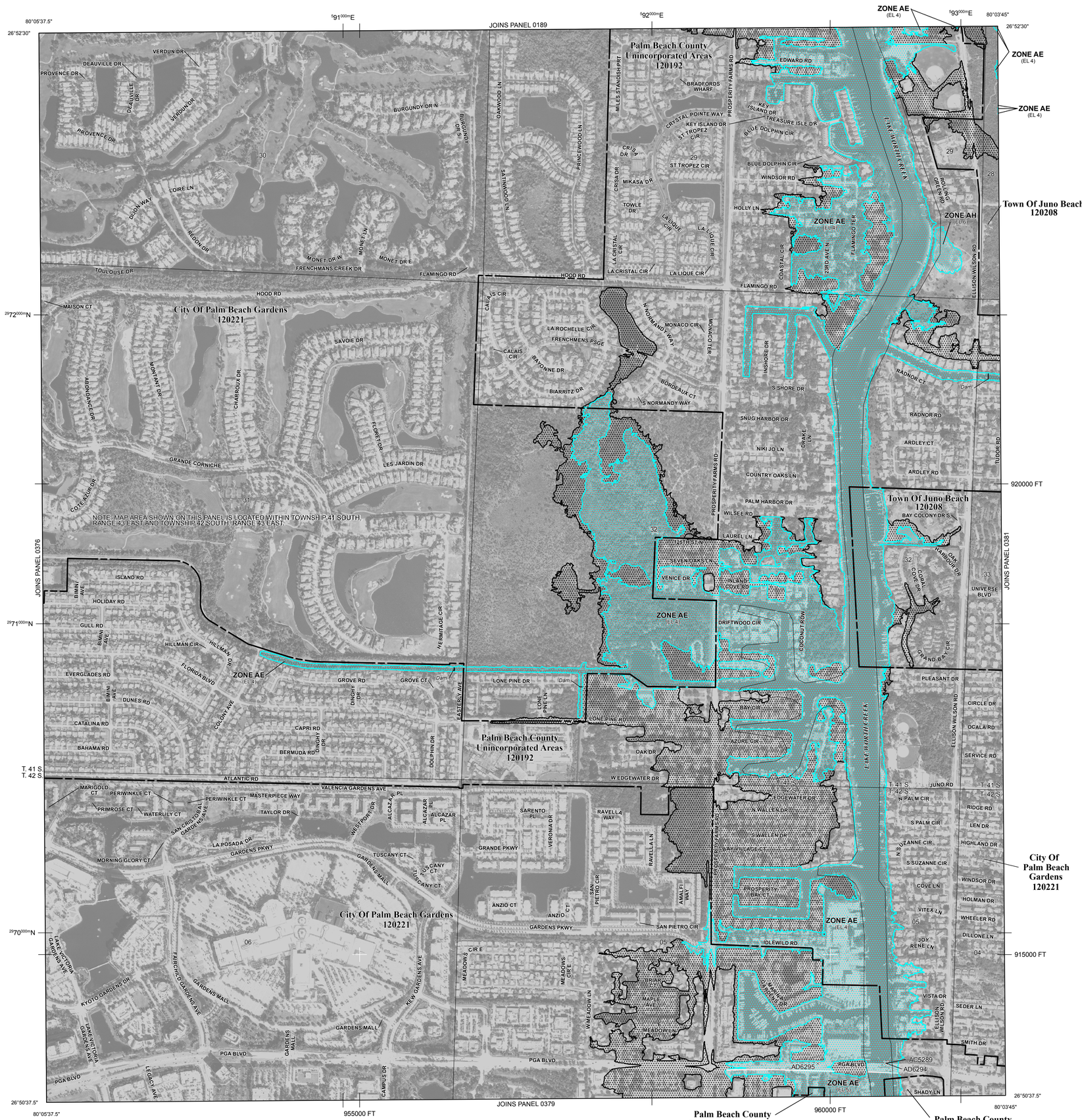

LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A No Base Flood Elevations determined.

ZONE AE Base Flood Elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

ZONE A99 Areas to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no Base Flood Elevations determined.

ZONE V Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% annual chance floodplain boundary
0.2% annual chance floodplain boundary
Floodway boundary
Zone D boundary
CBRS and OPA boundary
Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities
513 — Base Flood Elevation line and value; elevation in feet*
(EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*
* Referenced to the North American Vertical Datum of 1988
A — A — Cross section line
23 — 23 — Transect line
97°07'30", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
4275000mE — 1000-meter Universal Transverse Mercator grid ticks, zone 17
6000000 FT — 5000-foot grid values: Florida State Plane coordinate system, East Zone (FIPSZONE = 901), Transverse Mercator projection
DX5510 — Bench mark (see explanation in Notes to Users section of this FIRM panel)
M1.5 — River Mile

MAP REPOSITORIES
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EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

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MAP SCALE 1" = 500'

250 0 250 500 750 1,000 FEET
150 0 150 300 METERS

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0377F

FIRM

FLOOD INSURANCE RATE MAP

PALM BEACH COUNTY, FLORIDA AND INCORPORATED AREAS

PANEL 377 OF 1200

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
JUNO BEACH, TOWN OF	120208	0377	F
PALM BEACH COUNTY	120192	0377	F
PALM BEACH GARDENS, CITY OF	120221	0377	F

PRELIMINARY
MAY 31 2013

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
12099C0377F

EFFECTIVE DATE

Federal Emergency Management Agency

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LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

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ZONE A No Base Flood Elevations determined.

ZONE AE Base Flood Elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

ZONE A99 Areas to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no Base Flood Elevations determined.

ZONE V Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D Areas in which flood hazards are undetermined, but possible.

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OTHERWISE PROTECTED AREAS (OPAs)

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0.2% annual chance floodplain boundary
Floodway boundary
Zone D boundary
CBRS and OPA boundary
Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities
513 — Base Flood Elevation line and value; elevation in feet*
(EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*
* Referenced to the North American Vertical Datum of 1988
A — A — Cross section line
23 — 23 — Transect line
97°07'30", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
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6000000 FT — 5000-foot grid values: Florida State Plane coordinate system, East Zone (FIPSZONE = 901), Transverse Mercator projection
DX5510 — Bench mark (see explanation in Notes to Users section of this FIRM panel)
M1.5 — River Mile

MAP REPOSITORIES
Refer to Map Repositories List on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

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MAP SCALE 1" = 500'

250 0 250 500 750 1,000 FEET
150 0 150 300 METERS

NFIP

PANEL 0381F

FIRM

FLOOD INSURANCE RATE MAP

PALM BEACH COUNTY, FLORIDA

AND INCORPORATED AREAS

PANEL 381 OF 1200

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
JUNO BEACH, TOWN OF	120208	0381	F
NORTH PALM BEACH, VILLAGE OF	120217	0381	F
PALM BEACH COUNTY	120192	0381	F
PALM BEACH GARDENS, CITY OF	120221	0381	F

PRELIMINARY
MAY 31 2013

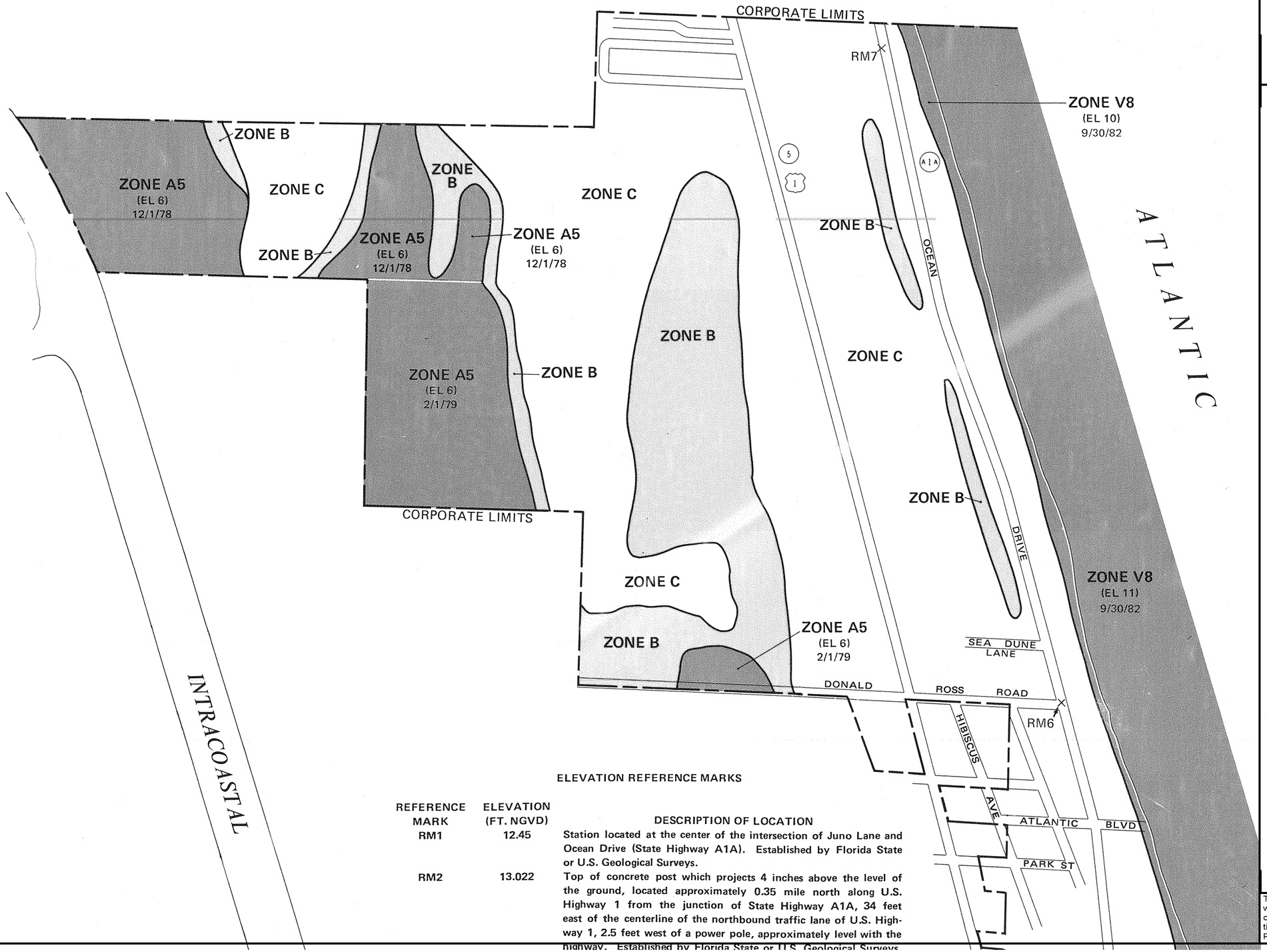
Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
12099C0381F

EFFECTIVE DATE

Federal Emergency Management Agency

NATIONAL FLOOD INSURANCE PROGRAM



ELEVATION REFERENCE MARKS

REFERENCE MARK	ELEVATION (FT. NGVD)	DESCRIPTION OF LOCATION
RM1	12.45	Station located at the center of the intersection of Juno Lane and Ocean Drive (State Highway A1A). Established by Florida State or U.S. Geological Surveys.
RM2	13.022	Top of concrete post which projects 4 inches above the level of the ground, located approximately 0.35 mile north along U.S. Highway 1 from the junction of State Highway A1A, 34 feet east of the centerline of the northbound traffic lane of U.S. Highway 1, 2.5 feet west of a power pole, approximately level with the highway. Established by Florida State or U.S. Geological Surveys

APPROXIMATE SCALE

600 0 600 FE

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

TOWN OF

JUNO BEACH, FLORIDA

PALM BEACH COUNTY

ONLY PANEL PRINTED

COMMUNITY-PANEL NUMBER
120208 0001 C

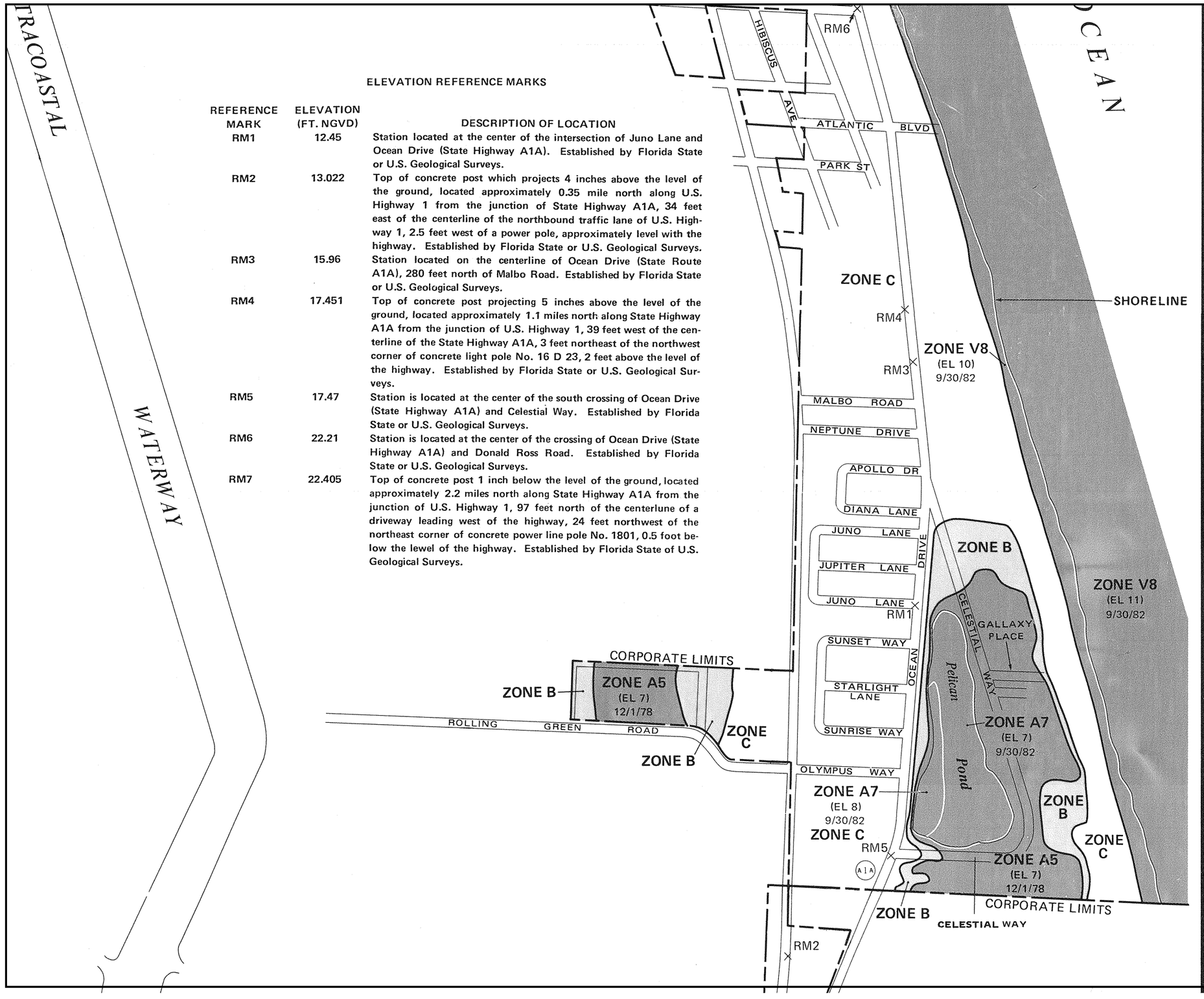
MAP REVISED:
SEPTEMBER 30, 1982

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

ELEVATION REFERENCE MARKS

REFERENCE MARK	ELEVATION (FT. NGVD)	DESCRIPTION OF LOCATION
RM1	12.45	Station located at the center of the intersection of Juno Lane and Ocean Drive (State Highway A1A). Established by Florida State or U.S. Geological Surveys.
RM2	13.022	Top of concrete post which projects 4 inches above the level of the ground, located approximately 0.35 mile north along U.S. Highway 1 from the junction of State Highway A1A, 34 feet east of the centerline of the northbound traffic lane of U.S. Highway 1, 2.5 feet west of a power pole, approximately level with the highway. Established by Florida State or U.S. Geological Surveys.
RM3	15.96	Station located on the centerline of Ocean Drive (State Route A1A), 280 feet north of Malbo Road. Established by Florida State or U.S. Geological Surveys.
RM4	17.451	Top of concrete post projecting 5 inches above the level of the ground, located approximately 1.1 miles north along State Highway A1A from the junction of U.S. Highway 1, 39 feet west of the centerline of the State Highway A1A, 3 feet northeast of the northwest corner of concrete light pole No. 16 D 23, 2 feet above the level of the highway. Established by Florida State or U.S. Geological Surveys.
RM5	17.47	Station is located at the center of the south crossing of Ocean Drive (State Highway A1A) and Celestial Way. Established by Florida State or U.S. Geological Surveys.
RM6	22.21	Station is located at the center of the crossing of Ocean Drive (State Highway A1A) and Donald Ross Road. Established by Florida State or U.S. Geological Surveys.
RM7	22.405	Top of concrete post 1 inch below the level of the ground, located approximately 2.2 miles north along State Highway A1A from the junction of U.S. Highway 1, 97 feet north of the centerlune of a driveway leading west of the highway, 24 feet northwest of the northeast corner of concrete power line pole No. 1801, 0.5 foot below the lewel of the highway. Established by Florida State of U.S. Geological Surveys.



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APPROXIMATE SCALE

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NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

TOWN OF
JUNO BEACH, FLORIDA
PALM BEACH COUNTY

ONLY PANEL PRINTED

COMMUNITY-PANEL NUMBER
120208 0001 C

MAP REVISED:
SEPTEMBER 30, 1982

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

APPROXIMATE SCALE

600 0 600 FE

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

TOWN OF

JUNO BEACH, FLORIDA

PALM BEACH COUNTY

ONLY PANEL PRINTED

COMMUNITY-PANEL NUMBER
120208 0001 C

MAP REVISED:
SEPTEMBER 30, 1982

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

KEY TO MAP

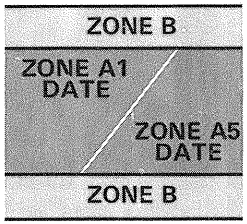
500-Year Flood Boundary

100-Year Flood Boundary

Zone Designations* With Date of Identification e.g., 12/2/74

100-Year Flood Boundary

500-Year Flood Boundary



Base Flood Elevation Line With Elevation In Feet**

513

Base Flood Elevation in Feet Where Uniform Within Zone**

(EL 987)

Elevation Reference Mark

RM7×

Zone D Boundary

River Mile

•M1.5

**Referenced to the National Geodetic Vertical Datum of 1929

*EXPLANATION OF ZONE DESIGNATIONS

ZONE	EXPLANATION
A	Areas of 100-year flood; base flood elevations and flood hazard factors not determined.
A0	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; average depths of inundation are shown, but no flood hazard factors are determined.
AH	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; base flood elevations are shown, but no flood hazard factors are determined.
A1-A30	Areas of 100-year flood; base flood elevations and flood hazard factors determined.
A99	Areas of 100-year flood to be protected by flood protection system under construction; base flood elevations and flood hazard factors not determined.
B	Areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood. (Medium shading)
C	Areas of minimal flooding. (No shading)
D	Areas of undetermined, but possible, flood hazards.
V	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors not determined.
V1-V30	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors

APPROXIMATE SCALE

600 0 600 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

TOWN OF

JUNO BEACH, FLORIDA

PALM BEACH COUNTY

ONLY PANEL PRINTED

COMMUNITY-PANEL NUMBER
120208 0001 C

MAP REVISED:
SEPTEMBER 30, 1982

Federal Emergency Management Agency

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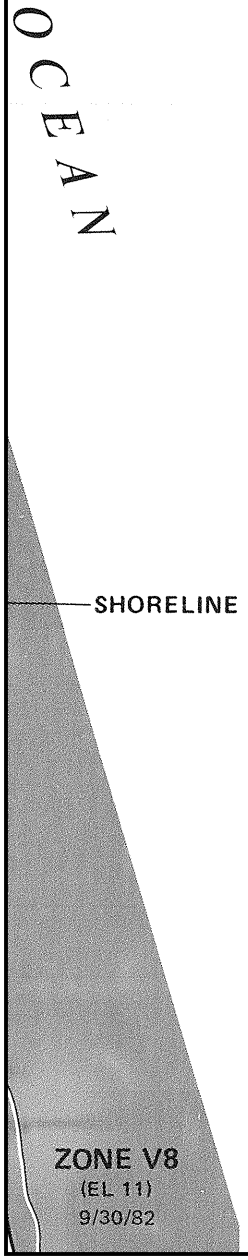

D	Areas of undetermined, but possible, flood hazards.
V	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors not determined.
V1-V30	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors determined.

NOTES TO USER

Certain areas not in the special flood hazard areas (zones A and V) may be protected by flood control structures.

This map is for flood insurance purposes only; it does not necessarily show all areas subject to flooding in the community or all planimetric features outside special flood hazard areas.

Coastal base flood elevations shown on this map include the effects of wave action.

INITIAL IDENTIFICATION:
JANUARY 16, 1974

FLOOD HAZARD BOUNDARY MAP REVISIONS:
MAY 28, 1976

FLOOD INSURANCE RATE MAP EFFECTIVE:
DECEMBER 1, 1978

FLOOD INSURANCE RATE MAP REVISIONS:
Map revised September 30, 1982 to change zone designations and base flood elevations reflecting wave action effects, and to add special flood hazard areas and change corporate limits.

(Note: Some special flood hazard areas added for this map revision were taken from the effective FIRM for Palm Beach County, Florida dated February 1, 1979 and are shown with this date.)

APPROXIMATE SCALE
600 0 600 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

TOWN OF
JUNO BEACH, FLORIDA
PALM BEACH COUNTY

ONLY PANEL PRINTED

COMMUNITY-PANEL NUMBER
120208 0001 C

MAP REVISED:
SEPTEMBER 30, 1982

Federal Emergency Management Agency

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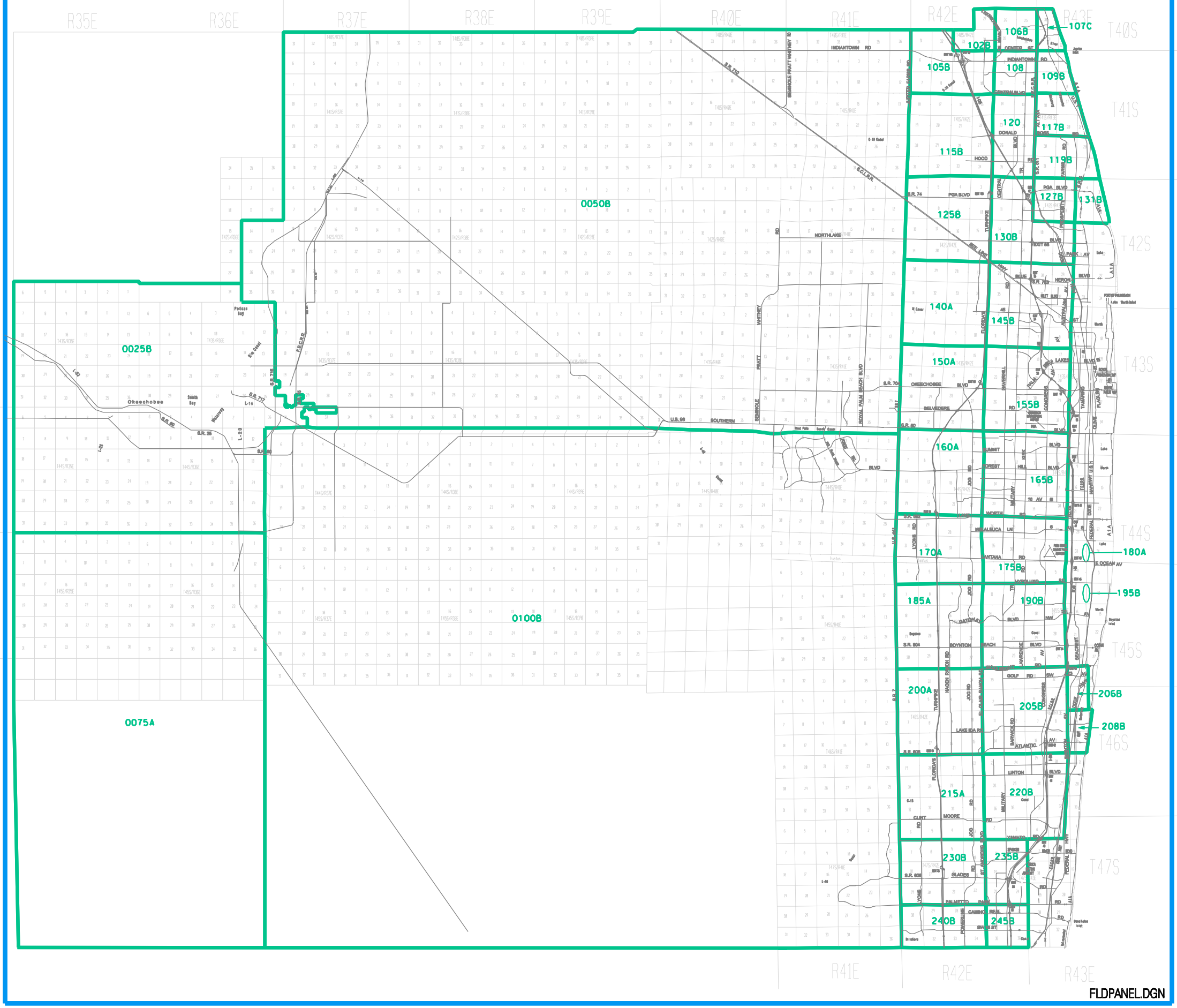
PALM BEACH COUNTY
PLANNING, ZONING AND BUILDING DEPARTMENT / GIS



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Appendix G

Palm Beach SLOSH, Storm Surge Maps

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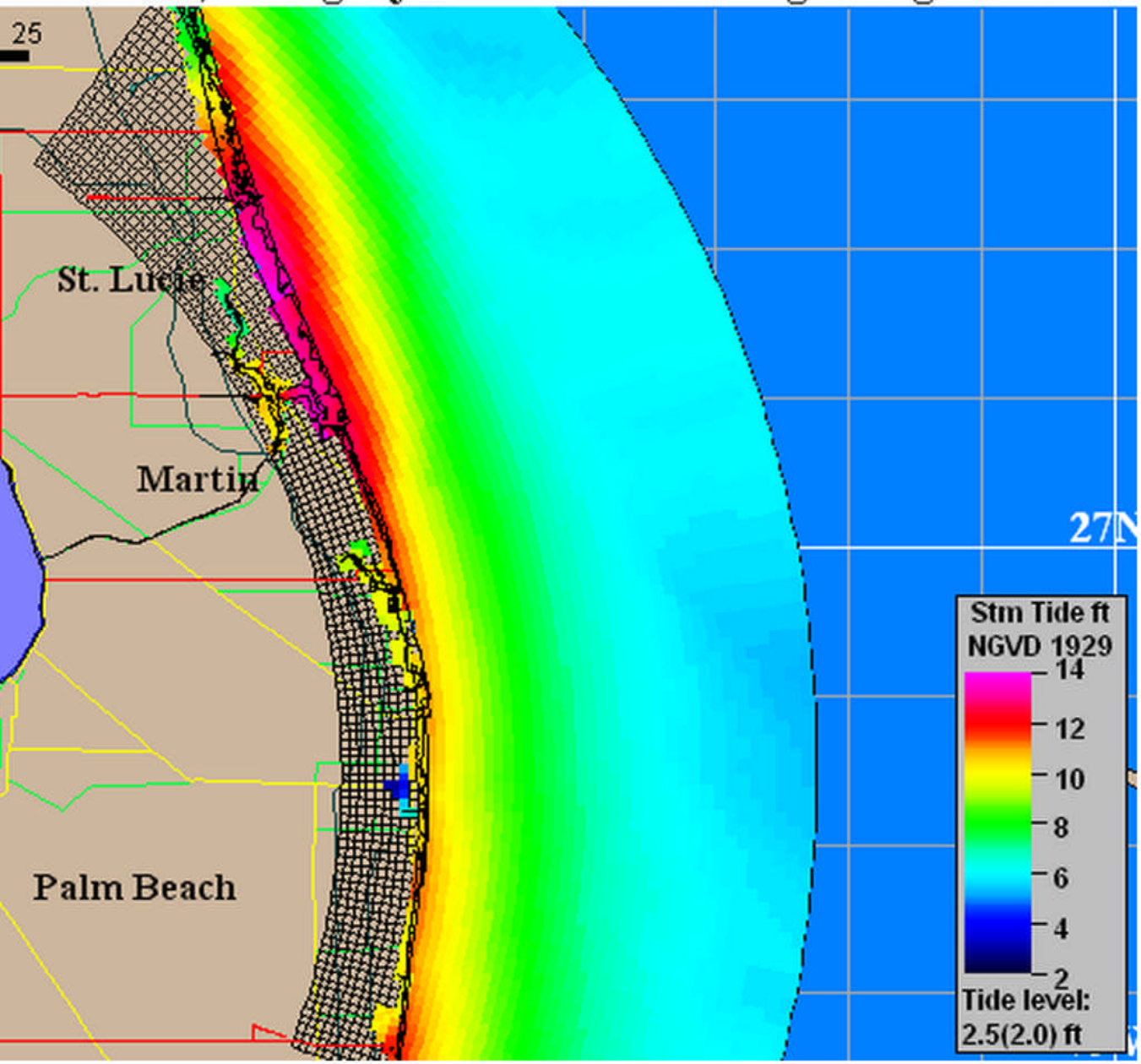
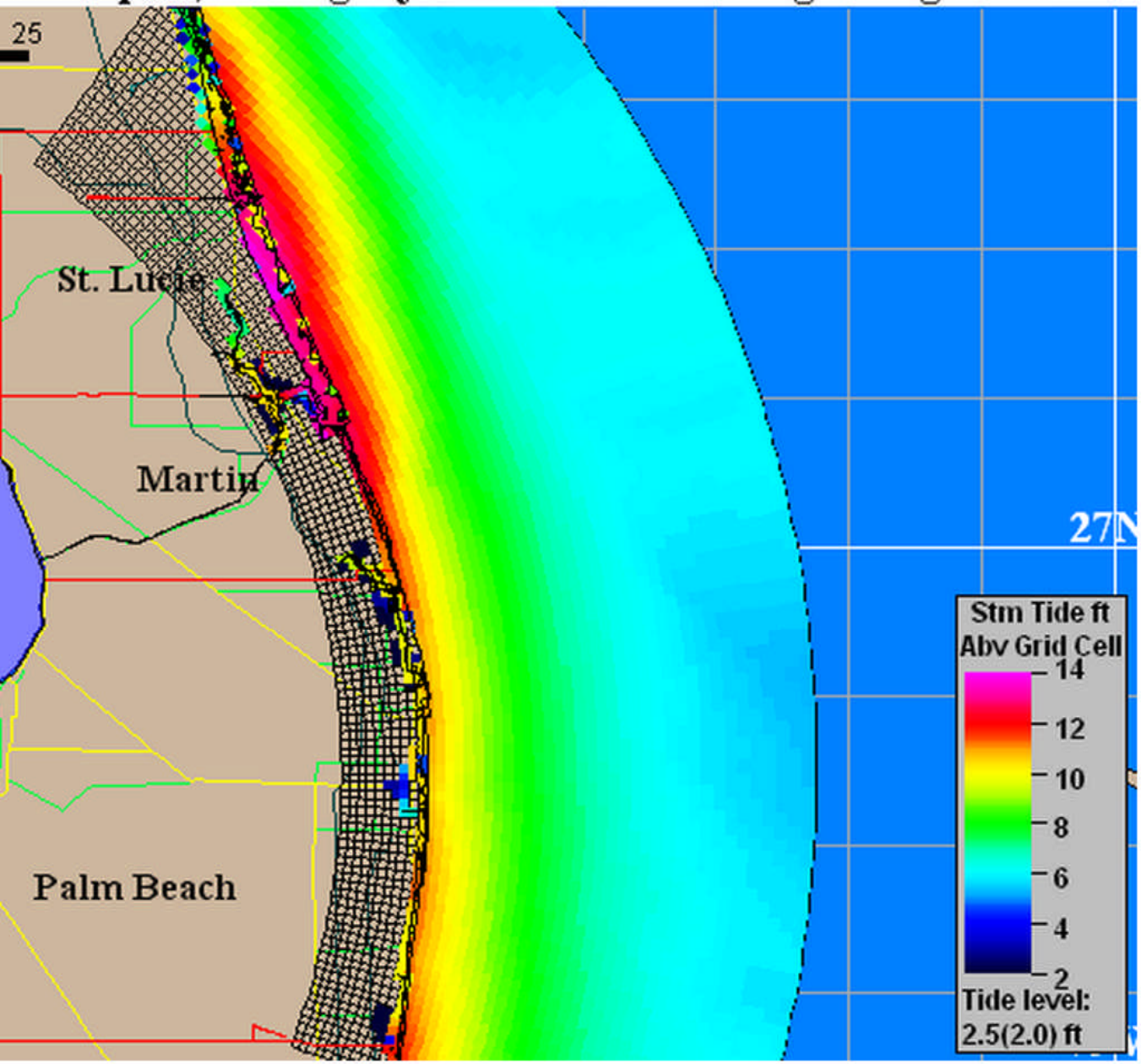
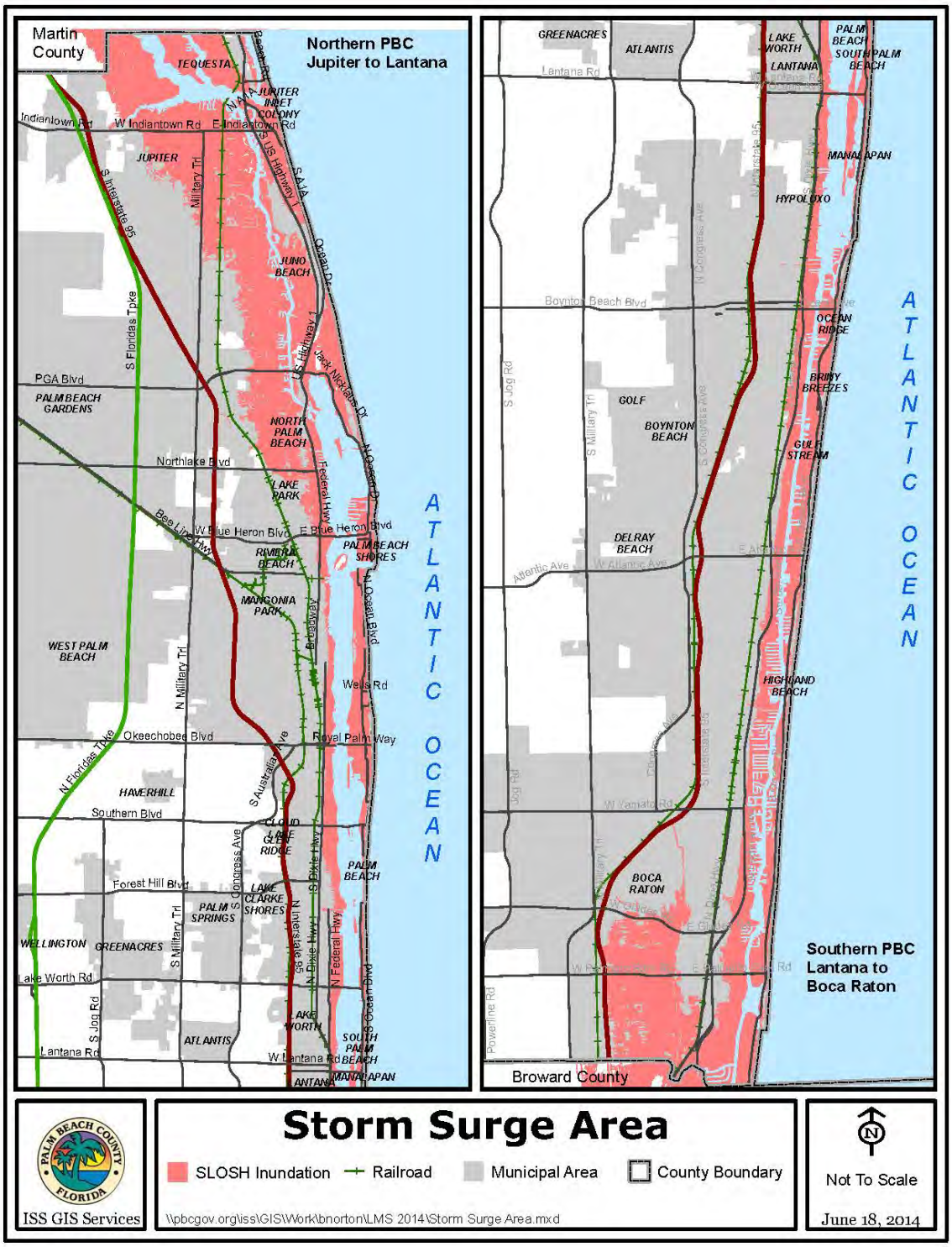
torm Tide, Category 5 Hurricane hitting at high tide



ground.com/hurricane/surge/palmbeach_mom5h.png

ter depth , Category 5 Hurricane hitting at high tide




Martin County
Northern PBC
Jupiter to Lantana
TEQUESTA
JUPITER
JUPITER INLET COLONY
JUNO BEACH
NORTH PALM BEACH
LAKE PARK
PALM BEACH GARDENS
PALM BEACH SHORES
RIVIERA BEACH
MANGONIA PARK
WEST PALM BEACH
HAVERHILL
CLOUD LAKE
GLEN RIDGE
PALM BEACH
LAKE CLARKE SHORES
PALM SPRINGS
WELLINGTON
GREENACRES
ATLANTIS
LAKE WORTH
SOUTH PALM BEACH
MANALAPAN
ATLANTIC OCEAN
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E Indiantown Rd
Beach Rd
S Military Trl
S A1A
Ocean Dr
US Highway 1
Jack Nicklaus Dr
N Ocean Dr
S Florida's Tpke
PGA Blvd
Northlake Blvd
Federal Hwy
Bee Line Hwy
W Blue Heron Blvd
E Blue Heron Blvd
E Ocean Blvd
Broadway
N Military Trl
Okeechobee Blvd
Royal Palm Way
N Florida's Tpke
S Australian Ave
Southern Blvd
S Congress Ave
S Dixie Hwy
Forest Hill Blvd
N Interstate 95
N Dixie Hwy
N Federal Hwy
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Lantana Rd
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LAKE WORTH
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BRINY BREEZES
GOLF
BOYNTON BEACH
GULF STREAM
DELRAY BEACH
Atlantic Ave
HIGHLAND BEACH
BOCA RATON
Powerline Rd
Broward County
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Boca Raton
Storm Surge Area
SLOSH Inundation
Railroad
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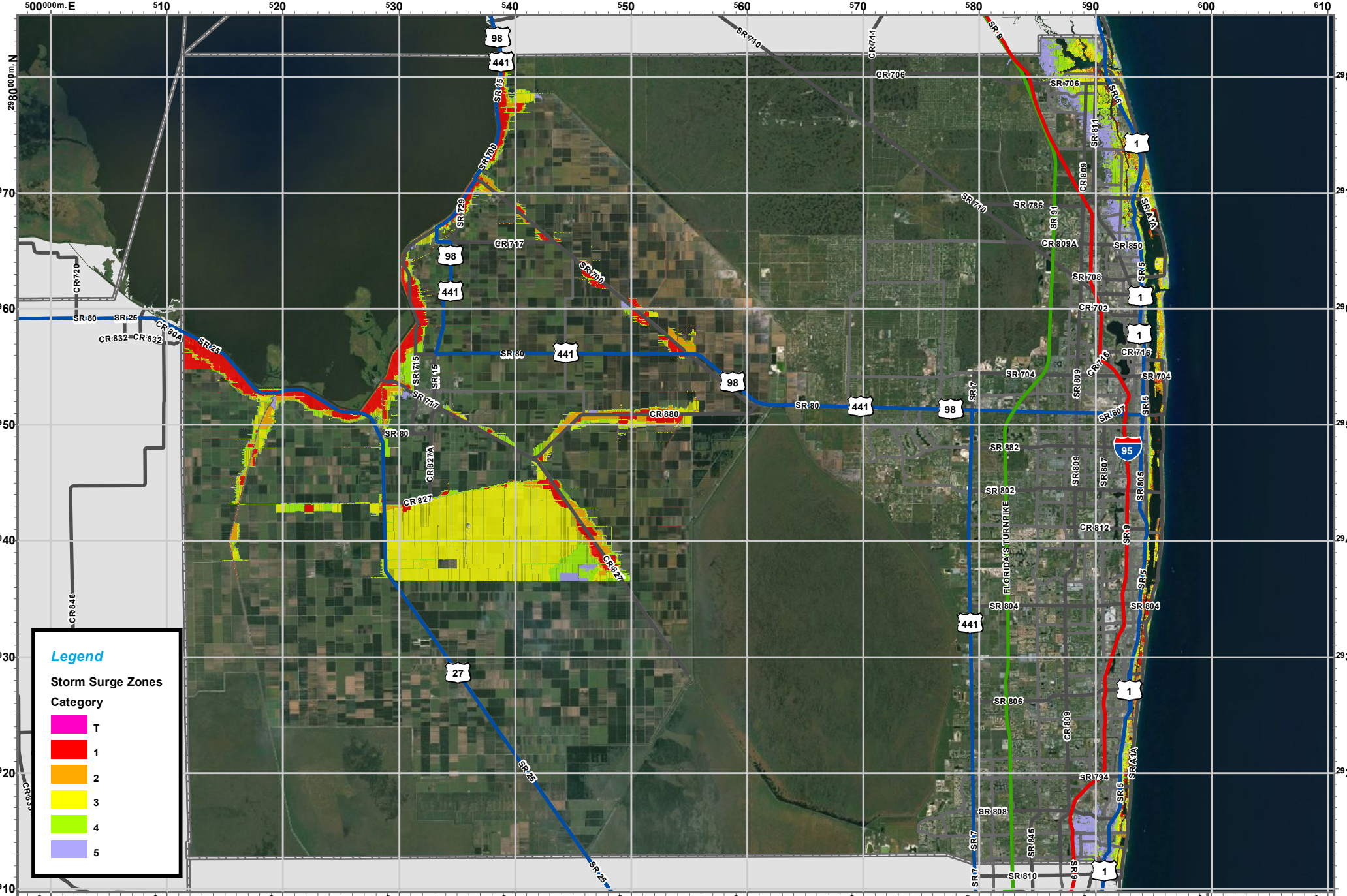
June 18, 2014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CR 717
SR 786
SR 91
CR 809
SR A1A
CR 809A
SR 850
SR 708
CR 720
SR 80
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FLORIDA'S TURNPIKE
CR 812
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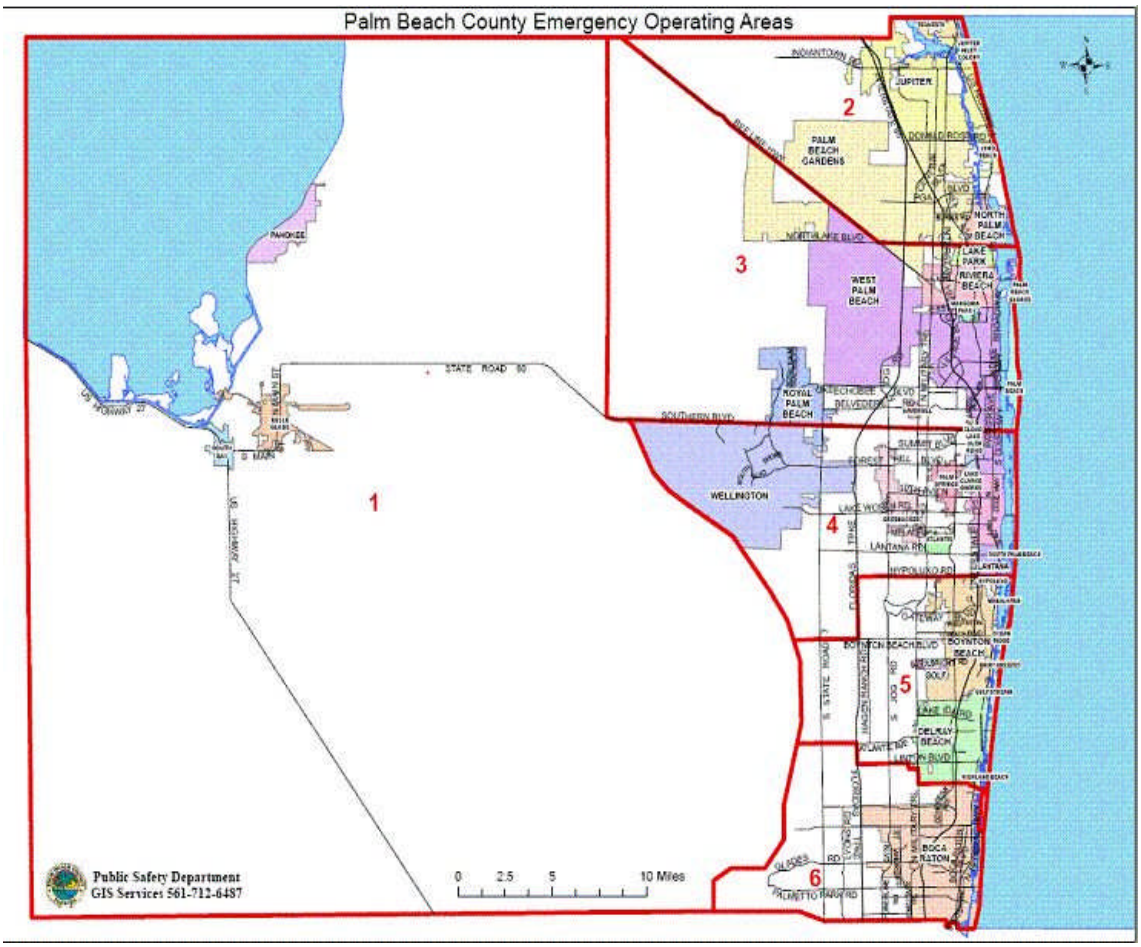
Disclaimer: Map is intended for reference only
No warranty for accuracy provided
Created By: GIS Section
Requested By: Standard Map Product
Date: 5/31/2012
Time: 11:12:37 AM
Path: S:\Projects\EvacRoute_SurgeZone_Maps\2012_DDP_MXDs\Storm_Surge_Zones\MXDs\UTM17_Landscape.mxd
PALM BEACH
STORM SURGE ZONES
0 2 4 6 8 Miles
FLORIDA DIVISION OF EMERGENCY MANAGEMENT

Appendix H

Map of Palm Beach County Emergency Operations Areas


Palm Beach County Emergency Operating Areas
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JUPITER
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LAKE PARK
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WEST PALM BEACH
ROYAL PALM BEACH
WELLINGTON
BOYNTON BEACH
DELRAY BEACH
BOCA RATON
PAHOKEE
STATE ROAD 80
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LANTANA RD
Public Safety Department
GIS Services 561-712-6487
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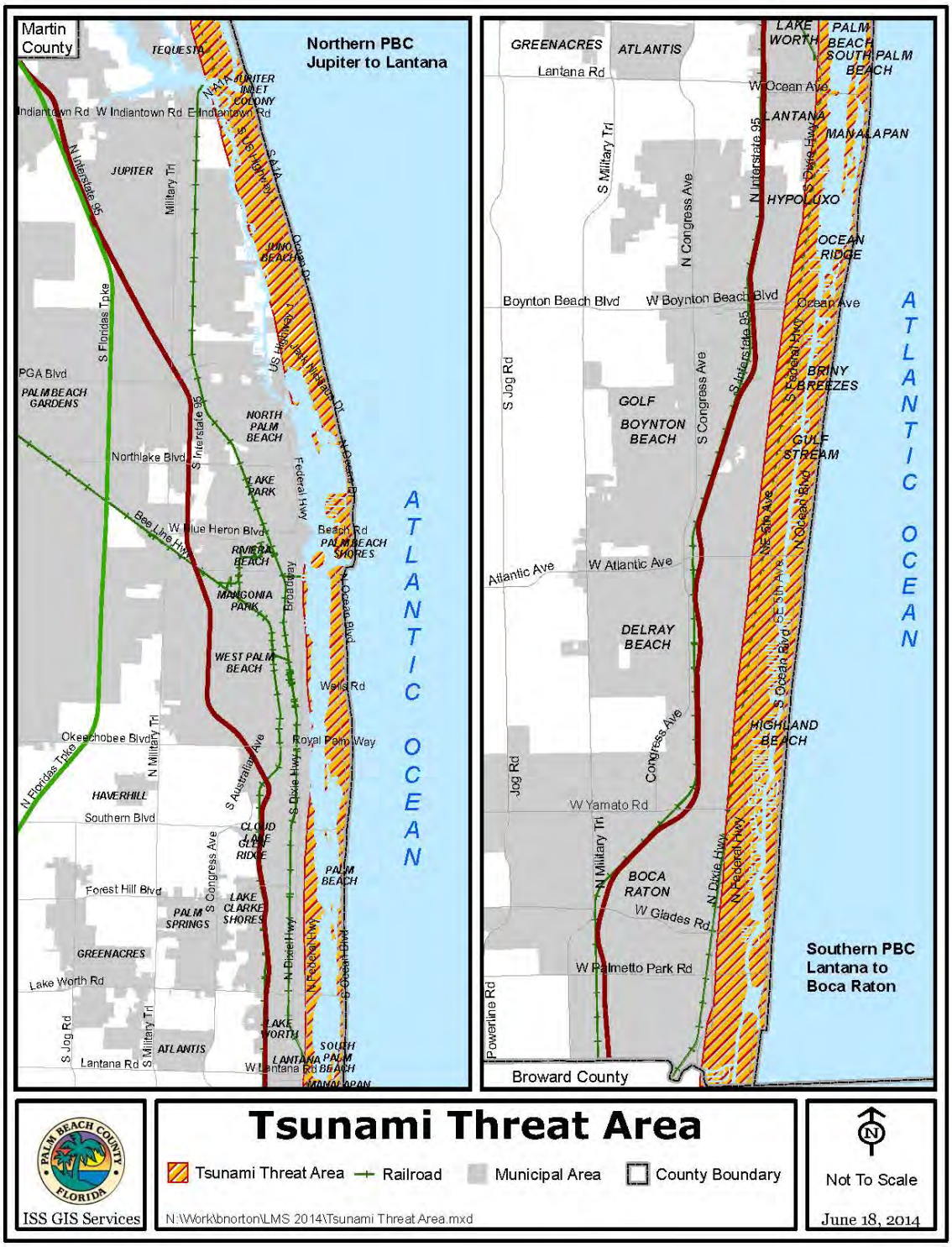
Appendix I

Palm Beach County Tsunami Hazard Area


Martin County
Northern PBC
Jupiter to Lantana
TEQUESTA
JUPITER INLET COLONY
JUPITER
JUNO BEACH
PGA Blvd
PALM BEACH GARDENS
NORTH PALM BEACH
LAKE PARK
RIVIERA BEACH
PALM BEACH SHORES
MANGONIA PARK
WEST PALM BEACH
HAVERHILL
CLOUD LAKE
GLEN RIDGE
PALM BEACH
LAKE CLARKE SHORES
PALM SPRINGS
GREENACRES
ATLANTIS
LAKE WORTH
SOUTH PALM BEACH
LANTANA
MANALAPAN
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E Indiantown Rd
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W Blue Heron Blvd
Beach Rd
Wells Rd
Okeechobee Blvd
Royal Palm Way
Southern Blvd
Forest Hill Blvd
Lake Worth Rd
Lantana Rd
W Lantana Rd
N Interstate 95
S Interstate 95
S Florida Tpke
N Florida Tpke
N Military Trl
S Military Trl
Jog Rd
S Jog Rd
Congress Ave
S Australian Ave
Broadway
Federal Hwy
S Dixie Hwy
N Dixie Hwy
N Ocean Blvd
S Ocean Blvd
Bee Line Hwy
ATLANTIC OCEAN
GREENACRES
ATLANTIS
Lantana Rd
LAKE WORTH
PALM BEACH
SOUTH PALM BEACH
W Ocean Ave
LANTANA
MANALAPAN
HYPOLUXO
OCEAN RIDGE
Boynton Beach Blvd
W Boynton Beach Blvd
Ocean Ave
BRINY BREEZES
GOLF
BOYNTON BEACH
GULF STREAM
Atlantic Ave
W Atlantic Ave
DELRAY BEACH
HIGHLAND BEACH
W Yamato Rd
BOCA RATON
W Glades Rd
W Palmetto Park Rd
Powerline Rd
Broward County
Southern PBC
Lantana to
Boca Raton
ATLANTIC OCEAN
Tsunami Threat Area
Tsunami Threat Area
Railroad
Municipal Area
County Boundary
Not To Scale
June 18, 2014
ISS GIS Services
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Appendix J

Maps of Evacuation Zones, Critical Facilities from the *Palm Beach County LMS*, Sea Level Rise Inundation Map

.maps.arcgis.com/home/webmap/viewer.html?webmap=06d4b60721a64884bfa942d0beb6d473&extent=-91.4499,23.5182,-73.0587,32.3749

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acuation Zones

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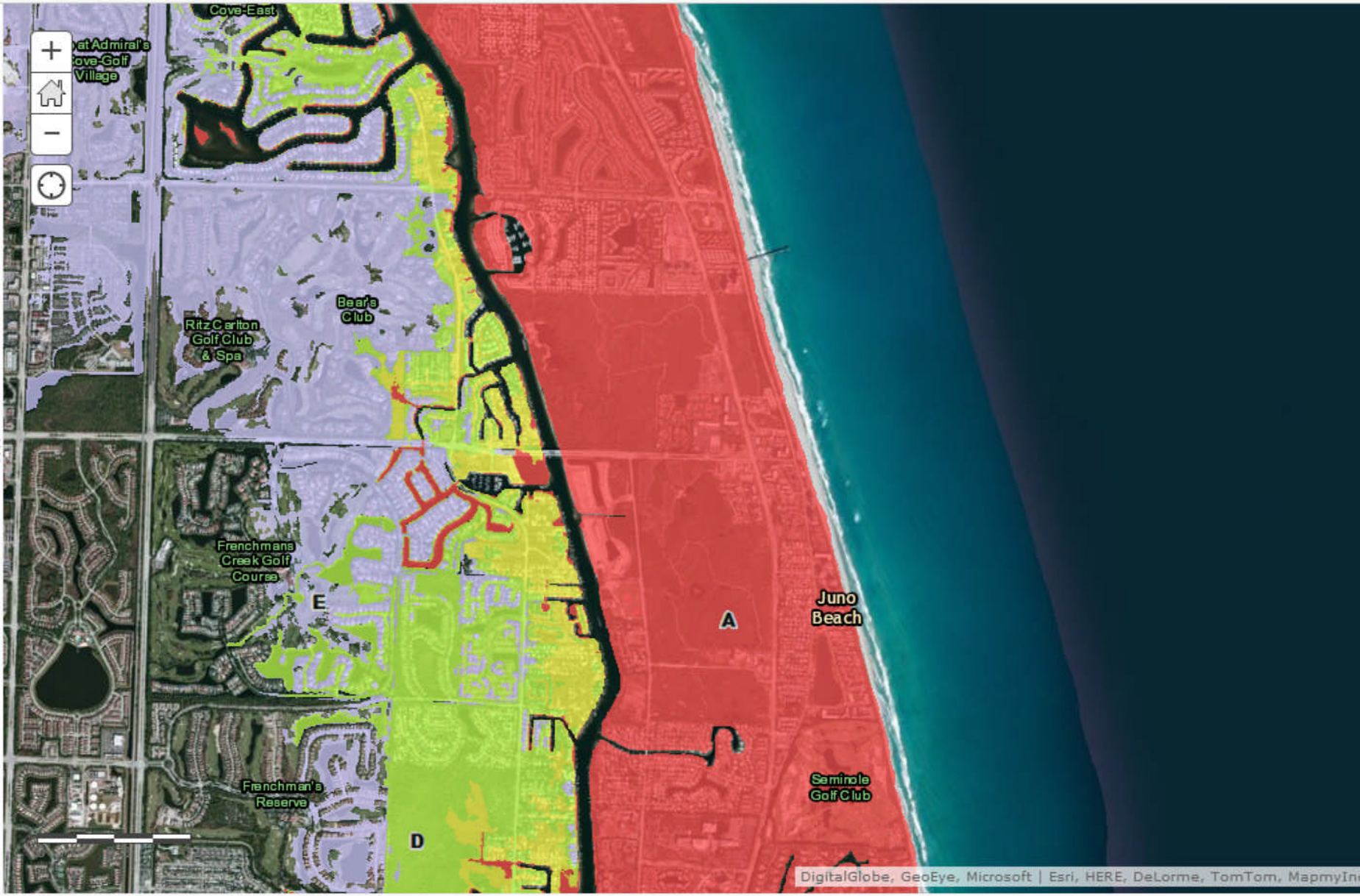

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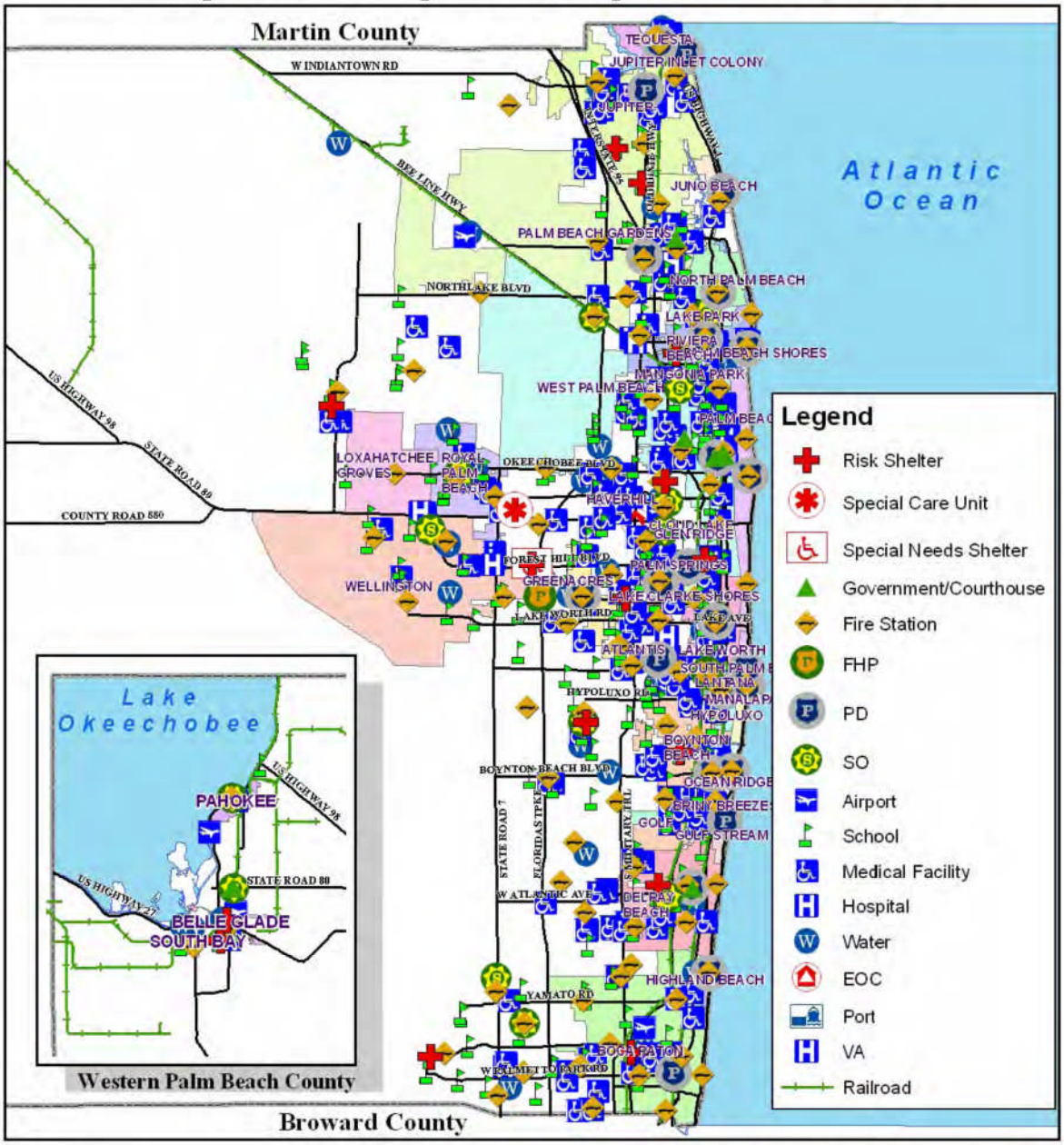
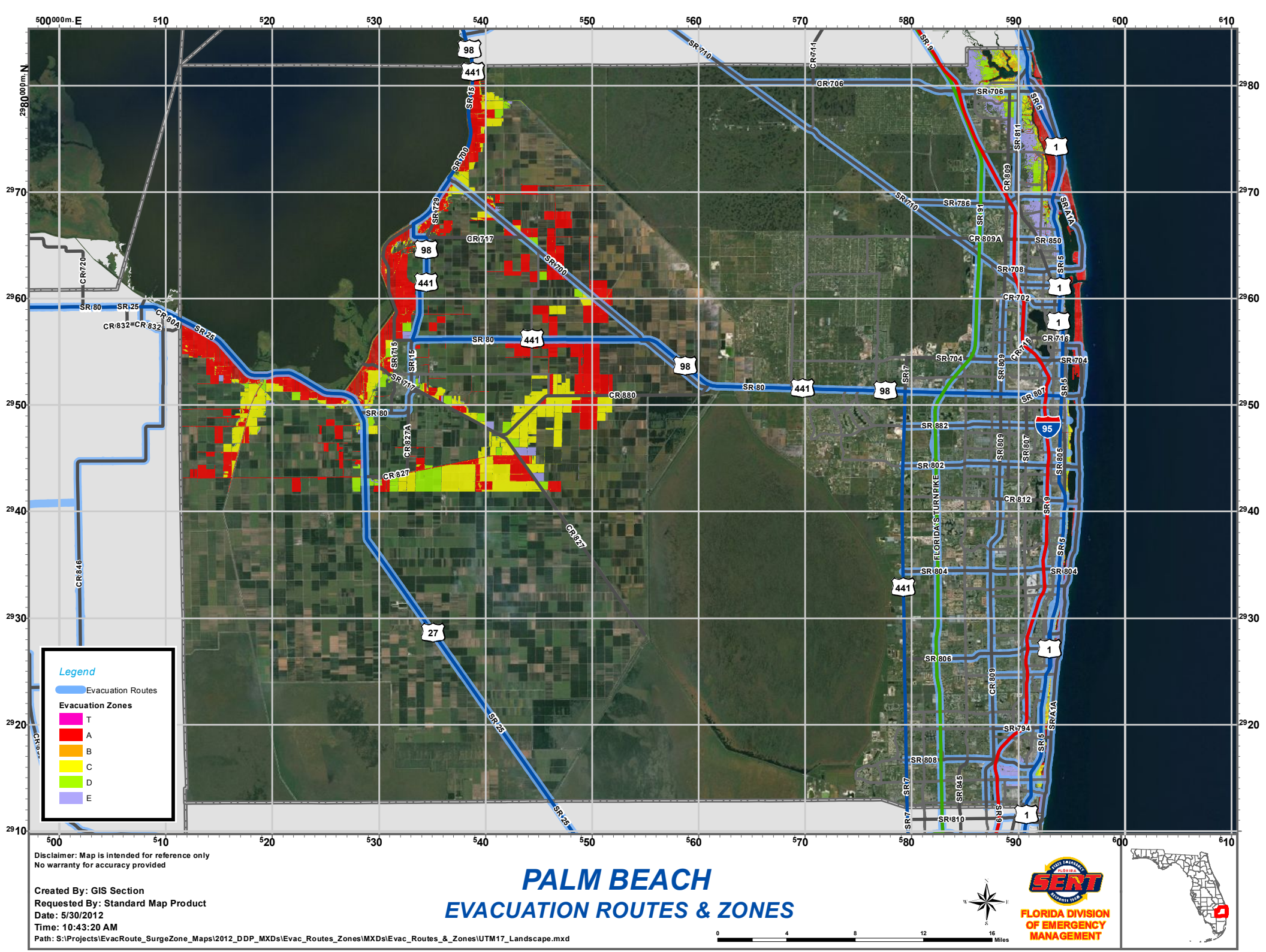
Palm Beach County Facilities Impacted by Countywide Events



Public Safety Department
GIS Services 561-712-6400
LMS Plan
Date: May 15, 2009
Data Source: Palm Beach Countywide GIS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SR 91
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CR 827A
CR 827
CR 846
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SR 704
CR 716
SR 882
SR 802
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SR 807
FLORIDA'S TURNPIKE
CR 812
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SR 794
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SR 845
SR 810
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Disclaimer: Map is intended for reference only
No warranty for accuracy provided
Created By: GIS Section
Requested By: Standard Map Product
Date: 5/30/2012
Time: 10:43:20 AM
Path: S:\Projects\EvacRoute_SurgeZone_Maps\2012_DDP_MXDs\Evac_Routes_Zones\MXDs\Evac_Routes_&_Zones\UTM17_Landscape.mxd
PALM BEACH
EVACUATION ROUTES & ZONES
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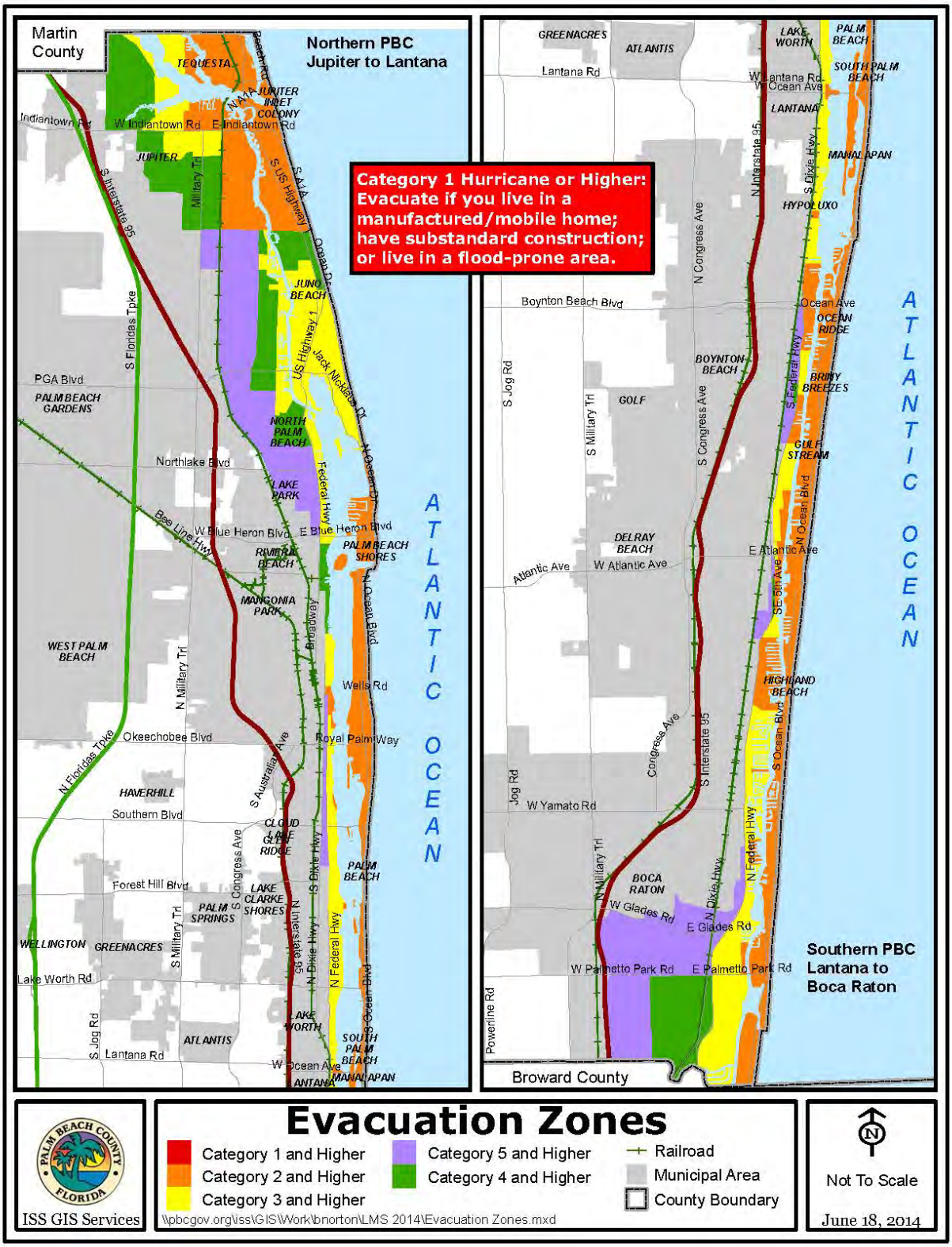
Miles
SERT
FLORIDA DIVISION OF EMERGENCY MANAGEMENT


Martin County
Northern PBC
Jupiter to Lantana
Category 1 Hurricane or Higher:
Evacuate if you live in a manufactured/mobile home; have substandard construction; or live in a flood-prone area.
TEQUESTA
JUPITER INLET COLONY
JUPITER
JUNO BEACH
NORTH PALM BEACH
LAKE PARK
PALM BEACH GARDENS
PALM BEACH SHORES
RIVIERA BEACH
MANGONIA PARK
WEST PALM BEACH
HAVERHILL
CLOUD LAKE
GLEN RIDGE
LAKE CLARKE SHORES
PALM SPRINGS
WELLINGTON
GREENACRES
ATLANTIS
LAKE WORTH
SOUTH PALM BEACH
MANALAPAN
ATLANTIC OCEAN
Indiantown Rd
W Indiantown Rd
E Indiantown Rd
Beach Rd
Military Trl
S US Highway 1
A1A
Ocean Dr
Jack Nicklaus Dr
S Florida's Trpke
PGA Blvd
Northlake Blvd
Federal Hwy
Bee Line Hwy
W Blue Heron Blvd
E Blue Heron Blvd
N Ocean Blvd
Broadway
N Military Trl
Wells Rd
Okeechobee Blvd
N Florida's Trpke
Royal Palm Way
S Australian Ave
Southern Blvd
S Congress Ave
S Dixie Hwy
Forest Hill Blvd
N Interstate 95
N Federal Hwy
S Ocean Blvd
Lake Worth Rd
S Jog Rd
Lantana Rd
W Ocean Ave
GREENACRES
ATLANTIS
Lantana Rd
LAKE WORTH
PALM BEACH
SOUTH PALM BEACH
W Lantana Rd
W Ocean Ave
LANTANA
MANALAPAN
N Interstate 95
S Dixie Hwy
HYPOLUXO
N Congress Ave
Boynton Beach Blvd
Ocean Ave
OCEAN RIDGE
BOYNTON BEACH
BRINY BREEZES
S Jog Rd
S Military Trl
GOLF
S Congress Ave
S Federal Hwy
GULF STREAM
N Ocean Blvd
DELRAY BEACH
E Atlantic Ave
W Atlantic Ave
Atlantic Ave
SE 6th Ave
HIGHLAND BEACH
S Interstate 95
S Ocean Blvd
Congress Ave
Jog Rd
W Yamato Rd
N Military Trl
N Federal Hwy
BOCA RATON
N Dixie Hwy
W Glades Rd
E Glades Rd
W Palmetto Park Rd
E Palmetto Park Rd
Powerline Rd
Broward County
Southern PBC
Lantana to
Boca Raton
ATLANTIC OCEAN
ISS GIS Services
Evacuation Zones
Category 1 and Higher
Category 2 and Higher
Category 3 and Higher
Category 5 and Higher
Category 4 and Higher
Railroad
Municipal Area
County Boundary
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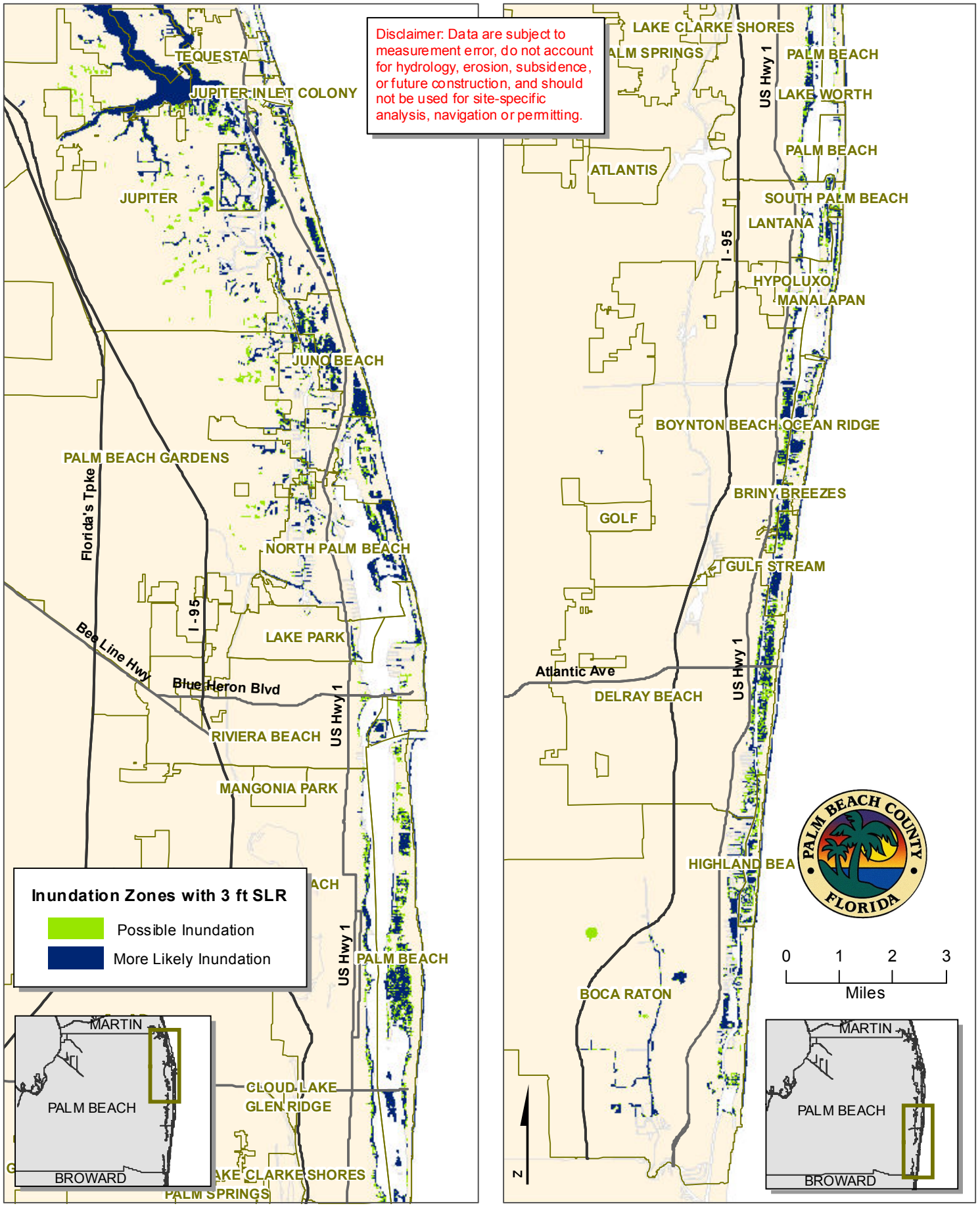
Not To Scale
June 18, 2014



Palm Beach County Municipalities

Inundation Zones with 3 ft Sea Level Rise

Sea Level Rise Hazard Vulnerability Analysis

Appendix K

Flood Insurance Claims Filed (Dates and Totals)

City	ST	Comm Nbr	Pol Eff Dt	Pol Exp Dt	Dt of Loss	Total Paid
JUNO BEACH	FL	120208	01/10/1984	01/10/1985	11/25/1984	0
JUNO BEACH	FL	120208	01/16/1991	01/16/1992	10/31/1991	0
JUNO BEACH	FL	120208	06/12/1992	06/12/1993	08/24/1992	0
JUNO BEACH	FL	120208	12/03/1992	12/03/1993	11/27/1993	27,362
JUNO BEACH	FL	120208	12/03/1993	12/03/1994	01/08/1994	13,617
JUNO BEACH	FL	120208	12/03/1993	12/03/1994	10/21/1994	19,106
JUNO BEACH	FL	120208	12/03/1993	12/03/1994	11/14/1994	16,384
JUNO BEACH	FL	120208	05/09/1994	05/09/1995	11/17/1994	15,474
JUNO BEACH	FL	120208	04/23/1994	04/23/1995	11/24/1994	21,135
JUNO BEACH	FL	120208	01/11/1995	01/11/1996	10/09/1995	7,986
JUNO BCH	FL	120208	11/25/1994	11/25/1995	10/17/1995	0
JUNO BEACH	FL	120208	01/07/1995	01/07/1996	10/17/1995	0
JUNO BEACH	FL	120208	01/16/1995	01/16/1998	10/17/1995	1,162
JUNO BEACH	FL	120208	10/10/1995	10/10/1996	10/17/1995	7,159
JUNO BEACH	FL	120208	01/07/1995	01/07/1996	10/17/1995	36,925
JUNO BEACH	FL	120208	01/07/1993	01/07/1996	10/17/1995	13,873
JUNO BEACH FL	FL	120208	08/07/1995	08/07/1996	10/17/1995	10,190
PALM BCH GDNS	FL	120208	10/10/1995	10/10/1996	10/17/1995	4,535
JUNO BCH	FL	120208	09/02/1995	09/02/1996	10/18/1995	0
JUNO BEACH	FL	120208	06/09/1995	06/09/1998	10/18/1995	0
PALM BCH GDNS	FL	120208	06/08/1993	06/08/1996	10/18/1995	0
JUNO BEACH	FL	120208	01/11/1995	01/11/1996	01/03/1996	0
JUNO BEACH	FL	120208	05/24/1999	05/24/2000	10/14/1999	0
JUNO BEACH	FL	120208	04/30/1999	04/30/2002	10/15/1999	1,264
JUNO BEACH	FL	120208	04/30/1999	04/30/2002	10/15/1999	8,783
NO PALM BEACH	FL	120208	05/27/1999	05/27/2000	10/15/1999	0
JUNO BCH	FL	120208	10/30/1997	10/30/2000	10/16/1999	0
JUNO BEACH	FL	120208	09/05/2004	09/05/2005	09/05/2004	48,218
JUNO BEACH	FL	120208	09/22/2003	09/22/2004	09/05/2004	0
JUNO BEACH	FL	120208	04/04/2004	04/04/2005	09/05/2004	0
JUNO BEACH	FL	120208	05/07/2004	05/07/2005	09/16/2004	4,685
JUNO BEACH	FL	120208	06/26/2004	06/26/2005	09/18/2004	0
JUNO BEACH	FL	120208	06/26/2004	06/26/2005	09/18/2004	0
JUNO BEACH	FL	120208	08/19/2004	08/19/2005	09/26/2004	20,043
JUNO BEACH	FL	120208	09/18/2004	09/18/2005	09/26/2004	0
JUNO BEACH	FL	120208	03/29/2004	03/29/2005	09/26/2004	0
JUNO BEACH	FL	120208	09/11/2004	09/11/2005	08/26/2005	0
JUNO BEACH	FL	120208	07/14/2005	07/14/2006	10/24/2005	9,737
JUNO BEACH	FL	120208	08/19/2008	08/19/2009	08/19/2008	19,080
JUNO BEACH	FL	120208	07/09/2009	07/09/2010	12/16/2009	1,122

Appendix L

Map of Nuisance Flooding Areas and Repetitive Loss Locations

LEGEND

- JUNO BEACH BOUNDARY
- A
- A5
- AH
- ANI
- AO
- D
- UNDES
- VE
- C
- B

FEMA FLOOD ZONES

JUNO BEACH, FLORIDA

N W E S

ESRI

0 700 1,400 2,800 4,200 Feet

0 General Location of an Isolated Repetive Loss Property

Appendix M

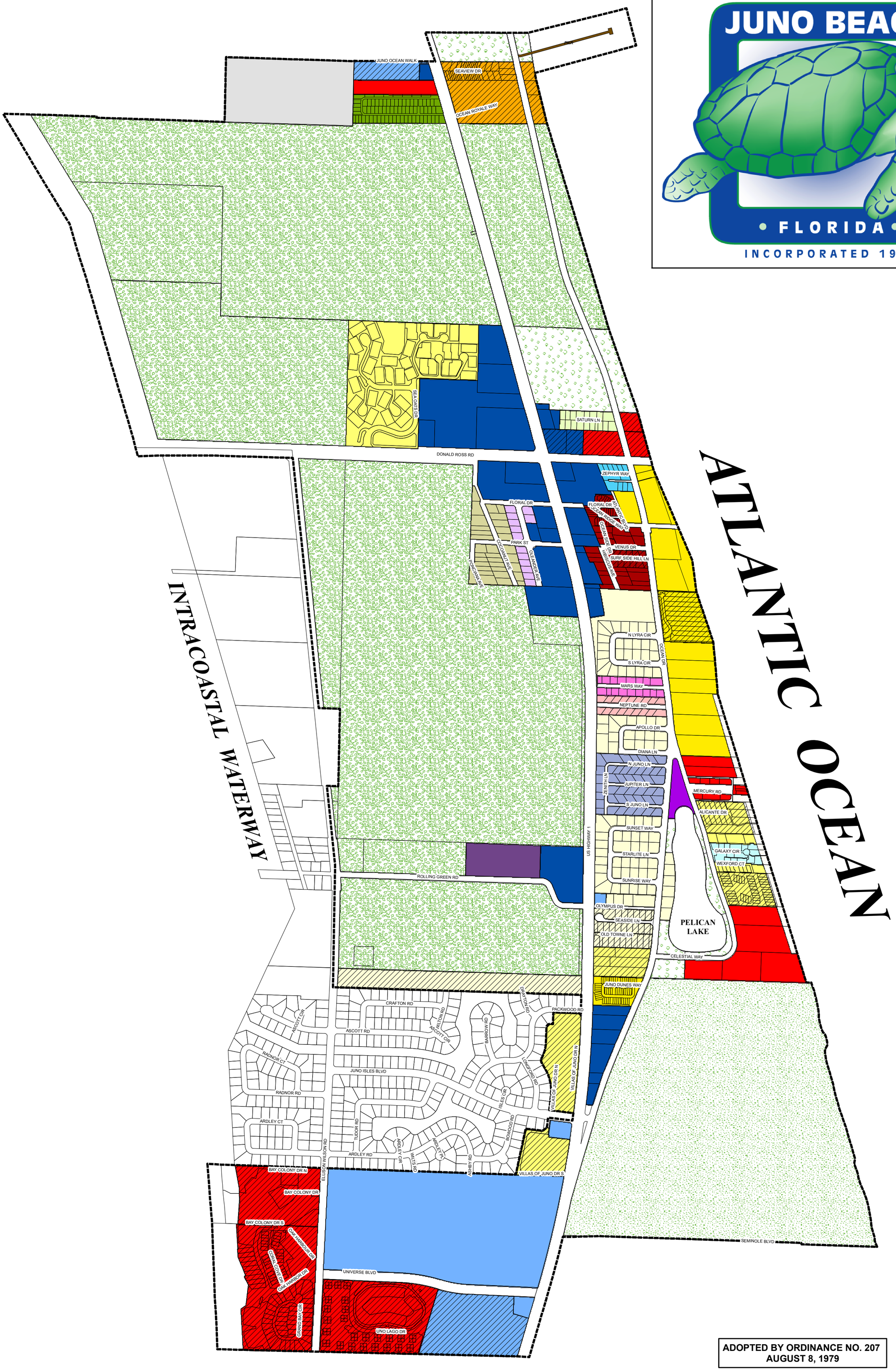
Juno Beach Zoning Map, Future Land Use Map & Development/ Redevelopment Opportunities Report

TOWN OF

JUNO BEACH

FLORIDA

INCORPORATED 1953



ADOPTED BY ORDINANCE NO. 207
AUGUST 8, 1979

REVISED NOVEMBER 2010

LEGEND

JUNO_BEACH_BOUNDARY		HIST-Z	ZEPHYR WAY HISTORIC PRESERVATION DISTRICT	RMT	RESIDENTIAL TRANSIENT & MULTIPLE FAMILY MODERATE DENSITY
PUD	PLANNED UNIT DEVELOPMENT	MH	MANUFACTURED HOME COMMUNITY	RS-1	RESIDENTIAL SINGLE FAMILY
BCH	BEACH	R-DUP	RESIDENTIAL DUPLEX (TWO FAMILY)	RS-2	RESIDENTIAL SINGLE FAMILY
CG	COMMERCIAL GENERAL	REC-PRIV	PRIVATE RECREATION	RS-3	RESIDENTIAL SINGLE FAMILY
CO	COMMERCIAL OFFICE	REC-PUB	PUBLIC RECREATION	RS-4	RESIDENTIAL SINGLE FAMILY
ESL	ENVIRONMENTAL SENSITIVE LANDS	RH	RESIDENTIAL MULTIPLE FAMILY HIGH DENSITY	RS-5	RESIDENTIAL SINGLE FAMILY
GOV	GOVERNMENT	RM-00	RESIDENTIAL MULTIPLE FAMILY - MODERATE DENSITY - OPEN SPACE	RV PARK	RECREATIONAL VEHICLE PARK
HIST-B	BEACHBOUND HISTORIC PRESERVATION DISTRICT	RM-1	RESIDENTIAL MULTIPLE FAMILY - MEDIUM DENSITY	UTL	UTILITIES
HIST-S	SATURN LANE HISTORIC PRESERVATION DISTRICT	RM-2	RESIDENTIAL MULTIPLE FAMILY - MODERATE DENSITY		

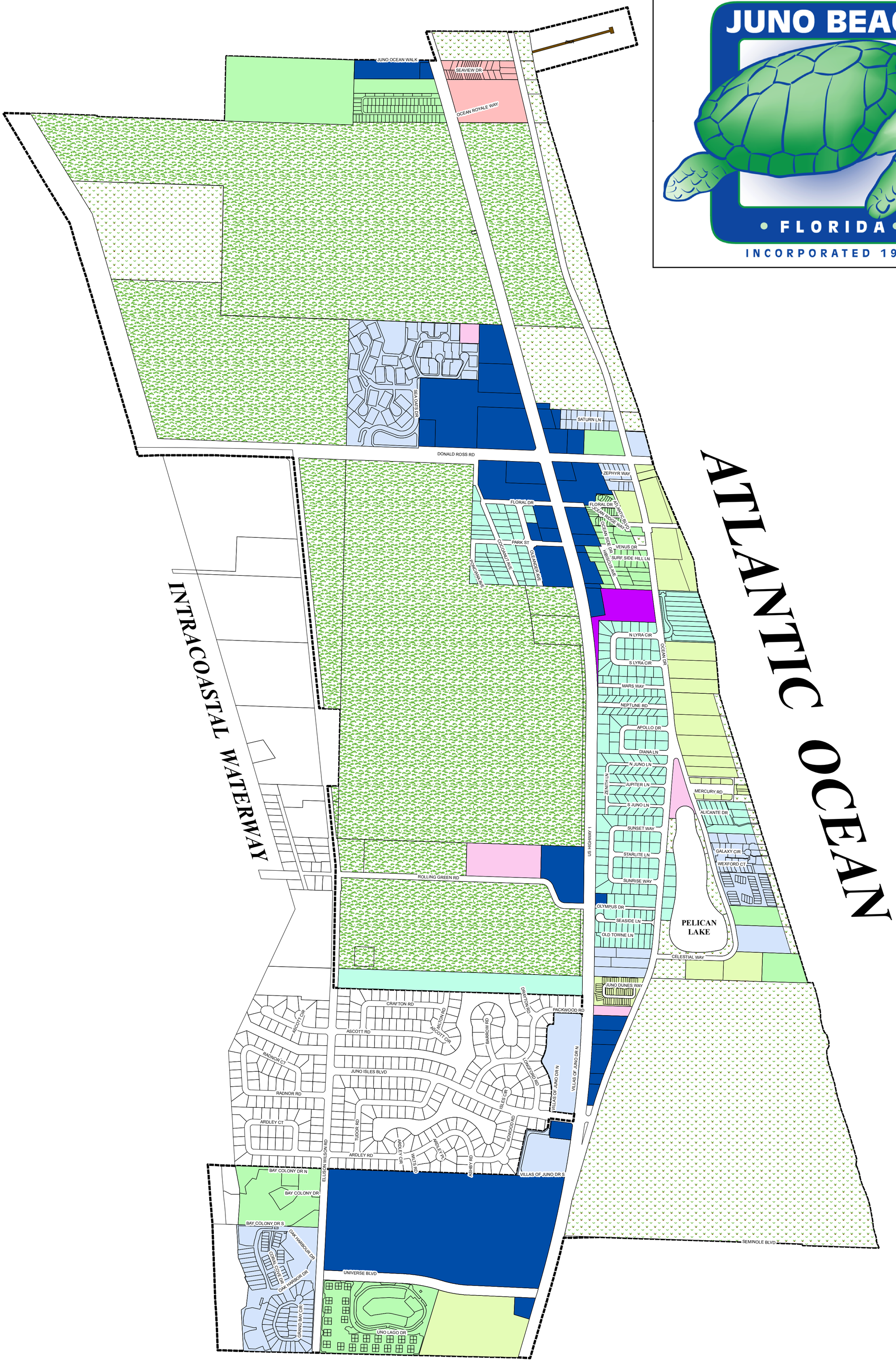
ESRI

N W E S

OFFICIAL JUNO BEACH ZONING MAP

Feet
0 390 780 1,560 2,340 3,120

TOWN OF
JUNO BEACH
FLORIDA
INCORPORATED 1953



REVISED JANUARY 2010

LEGEND

PBG	PUBLIC BUILDINGS AND GROUNDS	ROS	RECREATION / OPEN SPACE	MODR	MODERATE DENSITY RESIDENTIAL (UP TO 15 DU/AC)	COM	COMMERCIAL
OPF	OTHER PUBLIC FACILITIES	LDR	LOW DENSITY RESIDENTIAL (UP TO 5 DU/AC)	HDR	HIGH DENSITY RESIDENTIAL (UP TO 22 DU/AC)		**JUNO BEACH BOUNDARY**
CON	CONSERVATION	MEDR	MEDIUM DENSITY RESIDENTIAL (UP TO 10 DU/AC)	TR	TRANSIENT / RESIDENTIAL		

ESRI

N W E S

JUNO BEACH
FUTURE LAND USE MAP

0 390 780 1,560 2,340 3,120 Feet

Town of Juno Beach
Development /Redevelopment Opportunities – Presentation/Networking Event

SIGN IN SHEET

	NAME	COMPANY	PHONE NUMBER	EMAIL
1	Ruben Cruz	Director of Planning and Zoning	561-656-0306	rcruz@juno-beach.fl.us
2	Frank Davila	Planning Technician	561-656-0312	fdavila@juno-beach.fl.us
3	Joseph Lo Bello	Town Manager	561-656-0322	jlobello@juno-beach.fl.us
4	Brian Cartland	Business Development Brd	FBC 561.324-9729	bcartland@bdb.org
5	Josy Cue	Menin Development	561.281-0370	jcue@menin.com
6	Nancy Kanney		646.642.9209	521 Juno Beach
7	Tom Doyle		561-624 4572	405A SEA OATS DR.
8	Don Dtmi		561-307-7700	1061 Ocean Dr Juno Beach FL
9	George Gentile	2GHO.	561.575.9577	george@2gho.com
10	Jack Kneen		5616940777	HOME
11	Lee Ramos	Lemuel Ramos, FAIA	561.747.9956	keramos@bellsouth.net
12	Marsha Andes	Divosta	(561) 818-0728	marsha@lifetimerealty.com
13	William Turner	JB Prz BR	561 626-7343	wbturner@jacksonlife.net
14	David Cox	The Manor	626 6088	
15	MARYLIN ROSS	OCEAN ROYALE Condo.	776-8071	MARYLINROSS@Comcast.net
16	Robert Magyh		775 664	
17	Bill Kollmer		762-1976	bill@billkollmer.com
18	Anne Bosso		844-5500	annebosso@bossorealty.com
19	Rinus Slowicker	Global Energy Institute	905 735-5600	lpac@collaborative-research.com
20	Michael Hotte	Edrian USA	954-292 6853	michael.hotte@edrian.net
21	Home, Bryan	Global Real Est Re	561-308-8266	
22	Ken Abbott	Abbott Office Here	561-626-2[illegible]	Abbott53@Aol.com
23	Don Felicella		561-624-3351	

	NAME	COMPANY	PHONE NUMBER	EMAIL
24	Barker	Patriot Insurance	694-1776	chris@oppatriotinsurance.com
25	Developer	Ground Stone, Inc	239-9738	matthew@groundstone.net
26	Marty Minor	Urban Design Studio	366-1100	marcnor@udastudios.com
27	Donna Hamilton		691-0702	DMHAMILTON2@gmail.com
28	Bob Hamilton		" "	
29	Roselyn Gross	Keller Williams Realty	628-3976	RGrossHomes@gmail.com
30	Robert Gross	"	"	"
31	ELAINE KNAPP	Realty Assoc	962-4788	elaineknapp1@gmail.com
32	LEON TIRSEN	—	—	
33	Mark Hollenbeck	The Hollenbeck Property Co.	291-6245	markjhollenbeck@yahoo.com
34	RAUL OCAMPO	OCAMPO & ASSOC	772-286-9004	RAUL@OCAMPOASSOCIATES.com
35	NILSA ZACARIAS	NZ Consultants		
36	Jon Rapport	J. Rapport Company	5617187516	JonRapportK@Comcast.net
37				
38				
39				
40				
41				
42				
43				
44				
45				
46				

Town of Juno Beach FLORIDA

Town of Juno Beach Development/Redevelopment Opportunities – Presentation/Networking Event

Ruben Cruz, CFM – Director of Planning and Zoning

Guest Presenter
Brian Cartland – Vice President, Business Recruitment
Business Development Board of Palm Beach County, Inc.

March 6, 2013
Town of Juno Beach Planning and Zoning Department

Business Development Board BDB
Palm Beach County's Business Resource

AGENDA

- Introductions – Opening Comments from Mayor Mort Levine
- Presentation by Staff – Unveiling of Juno Beach Development Opportunities Report
- Presentation by Business Development Board of Palm Beach County
- Conclusion by Staff
- Network Mixer in the Town Center Lounge

TOWN OF JUNO BEACH
340 OCEAN DRIVE
JUNO BEACH, FL 33408
PHONE: 561.626.1122 • FAX: 561.775.0812
WEBSITE: www.juno-beach.fl.us
E-MAIL: junobeach@juno-beach.fl.us

Mort Levine, Mayor
Bill Greene, Vice Mayor
Ellen Andel, Vice Mayor Pro Tem
John Callaghan, Councilmember
Jim Lyons, Councilmember

Joseph F. Lo Bello, Town Manager

COMMITMENT STATEMENT

The Town of Juno Beach's Town Council and Staff are committed to providing unmatched expedient services with a professional welcoming environment.

The Town has a long standing reputation for supporting and working with developers and property owners to enhance the quality of life for both the business and residential communities.

The Town is committed to sound superior development and will make ourselves available to meet and surpass your expectations.

Sincerely,

Mort Levine, Mayor

Bill Greene, Vice Mayor

Ellen Andel, Vice Mayor Pro Tem

John Callaghan, Councilmember

Jim Lyons, Councilmember

Joseph Lo Bello, Town Manager

DEVELOPMENT / REDEVELOPMENT OPPORTUNITIES REPORT

PREPARED BY
RUBEN CRUZ, CFM
DIRECTOR OF PLANNING AND ZONING
March 2013

Table of Contents

Description	Page Number
LIST OF PRINCIPAL OFFICIALS	1
COMMITMENT STATEMENT	2
DESCRIPTION OF JUNO BEACH	3
AMENITIES OF JUNO BEACH	3
HIGHLIGHTS OF JUNO BEACH	5
COMMERCIAL PROPERTIES	6
MAP OF COMMERCIAL PARCELS	7
INFORMATION OF VACANT COMMERCIAL PARCELS	8-12
RESIDENTIAL PROPERTIES	13
MAP OF RESIDENTIAL PARCELS	14
INFORMATION OF VACANT RESIDENTIAL PARCELS	15-50
GENERAL INFORMATION MAPS	51
TOWN OF JUNO BEACH POTABLE WATER SERVICE AREAS	52
TOWN OF JUNO BEACH SEWER SERVICE AREAS	53
MAP OF TOWN OWNED BEACH ACCESSES	54
OFFICIAL JUNO BEACH ZONING MAP	55

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Andrea L. Dobbins.....Project Coordinator

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Leonard G. Rubin, P.A.....Attorney

Robert Rennebaum, P.E.
Simmons & White, Inc.....Consulting Engineer

Buck Evans,
M.T. Causley, Inc.....Consulting Building Official

Description of Juno Beach

- The Town of Juno Beach was incorporated in 1953;
- The Town encompasses an area of 2.65 square miles;
- The Town has operated under the Council-Manager form of government since 1985;
- The Town provides general municipal services such as Police Protection, Planning and Zoning, Building, Code Enforcement, Parks, Public Works, Stormwater Utilities and Cultural events. Fire Services are provided by Palm Beach County.

Amenities of Juno Beach

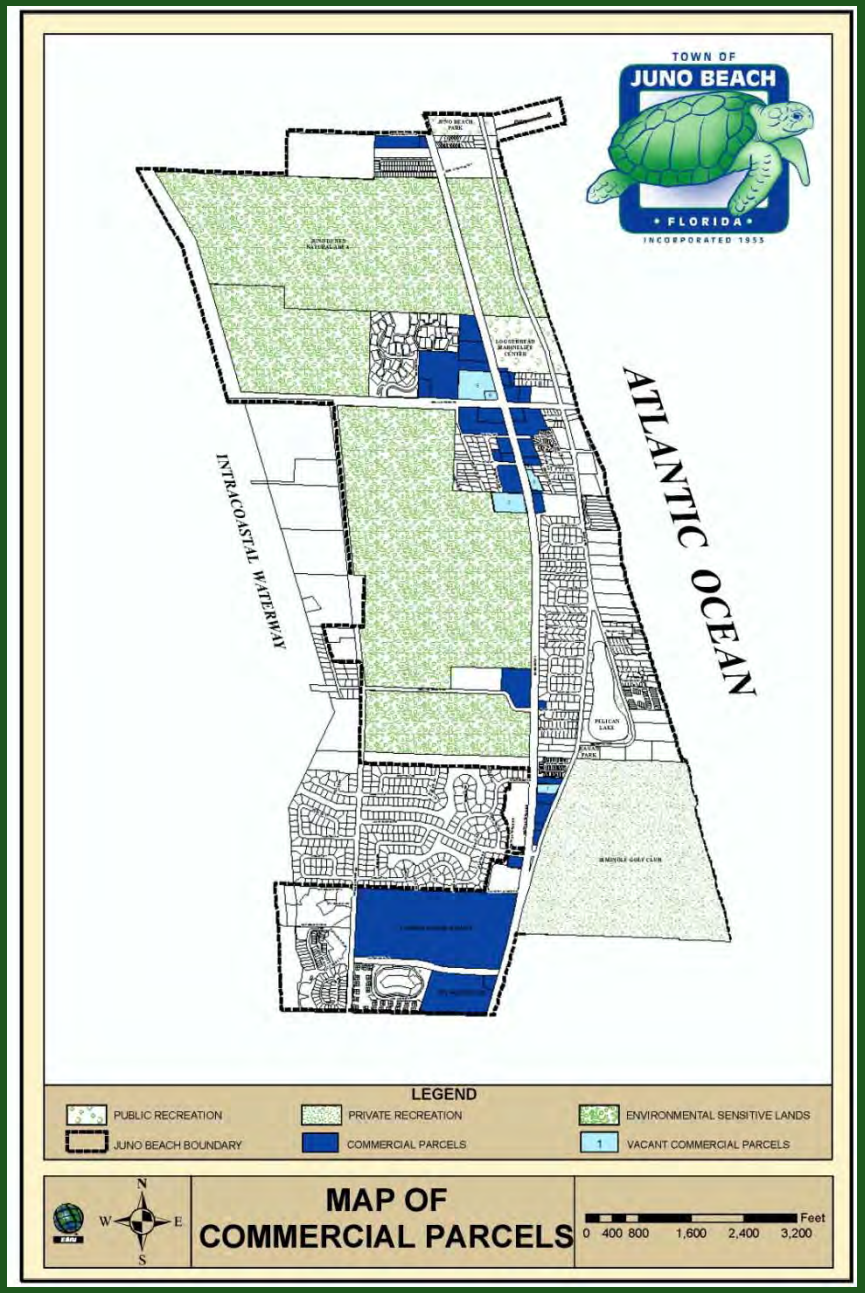
- Beach
- Juno Beach Pier
- Loggerhead Marinelife Center/Turtle Nesting
- Environmentally Sensitive Lands
- Pelican Lake Park
- County and Town Parks
- Cultural Resources
- Diverse Housing
- Seminole Golf Club
- Town Center

Highlights of Juno Beach (Why Juno Beach)

- Positive marketing aspect to potential clients in the real estate market because of location and amenities;
- Juno Beach is viewed as being an affluent community that prides itself in having a "home town" feel to it by offering its residents special events such as an annual Town Picnic, an Ice Cream Social, Holiday Parties, and Bus trips for residents;
- Stronger local government voice- including land use, planning and zoning, and community programs;
- Superior Police protection (response time, vacation check, community policing, police involvement with businesses and Home Owner Associations, etc.);
- The financial "health" of the Town, fiscally responsible, and conservative. The Town maintains itself in a very favorable financial position with the Town millage rate at 2.8786; and
- 25% discount on flood insurance due to Class 5 rating in FEMA's Community Rating System Program.

Commercial Parcels

Vacant Commercial Parcels



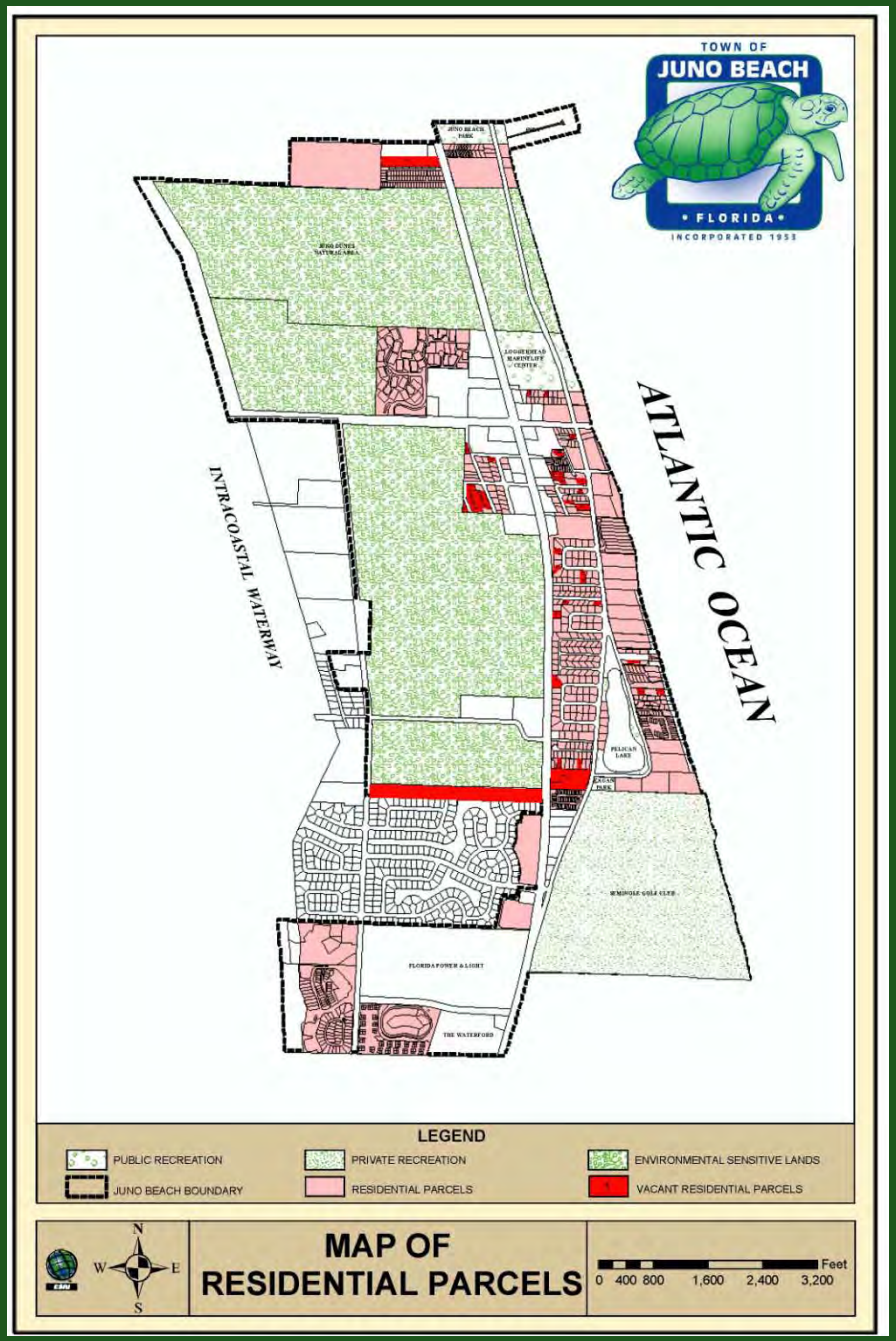
	Owner	Address	Parcel Number	Square Footage*	Acreage*
1	D & M JUNO BEACH INC	US HIGHWAY 1	28434133270000000	159,210	3.66
2	PALM BEACH COUNTY	US HIGHWAY 1	28434128000040010	150,000	3.44
3	MORAN THOMAS J	US HIGHWAY 1	28434128100080041	54,639	1.25
4	CASTO JIMMY A TR, CASTO MARY TRUST	US HIGHWAY 1	28434128100080180	7,500	0.17
5	JUNO POINTE HOLDINGS INC	US HIGHWAY 1	28434121000050086	223,455	5.13
6	JUNO LANDINGS LLC	1011 US HIGHWAY 1	28434121080000010	20,925	0.48
				Total	**14.13**

COMMERCIAL PARCEL #1

Parcel Control #: 28434133270000000
Approx Acreage: 3.66

Images used for this presentation were gathered from Palm Beach County's Property Appraiser Website and Google Maps/Earth.

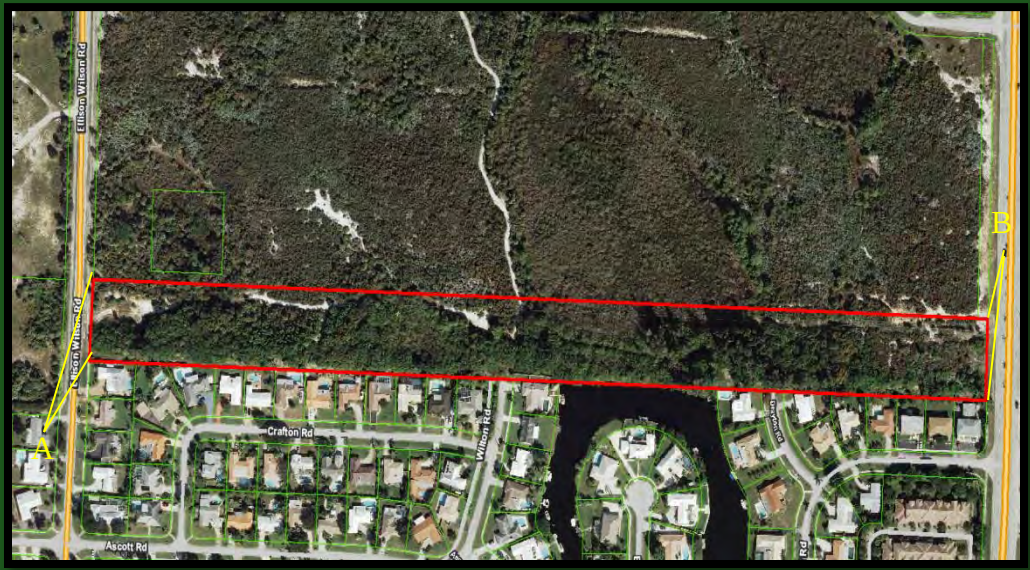
Residential Parcels



Vacant Residential Parcels

	Owner	Address	Parcel Number	Square Footage*	Acreage*
1	L & J ENTERPRISES LLC	US HIGHWAY 1	28434133000003010	510,000	11.3
2	SEMINOLE RIDGE LLC	AKA 61 OCEAN DRIVE	28434128620010000	167,274	3.84
3	OATMAN JANICE& OATMAN ROBERT	OLD TOWNE LANE - WEST LOT	28434128550000030	9,000	0.2
4	JUNO LOTS LLC	OLD TOWNE LANE - EAST LOT	28434128550000080	9,000	0.2
5	VILLAFANA ANN & YEAR EVELIO	471 SUNSET WAY	28434128040000130	22,643	0.52
6	LIVENGOOD STEVEN	CELESTIAL WAY - WEST	28434128010000224	9,380	0.22
7	RICARDO BEATRICE	CELESTIAL WAY - EAST	28434128010000222	18,760	0.43
8	MERCURY RISING LLC	270-300 MERCURY ROAD	28434128630030000	10,950	0.25
9	YOUNG NEAL E	US HIGHWAY 1	28434128130000030	12,500	0.29
10	LIVIS MILLEN TR	NEPTUNE ROAD - WEST	28434128080000120	7,350	0.17
11	MILNE ALBERT A & MILNE ELAINE	NEPTUNE ROAD - EAST	28434128080000180	11,655	0.27
12	WALCZAK PAUL	421 MARS WAY	28434128090000042	6,273	0.14
13	CARP MICHAEL T	SOUTH LYRA CIRCLE	28434128260000030	9,994	0.23
14	GOLDMAN ALEXANDER	520 SOUTH LYRA CIRCLE	28434128260000080	12,042	0.28
15	KEY LINDA S	NORTH LYRA CIRCLE	28434128260000110	9,863	0.23
16	PIPPIN ADAM	"PARK STREET" TRIANGULAR LOT	28434128100180010	9,000	0.2
17	SEASIDE HOLDINGS AND INVESTMENTS LLC	PARK STREET - NORTH WEST LOT	28434128100150011	11,350	0.26
18	KAPLAN STEVEN R	COCOANUT AVENUE - NORTH WEST LOT	28434128100150160	5,175	0.12
19	KOHLMEYER ANN M	COCOANUT AVENUE - WEST LOT	28434128100150150	6,900	0.16
20	THROOP HOBART H	COCOANUT AVENUE - WEST LOT	28434128100150140	7,500	0.17
21	KAPLAN STEVEN R	COCOANUT AVENUE - WEST LOT	28434128100150130	7,750	0.18
22	ALDEN ROBIN S	COCOANUT AVENUE - WEST LOT	28434128100150120	7,500	0.17
23	PALM BEACH COUNTY	COCOANUT AVENUE - SOUTH WEST LOT	28434128100150100	15,500	0.36
24	SUNSTONE LAMES E, SUNSTONE LAURA & SUNSTONE ROBERT	COCOANUT AVENUE - NORTH EAST LOT	28434128100150030	7,000	0.16
25	PIPPIN ADAM	COCOANUT AVENUE - EAST LOT	28434128100150040	7,500	0.17
26	PIPPIN ADAM	COCOANUT AVENUE - EAST LOT	28434128100150050	7,500	0.17
27	KAPLAN STEVEN R	COCOANUT AVENUE - EAST LOT	28434128100150060	7,500	0.17
28	BAUCH STEVEN	COCOANUT AVENUE - SOUTH EAST LOT	28434128100150070	11,625	0.27
29	WOODS GAYLE	771 OCEAN DRIVE	28434128100030060	15,000	0.34
30	MACEIJKO ROBERT	790 HIBISCUS AVENUE	28434128100030140	7,500	0.17
31	ANGELONE JAMES & ANGELONE VICTORIA	SURFSIDE LANE - NORTH EAST	28434128510000100	5,474	0.13
32	OCEAN SIDE LLC	845 OCEAN SIDE DRIVE	28434128580000040	6,818	0.16
33	BUCH GARVEY MINDY	843 OCEAN SIDE DRIVE	28434128580000050	5,850	0.13
34	BUCH GARVEY MINDY	844 OCEAN SIDE DRIVE	28434128580000030	6,080	0.14
35	OCEAN SIDE LLC	842 OCEAN SIDE DRIVE	28434128580000020	5,670	0.13
36	MAHL THOMAS	840 OCEAN SIDE DRIVE	28434128580000010	5,808	0.13
37	TOWN OF JUNO BEACH	OCEAN DRIVE	28434128140000150	14,279	0.33
38	PENNY BARBARA A & PENNY WILLIAM G	OLEANDER AVE	28434128110000090	6,476	0.15
39	BLACK CYNTHIA, BLACK GLEEN	COCOANUT AVENUE TRIANGULAR LOT NORTH	28434128100170010	8,800	0.19
40	OCEAN HORIZON PROPERTIES OF FLORIDA LLC	OCEAN RIDGE WAY - NORTH	28434128590010000	25,000	0.57
41	BLECHMAN ENID & ZEICHNER DANIEL M	OCEAN DRIVE - ZEPHYR WAY	28434128140000160	5,000	0.11
42	PEREZ ELIZABETH J TRUST	SATURN LANE - WEST	28434121010000090	6,000	0.14
43	TARANELLA JOHN & TARANELLA LOIS	SATURN LANE - EAST	28434121010000050	5,500	0.13
44	FLORIDIAN OCEAN PARK LLC	14701 US HIGHWAY 1	28434121000020041	127,500	2.93
				Total	15.71

RESIDENTIAL PARCEL #1

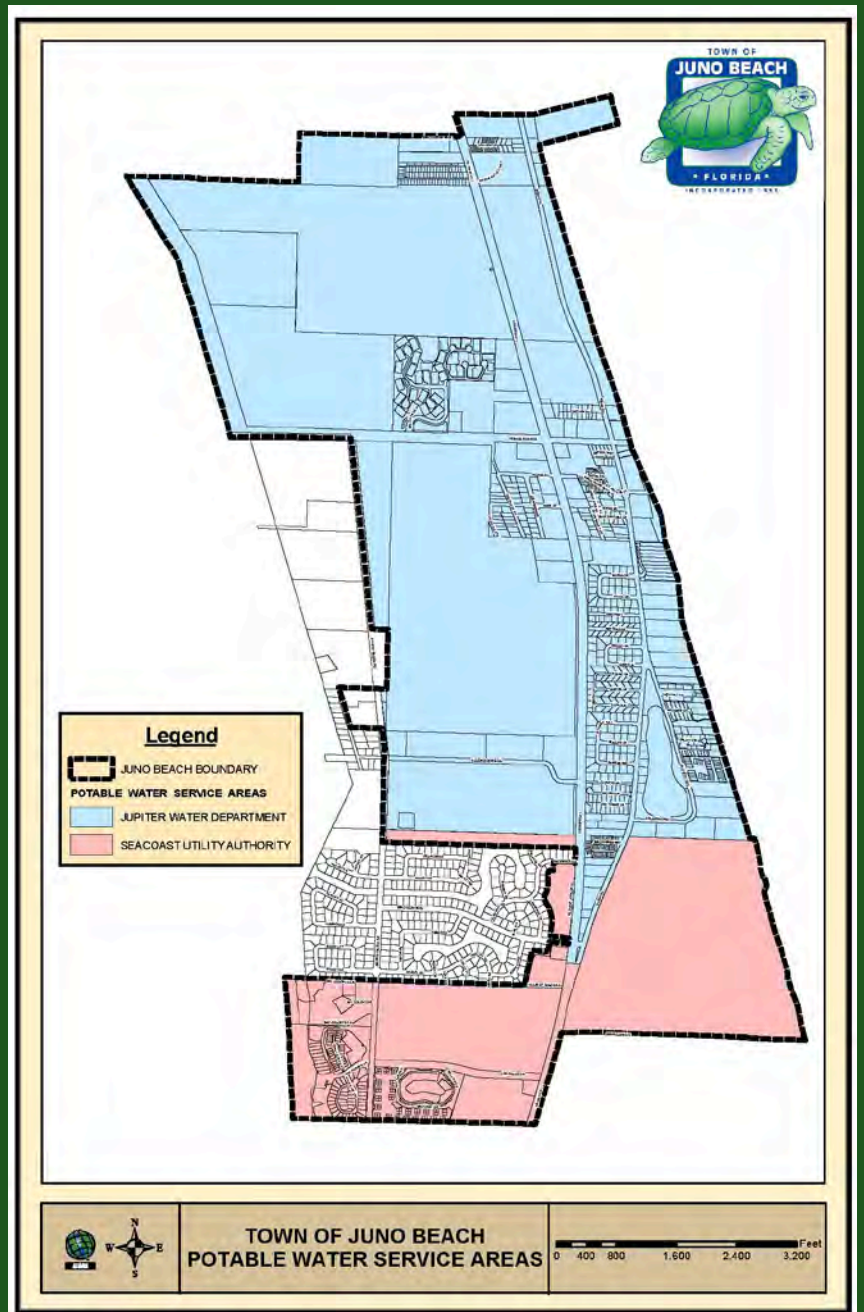


Parcel Control #: 28434133000003010
Approx Acreage: 11.3

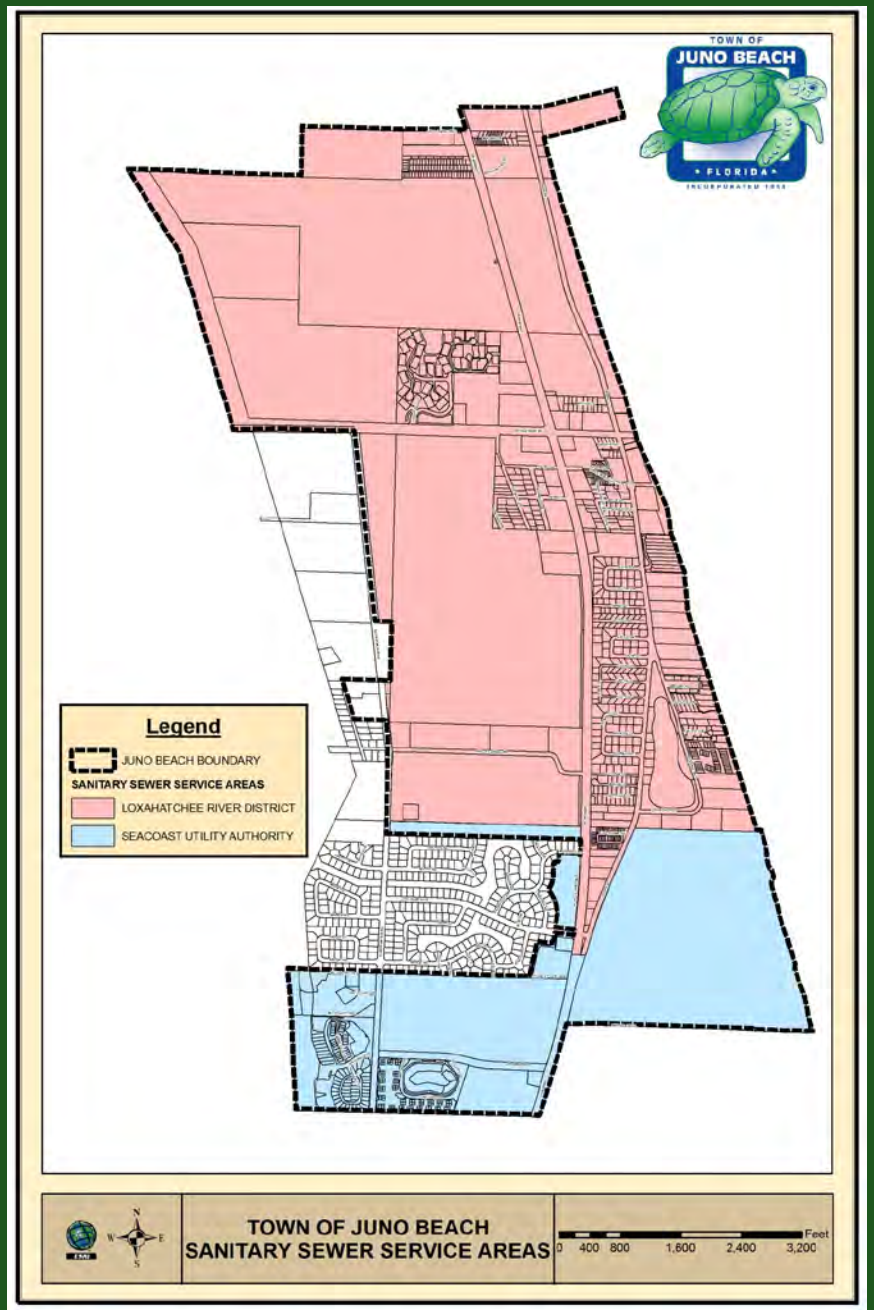
Images used for this presentation were gathered from Palm Beach County's Property Appraiser Website and Google Maps/Earth.

General Information Maps

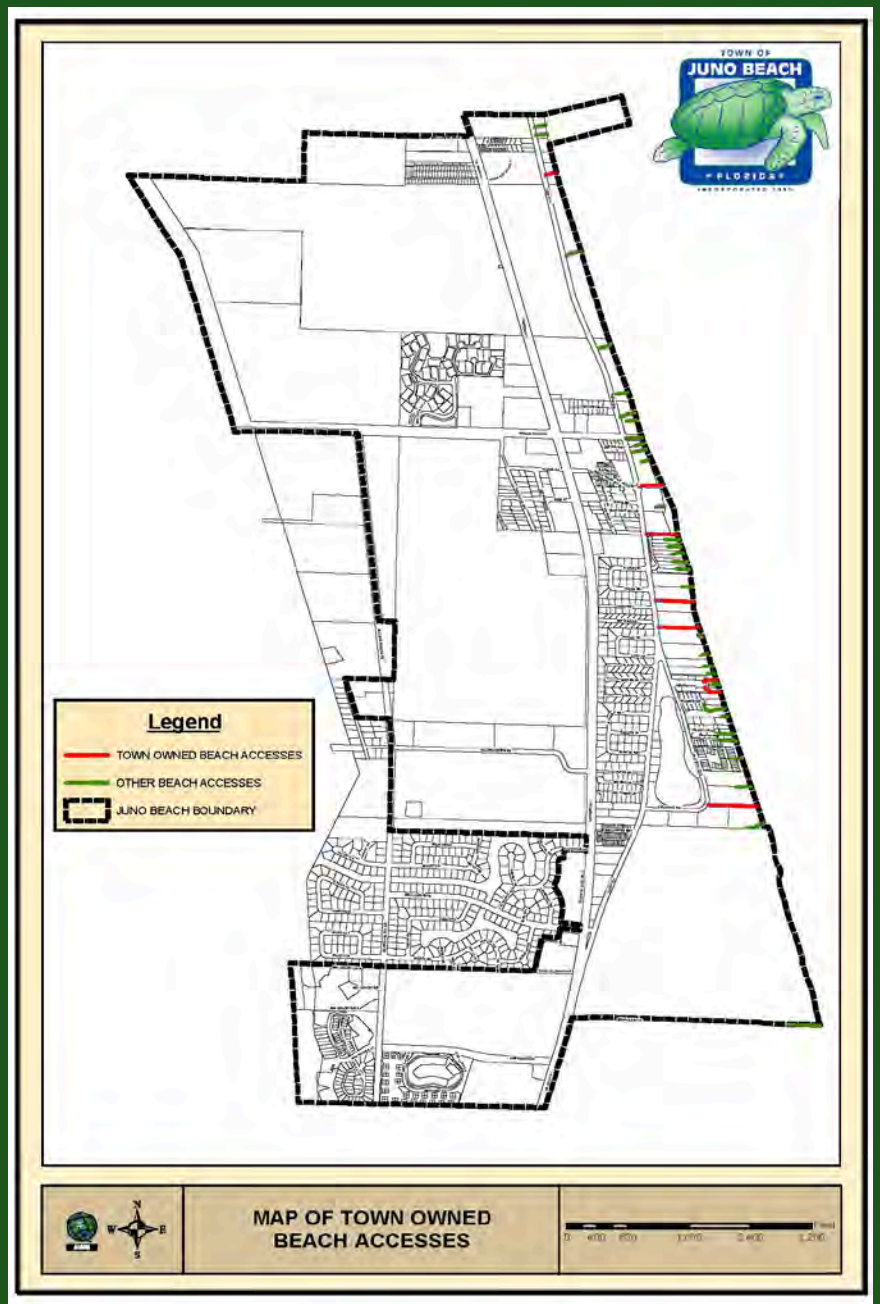
Town of Juno Beach Potable Water Service Areas



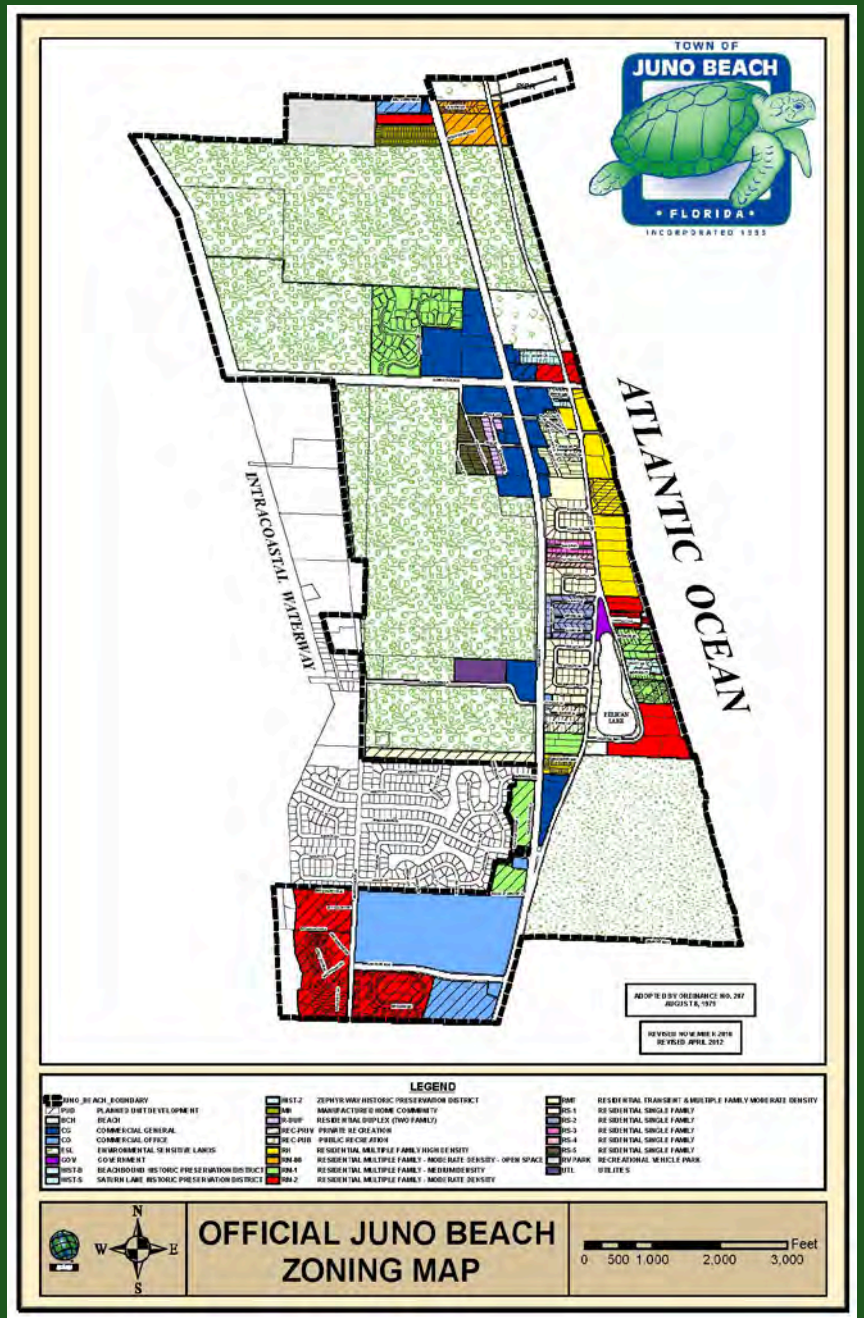
Town of Juno Beach Sanitary Sewer Services Areas



Map of Town Owned Beach Accesses



Official Juno Beach Zoning Map



Presentation by -
Brian Cartland – Vice President, Business Recruitment
Business Development Board of Palm Beach County, Inc.

- Questions for the Presenters

- Network Mixer

  Drinks and hors d'oeuvres will be served in the lobby.

Thank you for coming, and a special thank you to the Business Development Board of Palm Beach County and Brian Cartland!

Town of Juno Beach FLORIDA

Town of Juno Beach Development/Redevelopment Opportunities – Presentation/Networking Event

Ruben Cruz, CFM – Director of Planning and Zoning

Guest Presenter
Brian Cartland – Vice President, Business Recruitment
Business Development Board of Palm Beach County, Inc.

March 6, 2013
Town of Juno Beach Planning and Zoning Department

Business Development Board BDB
Palm Beach County's Business Resource

DEVELOPMENT / REDEVELOPMENT OPPORTUNITIES REPORT

PREPARED BY
RUBEN CRUZ, CFM
DIRECTOR OF PLANNING AND ZONING
February 2013

Town of Juno Beach
Development / Redevelopment
Opportunities Report

Table of Contents

Description	Page Number
LIST OF PRINCIPAL OFFICIALS	1
COMMITMENT STATEMENT	2
DESCRIPTION OF JUNO BEACH	3
AMENITIES OF JUNO BEACH	3
HIGHLIGHTS OF JUNO BEACH	5
COMMERCIAL PROPERTIES	6
MAP OF COMMERCIAL PARCELS	7
INFORMATION OF VACANT COMMERCIAL PARCELS	8-12
RESIDENTIAL PROPERTIES	13
MAP OF RESIDENTIAL PARCELS	14
INFORMATION OF VACANT RESIDENTIAL PARCELS	15-50
GENERAL INFORMATION MAPS	51
TOWN OF JUNO BEACH POTABLE WATER SERVICE AREAS	52
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Leonard G. Rubin, P.A…….…….…….....Attorney

Robert Rennebaum, P.E.
Simmons & White, Inc.…….……..…….Consulting Engineer

Buck Evans,
M.T. Causley, Inc.….....Consulting Building Official

TOWN OF JUNO BEACH
340 OCEAN DRIVE
JUNO BEACH, FL 33408
PHONE: 561.626.1122 • FAX: 561.775.0812
WEBSITE: www.juno-beach.fl.us
E-MAIL: junobeach@juno-beach.fl.us

Mort Levine, Mayor
Bill Greene, Vice Mayor
Ellen Andel, Vice Mayor Pro Tem
John Callaghan, Councilmember
Jim Lyons, Councilmember

Joseph F. Lo Bello, Town Manager

COMMITMENT STATEMENT

The Town of Juno Beach's Town Council and Staff are committed to providing unmatched expedient services with a professional welcoming environment.

The Town has a long standing reputation for supporting and working with developers and property owners to enhance the quality of life for both the business and residential communities.

The Town is committed to sound superior development and will make ourselves available to meet and surpass your expectations.

Sincerely,

Mort Levine, Mayor

Bill Greene, Vice Mayor

Ellen Andel, Vice Mayor Pro Tem

John Callaghan, Councilmember

Jim Lyons, Councilmember

Joseph Lo Bello, Town Manager

DESCRIPTION OF JUNO BEACH

The Town of Juno Beach was incorporated in 1953 and is located approximately 14 miles north of West Palm Beach, which is the county seat of Palm Beach County. The Town encompasses an area of 2.65 square miles. This special and unique Town is an island with the Intracoastal Waterway to the west, the Atlantic Ocean to the east, Jupiter Inlet to the north and Palm Beach Inlet to the south.

The Town has operated under the Council-Manager form of government since 1985. Policy-making and legislative authority are vested in a five member Town Council. The Council is elected on a non-partisan basis. Councilmembers serve three-year staggered terms. The Councilmembers are elected at large and every year they select a mayor, vice mayor and vice mayor pro-tem. The Town Council is responsible, among other things, for passing ordinances, adopting the budget, appointing committees, and hiring both the Town Manager and Town Attorney. The Town Manager is responsible for carrying out the policies and ordinances of the Town Council, for overseeing the day-to-day operations of the government, and for appointing the heads of the various departments.

The Town of Juno Beach is empowered to levy a property tax on both real and personal properties located within its boundaries. It also is empowered by state statute to extend its corporate limits by annexation, which occurs periodically when deemed appropriate by the Town Council.

The Town provides general municipal services such as police protection, planning and zoning, building, code enforcement, parks, public works, stormwater utilities and cultural events. Fire Services are provided by Palm Beach County. Utility services, such as water and wastewater are provided by neighboring jurisdictions/agencies (Town of Jupiter, Loxahatchee River District, Seacoast Utility Authority). Sanitation services are currently contracted with Waste Management, Inc. until September 2017.

AMENITIES OF JUNO BEACH

The Town has many special features that contribute to this wonderful place to live, recreate and visit. The following is a list of some of these special features:

Beach — The Town has 2.4 miles of wonderful beaches along a spectacular blue ocean. Eleven (eight Town owned) dune walkovers provide beach access for the public that include a variety of structures, showers, parking, gazebo and chickee huts among other amenities.

Juno Beach Pier — The Town has a County owned and operated 990-foot pier at its northern edge. It is visited and enjoyed by sightseers and fishermen from all over.

Loggerhead Marinelife Center/ Turtle Nesting

The Town's coastline is one of the highest density nesting areas for sea turtles in the world. The Loggerhead Marinelife Center (LMC), a not-for-profit organization, monitors the nests and is dedicated to promoting the conservation of Florida's coastal ecosystem through education, research and rehabilitation with a special focus on threatened and endangered sea turtles. The LMC is located in the County owned Loggerhead Park.

Environmentally Sensitive Lands

Approximately 594 acres of land or 43% of the Town's total land area has been purchased by the County for preservation. The County has installed trails throughout these parcels, known as the Juno Dunes Natural Area, to serve as a beautiful nature walk and to educate the public about the importance of preservation. In 2011, the County made additional improvements including a light vessel boat dock, erosion control and other amenities along the Intracoastal Waterway.

Pelican Lake Park

A 12-acre lake adjacent to the Town Center Property with lush landscaping and a ¾ mile – 8 feet wide public concrete and paver brick sidewalk, covered gazebos and fountains is the setting for Town events and leisure strolls.

County and Town Parks

The Town benefits from two beachfront County parks. Loggerhead Park has covered picnic areas and a playground and houses the Loggerhead Marinelife Center. Juno Beach Park, at the northern edge of Town, serves as a large parking lot for beach goers and the County owned and operated pier. South of Pelican Lake the Town owns and operates Kagan Park, which has playground equipment, bocci, basketball, and adult exercise stations.

Cultural Resources

The Town hosts and takes part in many cultural activities. Many local history, art and civic organizations utilize the Town's resources for their activities. The "Friends of the Arts" organizes art shows for local artists; artwork is displayed year round in the Town Center Council Chambers. "Artfest by the Sea," which draws some 30,000 visitors is held along A1A and the Ocean at the north end of Town.

Diverse Housing

The Town has assisted living facility units, mobile home parks, townhouses, single-family homes and condominium units with values in excess of several million dollars.

Seminole Golf Club A prestigious private oceanfront golf course designed by Donald Ross and opened in 1929.

Town Center This complex was designed to house all of the Town's government operational needs and also function as a cultural center to facilitate social activities, host events and serve as a meeting place for homeowners associations, businesses, social groups, etc.

HIGHLIGHTS OF JUNO BEACH (WHY JUNO BEACH?)

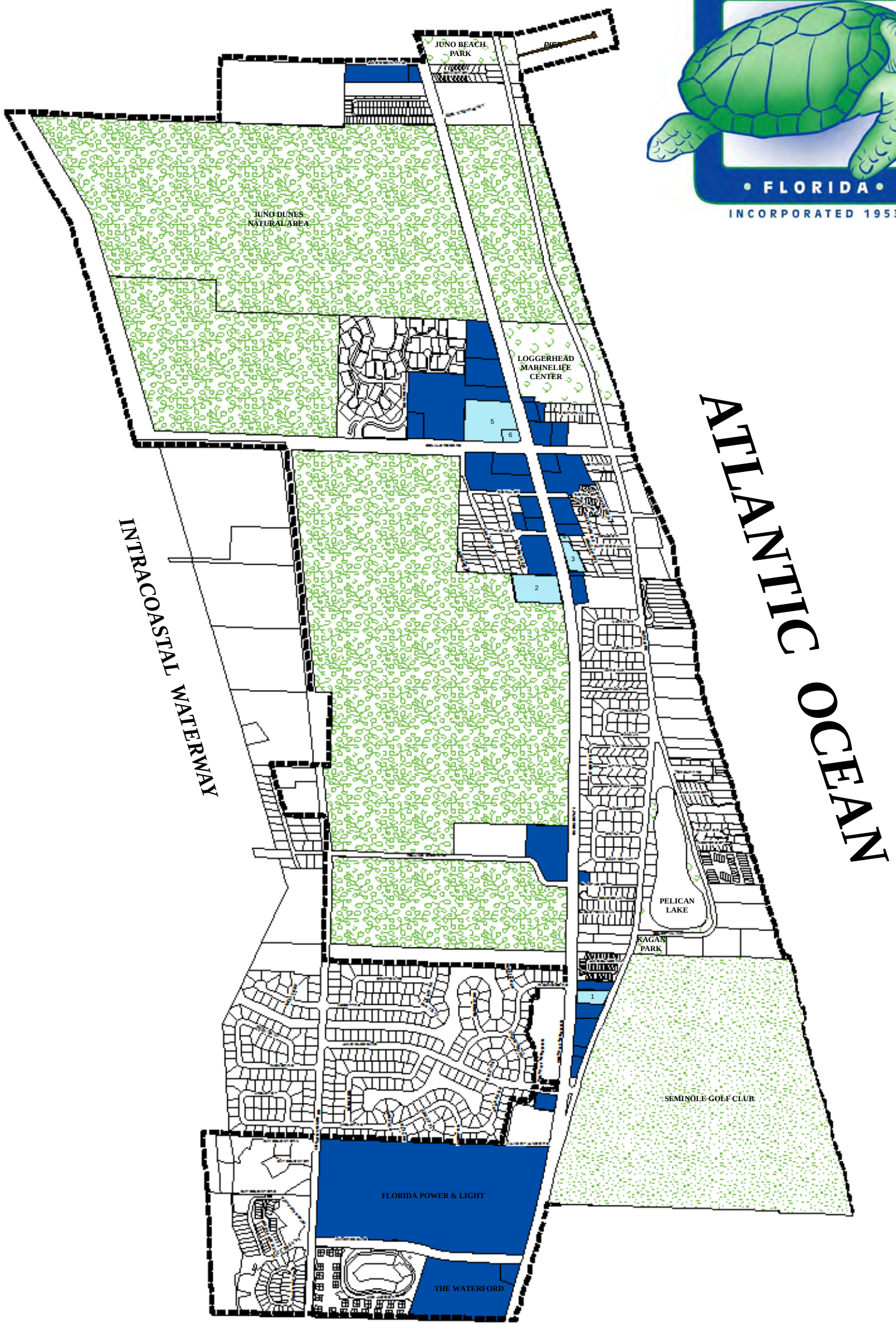
Many benefits of being located with the Town of Juno Beach cannot be quantified by a dollar value, but they offer a higher quality of life that can be interpreted as priceless.

Some of the benefits to calling the Town of Juno Beach your corporate headquarters (like Florida Power & Light and Tire Kingdom do) or home (like many yearlong and seasonal residents do) are as follows:

- Positive marketing aspect to potential clients in the real estate market because of location and amenities;
- Juno Beach is viewed as being an affluent community that prides itself in having a "home town" feel to it by offering its residents special events such as an annual Town Picnic, an Ice Cream Social, Holiday Parties, and Bus trips for residents;
- Streamlined permitting process- town staff goes the extra mile;
- Stronger local government voice- including land use, planning and zoning, and community programs;
- Superior Police protection (response time, vacation check, community policing, police involvement with businesses and Home Owner Associations, etc.);
- ALPR- automated license plate reader; the Police Department has a mobile unit that has proven successful in the recovery of stolen vehicles and making arrests when there is a suspended license or an open warrant;
- The financial "health" of the Town, fiscally responsible, and conservative. The Town maintains itself in a very favorable financial position with the Town millage rate at 2.8786;
- Low cost trash services with superior service;
- No franchise fees on electric;
- Great Public and Private school systems along with other educational options;
- 25% discount on flood insurance due to Class 5 rating in FEMA's Community Rating System Program;
- Proactive in emergency management- the town takes an active role in being prepared and helping residents be prepared (free educational classes are periodically offered at Town Center); and
- Approximately 43% of environmentally sensitive lands keep the town from being over developed which means less traffic congestion in the community.

COMMERCIAL PROPERTIES

TOWN OF
JUNO BEACH
• FLORIDA •
INCORPORATED 1953



LEGEND

- PUBLIC RECREATION
- PRIVATE RECREATION
- ENVIRONMENTAL SENSITIVE LANDS
- JUNO BEACH BOUNDARY
- COMMERCIAL PARCELS
- 1 — VACANT COMMERCIAL PARCELS

ESRI

N W E S

MAP OF COMMERCIAL PARCELS

0 400 800 1,600 2,400 3,200 Feet

Vacant Commercial Parcels

	Owner	Address	Parcel Number	Square Footage*	Acreage*
1	D & M JUNO BEACH INC	US HIGHWAY 1	28434133270000000	159,210	3.66
2	PALM BEACH COUNTY	US HIGHWAY 1	28434128000040010	150,000	3.44
3	MORAN THOMAS J	US HIGHWAY 1	28434128100080041	54,639	1.25
4	CASTO JIMMY A TR, CASTO MARY TRUST	US HIGHWAY 1	28434128100080180	7,500	0.17
5	JUNO POINTE HOLDINGS INC	US HIGHWAY 1	28434121000050086	223,455	5.13
6	JUNO LANDINGS LLC	1011 US HIGHWAY 1	28434121080000010	20,925	0.48
				Total	**14.13**

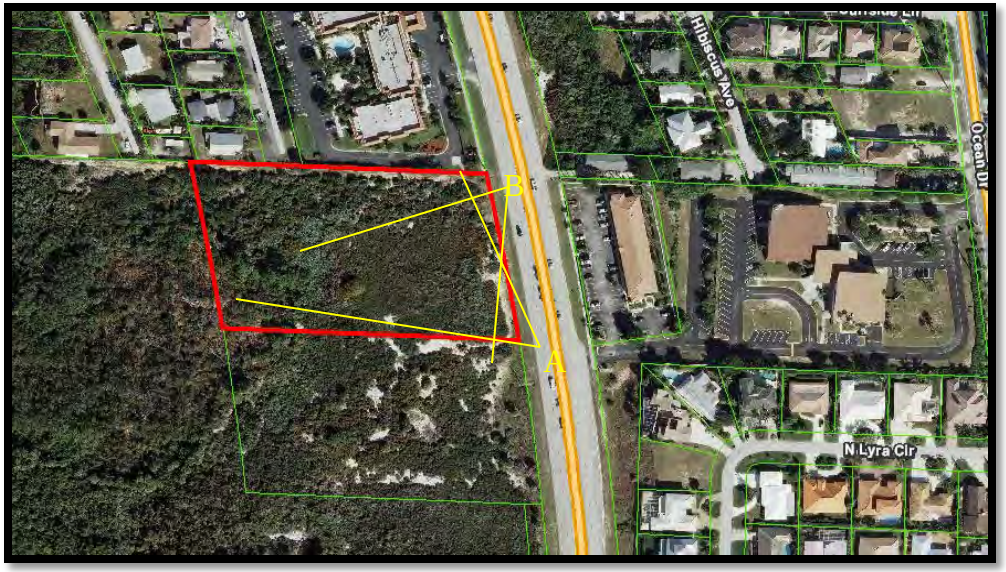
* Approximate Measurements

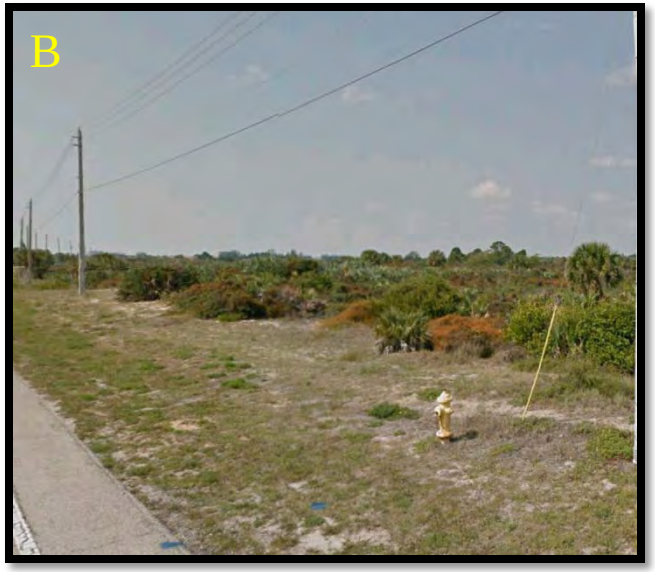
COMMERCIAL PARCEL #1

Parcel Control #: 28434133270000000
Approx Acreage: 3.66

Images used for this presentation were gathered from Palm Beach County's Property Appraiser Website and Google Maps/Earth.

COMMERCIAL PARCEL #2





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Images used for this presentation were gathered from Palm Beach County's Property Appraiser Website and Google Maps/Earth.

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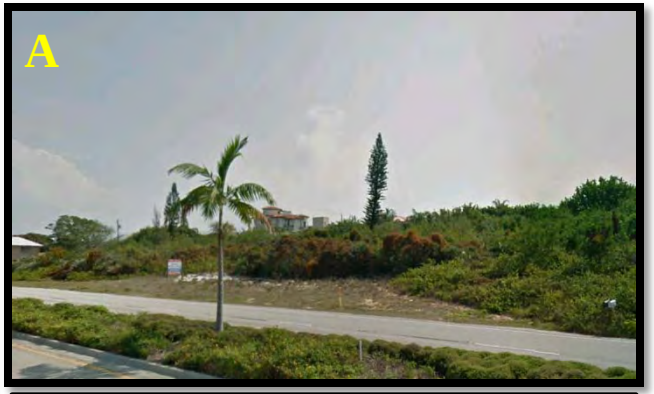


Parcel Control #: 28434128100080041
Approx Acreage: 1.25

COMMERCIAL PARCEL #4

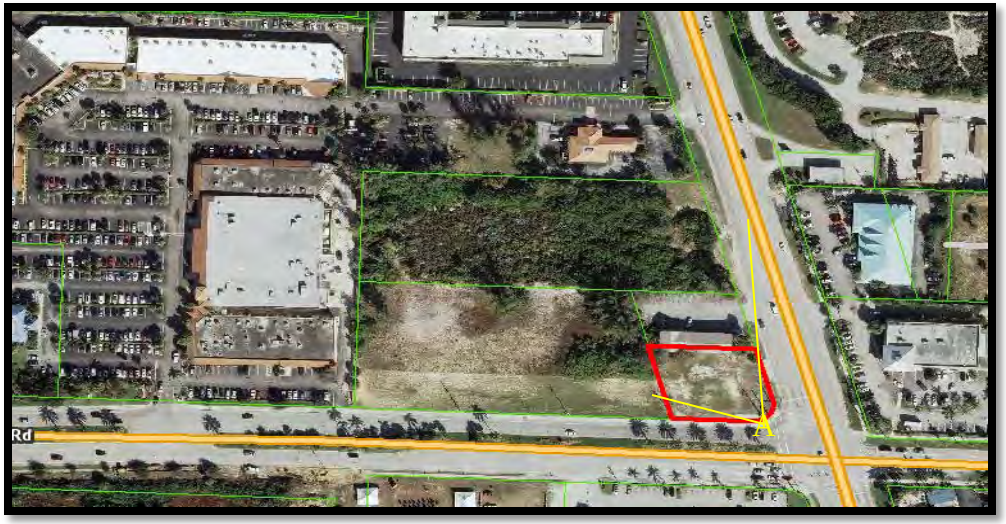
Parcel Control #: 28434128100080180
Approx Acreage: 0.17

Images used for this presentation were gathered from Palm Beach County's Property Appraiser Website and Google Maps/Earth.

COMMERCIAL PARCEL #5

Parcel Control #: 28434121000050086
Approx Acreage: 5.13

COMMERCIAL PARCEL #6



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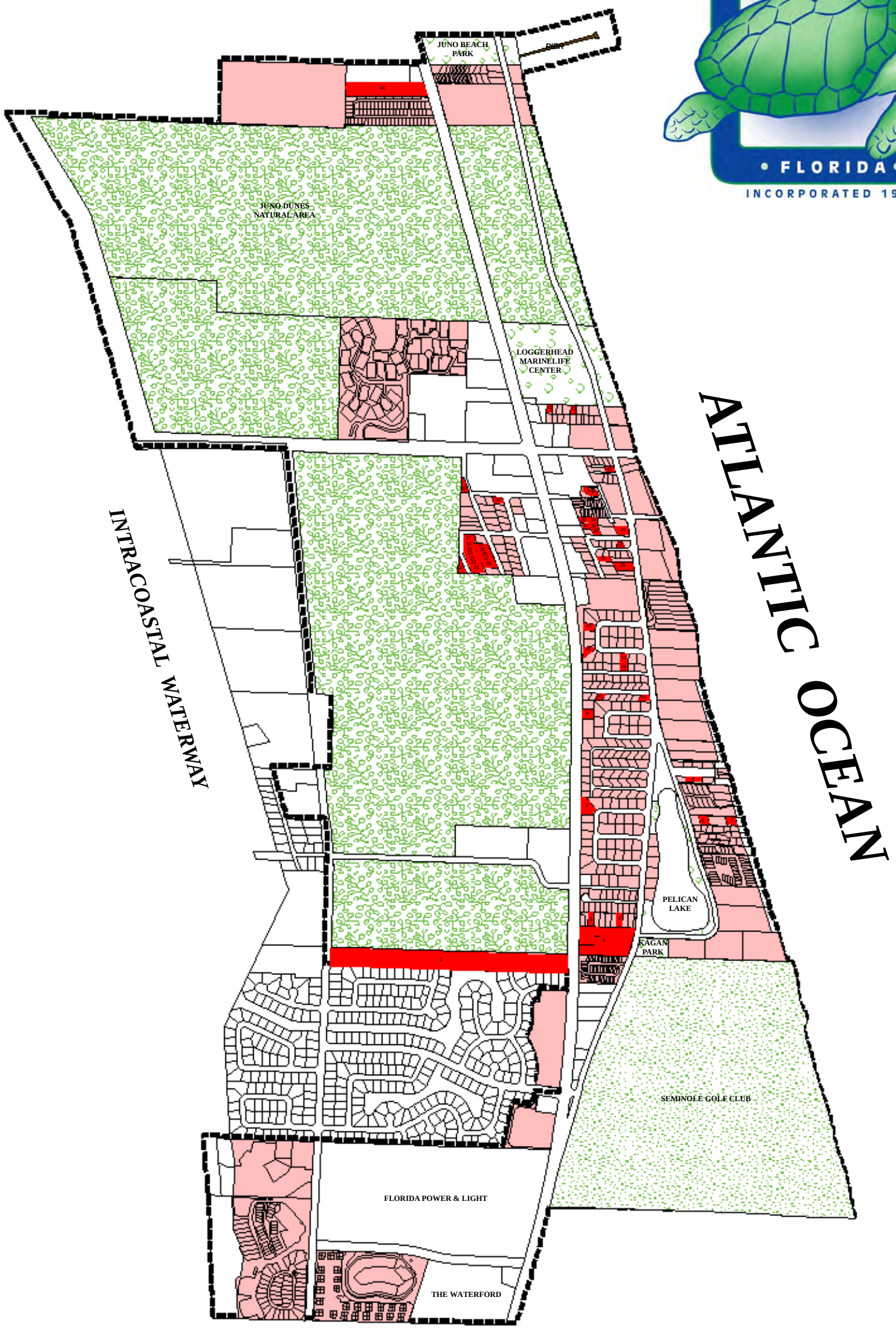
Images used for this presentation were gathered from Palm Beach County's Property Appraiser Website and Google Maps/Earth.

RESIDENTIAL PROPERTIES

TOWN OF
JUNO BEACH
FLORIDA
INCORPORATED 1953



LEGEND

- PUBLIC RECREATION
- PRIVATE RECREATION
- ENVIRONMENTAL SENSITIVE LANDS
- JUNO BEACH BOUNDARY
- RESIDENTIAL PARCELS
- 1 VACANT RESIDENTIAL PARCELS

ESRI

N W E S

MAP OF RESIDENTIAL PARCELS

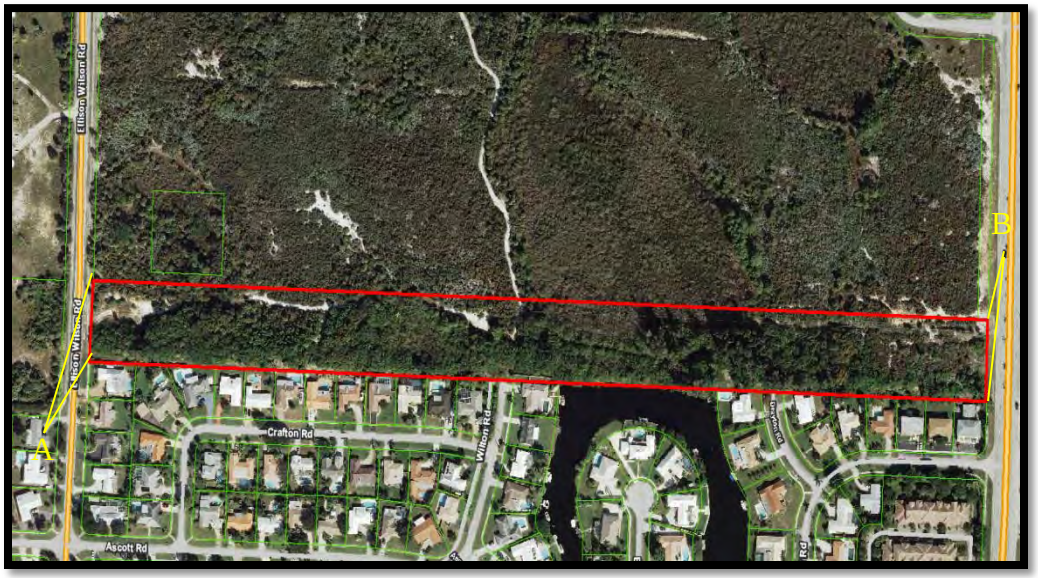
Feet
0 400 800 1,600 2,400 3,200

Vacant Residential Parcels

	Owner	Address	Parcel Number	Square Footage*	Acreage*
1	L & J ENTERPRISES LLC	US HIGHWAY 1	28434133000003010	510,000	11.3
2	SEMINOLE RIDGE LLC	AKA 61 OCEAN DRIVE	28434128620010000	167,274	3.84
3	OATMAN JANICE& OATMAN ROBERT	OLD TOWNE LANE - WEST LOT	28434128550000030	9,000	0.2
4	JUNO LOTS LLC	OLD TOWNE LANE - EAST LOT	28434128550000080	9,000	0.2
5	VILLAFANA ANN & YEAR EVELIO	471 SUNSET WAY	28434128040000130	22,643	0.52
6	LIVENGOOD STEVEN	CELESTIAL WAY - WEST	28434128010000224	9,380	0.22
7	RICARDO BEATRICE	CELESTIAL WAY - EAST	28434128010000222	18,760	0.43
8	MERCURY RISING LLC	270-300 MERCURY ROAD	28434128630030000	10,950	0.25
9	YOUNG NEAL E	US HIGHWAY 1	28434128130000030	12,500	0.29
10	LIVIS MILLEN TR	NEPTUNE ROAD - WEST	28434128080000120	7,350	0.17
11	MILNE ALBERT A & MILNE ELAINE	NEPTUNE ROAD - EAST	28434128080000180	11,655	0.27
12	WALCZAK PAUL	421 MARS WAY	28434128090000042	6,273	0.14
13	CARP MICHAEL T	SOUTH LYRA CIRCLE	28434128260000030	9,994	0.23
14	GOLDMAN ALEXANDER	520 SOUTH LYRA CIRCLE	28434128260000080	12,042	0.28
15	KEY LINDA S	NORTH LYRA CIRCLE	28434128260000110	9,863	0.23
16	PIPPIN ADAM	"PARK STREET" TRIANGULAR LOT	28434128100180010	9,000	0.2
17	SEASIDE HOLDINGS AND INVESTMENTS LLC	PARK STREET - NORTH WEST LOT	28434128100150011	11,350	0.26
18	KAPLAN STEVEN R	COCOANUT AVENUE - NORTH WEST LOT	28434128100150160	5,175	0.12
19	KOHLMEYER ANN M	COCOANUT AVENUE - WEST LOT	28434128100150150	6,900	0.16
20	THROOP HOBART H	COCOANUT AVENUE - WEST LOT	28434128100150140	7,500	0.17
21	KAPLAN STEVEN R	COCOANUT AVENUE - WEST LOT	28434128100150130	7,750	0.18
22	ALDEN ROBIN S	COCOANUT AVENUE - WEST LOT	28434128100150120	7,500	0.17
23	PALM BEACH COUNTY	COCOANUT AVENUE - SOUTH WEST LOT	28434128100150100	15,500	0.36
24	SUNSTONE LAMES E, SUNSTONE LAURA & SUNSTONE ROBERT	COCOANUT AVENUE - NORTH EAST LOT	28434128100150030	7,000	0.16
25	PIPPIN ADAM	COCOANUT AVENUE - EAST LOT	28434128100150040	7,500	0.17
26	PIPPIN ADAM	COCOANUT AVENUE - EAST LOT	28434128100150050	7,500	0.17
27	KAPLAN STEVEN R	COCOANUT AVENUE - EAST LOT	28434128100150060	7,500	0.17
28	BAUCH STEVEN	COCOANUT AVENUE - SOUTH EAST LOT	28434128100150070	11,625	0.27
29	WOODS GAYLE	771 OCEAN DRIVE	28434128100030060	15,000	0.34
30	MACEIJKO ROBERT	790 HIBISCUS AVENUE	28434128100030140	7,500	0.17
31	ANGELONE JAMES & ANGELONE VICTORIA	SURFSIDE LANE - NORTH EAST	28434128510000100	5,474	0.13
32	OCEAN SIDE LLC	845 OCEAN SIDE DRIVE	28434128580000040	6,818	0.16
33	BUCH GARVEY MINDY	843 OCEAN SIDE DRIVE	28434128580000050	5,850	0.13
34	BUCH GARVEY MINDY	844 OCEAN SIDE DRIVE	28434128580000030	6,080	0.14
35	OCEAN SIDE LLC	842 OCEAN SIDE DRIVE	28434128580000020	5,670	0.13
36	MAHL THOMAS	840 OCEAN SIDE DRIVE	28434128580000010	5,808	0.13
37	TOWN OF JUNO BEACH	OCEAN DRIVE	28434128140000150	14,279	0.33
38	PENNY BARBARA A & PENNY WILLIAM G	OLEANDER AVE	28434128110000090	6,476	0.15
39	BLACK CYNTHIA, BLACK GLEEN	COCOANUT AVENUE TRIANGULAR LOT NORTH	28434128100170010	8,800	0.19
40	OCEAN HORIZON PROPERTIES OF FLORIDA LLC	OCEAN RIDGE WAY - NORTH	28434128590010000	25,000	0.57
41	BLECHMAN ENID & ZEICHNER DANIEL M	OCEAN DRIVE - ZEPHYR WAY	28434128140000160	5,000	0.11
42	PEREZ ELIZABETH J TRUST	SATURN LANE - WEST	28434121010000090	6,000	0.14
43	TARANELLA JOHN & TARANELLA LOIS	SATURN LANE - EAST	28434121010000050	5,500	0.13
44	FLORIDIAN OCEAN PARK LLC	14701 US HIGHWAY 1	28434121000020041	127,500	2.93
				Total	**15.71**

* Approximate Measurements

RESIDENTIAL PARCEL #1



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Approx Acreage: 11.3

JUNO BEACH
FLORIDA

Images used for this presentation were gathered from Palm Beach County's Property Appraiser Website and Google Maps/Earth.

RESIDENTIAL PARCEL #2

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Approx Acreage: 3.84

JUNO BEACH
FLORIDA

Images used for this presentation were gathered from Palm Beach County's Property Appraiser Website and Google Maps/Earth.

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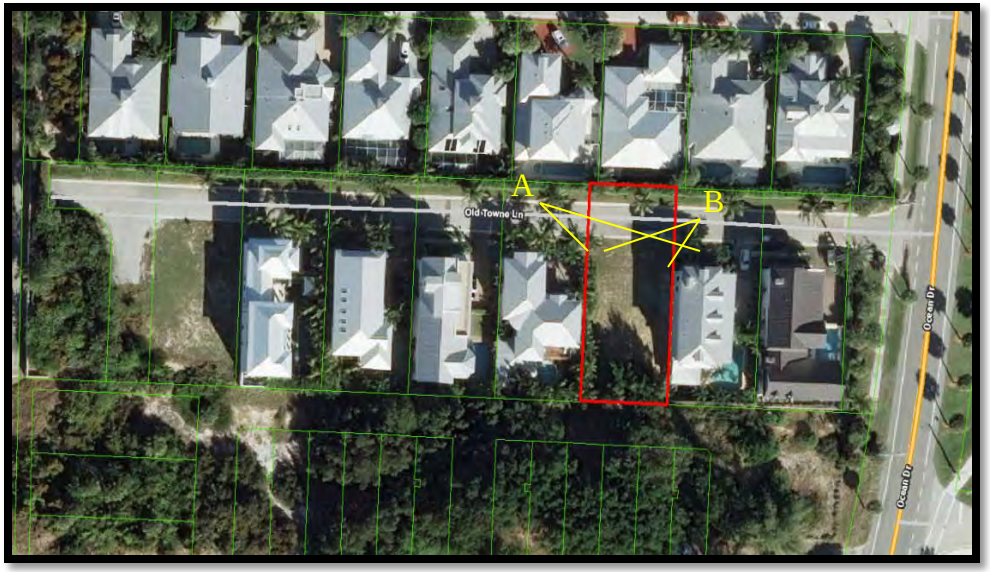

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Images used for this presentation were gathered from Palm Beach County's Property Appraiser Website and Google Maps/Earth.

RESIDENTIAL PARCEL #4

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Images used for this presentation were gathered from Palm Beach County's Property Appraiser Website and Google Maps/Earth.

RESIDENTIAL PARCEL #5

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Images used for this presentation were gathered from Palm Beach County's Property Appraiser Website and Google Maps/Earth.

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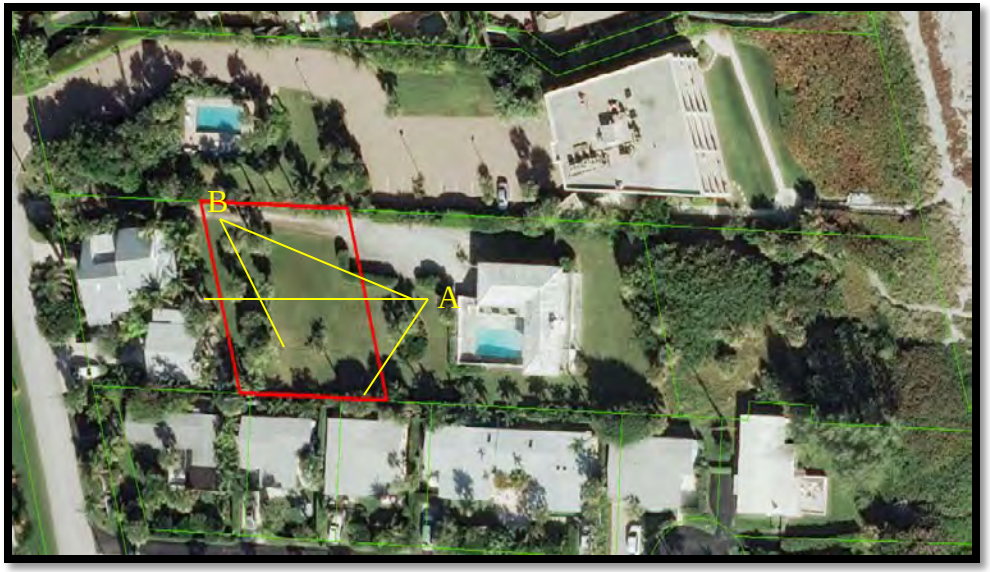

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Images used for this presentation were gathered from Palm Beach County's Property Appraiser Website and Google Maps/Earth.

RESIDENTIAL PARCEL #7

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Images used for this presentation were gathered from Palm Beach County's Property Appraiser Website and Google Maps/Earth.

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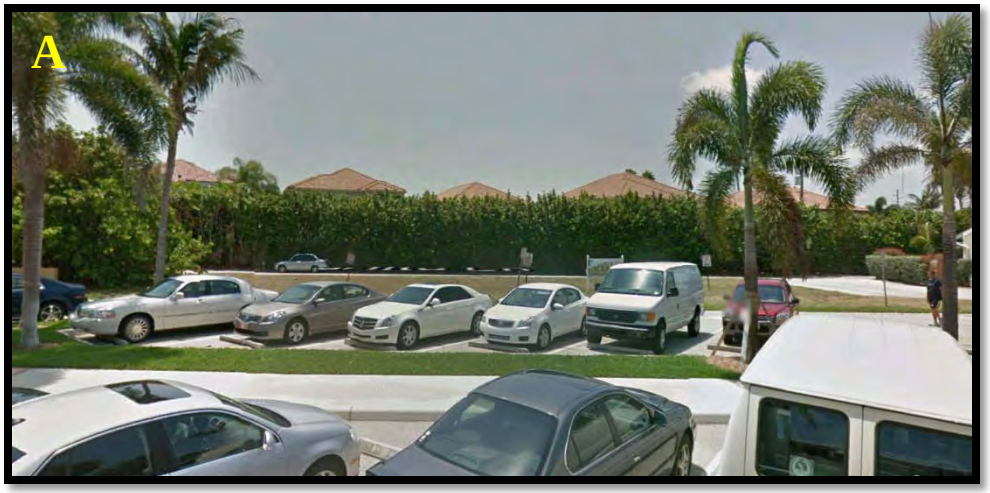

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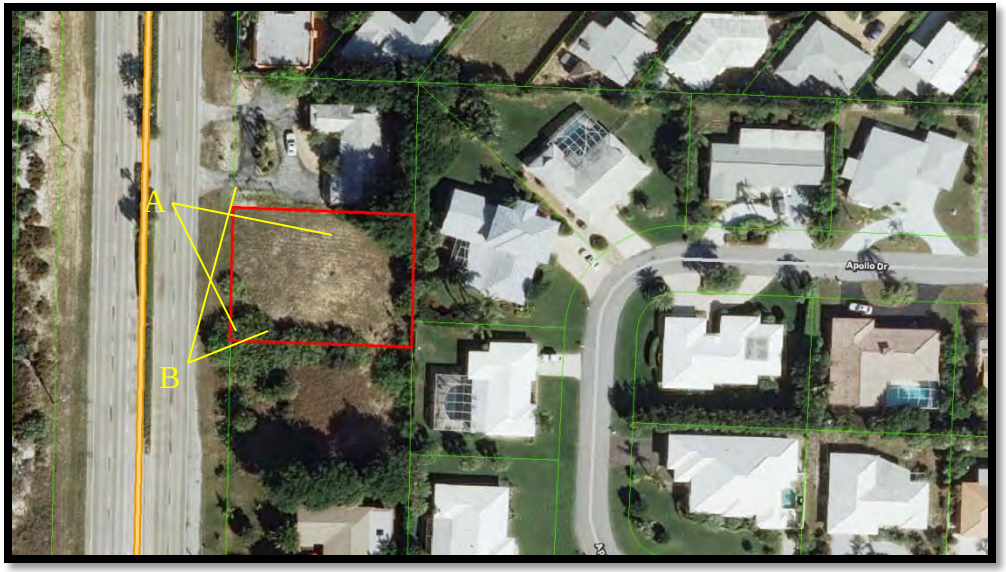
JUNO BEACH
FLORIDA

Images used for this presentation were gathered from Palm Beach County's Property Appraiser Website and Google Maps/Earth.

RESIDENTIAL PARCEL #9



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Images used for this presentation were gathered from Palm Beach County's Property Appraiser Website and Google Maps/Earth.

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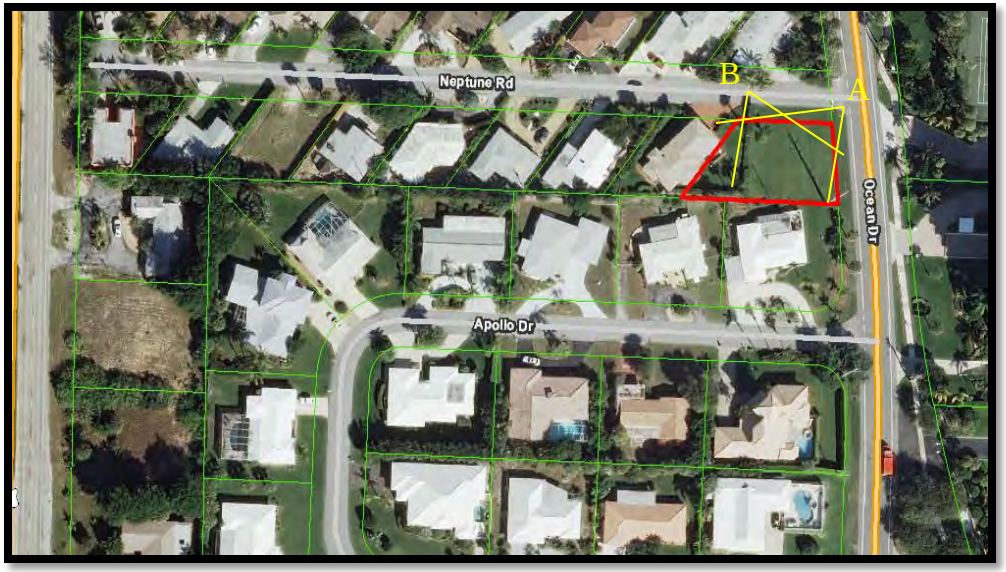
Images used for this presentation were gathered from Palm Beach County's Property Appraiser Website and Google Maps/Earth.

RESIDENTIAL PARCEL #11



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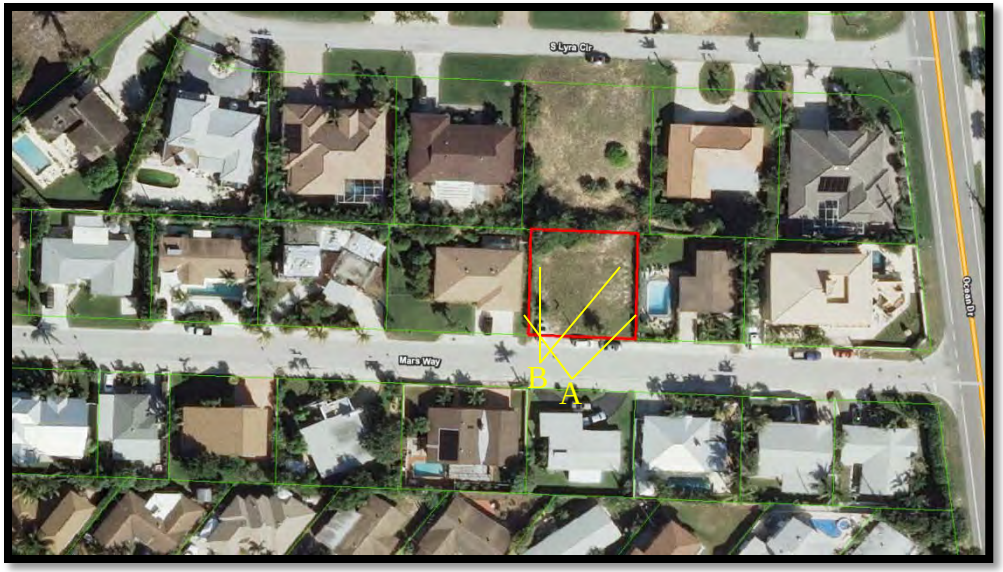

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JUNO BEACH
FLORIDA

Images used for this presentation were gathered from Palm Beach County's Property Appraiser Website and Google Maps/Earth.

RESIDENTIAL PARCEL #13

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Approx Acreage: 0.23

Images used for this presentation were gathered from Palm Beach County's Property Appraiser Website and Google Maps/Earth.

RESIDENTIAL PARCEL #14

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Approx Acreage: 0.28

Images used for this presentation were gathered from Palm Beach County's Property Appraiser Website and Google Maps/Earth.

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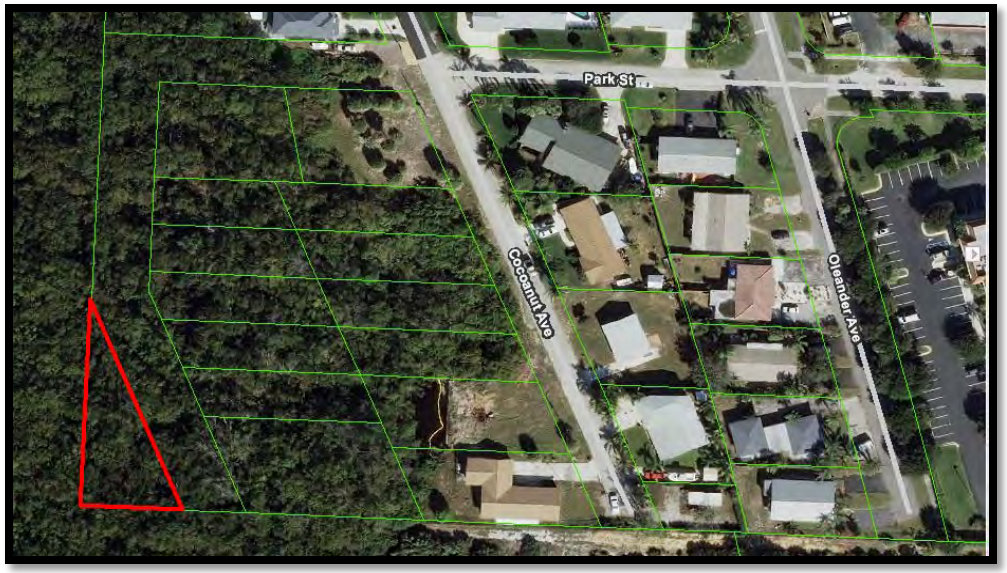

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RESIDENTIAL PARCEL #17

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Images used for this presentation were gathered from Palm Beach County's Property Appraiser Website and Google Maps/Earth.

RESIDENTIAL PARCEL #18

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RESIDENTIAL PARCEL #19

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Approx Acreage: 0.16

JUNO BEACH
FLORIDA

Images used for this presentation were gathered from Palm Beach County's Property Appraiser Website and Google Maps/Earth.

RESIDENTIAL PARCEL #20

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RESIDENTIAL PARCEL #21

Parcel Control #: 28434128100150130
Approx Acreage: 0.18

JUNO BEACH
FLORIDA

Images used for this presentation were gathered from Palm Beach County's Property Appraiser Website and Google Maps/Earth.

RESIDENTIAL PARCEL #22

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RESIDENTIAL PARCEL #23

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Images used for this presentation were gathered from Palm Beach County's Property Appraiser Website and Google Maps/Earth.

RESIDENTIAL PARCEL #24

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Approx Acreage: 0.17

Images used for this presentation were gathered from Palm Beach County's Property Appraiser Website and Google Maps/Earth.

RESIDENTIAL PARCEL #26

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RESIDENTIAL PARCEL #27

Parcel Control #: 28434128100150060
Approx Acreage: 0.17

Images used for this presentation were gathered from Palm Beach County's Property Appraiser Website and Google Maps/Earth.

RESIDENTIAL PARCEL #28

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JUNO BEACH
FLORIDA

Images used for this presentation were gathered from Palm Beach County's Property Appraiser Website and Google Maps/Earth.

RESIDENTIAL PARCEL #29

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Images used for this presentation were gathered from Palm Beach County's Property Appraiser Website and Google Maps/Earth.

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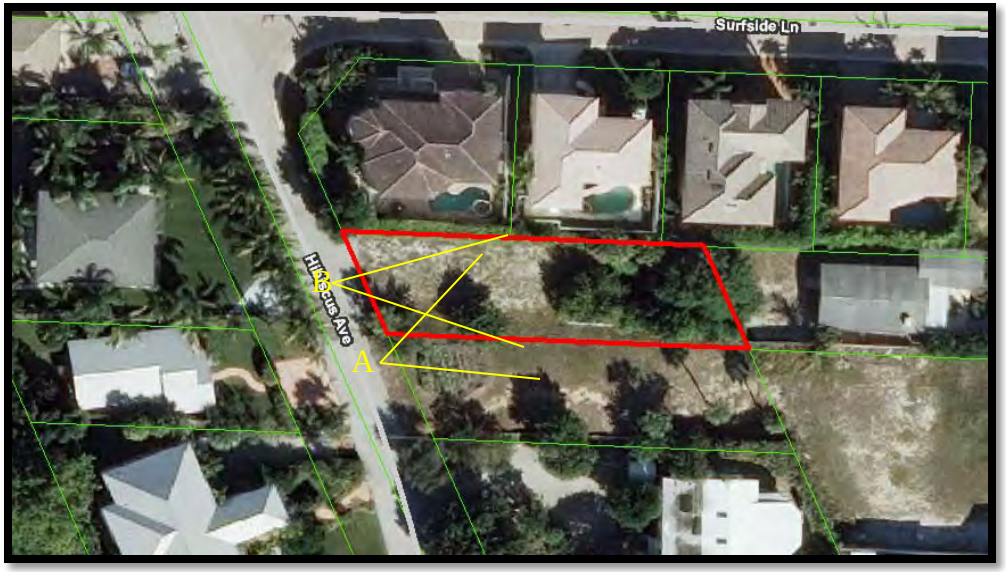

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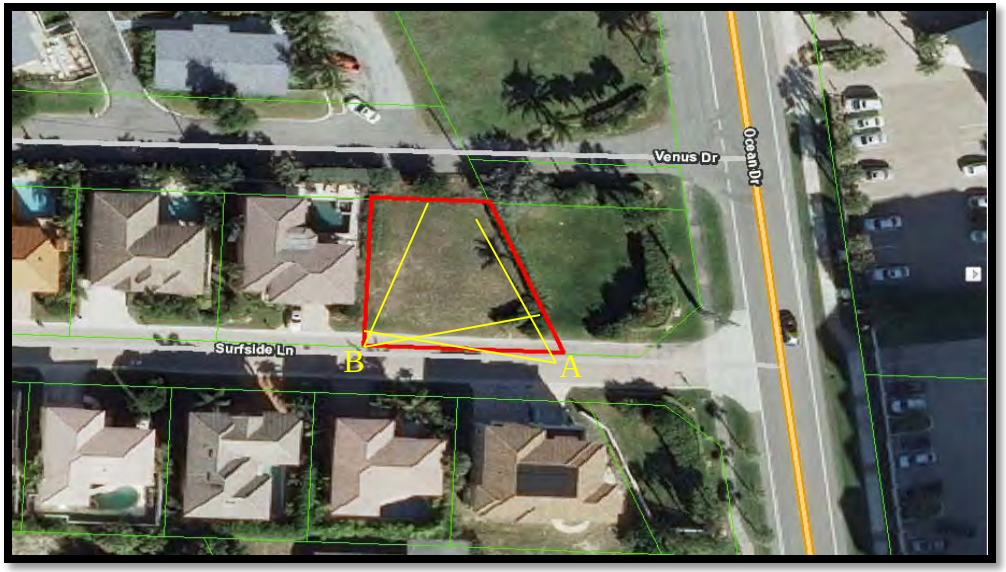
Approx Acreage: 0.17

Images used for this presentation were gathered from Palm Beach County's Property Appraiser Website and Google Maps/Earth.

RESIDENTIAL PARCEL #31



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Approx Acreage: 0.13

JUNO BEACH
FLORIDA

Images used for this presentation were gathered from Palm Beach County's Property Appraiser Website and Google Maps/Earth.

RESIDENTIAL PARCEL #32

Parcel Control #: 28434128580000040
Approx Acreage: 0.16

RESIDENTIAL PARCEL #33

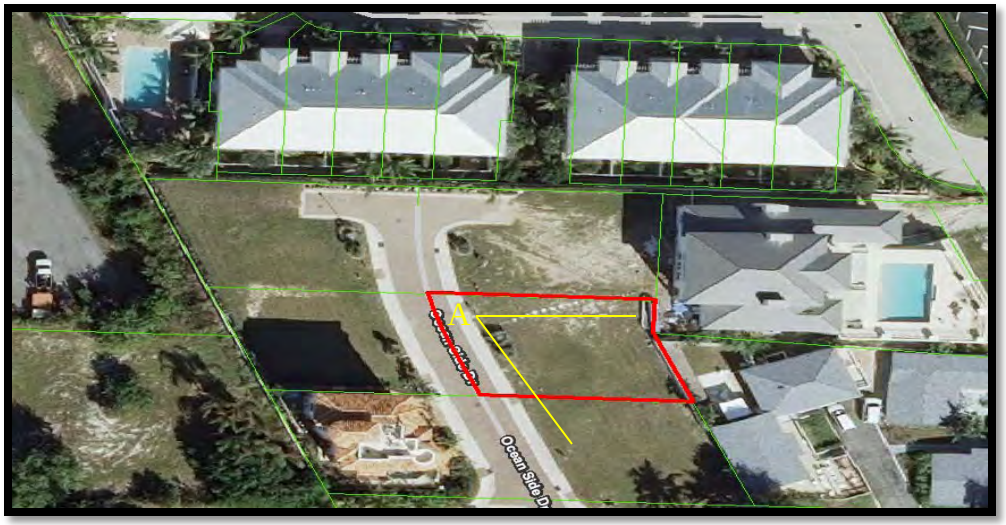
Parcel Control #: 28434128580000050
Approx Acreage: 0.13

Images used for this presentation were gathered from Palm Beach County's Property Appraiser Website and Google Maps/Earth.

RESIDENTIAL PARCEL #34

Parcel Control #: 28434128580000030
Approx Acreage: 0.14

RESIDENTIAL PARCEL #35



Parcel Control #: 28434128580000020
Approx Acreage: 0.13

Images used for this presentation were gathered from Palm Beach County's Property Appraiser Website and Google Maps/Earth.

RESIDENTIAL PARCEL #36

Parcel Control #: 28434128580000010
Approx Acreage: 0.13

Images used for this presentation were gathered from Palm Beach County's Property Appraiser Website and Google Maps/Earth.

RESIDENTIAL PARCEL #37

Parcel Control #: 28434128140000150
Approx Acreage: 0.33

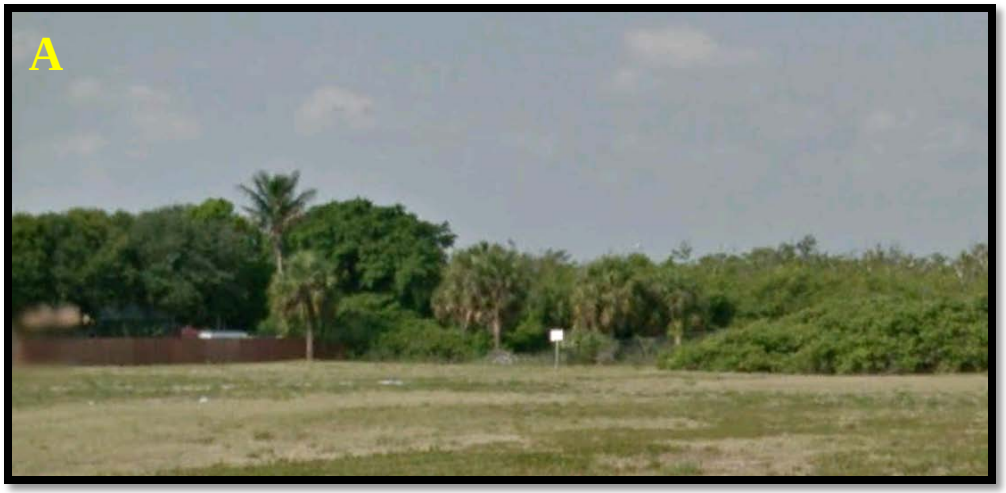
Images used for this presentation were gathered from Palm Beach County's Property Appraiser Website and Google Maps/Earth.

RESIDENTIAL PARCEL #38

Parcel Control #: 28434128110000090
Approx Acreage: 0.15

Images used for this presentation were gathered from Palm Beach County's Property Appraiser Website and Google Maps/Earth.

RESIDENTIAL PARCEL #39



Parcel Control #: 28434128100170010
Approx Acreage: 0.19

Images used for this presentation were gathered from Palm Beach County's Property Appraiser Website and Google Maps/Earth.

RESIDENTIAL PARCEL #40

Parcel Control #: 28434128590010000
Approx Acreage: 0.57

Images used for this presentation were gathered from Palm Beach County's Property Appraiser Website and Google Maps/Earth.

RESIDENTIAL PARCEL #41

Parcel Control #: 28434128140000160
Approx Acreage: 0.11

Images used for this presentation were gathered from Palm Beach County's Property Appraiser Website and Google Maps/Earth.

RESIDENTIAL PARCEL #42

Parcel Control #: 28434121010000090
Approx Acreage: 0.14

RESIDENTIAL PARCEL #43

Parcel Control #: 28434121010000050
Approx Acreage: 0.13

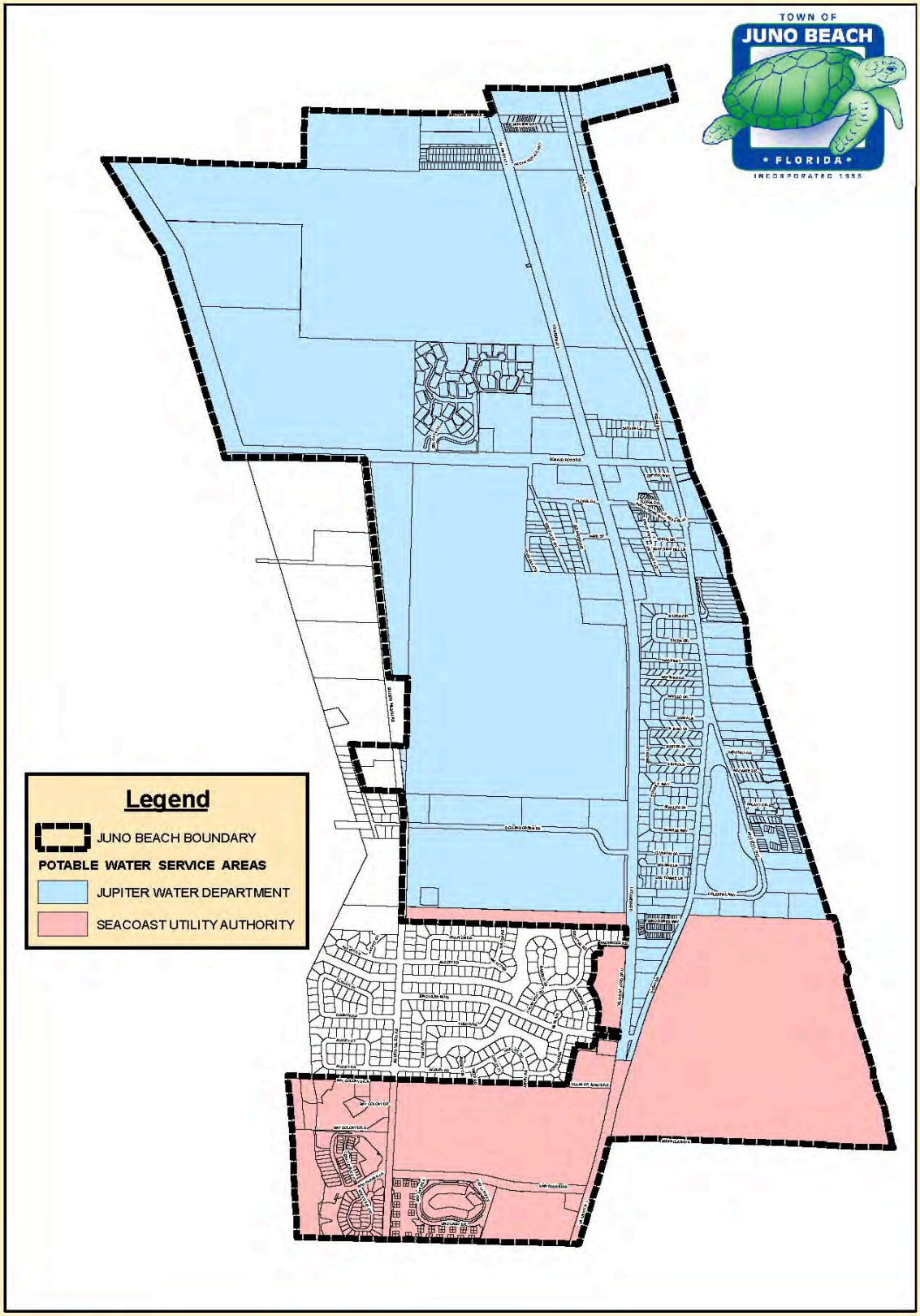
Images used for this presentation were gathered from Palm Beach County's Property Appraiser Website and Google Maps/Earth.

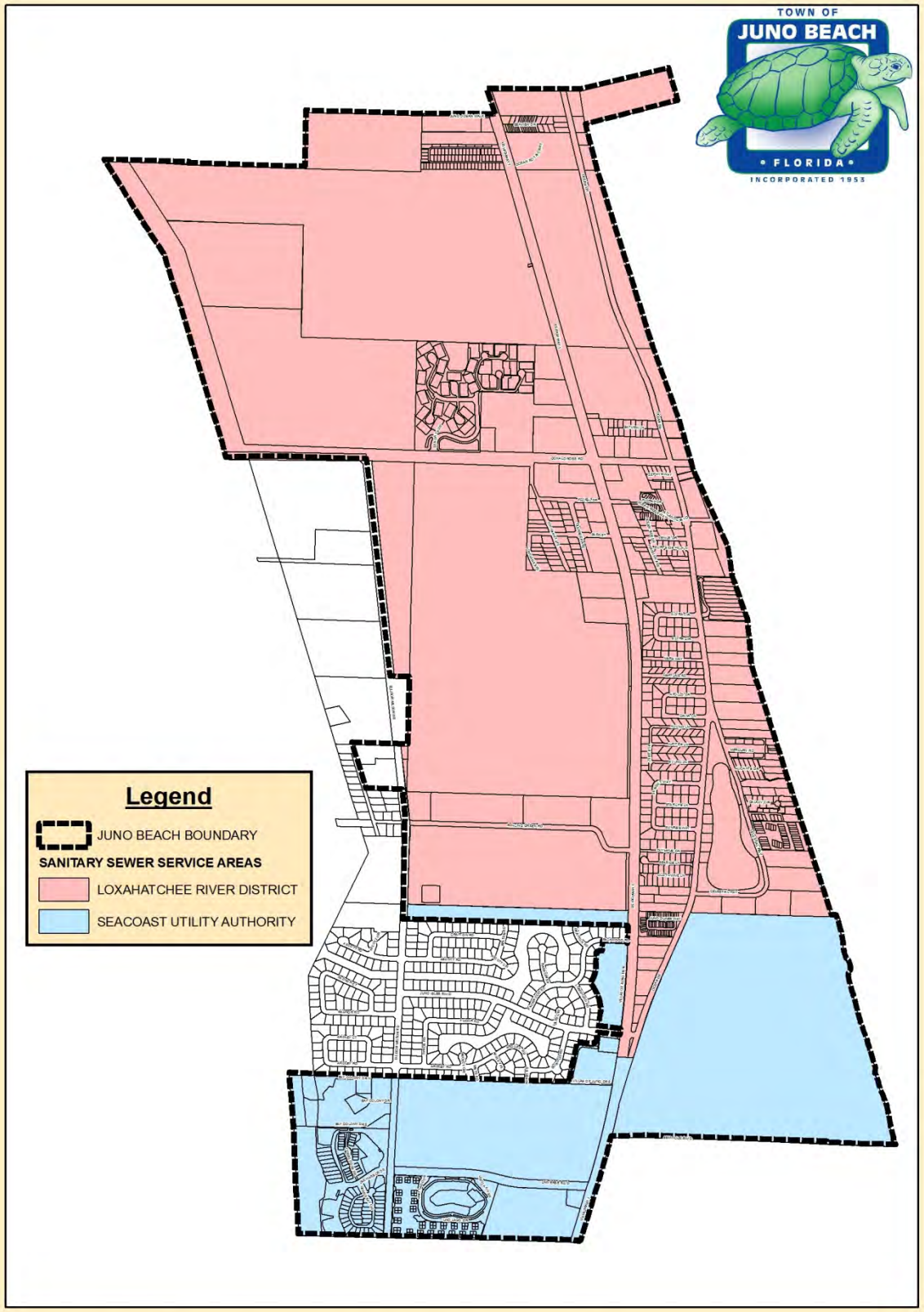
RESIDENTIAL PARCEL #44

Parcel Control #: 28434121000020041
Approx Acreage:

Images used for this presentation were gathered from Palm Beach County's Property Appraiser Website and Google Maps/Earth.

GENERAL INFORMATION MAPS


TOWN OF
JUNO BEACH
FLORIDA
INCORPORATED 1953
Legend
JUNO BEACH BOUNDARY
POTABLE WATER SERVICE AREAS
JUPITER WATER DEPARTMENT
SEACOAST UTILITY AUTHORITY
N
W
E
S
TOWN OF JUNO BEACH
POTABLE WATER SERVICE AREAS
0 400 800 1,600 2,400 3,200
Feet


TOWN OF
JUNO BEACH
FLORIDA
INCORPORATED 1953
Legend
JUNO BEACH BOUNDARY
SANITARY SEWER SERVICE AREAS
LOXAHATCHEE RIVER DISTRICT
SEACOAST UTILITY AUTHORITY
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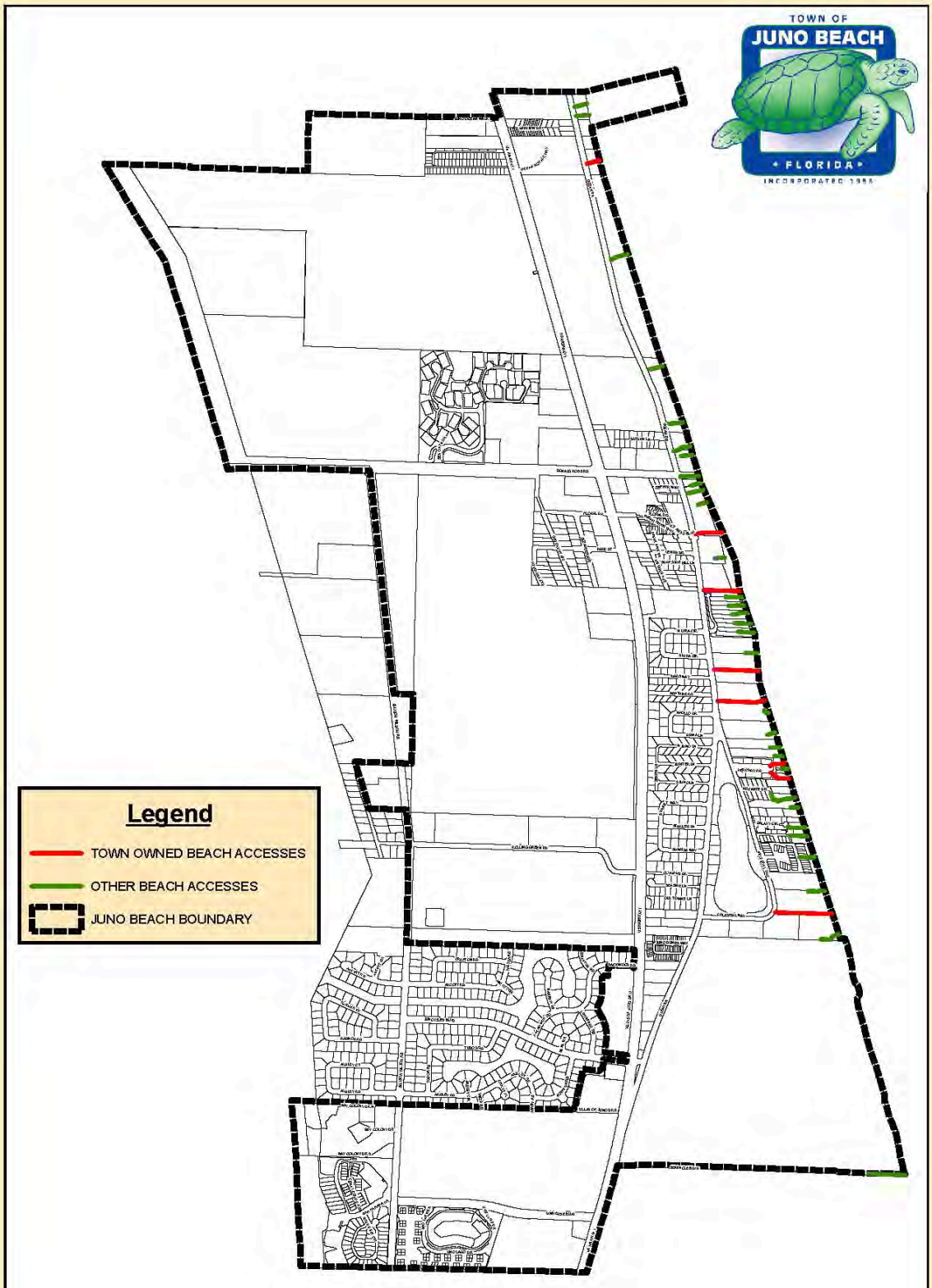
TOWN OF JUNO BEACH
SANITARY SEWER SERVICE AREAS
0 400 800 1,600 2,400 3,200
Feet


TOWN OF
JUNO BEACH
FLORIDA
INCORPORATED 1953
Legend
TOWN OWNED BEACH ACCESSES
OTHER BEACH ACCESSES
JUNO BEACH BOUNDARY
N
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E
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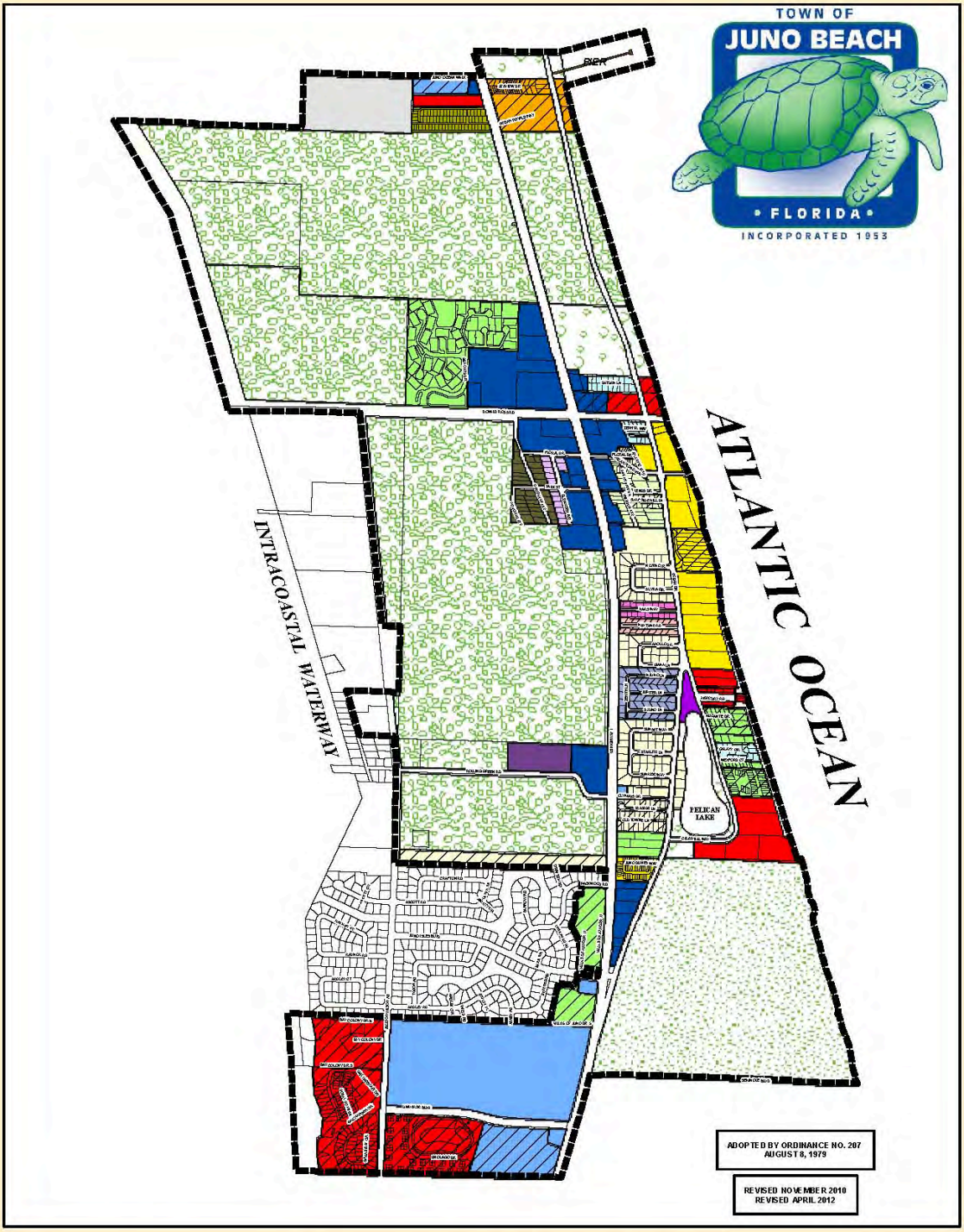
MAP OF TOWN OWNED
BEACH ACCESSES
Feet
0 400 800 1,600 2,400 3,200



LEGEND

JUNO_BEACH_BOUNDARY		HIST-Z	ZEPHYRWAY HISTORIC PRESERVATION DISTRICT	RMT	RESIDENTIAL TRANSIENT & MULTIPLE FAMILY MODERATE DENSITY
PUD	PLANNED UNIT DEVELOPMENT	MH	MANUFACTURED HOME COMMUNITY	RS-1	RESIDENTIAL SINGLE FAMILY
BCH	BEACH	R-DUP	RESIDENTIAL DUPLEX (TWO FAMILY)	RS-2	RESIDENTIAL SINGLE FAMILY
CG	COMMERCIAL GENERAL	REC-PRIV	PRIVATE RECREATION	RS-3	RESIDENTIAL SINGLE FAMILY
CO	COMMERCIAL OFFICE	REC-PUB	PUBLIC RECREATION	RS-4	RESIDENTIAL SINGLE FAMILY
ESL	ENVIRONMENTAL SENSITIVE LANDS	RH	RESIDENTIAL MULTIPLE FAMILY HIGH DENSITY	RS-5	RESIDENTIAL SINGLE FAMILY
GOV	GOVERNMENT	RM-00	RESIDENTIAL MULTIPLE FAMILY - MODERATE DENSITY - OPEN SPACE	RV PARK	RECREATIONAL VEHICLE PARK
HIST-B	BEACHBOUND HISTORIC PRESERVATION DISTRICT	RM-1	RESIDENTIAL MULTIPLE FAMILY - MEDIUM DENSITY	UTL	UTILITIES
HIST-S	SATURN LANE HISTORIC PRESERVATION DISTRICT	RM-2	RESIDENTIAL MULTIPLE FAMILY - MODERATE DENSITY		

N W E S

OFFICIAL JUNO BEACH ZONING MAP

0 500 1,000 2,000 3,000 Feet

Juno Beach

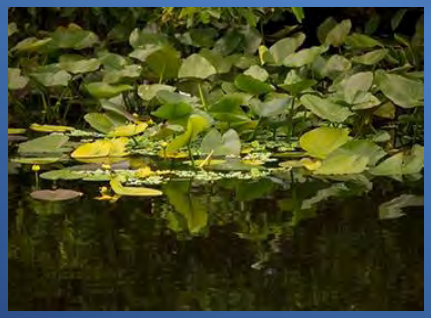
Development / Redevelopment Opportunities

Presenter:

Brian Cartland

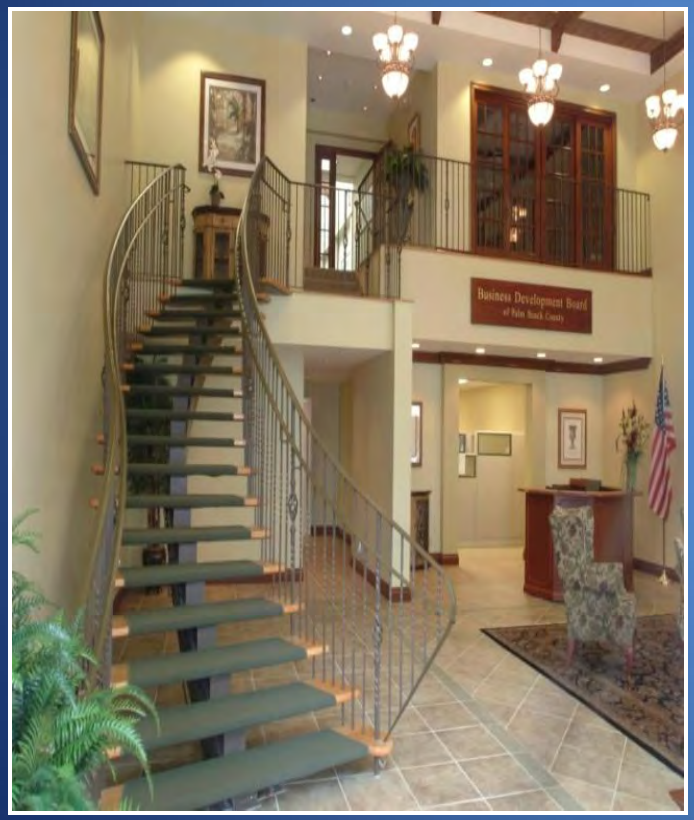
VP, Business Recruitment

Business Development Board BDB



Mission , Structure and Funding

Recruit Retain Expand



- Not-for-profit private corporation
- Formed in 1982
- 40 Member Board of Directors
- 15 Member Staff
- 400 Dues Paying Members
- 1 of only 2 Accredited Economic Development Organizations in Florida.
- $2.4 million budget
- Partner of Enterprise Florida

State of Florida

EFI

Enterprise Florida

DEO

Department of Economic Opportunity

WF

Workforce Florida

Business Development Board

BDB

Palm Beach County's Economic Development Resource

8 Industry Clusters

Aviation, Aerospace & Engineering

Corporate HQ

Business / Financial Services

Manufacturing

Business Development Board BDB
Palm Beach County's Economic Development Resource

International Commerce

Life Science

IT & Telecommunications

Green Energy

Results

Over Past 5 Years:

- 7,900 Jobs
- $55,400 Average Salaries
- $400 Million Capital Investment
- $1.8 Billion Economic Impact

Relocations

FY 2011-2012

- Radical Cosmetics, LLC
- 40 New Jobs
- Lake Worth

- ALDI, Inc.
- 100 New Jobs
- Royal Palm Beach

- CTS Engines
- 6 New Jobs
- Jupiter

- American Sugar Refining
- 10 New Jobs
- Boca Raton

- Digital Risk
- 600 New Jobs
- Boca Raton

- Liquid Cargo
- 20 New Jobs
- Riviera Beach

- Lyf Holding
- 90 New Jobs
- West Palm Beach

- Somahlution, Inc.
- 25 New Jobs
- Jupiter

- Marjam Supply
- 19 New Jobs/65 Retain
- West Palm Beach

Expansions

FY 2011-2012

Convergent
- Bus/Fin/Services
- 50 New Jobs/65 Retain
- Boca Raton

MobileHelp
- HQ/Life Science
- 50 New Jobs/50 Retain
- Boca Raton.

Locus Traxx
- H/Mfg
- 110 New Jobs/50 Retain
- Jupiter

Hollander
- Business Financial
- 77 Retained
- Boca Raton

Image Skincare
- HQ
- 30 New Jobs/40 Retain
- Lantana

SmartforLife Weight Management Centers
- HQ/Mfg
- 25 New Jobs/50 Retain
- Riviera Beach

PC Professor
- Bus/Fin/Services
- 20 New Jobs
- West Palm Beach

ArchieMD
- Software Development
- 10 New Jobs
- Boca Raton

Signet Diagnostic Corporation
- Life Science
- 50 New Jobs/65 Retain
- Riviera Beach

Lumitec
- Manufacturer Marine
- 6 New Jobs/17 Retain
- Delray Beach

Children's Hospital Nicklaus Outpatient Center
- Healthcare
- 20 New Jobs
- Palm Beach Gardens

JFK Medical Center
- 120 New Jobs
- Emergency Services
- PBG / Boynton Beach

Lockheed Martin
- Engineering
- 50 New Jobs
- Riviera Beach

Modernizing Medicine
- HQ/IT
- 40 New Jobs/60 Retain
- Boca Raton

ACG Advanced Communications Group, Inc.
- Call Center
- 200 New Jobs/140 Retention
- Boynton Beach

TBC Corporation
- Corporate HQ
- 175 New Jobs/120 Retention
- Palm Beach Gardens

3 Major Announcements - 1,060 JOBS

Pratt & Whitney

- Northwest PBC
- 230 New jobs
- $81,110 Average Salary

Total Incentives
- $4,391,000 million

ADT

- Corporate HQ
- Boca Raton
- 120 New Jobs
- 260 Retained Jobs

Total Incentives
- $1,620,000 million

Digital Risk

- Financial Services
- Boca Raton
- 450 New jobs
- 50,000 s.f.

Total Incentives
- $1,989,000 million

PARAMETRIC SOLUTIONS INC.
PRODUCT DEVELOPMENT SERVICES

100 NEW ENGINEERING JOBS COMING TO PALM BEACH COUNTY

Jupiter
Gov. Rick Scott stands with employees of Parametric Solutions Wednesday after announcing more than 100 new jobs and the company's expansion in Jupiter.

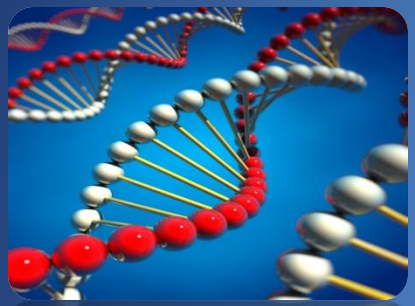
Business Development Board
BDB
Palm Beach County's Economic Development Resource

2 More New Projects

- American Tire Distributors
  - 120,000 SF
  - 30 jobs
  - Royal Palm Beach
- Advanced Processing and Imaging
  - 6,700 SF
  - 60 jobs
  - Boca Raton

Relocation Pipeline

Project Therapy



- Life Science
- 325 New Jobs
- County Wide

Project Contact

- Bus/Financial
- 200 New Jobs
- County Wide

Project King

- Dist/Logistics
- 450,000 SF
- 200 New jobs
- County Wide

Project Wings

- Aviation
- 70 New jobs
- 30,000 S.F.
- West Palm Bch

Expansion Pipeline

Project Window

- Manufacturing
- 30 Existing / 30 New Jobs
- 50,000 S.F. Existing Space
- Central County

Project Gas

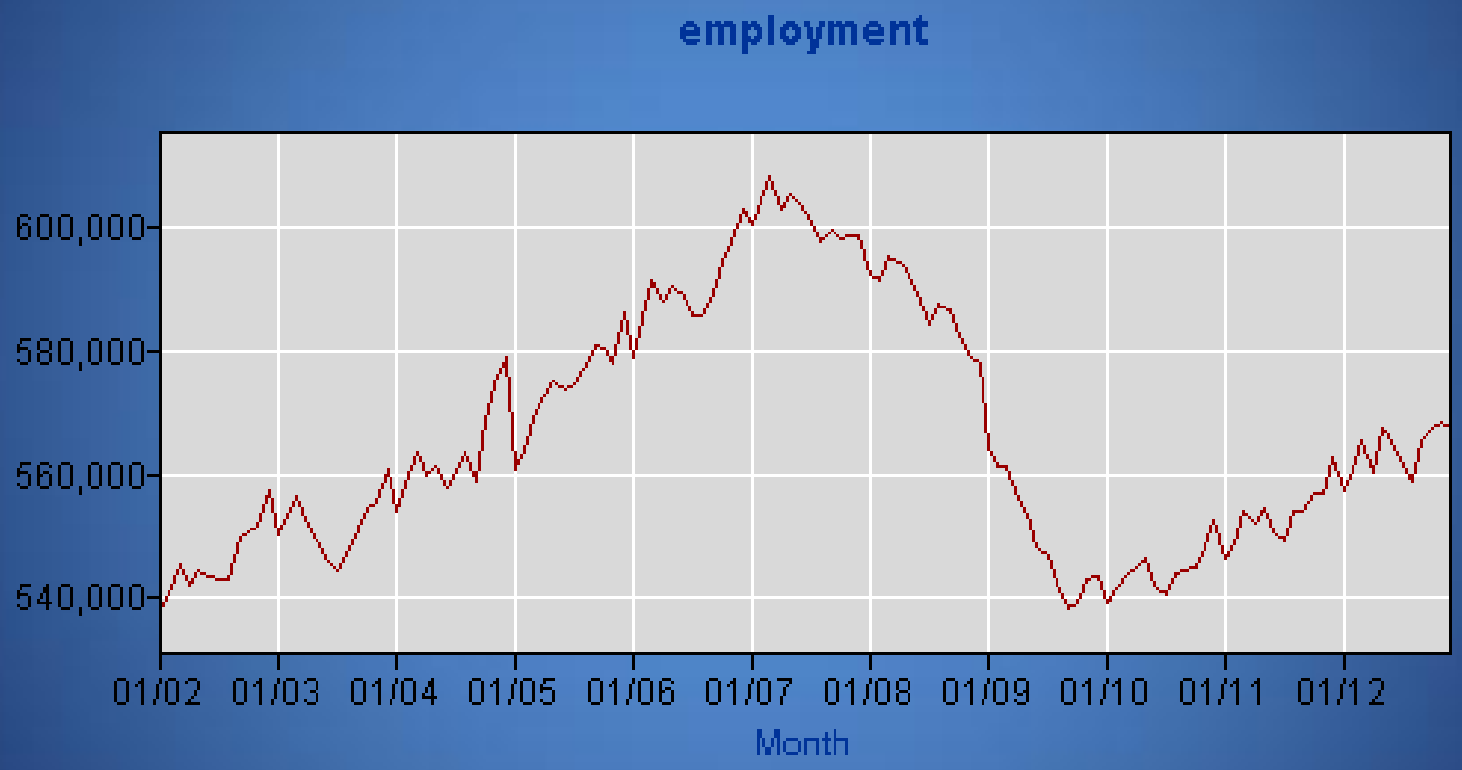
- AAE
- 325 Existing / 100 New jobs
- 80,000 S.F. New Space
- North Palm Beach

Project Cobra

- Life Science Manufacturer
- 100 New jobs
- Boynton Beach

Unemployment Rate
Palm Beach County

Employment
Palm Beach County



Slide 16 of 287

BDB Services

- Real Estate
- Housing
- Vendors and Suppliers
- Permitting
- Grants & Incentives
- Education
- Demographics
- Workforce Assistance

Business Development Board BDB
Palm Beach County's Economic Development Resource

Incentives

State of Florida Tax Advantages

- **NO** corporate income tax on limited partnerships
- **NO** corporate income tax on subchapter S-corporations
- **NO** state personal income tax, guaranteed by constitutional provision
- **NO** corporate franchise tax on capital stock
- **NO** state-level property tax assessed
- **NO** property tax on business inventories
- **NO** property tax on goods-in-transit for up to 180 days
- **NO** sales and use tax on goods manufactured or produced in Florida for export outside the state
- **NO** sales tax on purchases of raw materials incorporated in a final product for resale, including non-reusable containers or packaging
- **NO** sales and use tax on co-generation of electricity

Incentives

- **Sales and Use Tax Exemptions**
- Machinery and equipment used by a new or expanding Florida business to manufacture, produce or process tangible personal property for sale
- Labor, parts and materials used in repair of and incorporated into machinery and equipment
- Electricity used in the manufacturing process
- Certain boiler fuels (including natural gas) used in the manufacturing process
- Semiconductor, defense and space technology-based industry transactions involving manufacturing equipment
- Machinery and equipment used predominantly in research and development (effective July 1, 2006)
- Labor component of research and development expenditures
- Commercial space activity — launch vehicles, payloads and fuel, machinery and equipment for production
- Aircraft parts, modification, maintenance and repair, sale or lease of qualified aircraft
- Production companies engaged in Florida in the production of motion pictures, made for television motion pictures, television series, commercial advertisements, music videos or sound recordings

Incentives

State of Florida Business Incentives

- Qualified Target Industry Refund Program – (QTI)
- Quick Response Training Grant – (QRT)
- Incumbent Worker Training Grant – (IWT)
- Economic Development Transportation Fund – (Road Fund)
- Qualified Defense and Space Contractor Tax Refund – (QDSC)
- High Impact Business Performance Incentive Grant – (HIPI)
- Capital Investment Tax Credit – (CITC)
- Brownfield Redevelopment Bonus
- Enterprise Zones

Stage 1 Lead Qualification

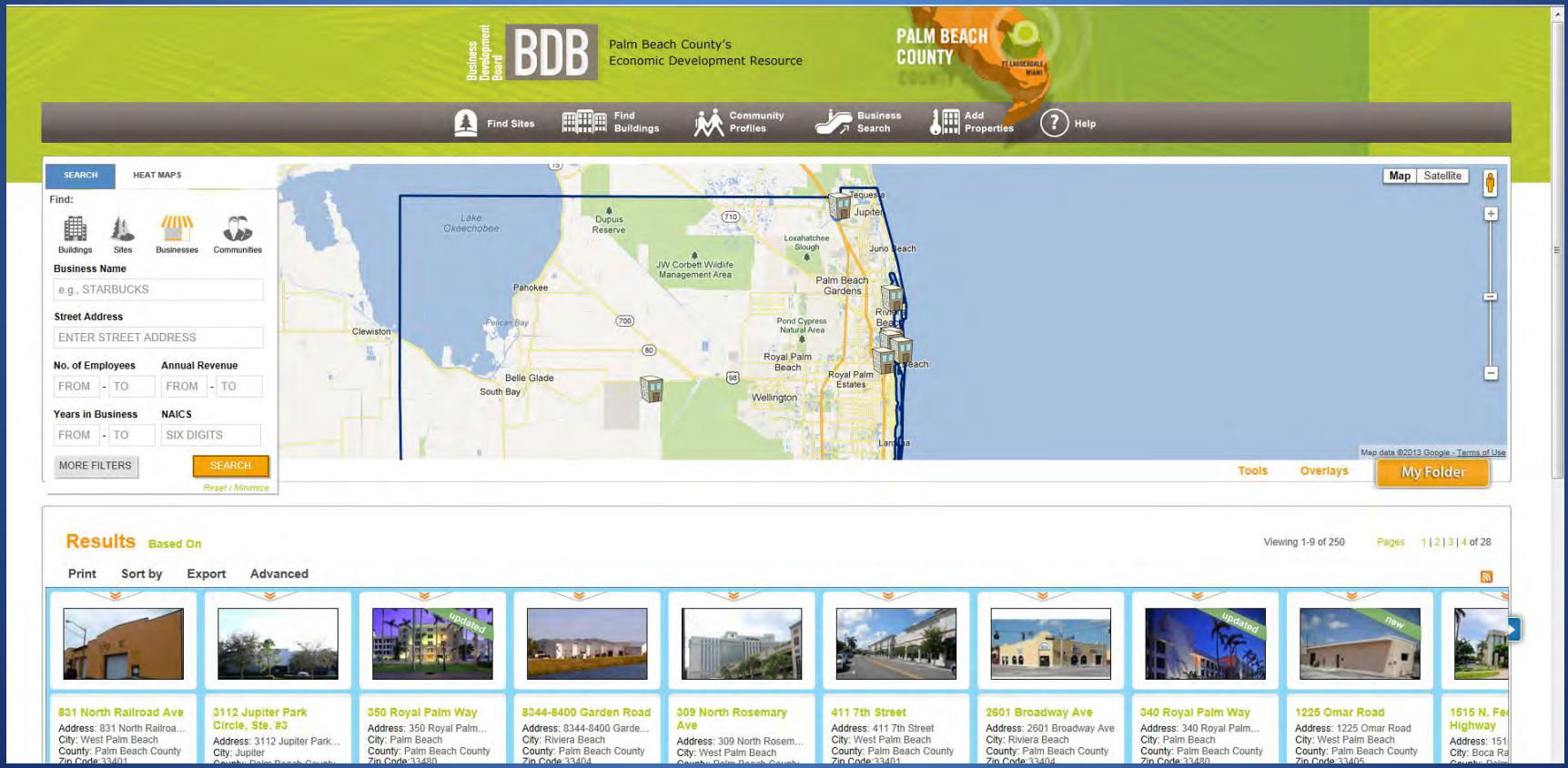
- Not Dependent on Local Market
  (e.g. Manufacturers, Corp HQ, not Retail)
- At Least 10 Jobs
- High Average Wage (around 50k +)
  - $52,366 = 115% Palm Beach County Wage
  - $47,581 = 115% State of FL Wage

Property Search

Expedited Permitting

Shovel Ready Sites

Zoom Prospector



Demographic Research

Juno Beach

Consumer Expenditures (2012)		
Food and Beverages	$ PER HOUSEHOLD	TOTAL $000'S
Totals:	$10,279	$19,120
Food At Home	$5,115	$9,515
Food Away From Home	$4,296	$7,992
Alcoholic Beverages	$867	$1,613

West Palm Beach

Consumer Expenditures (2012)		
Food and Beverages	$ PER HOUSEHOLD	TOTAL $000'S
Totals:	$8,270	$374,033
Food At Home	$4,265	$192,916
Food Away From Home	$3,346	$151,356
Alcoholic Beverages	$658	$29,760

Appendix N

List of
Juno Beach
Businesses

Town of Juno Beach Business Listings

Financial Services

NAME	ADDRESS	PHONE
CB Richard Ellis	700 Universe Blvd.	561-694-3143
Gale M. Vanderpol	840 Ocean Drive Ste. 905	205-861-7005
Grenadier Associates	14155 US Hwy. 1	561-622-2000
Fleur de Lis Capital LLC	14263 US Hwy 1	561-745-7715
Heat Energy Group	790 Juno Ocean Walk, #504C	561-626-8850
Larry A Gerson, CPA, PA	13901 US Hwy. 1	561-622-9090
Loan Solutions	13205 US Hwy. 1	561-202-6266
Modern Management "Consultant in all Phases of Financial Management"	800 Ocean Drive	561-776-0022 Arnies1@aol.com
Palm Beach Financial Svcs., Inc.	14255 US Hwy. 1	561-775-8244
RB Financial Advisors, Inc	13700 US Hwy. 1	561-691-6800
Smolin, Lupin & Company LLC	14155 US Hwy. 1 # 200	561-747-1040 fax 561-747-9980
Sovereign Capital Management	790 Juno Ocean Walk, #401C	561-691-6249
Stockbrokershop.com, Inc	790 Juno Ocean Walk, #501C	561-427-7268
Stonebridge Wealth Management, Inc **"Your bridge to the future"**	13700 US Hwy. 1 #102	561-355-0881 marybeth@st-wm.com
Supervised Financial Services	14255 US Hwy. 1	561-694-2645
Tax Planning Associates of Florida	14255 US Hwy. 1 Suite 244	877-824-0377
TD Bank	12679 US Hwy. 1	561-775-9249 john.lopez@td.com

Financial Services		
NAME	**ADDRESS**	**PHONE**
The Roe Group, LLC	14255 US Hwy. 1	561-624-8699
Voloridge Investment Management, LLC	14255 US Hwy. 1	561-316-8656
WPI Services, LLC	14255 US Hwy. 1 Suite 228	877-864-3613

Automotive		
NAME	**ADDRESS**	**PHONE**
Bluff's Shell Gas Station	14731 US Hwy. 1	561 627-4012
Juno Beach Mobil	12750 US Hwy. 1	561-624-9735
Juno Beach Tire & Auto Center	13841 US Hwy. 1	561-624-2211
Tire Kingdom	823 Donald Ross Road	561-383-3000

Construction & Home Improvement

NAME	ADDRESS	PHONE
Aim Engineering & Surveying, Inc.	14145 US Hwy. 1	239-332-4569
A World of Rugs	12800 US Hwy. 1, #110B	561-776-9988
Ban Enterprises, LLC "Our Fees Will Not Bankrupt You"	26 Grand Cay Circle	561-626-2337 or 561-262-8696 bobbat26@comcast.net
Bespoke Kitchen Design	765 Hibiscus Avenue	561-512-6376
Cabinet Encounters (Designing custom living spaces to fit your needs)	14239 US Hwy. 1	561-627-4996 cabinetencountersfl.com
California Designs, Inc.	12800 US Hwy. 1, #110	561-625-5250
Casto Homes, Inc.	13842 US Hwy. 1	561-626-3444
Clarkitecture Construction, Inc.	12800 US Hwy. 1, #280	561-694-0069
Downsview Kitchens of Juno	12800 US Hwy. 1, #100	561-799-7700
Enviro-Services & Constructors	800 Uno Lago Drive	561-322-5928
Fran Murphy Interior, Inc.	12800 US Hwy. 1	561-626-6200
Gary Walker & Associates	324 Oak Harbour Drive	561-575-0245
Handyman Services	741 Seaview Drive	561-685-0357
Harco, Inc.	760 Seaview Drive	772-475-5437
Irish C's Marine Service	425 Coral Cove Drive	561-234-9285
JB Kern Construction	770 Hibiscus Avenue	561-762-4849
Jupiter Screen Repairs, Inc.	jupiterscreenrepairs.com	561-401-5658
Legacy Castle Construction, Inc.	400 Uno Lago Drive Ste. 405	561-972-8394
NH&A	790 Juno Ocean Walk	561-622-2283
Plan-It Desin-Build Inc.	851 Donald Ross Rd.	561-324-0500
Prodiey Government Services, LLC	14255 US Hwy. 1 Ste. 220	561-727-3652
Regal Decorating & Paint Center	13886 US Hwy. 1	561-627-7600
Richard Dalessio Construction, Inc.	361 Zenith Lane	561-346-7858

Construction & Home Improvement		
NAME	**ADDRESS**	**PHONE**
Riggin Interiors of Florida	12836 US Hwy. 1	561-775-0535
Three Guys Roofing, Inc.	700 Uno Lago Drive Ste. 103	561-255-8103
Webb Builders, LLC	13896 US Hwy. 1	561-626-1568

Hotels/Motels		
NAME	**ADDRESS**	**PHONE**
Hampton Inn	13801 US Hwy. 1	561-626-9090
Holiday Inn Express	13950 US Hwy. 1	561-622-4366

Real Estate/ Mortgage/ Management Services

NAME	ADDRESS	PHONE
All Florida Land Title	790 Juno Ocean Walk, #601	561-775-7536
Atlantic Coast Title Group	14255 US Hwy. 1, #2170	561-624-9422
Boca Executive Realty, LLC	13700 US Hwy. 1, #202A	561-241-8200
Compass Mortgage, LLC	790 Juno Ocean Walk, #401C	561-626-0920
Distinct Estates	790 Juno Ocean Walk, #501C	561-427-7272 sandy@imls.com
Fatherson Realty, Inc.	13205 US Hwy. 1, #301	561-694-2446
Oceanfront Real Estate & Dev.Inc.	14041 US Hwy. 1, #H	561-622-4000
Platinum Properties Real Estate Inc. **"Your area Realtor since 1972, formerly Celestial Realty"**	350 Celestial Way	561-626-3559 www,platprops.com
R&R Realty, Inc (Real Estate)	865 Donald Ross Rd	561-626-8550 cryder@randrflorida.com
Re/Max Ocean Properties	14050 US Hwy. 1, #C	561-839-1770
Realty Assoc. Florida Properties	350 Celestial Way	561-775-7300
Robert Bosso Realty Service	13955 US Hwy. 1, #1	561-844-5500
Taylor Made Estate Sales	203 Sea Oats Drive Ste. D	561-240-9316
Signature Properties of the Palm Beaches	14267 US Hwy. 1	561-694-0020
Worth Realty	14255 US Hwy 1, #294	561-691-1999

Professional Services

NAME	ADDRESS	PHONE
Academy Leadership	500 Ocean Drive	561-776-3145
Arbor Capital Management Corp.	790 Juno Ocean Walk, #600	561-624-0449
Auto Focus Security	14255 US Hwy. 1, #229	561-776-9996
Avision Media Environments	13901 US Hwy. 1, #1	561-628-4239
Ban Enterprises, LLC	26 Grand Bay Circle	561-626-2337
Bespoke Design & Consulting "Home Renovations, Space Planning, Fine Cabinetry & Owners Representation."	765 Hibiscus Avenue Unit B	561-512-6376 or bespokei3@gmail.com www.bespokei3.com
Center for Communication Skills	14255 US Hwy. 1 Ste 208	561-632-0552
DRS Recruiting, Inc.	14255 US Hwy. 1, #242	561-630-3844
Federated Law Group, PLLC **Bryan Manno - Attorney**	13205 US Hwy. 1, # 555	1-866-419-0929 1-800-391-2178
Erich Zianabitnig, P.A.	471 Lyra Circle N	561-252-3555
Gary Jones & Associates	14255 US Hwy. 1, #2155	561-776-0840
Grant's Estate Buyers, Inc.	1433 Villa Juno Drive S	561-758-5585
Irene Long & Associates	14255 US Hwy. 1, #246	561-745-0075
ISR Strategies, LLC. **(Security Consultants)**	14255 US Hwy 1 # 238	561-319-3400
John Pitts Courrier Service	1434 Villa Juno Drive S	561-713-0379
Joseph Spitz, PA, CPA	14255 US Hwy. 1, #241	561-630-3860
Juno Computer Solutions	300 Uno Lago Drive	561-339-0899
Loggerhead Executive Services	14225 US Hwy. 1, #220	561-627-2702
Perspective Design, Inc **"Accomplished interior design firm with 30 years" experience"**	845 Oak Harbour Drive	561-659-3221 or carol@perspectivedesigninc.com or www.perspectivedesigninc.com
Pure Images Studio (Photography)	1406 Villa Juno Drive S	561-662-1689
Sand Dollar Promotions	705 Sea Oats Drive	561-575-7292

Professional Services (continued)		
NAME	**ADDRESS**	**PHONE**
SC Chemical Consulting Services	834 Oak Harbour Drive	561-427-3407
Security Alliance for Effective Solutions	14255 US Hwy 1, #238	561-630-3860
Shea Educational Group, Inc.	13878 Oleander Avenue	561-493-8080
Sue Compton, LCSW	13901 US Hwy. 1, #11	561-624-4748
Work Opportunities Unlimited	14255 US Hwy. 1 # 226	866-533-3947

Medical & Healthcare

NAME	ADDRESS	PHONE
AA Therapy Spa	869 Donald Ross Road	561-542-5669
Advanced Mental Health Care	790 Juno Ocean Walk, #404C	561-333-8884
Comprehensive Health Clinic of Juno Beach	14147 US Hwy. 1	561-694-2229
Douglas Stephenson, OD	13901 US Hwy. 1, #12	561-627-6113
Elaine E Dahl, Phd.	14255 US Hwy. 1, #216	561-630-4448
Family Chiropractic Centre	14100 US Hwy. 1	561-626-6711
Gabriel Rehabilitation, Inc.	13205 US Hwy. 1, #109	561-627-2525
Live Free Chiropractic **"Upper Cervical Chiropractic Care for the Whole Family"**	871 Donald Ross Road	561-694-0708 LiveFreeChiropractic@gmail.com www.YourChiropracticHome.com
Gaston Berenguer, DMD, MS	14155 US Hwy. 1, #302	561-729-0377
Health Focus Palm Beach **"Amazing Massage 7 Days a Week"**	350 Celestial Way	561-865-6464 cwstearns@gmail.com www.healthfocuspb.com
Hospice of Palm Beach	801 Donald Ross Road	561-227-5150
Jill Fisher, PT	440 Juno Lane N	561-309-6589
Juno Beach Dental	14050 US Hwy.1, Ste. D	561-622-7220
Juno Beach Family Practice	13205 US Hwy. 1, #105	561-691-0100
Juno Beach Optical	14050 US Hwy. 1, Ste. E	561-622-7220
Juno Comprehensive Dentistry	13700 US Hwy. 1, #201	561-622-7243
Justin I Schwartz, DMD, MS, PA	14155 US Hwy. 1, #302	561-799-9925
Mark Kuhl, DMD, PA	14143 Us Hwy. 1	561-627-5552
Mary Peterson, LMT	481 Mars Way	561-329-7376
Medical Development Systems	14255 US Hwy. 1, #231	561-630-9022
Minute Clinic	14000 US Hwy. 1	561-622-9414
Mittleman Eye Center	13901 US Hwy. 1, #7	561-775-3303

Medical & Healthcare (continued)		
NAME	**ADDRESS**	**PHONE**
Patrick C Smith, DDS, PA	13901 US Hwy. 1, #9	561-694-9000
Women First, LLC	13901 US Hwy. 1, #2	561-491-4666
World Travel Health Care	14255 US Hwy. 1, #227	561-361-7484 passport@fan.com

Cleaning Services

NAME	ADDRESS	PHONE
Black Tie Cleaners	14050 US Hwy. 1, #F&G	561-799-4061
Imperial Cleaners	13965 US Hwy. 1	561-624-0755
Juno Beach Window Washing "Affordable, Reliable, Dependable"	630 Ocean Drive	561-622-0904 paintamerica@aol.com
La Mer Cleaners	821 Donald Ross Road	561-622-6581

Moving & Storage		
NAME	**ADDRESS**	**PHONE**
Document Storage Systems, Inc.	12575 US Hwy. 1, #200	561-227-0207
McGovern Moving & Storage, Inc.	14701 US Hwy. 1	561-799-0840

Misc

NAME	ADDRESS	PHONE
Alterations By Yen	14050 US Hwy. 1	561-799-4062
Brown Printing Company	14255 US Hwy. 1, #204	561-630-1441
Café 777, LLC (Internet Café/fax/copy)	889 Donald Ross Rd	561-355-5434 joelmatpm@msn.com
Clean Cut International, LLC	14255 US Hwy. 1, #235	561-627-0546
Crow Couriers, Inc.	1434 Villa Juno Drive S	561-713-0379
Gale M. Vanderpol	840 Ocean Drive Ste 905	205-861-7005
Smart Product Innovations, Inc.	14255 US Hwy. 1, #235	609-868-1995
Smartvent Products, Inc.	14255 US Hwy. 1, #235	561-630-7260
South Florida Home Care LLC	14263 US Hwy. 1	561-745-7715 david@southfloridahomecare.com southfloridahomecare.com
Stop Shipping Horses to Slaughter	753 Seaview Drive	561-324-3069
Villas of Juno (Extraordinary apartment homes within walking distance to beach)	12801 US Hwy. 1	561-691-0300 villasofjuno@olenproperties.com
Yacht Finatics	490 Mars Way	561-889-8042

Maintenance Svc		
NAME	**ADDRESS**	**PHONE**
Tiger Pools, Inc.	753 Seaview Drive	561-691-1745

Animal Services

NAME	ADDRESS	PHONE
Bluff's Animal Hospital	13700 US Hwy. 1	561-626-4813
Canine College of Juno, Inc.	839 Donald Ross Road	561-626-0552
Clip-N-Dip	13205 US Hwy. 1, #115	561-627-1549
Holistic Veterinary Center	13882 US Hwy. 1	561-629-4727
Oz Veterinary Group	12834 US Hwy. 1	561-626-8000
Wags & Whiskers Pet Stop	873 Donald Ross Road	561-776-9933

Banking

NAME	ADDRESS	PHONE
Anchor Commercial Bank	13951 US Hwy. 1	561-383-3150
Floridian Community Bank	14235 US Hwy. 1	561-630-5778
Power Financial Credit Union	12575 US Hwy. 1	561-694-2757
TD Bank	12679 US Hwy. 1	561-775-9249 john.lopez@td.com
Trustco Bank	14051 US Hwy 1	561-630-4521 www.trustcobank.com

Health & Wellness		
NAME	**ADDRESS**	**PHONE**
Back to Health Rehab & Wellness, Dr. Paula Newmark, DC	13901 US Hwy 1 Suite 5	561-626-9200 drpaula@gobacktohealth.com
Ellen R. Bachmeyer, LCSW, LLC	14255 US Hwy. 1 # 225	561-601-7696 erbachmeyer@gmail.com
Juno Beach Fitness	14125 US Hwy. 1	561-776-7910
Juno Beach Pilates	13901 US Hwy. 1 Suite 1	561-801-6948
Loggerhead Fitness	901 Donald Ross Road	561-625-3011
Mary's Massage	481 Mars Way	561-329-7376
Monus Mind & Body Fitness	DrSammyMonus@hotmail.com	850-212-4857
Native Yoga Center	833 Donald Ross Road	561-670-6575
The Healing Arts Institute of Juno Beach	13901 US Hwy. 1, #10	561-799-7688
Total Holistic Body	350 Celestial Way	561-727-9130
Trueglo Med Spa	13901 US Hwy. 1, #2	561-691-8655

Bakery		
NAME	**ADDRESS**	**PHONE**
Cake and Candy Designs by Mary Lou, INC	14137 US Hwy 1	561-625-2500 cakeandcandydesignsbymarylou@gmail.com www.cakeandcandydesignsbymarylou.com
Lucio's Gourmet Bakery & Deli	13971 US Hwy 1	561-626-2666 skdesiderio@hotmail.com

Insurance		
NAME	**ADDRESS**	**PHONE**
John Kime Allstate Insurance	12832 US Hwy. 1	561-627-1806
Patriot Insurance Agency, LLC	13901 US Hwy. 1, # 8	561-626-1776

Legal Services

NAME	ADDRESS	PHONE
Disability Insurance Law Group	14255 US Hwy.1 # 235	561-202-9170
Gregory L Denes, PA	300 Mercury Road	561-694-9199
Jeck, Harris, Raynor & Jones, P.A.	790 Juno Ocean Walk, #600C	561-746-1002
Julie Nigro Attorney-At-Law	14255 US Hwy. 1 Suite 284	561-972-7061
Legal Client Services	14243 US Hwy. 1	561-290-0030
Michael Tomberg, PL	14255 US Hwy. 1, Suite #287	561-972-8721 Tomberg@tomberglawfirm.com
The Banbury Fund, Inc.	14255 US Hwy. 1, Suite #223	561-627-7025
Work Opportunities Unlimited, Inc.	14255 US Hwy. 1 Ste. 226	866-533-3947
Zurich American Insurance Company	14241 US Hwy. 1	561-799-7340

Pharmacy		
NAME	**ADDRESS**	**PHONE**
CVS	14000 US Hwy. 1	561-622-9414
Tri Coast Pharmacy, Inc	14141 US Hwy. 1	561-776-7510 mark@tricoastrx.com or Kevin@tricoastrx.com

Beauty		
NAME	**ADDRESS**	**PHONE**
All About You Salon & Spa	13959 US Hwy. 1	561-694-1330
Allagio Salon (No attitudes, just great hair@)	867 Donald Ross Road	561-622-2553 hair@allagiosalon.com
Andre Jordan Salon of Esthetic	13901 US Hwy. 1, #6	561-775-5606
Ayskel's Skin Care	14247 US Hwy.	561-775-9802
Stephanie & company	13700 US Hwy. 1, #103	561-622-1540
M + Y Nails	845 Donald Ross Road	561-427-4591
Vince's Surfside Salon- Barber	12844 US Hwy.1	561-494-8185

Schools/Learning		
NAME	**ADDRESS**	**PHONE**
BATT Learning Center	13205 US Hwy. 1, #202	561-625-2288
Bright Futures Academy Charter School	13205 US Hwy. 1 #535	561-253-7504 fax 561-253-7897
The Hebrew Academy of Palm Beach	13205 US Hwy. 1, #201	561-838-4222
Juno Beach Preparatory School	13205 US Hwy. 1, #211	561-627-6719

Dining/Eateries

NAME	ADDRESS	PHONE
101 Grille	13205 US Hwy. 1, #101	561-625-5557
Antonio's Deli & Meat Market	14137 US Hwy. 1	561-625-6544
Bentley's	805 Donald Ross Road	561-624-7944
Captain Charlie's 3 Doors Up	12846 US Hwy. 1	561-624-9924
Captain Charlie's Reef Grill	12846 US Hwy. 1	561-624-9924
Cathy's Beach Connection Restaurant	12850 US Hwy. 1	561-626-2262
China-Tokyo	815 Donald Ross Road	561-624-0700
Classico's Italian Restaurant	14133 US Hwy. 1	561-622-9772
County Line Pizza	875 Donald Ross Road	561-626-3662
Dunkin Donuts	803 Donald Ross Road	561-624-0103
Flip Flop Sub Shop	14731 US Hwy. 1	561-628-5975
Ganim's Juno Beach Café	13967 US Hwy. 1	561-622-1533
Hurricane Café	14050 US Hwy. 1	561-630-2012
Joey's Exotic Sandwitches	14731 US Hwy. 1	561-972-1459 fax: 561-630-6518 chefjlb@live.com
Juno Beach Fish House	13980 US Hwy. 1	561-626-2636
Kee Grill	14020 US Hwy. 1	561-776-1167
Kirby's Pub	841 Donald Ross Road	561-627-8000
Lucio's Gourmet Bakery & Deli	13971 US Hwy.1	561-626-2666 skdesiderio@hotmail.com
Picasso's Pizza **"Best Pizza in Juno Beach & So. Florida"**	13205 US Hwy. 1, #114	561-624-0004 www.**picassospizzeria**.biz
Seagull's Love-N-Bagels	891 Donald Ross Road	561-775-1542
Sushi Jo Juno	14261 US Hwy. 1	561-691-9811
The Snowball Shack	14731 US Hwy. 1	561-627-4012

Dining/Eateries (continued)		
NAME	**ADDRESS**	**PHONE**
Thirsty Turtle Seagrill & Market	13981 US Hwy. 1	561-627-8991

Electronics		
NAME	**ADDRESS**	**PHONE**
Seagull Electronics Inc.	12800 US Hwy. 1 Ste. 280	561-624-0220

Sports		
NAME	**ADDRESS**	**PHONE**
Cycle Science	13975 US Hwy. 1	561-627-2453
Bikestreet Retail, LLC.	12770 US Hwy. 1	561-624-4997
Florida Paddleboards, Inc	14153 US Hwy 1	561-281-3823 mmcgann@flpaddleboards.com
Ground Swell Surf Shop	811 Donald Ross Road	561-622-7878
Juno Surf Shop	13961 US Hwy. 1	561-626-3569
Peter Glenn of Vermont	13205 US Hwy. 1, #403	561-622-7940
Rowland Indoor Rowing	11985 US Hwy. 1 Suite 205	561-596-5351 jdgepp@aol.com
Running Sports, Inc. Specialty Running Store	13975 US Hwy 1	561-694-8125 www.runningsports.com runningsports@yahoo.com

Retail		
NAME	**ADDRESS**	**PHONE**
Hospice Retail Shop	863 Donald Ross Road	561-624-5495
House of Appliances	14249 US Hwy. 1	561-627-6652
Juno Beach Liquors	13977 US Hwy. 1	561-624-9170
Ladies Closet (Ladies Resale)	849 Donald Ross Rd	561-223-2623 rovenatutovic@aim.com
Michael Steven Wilson, Jeweler **A**dvanced Jewelry Design, Technology & Manufacturing "Mike makes it right, makes it a great value, & makes everyone happy"	14151 US Highway 1	561-741-7127 www.MichaelTheJewelerWilson.com
Palm Beach Fabrics	14157 US Hwy. 1	561-626-4400
Ter Marsh Groves	13900 US Hwy. 1	561-626-1177
Terry's Shoe Repair	853 Donald Ross Road	561-775-1440
The Good Feet Store	847 Donald Ross Road	561-799-4855
The Perfect Find, LLC (Cosignment Store)	13205 US Hwy 1	561-531-9520 theperfectfindjuno@gmail.com

Florists		
NAME	**ADDRESS**	**PHONE**
Juno Beach Florist	13957 US Hwy. 1	561-626-1195

Gourmet Food/Deli		
NAME	**ADDRESS**	**PHONE**
Good Harvest Gourmet Foods	13884 US Hwy 1	561-358-9320 ddavid11@aol.com
Lucio's Gourmet Bakery & Deli	13971 US Hwy 1	561-626-2666 skdesiderio@hotmail.com

Appendix O

LMS Project Submission Procedure, 2013 Prioritized Project List

PALM BEACH COUNTY
LMS PROJECT/INITIATIVE SUBMISSION FORM

OFFICIAL USE ONLY
PROJECT #

Date:

Municipality/Agency:

Project Point of Contact:

Phone Number:

Email:

Title of Project:

Estimated Cost: $

Check (X) Appropriate Box:

Shuttering and Wind Proofing ☐ Flood Control/Reduction and Waterway Management ☐

Public Information & Education ☐ Counter Terrorism/Homeland Security Initiative ☐

Mechanical Maintenance/Improvement ☐ Other ☐

PROJECT DESCRIPTION/NARRATIVE

Describe the proposed mitigation measure, including the existing hazard(s), frequency of occurrence, community vulnerability, and explanation of how this measure mitigates it.

COMMUNITY BENEFIT

1. **FLOOD MITIGATION**

Does the proposed project/initiative reduce flooding in the community? If so which activity: flood damage reduction, mapping and regulatory, flood preparedness, or public information. Explain:

2. **Project Benefit**

Does the project address critical elements of the community infrastructure such as primary or secondary facilities, public convenience facilities, or facilities affected by storm water or flooding? Which facilities? Explain:

3. **Area Benefit**

How does the project benefit the citizens of the county? Does it help a few dozen homeowners such as shuttering a neighborhood? Does it shutter a public building that thousands of patrons have access to? Does it have an impact on neighboring jurisdictions by reducing flooding along a major roadway? Explain:

4. **Community Exposure**

Does the project mitigate a frequently occurring problem or a problem to which a community is particularly vulnerable (i.e., high, medium, or low exposure with high, medium, or low frequency of occurrence) such as reduce the constant flooding problem that occurs at a major intersection every time it rains? Does the project reduce wildfires that frequently threaten numerous neighborhoods and government facilities during the dry season? Explain:

5. Cost Effectiveness

What is the benefit/cost ratio of the project applying the following Benefit/Cost ratio formula? (Estimated Loss Exposure ($) Before Project) – (Estimated Loss Exposure ($) After Project) ÷ Cost of the Project? Example: City Hall could have a loss of $500,000 of equipment and supplies from a Category 3 Hurricane. Estimated damage following a category 3 Hurricane after a wind retrofit project is estimated at $90,000. The cost to shutter City Hall would cost about $125,000. Using the equation above the benefit/cost ratio would be 3.28. Any ratio over 1 is a beneficial project.

PROJECT IMPLEMENTATION

6. COMP or Other Functional Plan

Is the project contained within a Comprehensive Growth Management Plan or equivalent such a Water Control Plan or a Capital Improvement Plan (CIP)? Provide supporting documentation.

7. Containment within an Existing Emergency Management Plan / Other Functional Plan Developed by an Official Local Governmental Entity/Organization

Has this project or initiative already been proposed as a management initiative or structural improvement in any emergency plan? Provide supporting documentation.

8. Consistency with Existing Regulatory Framework

Is the project consistent with existing legal, regulatory, and environmental/cultural framework? Are there local, regional, state, federal issues? Provide supporting documentation.

COMMUNITY COMMITMENT

9. Public Support

Is there demonstrated public support for this project? Has a public meeting been held or written evidence of public support been documented? Provide supporting documentation.

10. Funding Availability

Is there a funding source readily available for the current fiscal year? Available in 2, 3, 4 or 5 years? Explain:

11. Matching Funds

Are matching funds or in-kind services available for this project? If matching funds are available, what percentage? Explain:

12. Timeframe for Accomplishing Objectives

How long will it take for the proposed mitigation project to accomplish its stated goals (1, 2, 3, 4, or 5 years)? Explain:

PALM BEACH COUNTY
LMS PROJECT/INITIATIVE SCORING SHEET

Project Title:	
Sponsor:	

OFFICIAL USE ONLY
PROJECT #
Reviewer:

MEASURED CRITERIA	POINTS AVAILABLE	POINTS AWARDED
Community Benefit	50	
Project Implementation	25	
Community Commitment	25	
PROJECT / INITIATIVE FINAL	SCORE	

COMMUNITY BENEFIT	AVAILABLE POINTS	SCORING INSTRUCTION	AWARDED POINTS
Flood Mitigation - Does the proposed project or initiative mitigate against flooding?	5	Flood Activity Category Flood Damage Reduction =5 Mapping and Regulatory = 4 Flood Preparedness = 3 Public Information = 2 Other = 1	
Project Benefit - Does the project address critical elements of the community infrastructure?	10	Primary critical facilities = 10 Storm water/flooding = 8 Secondary critical facilities = 6 Public convenience facilities = 4 Residential Structures = 2	
Area Benefit – How many people stand to benefit from the project implementation?	5	Multiple Jurisdictions = 5 Community = 3 Neighborhood = 1	
Community Exposure - Does the project mitigate a frequently occurring problem or a problem to which a community is particularly vulnerable? H = High M = Medium L = Low E = Exposure F = Frequency of occurrence	10	HE + HF = 10 HE + MF = 8 HE + LF = 6 ME + HF = 9 ME + MF = 7 ME + LF = 4 LE + HF = 5 LE + MF = 2 LE + LF = 1	
Cost Effectiveness - What is the benefit/cost ratio of the project applying the following Benefit/Cost ratio formula: (Loss Exposure ($) Before Project - Loss Exposure ($) After Project) ÷ Cost of the Project	20	Benefit/cost ratio = 4.0 or greater = 20 points Benefit/cost ratio = 3.0 to 3.9 = 16 points Benefit/cost ratio = 2.0 to 2.9 = 12 points Benefit/cost ratio = 1.0 to 1.9 = 8 points Benefit/cost ratio = < 1.0 = 0 points	
TOTAL COMMUNITY BENEFIT POINTS	50	POINTS AWARDED	

FOR REFERENCE ONLY

PALM BEACH COUNTY
LMS PROJECT/INITIATIVE SCORING SHEET

PROJECT IMPLEMENTATION	AVAILABLE POINTS	SCORING INSTRUCTION	AWARDED POINTS
Containment Within the Existing Comprehensive Growth Management Plan or Equivalent Plan – Is the project or initiative consistent with or incorporated within the existing Comprehensive Growth Management Plan or equivalent document?	10	Contained within a specific Policy/Plan = 10 Contained in "Goal" with proposed Policy/Plan amendment = 8 Contained within a broad "Goal" = 5 Contained in a proposed Amendment = 3 Not in conflict with any Policy/Plan = 1	
Containment Within an Existing Emergency Management Plan / Other Functional Plan Developed by an Official Local Governmental Entity/Organization - Has this project or initiative already been proposed as a management initiative or structural improvement in any emergency plan or proposed or adopted by County\local jurisdictions or entity?	10	Officially adopted = 10 Proposed/Not officially adopted = 6 Not in conflict with any plan = 2	
Consistency with Existing Regulatory Framework - Is the project consistent with existing legal and regulatory and environmental/cultural framework?	5	No regulatory issues = 5 Local issues = 4 Regional issues = 3 State issues = 2 Federal issues = 1	
TOTAL PROJECT IMPLEMENTATION POINTS	25	TOTAL POINTS AWARDED	

FOR REFERENCE ONLY

PALM BEACH COUNTY
LMS PROJECT/INITIATIVE SCORING SHEET

COMMUNITY COMMITMENT	AVAILABLE POINTS	SCORING INSTRUCTION	AWARDED POINTS
Public Support - Is there demonstrated public support f or this project or recognition of this problem?	5	Has this project or problem been the subject of: A) An Advertised Public Meeting = 3 B) Written evidence of public support = 2 Both A and B = 5	
Funding Availability – Is there a funding source readily available?	10	Funds available Now = 10 1 year = 8 2 years = 6 3 years = 4 4 years = 2 5 years = 1	
Matching Funds - Are matching funds or in-kind services available for this project?	5	50 % or more = 5 40 to 49 % = 4 30 to 39 % = 3 20 to 29 % = 2 1 to 20 % = 1	
Timeframe for Accomplishing Objectives - How long will it take for the proposed mitigation project to accomplish its stated goals?	5	1 year = 5 2 years = 4 3 years = 3 4 years = 2 5 years+ = 1	
TOTAL COMMUNITY COMMITMENT POINTS	25	POINTS AWARDED	

(Revised 6/16/11)

NOTES:

REFERENCE ONLY

Instructions for Submitting Projects for Palm Beach County's Local Mitigation Strategy

In order to aid you in submitting projects the Division of Emergency Management and the LMS Evaluation Panel have developed the following guidelines for a successful application process:

1. All projects must be submitted electronically. No faxes or regular mail will be accepted. A fillable form can be found on Palm Beach County's Division of Emergency Management (DEM) Website; www.pbcdem.org, requested from the municipal LMS Representative, or from the DEM LMS Coordinator at (561) 712-6481. Only submit your project through this new fillable format.

2. Put the ***Date*** of submission, ***Name*** of your municipality, department or organization, ***Primary Contact*** for the project along with their ***Phone Number*** and ***Email Address***, ***Title of the Project***, and the ***Estimated Cost***.

3. Please use 11-point Times New Roman font. Do not use **bold,** underline, or *italics* as emphasis. Please do not use headers or footers in your document or any other means of changing the form. Do not list multiple projects on a submission form, only one (1) project per form. Note: We encourage jurisdictions to submit a variety of projects to be ranked.

4. Several smaller projects may be better than one large one. For example, if you want to shutter several buildings on your property, try to make each building a separate project rather than make them all one. However, there may be exceptions to this.

5. Check the box that your project corresponds with. In other words if you wish to submit a project that involves dredging a canal in order to improve floodwater flow in the community then check- **Flood Control/Reduction and Waterway Management**. Or if you want to conduct a controlled/prescribed burn to mitigate the impact of wildfires, then check- **Other**. Once again, any questions please consult your community's LMS Representative or Palm Beach County Emergency Management's LMS Coordinator.

6. Submit a short narrative paragraph that identifies what the project is that you want to have completed and how it benefits the community. We ask that you also submit an approximate project cost such as: Estimated cost $100,000. A detailed write-up and budget for the actual application will be required once a funding source has been identified and becomes available for application.

7. Please keep your narratives concise. It is not necessary to include anything other than information about the project and its benefit to the community. Please omit your municipality/agency characteristics, size, need, etc. from the narrative.

8. Lastly, answer the 12 questions as directly as possible and PROVIDE APPROPRIATE DOCUMENTATION. New projects can be submitted continually throughout the year. The Evaluation Panel will, at a minimum, rank and update the PPL twice a year (January & July).

Any further questions please contact Emergency Management's LMS Coordinator Jesse Spearo at (561) 712-6481 or jspearo@pbcgov.org

PALM BEACH COUNTY UNIFIED LOCAL MITIGATION STRATEGY

LMS Project Prioritized List

JUNE 2013

2013

20 SOUTH MILITARY TRAIL, WEST PALM BEACH, FL 33415

RANKED

Rank	Local Score	Control#	Municipality/ Applicant	Project Description	Cost ($)
1	85.5	12-B15	Wellington	Greenbriar Blvd Localized Flood Reduction Project	$ 200,000.00
2	85.5	12-B16	Wellington	Forest Hill Blvd Localized Flood Reduction Project	$ 300,000.00
3	84	13-A1	Indian Trail Improvement District	ITID MO Canal Reinforcement and Revetment Repair	$700,000.00
4	82.7	12-B23	Boynton Beach	North and South Rd Storm water Improvements	$ 1,350,000.00
6	81.5	12-B14	Wellington	South Shore Blvd Flood Reduction Project	$ 2,160,000.00
6	80	12-B27	Lake Park	Lake Shore Drainage Improvements	$ 3,500,000.00
7	74.5	11A002	Indian Trail Improvement District	Pump Station Hardening.	$ 775,000.00
8	73.8	12-B28	Lake Worth	New City Services Complex/EOC	$ 4,200,000.00
9	73.7	11A016	Pahokee	Emergency Equipment	$ 241,818.00
10	72.2	12-B10	Lantana	EOC Retrofit	$1,000,000.00
11	71.3	12-B47	West Palm Beach	North Flagler Improvements	$ 1,379,070.00
12	71.3	12-B51	West Palm Beach	Washington Rd Improvements	$ 1,393,098.00
13	70.7	12-B29	Lake Worth	North F St between 3rd Ave and 6th Ave North Drainage	$ 2,038,300.00
14	70.7	12-B34	Lake Worth	2nd Ave North to 1st So, F St to Dixie Drainage	$ 2,929,300.00
15	70.0	11A005	Wellington	Public Works Retrofit.	$ 261,975.00
16	69.8	12-B32	Lake Worth	North Lakeside/Duke/Notre Dame/Wellesley Dr Drainage	$ 1,791,900.00
17	69.0	11A001	Greenacres	Ramblewood Cir/Harwich Ct. Storm Sewer Enhancement.	$ 23,000.00
18	68.7	11A006	Wellington	Community Center Wind Retrofit.	$ 892,125.00
19	68.2	12-B21	Mangonia Park	Property Acquisition	$ 283,603.00
20	68	12-B30	Lake Worth	10th Ave N to 13th Ave N, E and F Streets Drainage	$ 721,600.00
21	67.8	12-B10	Lantana	EOC Construction/Retrofit	$ 1,500,00.00

RANKED

Rank	Local Score	Control#	Municipality/ Applicant	Project Description	Cost ($)
22	67.9	12-B31	Lake Worth	22nd Ave N and Park Street Drainage	$ 421,300.00
23	67.7	12-B50	West Palm Beach	Gregory Rd Improvements	$ 667,716.00
24	67	13-A2	City of Greenacres	Community Hall Wind Retrofit	$80,000
25	66.7	12-B48	West Palm Beach	South Flagler Improvements	$ 1,015,014.00
26	66.3	12-B36	Lake Worth	3rd Ave South to 5th Ave S Drainage	$ 3,349,500.00
27	66.2	12-B35	Lake Worth	Lake Ave to 1st Ave South Drainage	$ 2,956,800.00
28	66.1	12-B33	Lake Worth	15th Ave North and Dixie Drainage	$ 563,200.00
29	66.0	12-001	South Bay	EOC/Hurricane Community Center	$ 2,074,775.00
30	65.8	12-B13	South Bay	Repair of City's Storm Water System	$ 400,000.00
31	65.7	12-B49	West Palm Beach	Caroline Area Improvements	$ 1,423,338.00
32	65.2	12-B26	Jupiter	Town Hall Retrofit	$ 2,933,000.00
33	64.7	12-B24	Boynton Beach	Heart of Boynton Stormwater Study & Improvement	$ 400,00.00
34	62.3	12-B39	Lake Worth	10th Ave S and South N Street Drainage	$ 518,100.00
35	62.3	12-B38	Lake Worth	10th Ave S and G Street Drainage	$ 74,700.00
36	62.2	11A003	Indian Trail Improvement District	Primary East-West Conveyance Improvements.	$ 4,000,000.00
37	62.2	12-B12	South Bay	Retrofit City Hall	$ 95,000.00
38	62	12-B37	Lake Worth	6 Ave South and F Street Drainage	$ 224,400.00
39	61.7	12-B41	Lake Worth	Palmetto Ave and South Pine Street	$ 167,200.00
40	61.8	12-B20	Mangonia Park	Elevate Lift Stations	$ 40,000.00
41	61.5	11-B11	Greenacres	10th Ave north Drainage Improvements	$ 345,000.00

RANKED

Rank	Local Score	Control#	Municipality/ Applicant	Project Description	Cost ($)
42	61.2	11-B46	West Palm Beach	Caroline Area Improvements	$ 1,423,338.00
43	61.3	12-B25	Jupiter	Town Hall Impact Retrofit	$ 350,000.00
44	61	12-B40	Lake Worth	18th Ave ZS and South Palmway Drainage	$ 111,100.00
45	60.8	12-B45	West Palm Beach	Pineapple Park Improvements	$ 1,961,862.00
46	60.3	12-B20	Mangonia Park	Lift Stations	$ 40,000.00
47	59.5	12-B44	Lake Worth	City Hall Retrofit	$ 831,000.00
48	59.3	12-B22	Mangonia Park	Hills Drainage	$ 500,000.00
49	59.2	12-B17	Mangonia Park	53rd St Drainage – Hill East	$ 500,000.00
50	59.2	12-B18	Mangonia Park	53rd St Drainage – Hill West	$ 500,000.00
51	58.2	12-B08	Belle Glade	Public Works Hardening	$ 10,500.00
52	57.3	12-B06	Belle Glade	City Hall Retrofit Hardening	$ 67,770.00
53	57.3	12-B52	Mangonia Park	Individual Mitigation Measures	$ 237,00.00
54	54.2	12-B07	Belle Glade	Lake Shore Civic Center Retrofit	$ 14,554.00
55	53.3	12-B02	Belle Glade	West Ave A Drainage	$ 98,102.00
56	53.3	12-B04	Belle Glade	Northeast Ave H Drainage	$ 162,409.00
57	52.2	11A007	Palm Beach Gardens	City Hall, Police, Fire Station Wind Retrofit.	$ 600,000.00
58	51.7	12-B19	Mangonia Park	PO4 Chemical Building Hardening	$ 30,000.00
59	51.7	12-B03	Belle Glade	Southeast Ave K Drainage	$ 106,205.00
60	51.5	11A011	Lake Park	Sheriff's Office Wind Retrofit.	$ 83,000.00

RANKED

Rank	Local Score	Control#	Municipality/ Applicant	Project Description	Cost ($)
61	49.8	12-B05	Belle Glade	Drainage Improvements at City Hall	$ 206,205.00
62	48.3	11A014	Lake Park	Reed Road & Miller Way Storm Water Drains.	200,00
63	45.8	11A015	Lake Park	10th Street Storm Water Improvement.	NA
64	45.3	11A008	Palm Beach Gardens	Radio Communications Tower.	$ 300,000.00
65	44.2	11A004	Glen Ridge	Town Hall Emergency Generator.	$ 5,000.00
66	41.8	11A009	Lake Park	Community/Emergency Shelter.	$ 4,000,000.00
67	41.8	11A010	Lake Park	Stormline Camera.	$ 90,000.00
68	41.7	12-B09	Belle Glade	EOC Construction	$ 2,900,000.00
69	41.5	12-B01	Palm Beach County	EOC Radiological Mitigation Study	
70	39	11A015	Lake Park	Update Master Drainage Plan.	$ 20,000.00
71	39.5	12-B43	Lake Worth	Landscape Hardscape	$ 741,200.00
72	37	12-B42	Lake Worth	Demo of Vacant Properties	$ 692,000.00

Appendix P

Location specific flood images, Beach Renourishment

Project North Boundary
Diamondhead Radnor
4
Fill Area 4
Fill Area 3
3
Marcinski Road
Juno Pier
Fill Area 1
1
Loggerhead Park
Loggerhead Marinelife Center
Contractor
Staging Area
Donald Ross Road
2
Fill Area 2
Project South Boundary
Juno Ocean Club

Juno Beach Renourishment

A Palm Beach County Shore Protection Project

Project Location

- In northern Palm Beach County along the shoreline from 1 mile north of the Juno Pier to 1.4 miles south of the Juno Pier in the Towns of Jupiter and Juno Beach.

The Problem

- Ongoing erosion is threatening A1A, infrastructure and beach habitat.

The Solution

- Renourish the beach with sand dredged from offshore to act as a sacrificial berm.
- Stabilize the dune with native vegetation.

Benefits

- Storm protection
- Restoration of beach habitat
- Maintenance of public recreation
- Provides sand to adjacent beaches to the south by longshore current activity.

Project Funding

- Federal Emergency Management Agency (FEMA) and Florida Department of Emergency Management
- Florida Department of Environmental Protection
- Palm Beach County Tourist Development Tax Revenue

Completed Project

Project Overview

- The project area was first nourished with offshore sand in 2001 and designed to last 5 years.
- Most of the 2001 nourishment project remained stable until the re-nourishment, 9 years later.
- Approximately 926,000 cubic yards of sand was used to refill the beach to the same size as the 2001 project.
- Sand was placed above the high water line so that wave action could slowly over time contour it into a natural beach slope.
- More than 50,000 sea oat plants were planted to restore the eroded dune south of the Juno Pier.

FAQ'S

1. **How much did the project cost?**
   $10,534,028.45
2. **How long did construction take?**
   December 20, 2009 to March 20, 2010.
3. **Where did the sand come from?**
   An offshore borrow area 4 miles south.
4. **What was the impact to sea turtle nesting?**
   8 Leatherback nests were relocated from the construction area to another section of beach and hatched successfully.
5. **Were there any reef impacts near the borrow area?**
   The reef adjacent to the borrow area was carefully monitored before, during, and after construction and no impacts were observed.
6. **How much of the new beach will be accessible to the public?**
   The entire beach is open to the public.
7. **Why was it necessary to screen the beach after the renourishment was completed?**
   To remove rocks and shell that could impact sea turtle nesting. The rocks and shell were then used to create 6 acres of oyster reef habitat in the Loxahatchee River.

Project Partners

Palm Beach County and Florida Department of Environmental Protection

Palm Beach County Board of County Commissioners
Environmental Resources Management
2300 North Jog Road - Fourth Floor, West Palm Beach, FL 33411
Phone: 561-233-2400 http://www.co.palm-beach.fl.us/erm/

Published October 2010

http://www.dep.state.fl.us/beaches/publications/pdf/CriticalErosionReport.pdf

Critically Eroded Beaches
In
Florida

Updated June, 2014

ENGINEERING, HYDROLOGY, AND GEOLOGY PROGRAM
DIVISION OF WATER RESOURCE MANAGEMENT
DEPARTMENT OF ENVIRONMENTAL PROTECTION STATE OF FLORIDA

Definition of Critical Erosion

The earlier statewide inventories of critically eroded areas included only those erosion problem areas where the threat existed to development or recreational interests. The current inventory of critically eroded areas was formulated based upon an updated and modified definition of critical erosion. The following definition has been adopted by the Department to identify critically eroded areas:

Critically eroded area is a segment of the shoreline where natural processes or human activity have caused or contributed to erosion and recession of the beach or dune system to such a degree that upland development, recreational interests, wildlife habitat, or important cultural resources are threatened or lost. Critically eroded areas may also include peripheral segments or gaps between identified critically eroded areas which, although they may be stable or slightly erosional now, their inclusion is necessary for continuity of management of the coastal system or for the design integrity of adjacent beach management projects.

It is important to note, that for an erosion problem area to be critical, there must exist a threat to or loss of one of four specific interests – upland development, recreation, wildlife habitat, or important cultural resources. Many areas have significant historic or contemporary erosion conditions, yet the erosion processes do not currently threaten public or private interests. These areas are therefore designated as non-critically eroded areas and require close monitoring in case conditions become critical.

In contrast, in some areas the erosion processes are not particularly significant, except to the extent that adjacent public or private interest may be threatened. Determining whether erosion is critical results from the existence of a threat to interests in need of protection. Lacking any threat an erosion condition is not a critical problem.

Discussion

The Department's coastal engineering staff investigates an area of concern and employs both qualitative assessments and quantitative data and analyses to recommend a segment of shoreline as critically eroded. When data is limited at the time of an investigation, staff utilizes professional engineering judgment based upon reasonably accepted standards and practices. Subsequently, when pertinent new data is obtained, an update analysis is conducted to confirm and potentially revise an area that was designated or not designated. The type of quantitative data and analyses considered includes but is not limited to beach and offshore profiles, upland topography, nearshore and offshore bathymetry, historical shoreline position changes, storm tide frequency, beach and dune erosion, recent storm damage, design adequacy of upland development, and proximity of development, infrastructure, wildlife habitat, and important cultural resources to the effects of a 25-year frequency storm event.

Some discretion was applied when identifying the open water coastal beaches of Florida. Only those beaches that are exposed to the open water of the Gulf of Mexico, Atlantic Ocean, or Straits of Florida, and are not sheltered by a coastal barrier or island shoal were considered for inclusion in this report. The gulf fronting beaches of Monroe County, including the Cape Sable region and the distal sand keys

west of Key West (e.g., Marquesas Keys, Tortugas Keys), have insufficient data to identify the erosion problem areas at this time; however, the Department has documented substantial erosion in these areas due to hurricanes in 2005.

The listings of critically and non-critically eroded areas in this report are identified by the Department's reference monument system (R numbers) or by virtual stations (V numbers). A few areas are not identified by either the R or V numbers because they are not included in the coastal construction control line program nor have virtual stations been designated. These areas without R or V numbers are usually inlet shoreline areas, Florida Keys erosion areas, and Big Bend erosion areas.

Tables are provided with listings of the erosion areas for each coastal county fronting on the Atlantic Ocean, Gulf of Mexico, and Straits of Florida, with all values provided in miles of shoreline to the nearest one-tenth mile. Following the tables, which list all the erosion areas, maps are provided for twenty-nine coastal counties. Maps are not provided for the following five counties which have less than 1.5 miles of erosion: Taylor County (0.2 mile), Dixie County (0.6 mile), Citrus County (0.2 mile), Hernando County (0.5 mile), and Pasco County (1.3 miles).
These maps are intended to provide general location guidance to the user.

Palm Beach County

There are eight critically eroded areas (33.6 miles), two non-critically eroded areas (0.9 mile), and one critically eroded inlet shoreline area (0.8 mile) in Palm Beach County.

At the north end of Palm Beach County, a 1.5-mile segment of Tequesta and Jupiter Inlet Colony (R1-R10) is critically eroded, threatening private development in those communities as well as recreational interests at Coral Cove Park. A dune restoration project exists at Coral Cove Park and seawalls have been constructed along private development in Tequesta.

The north and south shorelines inside Jupiter Inlet have experienced critical erosion threatening development to the north and recreational interests to the south.

The five miles south of Jupiter Inlet is a critically eroded area (R12-R38) that threatens Jupiter Beach County Park, Carlin Park, State Road AIA, and development in the communities of Jupiter and Juno Beach. Inlet sand transfer has been conducted immediately south of Jupiter Inlet and beach restoration has been conducted at Carlin Park and Juno Beach.

At the south end of Juno Beach (R38-R40) the erosion area continues south for 0.4 mile with no current threat. Another non-critically eroded segment (R58-R60.5) extends 0.5 mile along John D. MacArthur State Park.

Along northern Riviera Beach on Singer Island (R60.5-R69) south of MacArthur State Park is 1.7 miles of critical erosion that is threatening private development and recreational interests at a county park.

Extending south of Lake Worth Inlet along the town of Palm Beach (R76-R128) are 10.9 miles of critical erosion threatening private development, local parks, and State Road AIA. Most of this segment of coast has seawalls, bulkheads, and revetments. There are also numerous groins, a 2.5-mile beach restoration project referred to as the Mid-Town project, and an inlet sand transfer project south of Lake Worth Inlet.

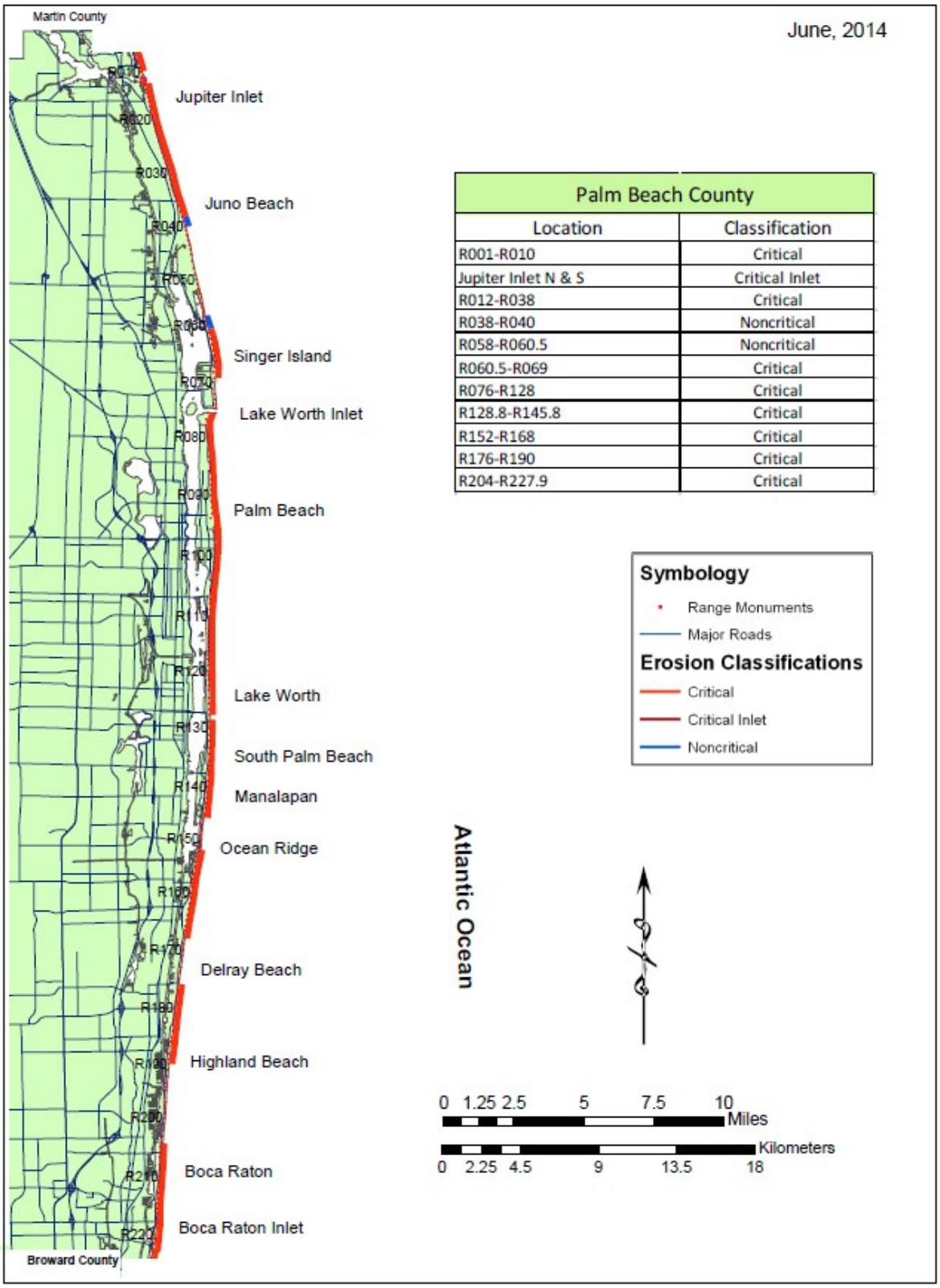
A 0.9-mile southern segment of the Town of Palm Beach (R128.8-R133.5) south of Lake Worth has been designated critically eroded for continuity of management of the coastal system. The Town of South Palm Beach and Lantana Municipal Beach (R133.5-R138.4) comprises 1.0 mile of critical erosion threatening private development and recreational interests at the public park. The South Palm Beach portion of this critically eroded area has nearly continuous seawalls. Due to the severe impact of Hurricane Sandy in 2012, much of the Town of Manalapan (R138.4R145.8) was added as critically eroded. At least 20 seawalls were destroyed by the storm along this 1.4-mile stretch.

Extending south of South Lake Worth Inlet for 3.3 miles is a critically eroded area (R152-R168) that threatens development along the communities of Ocean Ridge, Briny Breezes, Boynton Beach, and Gulf Stream. Inlet sand transfer is being conducted immediately south of South Lake Worth Inlet and beach restoration has been conducted at Ocean Ridge.

Along the City of Delray Beach (R176-R190) is a 2.9-mile critically eroded area that threatened development and recreational interests as well as State Road AIA. This area is a beach restoration project.

The City of Boca Raton at the south end of Palm Beach County has critical erosion (R204R227.9) extending 5.0 miles to the Broward County line, which threatens recreation interests at Spanish River Park, Red Reef Park, and South Inlet Park as well as State Road AIA and private development. Beach restoration has been constructed throughout Boca Raton, and inlet sand transfer and seawalls exist south of Boca Raton Inlet.

Last updated June, 2014.



Palm Beach County	
Location	Classification
R001-R010	Critical
Jupiter Inlet N & S	Critical Inlet
R012-R038	Critical
R038-R040	Noncritical
R058-R060.5	Noncritical
R060.5-R069	Critical
R076-R128	Critical
R128.8-R145.8	Critical
R152-R168	Critical
R176-R190	Critical
R204-R227.9	Critical

Photos of Flood Prone Areas in Juno Beach

Photos of Flood Prone Areas in Juno Beach

Photos of Flood Prone Areas in Juno Beach

Beach Erosion along the Juno Beach Shoreline:

Appendix Q

Palm Beach County Outreach Strategy

CRS USERS GROUP MEETING
July 11, 2013

AGENDA

After Action Comments – 2013 Flood Awareness Expo

Does the Expo fit into new Activity 330 Outreach options?

OPS Evaluation Comments for Your Recertifications

Outreach Plans – Your community plans?

OP Outreach Projects
STK Stakeholder Delivered Projects
FRP Flood Response Preparations
PPI Program for Public Information
(Jurisdictional or Multi-Jurisdictional)

Inclusion of local insurance, local lender, local realtor

FIRMs

Technical concerns submitted

FEMA's recent comments troubling (Ralph, PB&Z)

If maps go through as is, will Boynton Beach, Delray Beach, and Hypoluxo continue in the CRS?

Future of CRS Users Group?

330

Activity 330
2013 Public Information Program Strategy Annual Evaluation

The evaluations reported herein were developed by the Palm Beach County CRS Users Group over several of its monthly meetings, concluding with a comprehensive wrap up at its September 2013 meeting.

Goals of the community's OPS

1. Enhance public awareness of the flood threat
2. Provide flood preparedness tips to the public
3. Encourage residents to consider purchasing flood insurance
4. Familiarize residents with property protection measures

Projects implemented to meet those goals

1. *CRS Flood & Hurricane Awareness Expo*

On June 15th the Palm Beach County Community Rating Users Group held its annual Flood & Hurricane Awareness Expo at the Boynton Beach Mall in Boynton Beach, Florida. The Expo is considered to be the County's single most impactful public outreach project of the Group's many outreach activities.

Attendance was down somewhat because of the depressed economy, but the quality of interaction and questions was very good. Over 20 public and private sector exhibitors participated.

This year's theme was "Flood Insurance…The Squeeze Is On! Will It Impact You?" Information was handed out on the Biggert Waters Flood Insurance Reform Act of 2012 and questions were invited on the expected impact of the County's new Flood Insurance Rate Maps when they are released. The increased importance of the CRS program in helping to moderate the rise in insurance was emphasized. Other featured topics included the success of floodplain management strategies in minimizing damages from Tropical Storm Isaac flooding and the extensive coastal erosion caused by Tropical Storm Sandy. Highlights were shared on the consensus projections for sea level rise resulting from the research of the Southeast Florida Climate Change Compact and strategic adaptation strategies developed the state in support of the Post Disaster Redevelopment Plan.

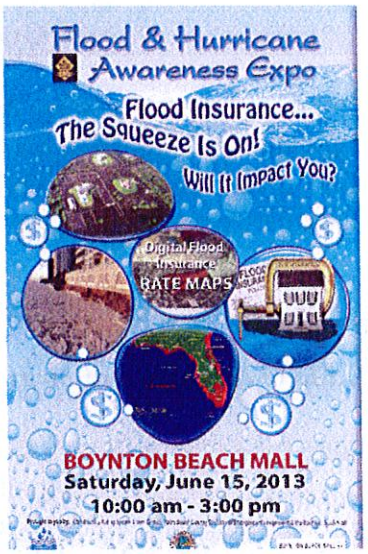
Locally prepared and FEMA brochures and information materials on all 10 key outreach topic areas highlighted in the Coordinator's Manual were distributed to attendees.

During the CRS AfterAction session the Users Group discussed whether and how the annual expo would fit within the various outreach options available within the new CRS guidelines and point system.

Uncertainties about the impacts of proposed CRS program changes on outreach credits for activities such as the Expo tended to dampen the spirit of the Users Group somewhat this year.

Goals Supported: 1, 2, 3, 4

Status: Held at the Boynton Beach Mall on June 16, 2011 with attendance of approximately 800 visiting the exhibition area.



Lead Agency: Palm Beach County Community Rating System Users' Group

Recommendation for next year: While the Users Group feels the Expo is the County's single most productive outreach project, because of the level of effort involved, it will wait to see what changes are made to Activity 330 by ISO before committing to doing one next year.

2. ***Yellow Pages Telephone Directory***

Each year Emergency Management works with AT&T to update flood and hurricane preparedness information published in the community pages of the county's four regional phone directories. This serves as the OPC for the county's municipalities.

Goals Supported: 1, 2, 3, 4

Status: Final edits were provided to AT&T in February 2012. The evacuation shelter list and map were updated.

Lead Agencies: Division of Emergency Management and CRS Users Group

Recommendation for next year: Make revisions, including an improved map of the flood zones, the 30-day waiting period for flood insurance, descriptions of local flood zones,

information on past floods and include the radio stations and television channels to tune to for emergency information.

3. ***Public Presentations by Emergency Management Department Staff***
The "speakers bureau" function of the Division of Emergency Management, supported by the CRS Users Group, presents flood information in dozens of "all hazards" presentations to residential, homeowner, business, healthcare facility, professional, and educational audiences. This year several flood specific presentations were given to municipal flood mitigation committees, Chambers of Commerce, Civic Groups, an Historic Society, HOAs, and floodplain management planning groups. Presentations covered Inland Flooding, Dike Breach, Storm Surge, Climate Change and Sea Level Rise, Tsunamis and Rogue Waves.

Goals Supported: 1, 2, 3, 4

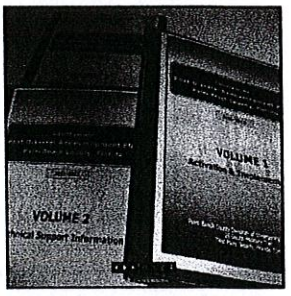
Status: Dozens of presentations were presented this year.

Lead Agency: Division of Emergency Management, CRS Users Group

Recommendation for next year: No changes are recommended. The expanded use of webinars will be considered.

4. ***Publication of an Enhanced, Updated Post Disaster Redevelopment Plan***

Goals supported: 1, 2, 3, 4



Status: Plan completed. It is being posted to the DEM website. A comprehensive tabletop exercise was conducted including private, public and NGO sector representatives.

Lead Agencies: Palm Beach County
Division of Emergency Management, PDRP Working Groups, PDRP Executive Committee.

Recommendation for next year: Conduct additional public outreach to familiarize community with the purpose and content of the PDRP.

5. ***Locally Produced TV Shows & Public Service Announcements***
Palm Beach County and Channel 20 collaborate on preparing Public Service Announcements on family and property preparedness, storm surge and flooding, insurance tips provided by a representative of the Florida Department of Financial Services, interviews with storm experts in Palm Beach County's Emergency Operations Center.

Goals supported: 1, 2, 3, 4

Status: "Crossing the Line", an Emmy award winning public education program, airs three times weekly on Channel 20. It provides general safety information to over one million households across Palm Beach County.

Emergency Management & Palm Beach County's Channel 20 Cable TV Station produced and continues to air a comprehensive half hour program entitled, "Storm Watch".

Storm Watch– The Storm Watch team brings you stories on this year's hurricane season, how Palm Beach County responds to hurricanes, floods and other storm events, and where to find information to help you prepare.

- Storm Watch 2013: EOC
- Storm Watch 2013: Governor's Hurricane Conference Interviews
- Storm Watch 2013: Bryan Koon (Florida EM Director)
- Storm Watch 2013: Evan Rosenberg

2013 Storm Watch Programs included:
Dr. Rick Knabb - Director National Hurricane Center
Bryan Koons – Florida Director of Emergency Management
Phil Klotzbach – Hurricane Forecaster, University of Colorado
Evan Rosenberg – Florida Recovery Bureau
Bill Johnson – Director, Palm Beach County Emergency Management

Lead Agencies: Division of Emergency Management and Channel 20

Recommendation for next year: Continue to produce new programs, and air old and new programs in various time slots, and make the programs easily accessible on the County website. Feature an interview with a notable Florida flood expert.

6. ***Palm Beach County Emergency Management website***
The website provides information on flood protection, evacuation information, hurricane preparedness, provides links to numerous documents including, "*Avoiding Hurricane Damage: A checklist for Homeowners*". There are links to all of the municipalities within Palm Beach County on the Emergency Management webpage, as well as links to FEMA, and to information on all of the hazards that threaten the county. Property protection information is available in easily understandable animated form, as well as in documents and publications.

Goals supported: 1, 2, 3, 4

Status: Website is updated and reviewed several times annually or when changes occur. New sections and enhancements were made in Fall 2011 and Spring 2012.

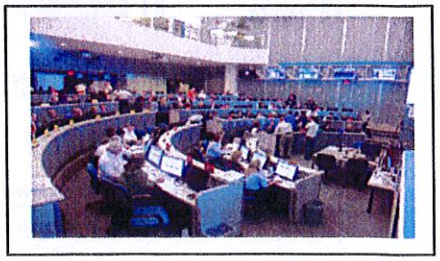
Lead Agency: Department of Public Safety, Division of Emergency Management, CRS Users' Group

Recommendation for next year: Hazard Specific Plans for Inland Flooding, Coastal Storm Surge, Sea Level Rise and Tsunamis/Rogue Waves will be included or linked.

7. ***Emergency Operations Center communication with the business community***
The ESF18 function (Business & Industry) in the Emergency Operations Center continues to distribute pre- and post-event decision-support information to the business community via the County's Private-Public Partnership through a variety of means, including a web-based communication system, situation reports, flash reports, weather advisories, NWS webinar and teleconference information. Flood advisories are among the weather information distributed. Pre and post event the operational status of businesses are posted on the business board of the County's WebEOC system.

Goals supported: 1, 2

Status: This initiative has been acknowledged in a recently released congressional report prepared by the U.S. Government Accountability Office on "best practices," in several government and academic reports, and was briefed to the White House National Security staff in April 2010. Began blast e-mail distributions of NHC/NOAA briefings, advisories and warning information to an extended list of private sector organizations for preparation and business continuity decision making.



Lead Agency: Division of Emergency Management

Recommendation for next year: Continue to support ESF 18 and private-public partnership information needs and interests.

8. ***Participation in Private-Public Partnership***

Continue to participate in Palm Beach County's Private-Public Partnership and the regional South Florida Disaster Resiliency Coalition, comprised of private and public sector partners and non-governmental organizations. Support the develop and implement collaborative business-government community resilience initiatives, promote businesses helping businesses (mutual aid) response and recovery support and post disaster private sector support to non-governmental and community-based organizations. It will compile and disseminate information critical to the business community and the economy.

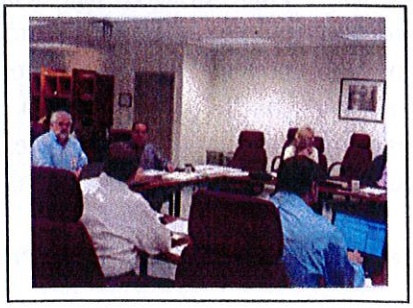
Goals supported: 2

Status: This initiative has been acknowledged in a recently released congressional report prepared by the U.S. Government Accountability Office, by the Public Entity Risk Institute, and the Business Civic Leadership Center of the U.S. Chamber of Commerce, and several "best practices" books and reports on community disaster resilience. A Florida House Bill developed by the partnership providing for emergency housing for victimized First Responders and their families was passed unanimously in 2011.

In 2012-2013 the partnership has been expanded into a regional four county partnership (South Florida Disaster Resiliency Coalition), has been organized into an incorporated, 501(c)3 organization and is engaged in a membership drive. The Board is comprised of region-wide business, community and non-profit representatives. The SFDRC is a conduit for community and business information. It has an active website serving the business community. Coalition members are frequent speakers at Disaster conferences nation-wide.

Lead Agency: SFDRC Board and the four county Emergency Management divisions.

Recommendation for next year: Continue to support the partnership's 50 plus resiliency initiatives, form and activate key committee project teams, and grow the membership.



9. ***CRS Users' Group***

Palm Beach County's CRS Users' Group is a pioneer attempt for the county and 26 CRS cities to join together to promote community floodplain management. The group shares information and collaborates on numerous CRS activities, including outreach through its Public Information Outreach Strategy (OPS). The Group shares expertise and organizes educational and training programs for the benefit of the members and communities throughout the region.

Through the CRS Users' Group, communities are encouraged and supported to actively engage in other CRS activities that promote outreach, including CRS Activities 320, 360, 510, 450 and 610.

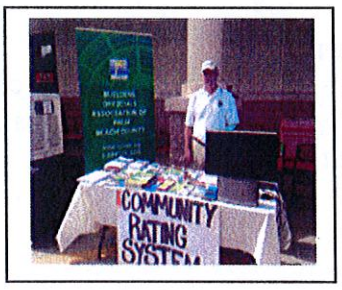
Palm Beach County's Users Group supports the recently organized nationwide CRS Users Group Network through ISO's Users Group office.

Goals supported: 1, 2, 3, 4

Status: The Group continues to meet monthly. Focus this year was on CRS program changes and the impacts expected from the Biggert Waters Act and the proposed new County FIRMs provided by FEMA. User Group members are actively engaged with members of the County's Technical Committee and League of Cities in reviewing the new draft FIRMs and participating in meetings with FEMA and its map contractor regarding technical deficiencies and errors. The Group is actively engaged in continuing development of a multi-jurisdictional PPI program.

The Users Group continues to recruit insurance, real estate and lending organizations, and business organizations to join the PPI committee. Two PPI projects have been completed to date: 1) collaboration with Home Depot stores throughout the county who organized and conducted hurricane and flood expos and 2) a private sector led presentation hosted by the Lantana Chamber of Commerce on the implications of the Biggert Waters Act, the new FIRMs and CRS Changes for the business community. **A PPI progress report is included at the end of this report.**

Lead Agency: Self-managed with Division of Emergency Management support and local CRS communities and draws support from the Local Mitigation Strategy.



Participation in Home Depot organized hurricane and flood expos throughout county.

Recommendation for next year: Continue implementation of an expanded PPI program; expand stakeholder and target focused outreach projects. Schedule more frequent educational events and webinars for monthly meetings. Strategize on how to sustain community participation in CRS in an environment of reduced staffing and budgets, competing priorities, and CRS program changes which promise to reduce credits for work already done and create additional work in new areas.

10. Hurricane Survival Guide

The guide discusses safety measures and provides property protection tips. The guides are available and downloadable online in English, Spanish and Creole at:
http://pbcgov.com/publicsafety/emergencymanagement/resources/pdf/hurricane_guide[1].pdf

Goals supported: 1, 2, 3, 4

Status: The 2013 edition is available online.

Lead Agency: Emergency Management Division with inputs from the CRS Users' Group

Recommendation for next year: Keep the content current. If funds are available, print hard copies and distribute to local retail outlets, and all municipalities.

HOW TO USE THIS GUIDE

IMPORTANT PHONE NUMBERS

INDEX

BEFORE THE STORM

LANDFALL

AFTER THE STORM

GENERAL INFORMATION

11. Distribution of hazard brochures, documents and publications

Flood and other hazards information in the form of brochures, pamphlets, handouts, etc. are distributed at various public and private sector sponsored area events. Flood information is also included in preparedness presentations given to community and business groups.

Goals supported: 1, 2, 3, 4

Status: Information was distributed at various Chamber–sponsored seminars, Palm Beach County LMS general meetings, and at public presentations..

Lead Agency: Emergency Management Division with assistance by the CRS Users' Group

Recommendation for next year: Stock-up on brochures, publications etc. from FEMA. Fill information gaps with locally prepared fact sheets and guidance documents.

12. LMS Times Newsletter

The County's trend setting quarterly LMS Times Newsletter contains a CRS/Floodplain Management corner which features timely flood management subjects including success stories, flood mitigation projects, government news, etc.

Goals supported: 1,2,3,4

Status: An extremely popular medium with a rapidly growing online and hard copy readership. Similar newsletters are popping up all over the state of Florida.

Due to personnel changes the LMS Times Newsletter was temporarily discontinued during the period of late 2012 and the first half of 2013. Publication is planned to resume in the Fall of 2013.

Lead Agency: Palm Beach County Emergency Management

Recommendation: Continue producing flood management articles of interest to the public and stakeholders.

13. Providing information to residents about the flood threat to their property

Information is available to residents about their property's elevation certificates, which helps to raise awareness of flood insurance issues. Requests can also be made by residents about the flood history of their property, property protection measures, drainage problems and flood zone determinations.

Goals supported: 1, 3, 4

Status: This service will continue and every effort will be made to make the public aware that such information is readily available to them.

Lead Agency: Building Department

Recommendation for next year: Encourage other departments to assist with these services.

14. Utilization of the Public Library

The Palm Beach County Public Library system and the Florida Atlantic University Libraries Government Resources Government Documents Department maintain hundreds of documents that pertain to the locally pertinent flood threat and other hazards, property protection, natural and beneficial functions of the floodplain, flood insurance, flood maps and FEMA documents etc.. Many of these documents are also available electronically through the countywide Library system or via inter-library loans. The flood library is very visible and easily accessible to residents on the Library's website. The staff is available to assist residents in finding documents, using library provided computers, and downloading copies of desired documentation.

Goals supported: 1, 2, 3, 4

Status: The Public Library continuously adds new flood related documents as part of its service. Over 100 FEMA publications were ordered and given to the Public Library system by the Users Group in 2012 to help update and expand the system's already impressive holdings on floods and other hazards.

Lead agency: Public Library System

Recommendation for next year: Continue to ensure the library system has the most current documents, publications, and maps.

15. Brochures, documents and publications available in public locations

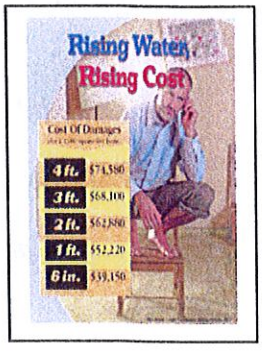
Flood information is available in the lobby of the Emergency Operations Center, the Vista Center, Environmental Resources Management and various other public locations throughout the county.

Goals supported: 1, 2, 3, 4

Status: As budgets allow, continue to provide updated and new flood information to the public. In June 2011 the Group produced, distributed and posted a locally produced poster based on the cost of flood damage using FEMA data. (See below)

Lead Agency: Division of Emergency Management, Public Affairs Department

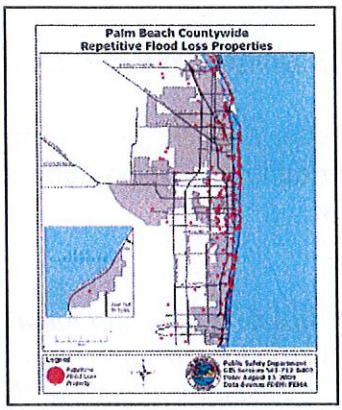
Recommendation for next year: No changes are recommended.



16. Annual Outreach to Repetitive Loss Property Owners & Neighbors

Palm Beach County sends a mailing to repetitive loss properties owners identified by FEMA to notify them of flood hazards and to

provide information on flood hazard reduction programs and steps they can take to make their properties more flood resistant. Similar letters are sent to property owners neighboring with repetitive loss properties who may also be susceptible to flooding but do not have flood insurance or multiple claims.



Goals Supported: 1, 4

Status: Letters will be mailed in September 2013 to 72 property owners and to more than 100 neighboring property owners in flood prone areas upon receipt of FEMA's updated list of Repetitive Loss Properties.

Lead Agency: Division of Emergency Management

Recommendations for next year: No changes are recommended. This is a CRS requirement. Changes sent to ISO in 2012 have not yet been reflected on the list, so some repetition is necessary.

17. Outreach Projects to under-reached populations

Develop outreach strategies and outreach projects to reach new residents and business-owners, school-aged children, the elderly, and special needs populations.

Goals supported: 1, 2, 3, 4

Status: A "Palm Beach County Special Needs Program" brochure is available on the County's website. Tips for new residents to find information about the flood threat and flood history are available on the County's website.

Lead Agency: Division of Emergency Management

Recommendation for next year: Continue, consistent with budgets, staffing and priorities.

18. Optimize Outreach Capabilities by working with other agencies

Work collaboratively with Environmental Resource Management, South Florida Water Management District, the County's 17 water control districts, community HOA and Condo associations, and other organizations to optimize outreach capabilities.

Goals supported: 1, 2, 3, 4

Status: Ongoing.

Lead Agency: Division of Emergency Management

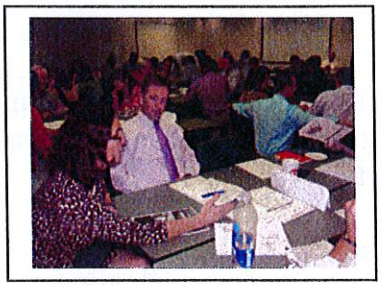
Recommendation for next year: Continue, consistent with budgets, staffing and priorities. Explore opportunities to cosponsor outreach projects with Citizens Corps and other voluntary organizations.

19. Ensure distribution of new and updated documents

Support the distribution of information coming out of the newly released documents such as the *Regional Evacuation Plan, the Recovery Plan* the revised and enhanced *Post Disaster Redevelopment Plan*, the revised *Local Mitigation Strategy Plan* and the latest version of *Comprehensive Emergency Management Plans (CEMPs).*

Goals supported: 1, 2, 4

Status: The *Local Mitigation Strategy, Comprehensive Emergency Management Plan and Recovery Plan* are available on the County's website. The revised Post Disaster Redevelopment Plan will be posted online soon. The widely acclaimed Post Disaster Redevelopment Plan has been revised and enhanced and served as a model for the State for integrating state of the art Sea Level Rise vulnerability assessments and long-term adaptation strategies and policy considerations into local plans. A series of 12 stakeholder briefings and trainings were delivered and a tabletop exercise on activating the Post Disaster Redevelopment Plan was organized by a multi-disciplinary exercise design team and prepared and conducted by a consulting firm. The post exercise After Action Review produced a number of recommendations for further enhancements.



Lead Agency: Division of Emergency Management

Recommendation for next year: Proceed with distribution and web posting of materials as they are adopted and available for public distribution and use.

20. Training for AmeriCorps volunteers

The Division of Emergency Management, in cooperation with Florida Atlantic University, provides training to AmeriCorps student volunteers, who, in turn, assist small businesses and

non-profit organizations develop "all hazard" disaster preparation, survival and continuity plans.

Goals supported: 2, 4

Status: This program is currently inactive following 3 generations of AmeriCorps students.

Lead Agency: Division of Emergency Management

Recommendation for next year: No changes are recommended.

21. Tours of the Emergency Operations Center

The CRS Users' Group cooperates with Emergency Management in providing information, materials and videos in support of tours of the Emergency Operations Center by schools, senior citizen groups, homeowner/condo associations, civic groups, CERT program volunteers, AmeriCorps volunteers, etc. Realistic hands-on student exercises are facilitated by Division of Emergency personnel.

Goals supported: 1

Status: The Emergency Management Division continues to provide this service; except student exercises have been put on hold because of budget and staffing limitations.

Lead Agency: Emergency Management Division

Recommendation for next year: No changes are recommended.

22. Emergency Management Video

Emergency Management released a locally produced short public information video on its roles in managing disasters and other emergency events. The video includes descriptions of how the county's "all hazards" warning systems work and describes planning, preparation, response and recovery responsibilities.

Goals supported: 2, 4

Status: Was pulled from Division of Emergency Management website because information was becoming somewhat dated and use did not meet expectations. May be updated and posted on the County's website sometime in the future when budgets permit.

Lead Agency: Emergency Management Division and Public Affairs

Recommendation for next year: No changes anticipated.

23. Notification of flood map information and elevation certificates

Insurance agents, lenders and real estate agents are advised each year on the availability of flood map information from the County through an annual mailing. This is important due to the

significant role they have in advising property owners and potential buyers. These mailings also include information on the availability of elevation certificates.

Goals supported: 1, 3

Status: Ongoing

Lead Agency: Building Department

Recommendation for next year: This will continue annually. Insurance, lender and real estate representation in the multi-jurisdictional PPI should enhance this outreach activity.

24. Bolster governmental awareness of necessity for public outreach projects
Budget and staffing constraints are significantly limiting all facets of community programs. It is important to make government officials aware of the importance of the Community Rating System and community outreach.

Goals supported: 1, 2, 3, 4

Status: Presentations before the Countywide EM Team continue to create awareness.

Lead Agency: Division of Emergency Management

Recommendation for next year: Resources available for supporting outreach strategies are expected to be limited at least through 2013.

25. Special presentation to the Palm Beach County Health Department
A two hour presentation by the Emergency Management Division to the Palm Beach County Health Department entitled *Lake Okeechobee and the Herbert Hoover Dike* was given to over 100 health providers with special emphasis on the health implications of flooding caused by a catastrophic breach of the Dike. The presentation was a lead into a countywide dike breach exercise

Goals Supported: 1, 2

Status: Presented on May 22, 2012; Dike Breach Exercise successfully conducted May 22, 2012.

Lead Agency: Division of Emergency Management

Recommendation for next year: Continue to work with the Health Dpertment on evacuation planning in the event of a dike breach.

26. Preparation, Publication & Distribution of the "Palm Beach County Health Department Brochure"

Released in August 2010, the 71 page tabbed brochure, published and distributed by the Palm Beach County Health Department describes important health terms and programs, public health threats (including pan flu, biological and chemical agents, infectious diseases, etc.), prevention measures, community-based mass prophylaxis initiatives, community health resources, the POD Incident Command System, and more. The brochure has been distributed at public forums and at numerous government and business locations throughout the County.

Goals Supported: 1, 2 (Hazards other than flood)

Status: Continue to distribute the brochure.

Lead Agency: Palm Beach County Health Department

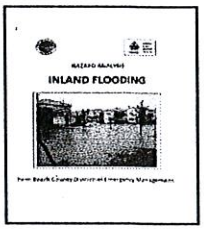
Recommendation for next year: Continue to distribute throughout the County.

27. Hazard Analyses & Operating Plans

The Palm Beach County Division of Emergency Management has prepared comprehensive analyses and vulnerability assessments on over forty potential natural, human-caused and technological hazards. Flood related analyses include Inland Flooding, Coastal Storm Surge, Sea Level Rise, Dike Failure, Tsunamis/Rogue Waves, Beach & Dune Erosion, Aquifer Contamination (Salt Water Intrusion). These analyses have been incorporated into hazard-specific operating plans which address all phases of disaster mitigation, preparation, response, and recovery and employing, as appropriate, the NIMS.

Goals Supported: 1, 2

Status: Being integrated into operating plans. Analyses will be posted online as they are approved.



Lead Agency: Palm Beach County Division of Emergency Management

Recommendation for next year: Begin posting analyses to the website.

28. Twitter & Facebook Postings of Flood Information

Palm Beach County is capitalizing on new communication technologies to reach an optimum population.

Goals Supported: 1, 2, 3, 4

Status: Introduced in 2011. Base of users is growing rapidly. Several flood and "all hazard" messages have been released.

Lead Agency: Palm Beach County Division of Emergency Management

Recommendation for next year: Increasingly use these services to distribute flood information and preparedness tips.

29. Flood Mitigation Presentations at LMS Meetings

Communitywide LMS meetings are held at least twice a year. They are attended by public and private sector organizations with mitigation interests. Invitations also extend to the general public through newspaper and website postings. Presentations include updates and comprehensive descriptions of significant flood mitigation projects.

Goals Supported: 1, 2, 3, 4

Status: Meetings and mitigation presentations continue as a major part of LMS meetings. The most recent meeting highlighted a major flood mitigation project taking place within the Westgate-Belvedere CRA. (See photo)

Lead Agency: Preparation coordinated by the LMS Coordinator, Planning Unit of the Division of Emergency Management

Recommendation for next year: Continue to share information on successful flood mitigation projects completed, in progress, and on the drawing board; solicit public feedback; and provide up to date information on funding source status, and recommended best practices.

30. Flood Threat Presentations – Juno Beach

Two comprehensive 2 hour presentations given on the county's flood threat as part of the community's flood management and mitigation planning.

Goals Supported: 1,2,3,4

Status: Delivered April 2 and April 16, 2013.

Agencies: Palm Beach County Division of Emergency Management; Juno Beach Flood Mitigation Task Force.

31. Flood Awareness Website

Goals Supported: 1,2,3,4

Status: Updating and enhancements completed in August, 2013 with review comments from CRS Users Group.

Agencies: Palm Beach County Division of Emergency Management;

32. Tropical Storm Isaac Briefings

Provided PowerPoint presentations on Tropical Storm Isaac and its flooding of the County's western residential areas to various stakeholder and public forums showing the extent of flooding, response, and damage assessment activities. While inconvenienced by flooded yards and streets, residents' homes were high and dry because of the county's floodplain management practices which elevate house pads and utilize yards and streets as necessary storage capacity.

Goals Supported: 1,3,4

Status: Given to several public forums, to the CRS Users Group and to the EM Team

Agencies: Palm Beach County Division of Emergency Management with CRS comments.

33. Business Preparedness Website

Goals Supported: 1, 2, 3, 4

Business Preparedness Website provides resources, tips, and links for all hazards including flooding

Status: Will be posted Fall 2013.

Agencies: Palm Beach County Division of Emergency Management, CRS Users Group

Recommendation: Integrate message that the whole county is susceptible to flooding from Tropical Storms and rain events, that street flooding is a necessary strategy for managing flood waters where drainage is limited, and that 60% of County flooding happens outside Special Flood Hazard Areas. Integrate new FIRM flood zones into presentation when they become available.

Were any projects not implemented or objectives not reached? If not, why?

Some planned enhancements were delayed because of budget and staff constraints. For example, the annual *Hurricane Survival Guide* was only available online, as there were no funds available to print hard copies. Use of the EOC Orientation Video has been cut back as the information is somewhat dated and needs updated. Hands-on exercises as part of student tours of the EOC have been put on hold because of staffing limitations and cost. Other cutbacks are described in the status sections of the above projects.

What new projects should be implemented and what projects or objectives should be revised?

1. Adoption of the multi-jurisdictional PPI approach to outreach
2. Space permitting, more CRS points for yellow pages - add more helpful information (see #2 above)
3. Creative outreach projects to residents of the floodplain (OPF)
4. Promotion of the purchase of flood insurance (PFI)
5. Utilization of water bills (or other utility bills) to post advisements
6. Advertisement of flood awareness information on County busses
7. Review, update and enforce notification for construction sites in anticipation of storm events
8. Install lightning detectors at County and City parks and make residents aware
9. Prepare a portable display that can be set up at various public activities, such as the Fourth of July celebration, Scout training, Fire Prevention Expo, etc. The display would include things like the floodplain map and suggestions for property protection, handouts on flood insurance and permit requirements and copies of flood protection brochures.

10. Place the County's Outreach Project to the Community (OPC) on the County's flood information website

11. Develop education and outreach plans for schoolchildren, such as natural and beneficial functions of the floodplain education and contact area science teachers to determine how Palm Beach County can develop partnerships with teachers to bring floodplain management issues to the classroom.

12. Plan outreach to alert residents to the potential threat of a Herbert Hoover Dike breach, so that they can be prepared.

13. Add or revise the OPS goals to include all hazards to which the County is vulnerable.

14. Inventory projects being implemented by other organizations, such as the schools, critical facilities, the state and others concerned about flooding, such as a sanitary district, water management district or insurance agents, and add them to the County OPS.

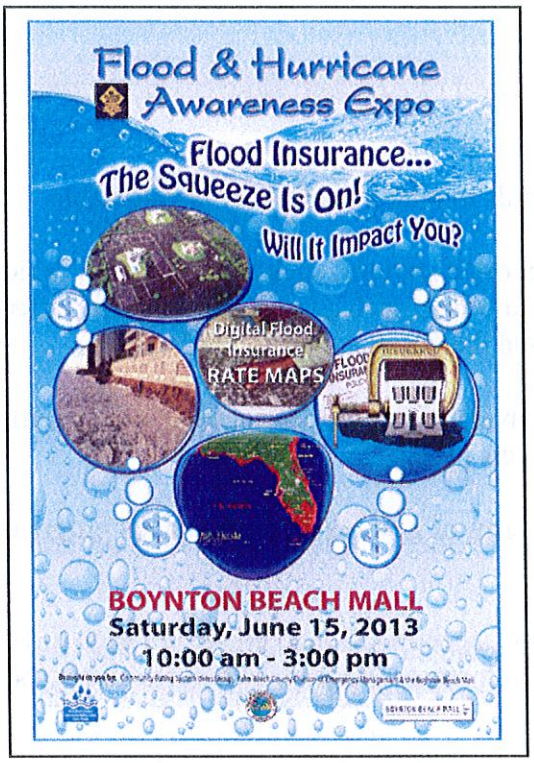
15. Print hard copies of the annual "Hurricane Survival Guide" for distribution to retail outlets and each municipality in the County when budgets permit.

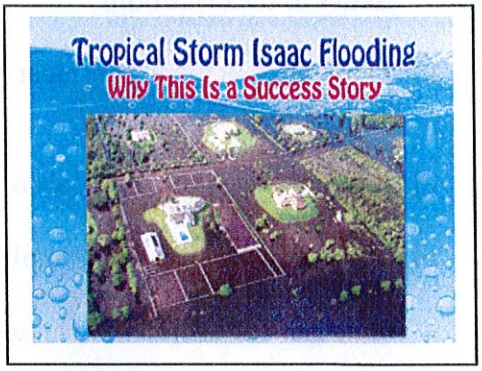
16. Reevaluate outreach strategies and projects in terms of cost-benefits when CRS program changes are implemented.

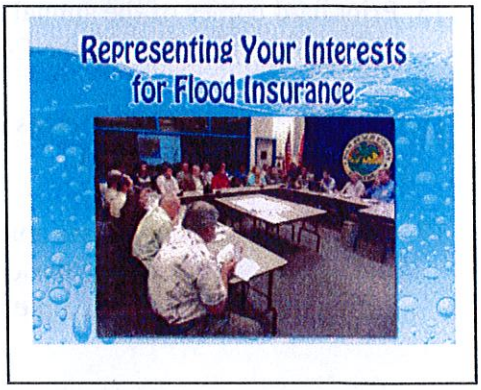
17. Consider encouraging state and FEMA to launch special CRS marketing campaign directed at elected officials and senior community staff to increase program awareness and support during difficult economic times.

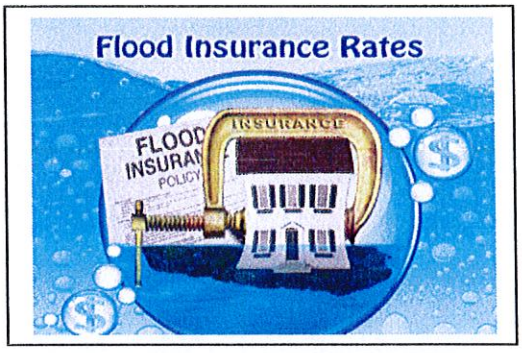
Summary of 2013 CRS Flood & Hurricane Awareness Expo

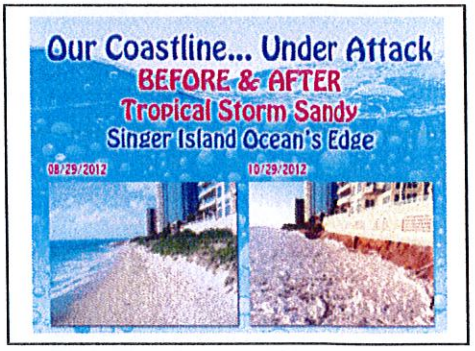
2013 Themes:

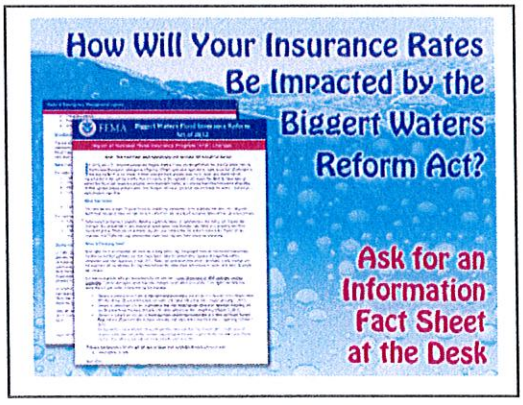


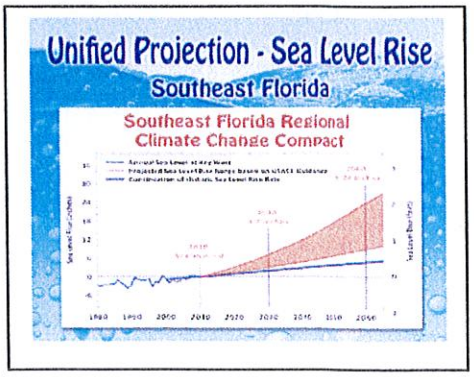


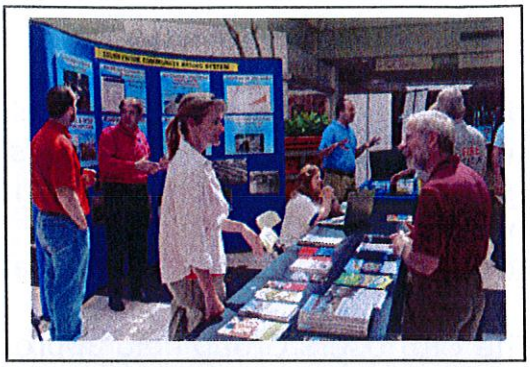


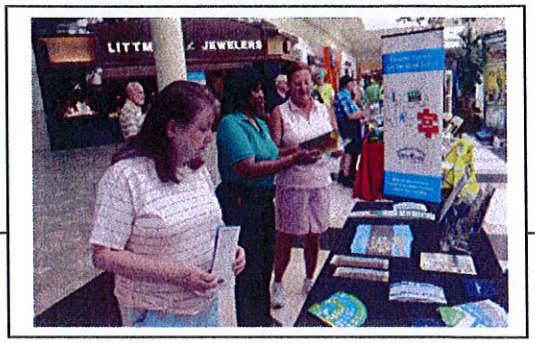












The Palm Beach Post

B | Local

COMING MONDAY IN THE POST

Proposed change to extracurricular activities policy has parents, students up in arms.

STORM SEASON 2013 HURRICANE EXPO

Expo stresses evacuation zones

Insurance expected to go up

Expo

'People need to pay attention to what's going on.'

Doug Wise
Palm Beach County building official

Hurricane and flood expo highlights changes in evacuation and flood zones

Posted: 5:07 p.m. Saturday, June 15, 2013

2013 Expo AfterAction

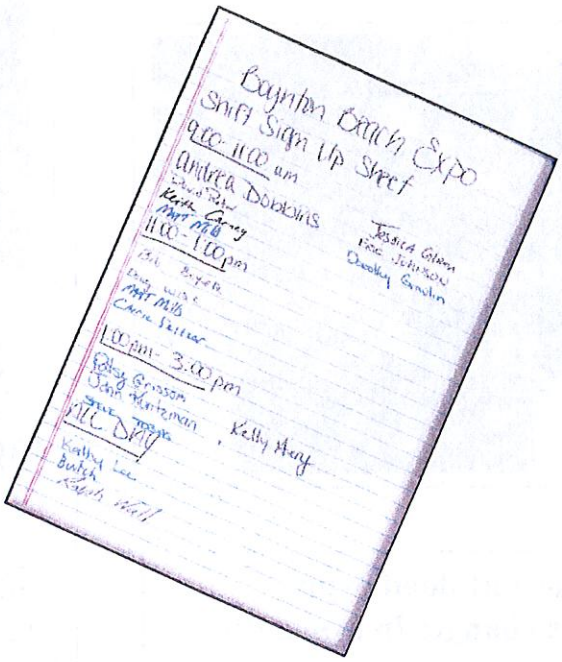
Overview:

The 2013 Flood Awareness Expo took place on June15, 2013. Despite the depressed economy, it was estimated to have been attended by close to 800 residents of Palm Beach County. Over 20 public and private sector exhibitors participated.

This year's theme was "Flood Insurance: The Squeeze is On." A broad cross-section of public sector and partnering support agencies answered questions and shared flyers and other informational materials. Special attention was

given to ensuring presentation of all 10 recommended outreach topics outlined in the CRS Coordinator's Manual. In addition flood and surge zone determination questions were addressed on the spot. A special treat for everyone was the attendance of the Muck Monster carrying the message of keeping our waters clean and free of debris.

The CRS Users Group held approximately six planning meetings between January and June. User Group participation and contributions were excellent.



Marketing:

The expo was marketed through various means including media releases, posters, newspaper ads, on-line postings (including a series of Twitter and Facebook messages), television and radio promotions, mentions at public forums, and word of mouth.

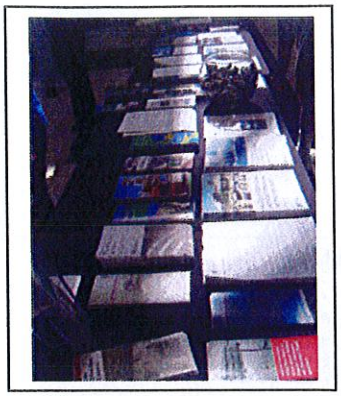
Distributed Publications:

A full range of FEMA and locally produced flood and hurricane materials were distributed to attendees at the CRS and Division of Emergency Management tables.

All 10 of CRS' recommended floodplain management topics were covered in the materials. These topics included:

- The Local Flood Hazard
- Flood Safety

- Flood Insurance
- Property Protection Measures
- Flood Warning System
- Permitting in Floodplains
- Drainage System Maintenance
- Substantial Damage Requirements
- Natural & Beneficial Functions of Floodplains
- Maps of Flooding Hazards



Informational materials on preparedness and recovery for other natural and manmade hazards (hurricanes, tornadoes, epidemics, etc.) were distributed by the Division of Emergency Management and various other participating agencies. Weather related materials were distributed by NWS/NOAA.

Examples of Locally Produced Handout Materials: (See next page)

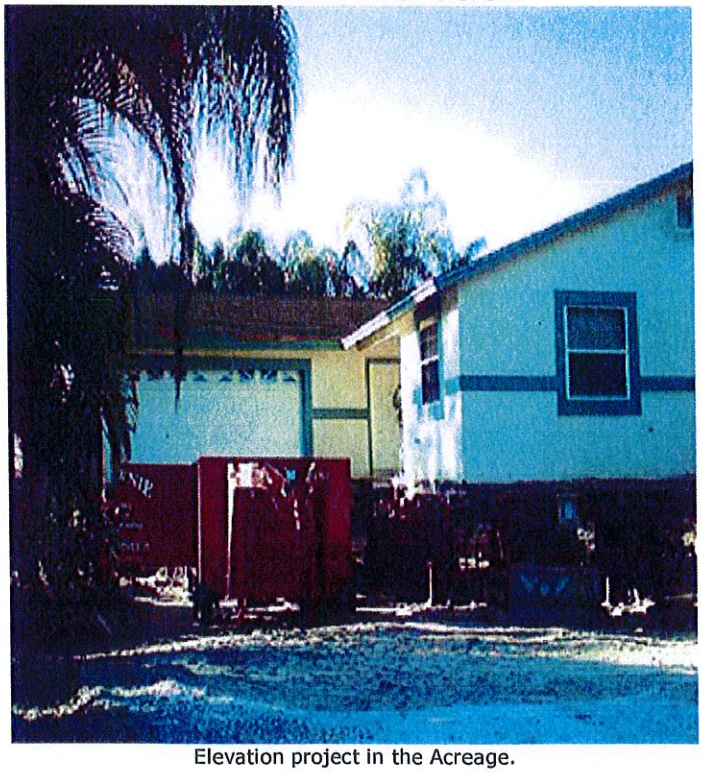
Palm Beach County Community Rating System Users Group

Structural Flood Mitigation Measures You Can Consider

While flood insurance can greatly reduce the cost of flood losses and rebuilding, there are six mitigation measures that can help prevent your house from flooding in the first place, even if you live in a special flood hazard area. If your house has sustained previous damage or is at high risk, one of the following mitigation projects may be a good investment and give you peace of mind.

Structural Elevation - Raising your house so that the lowest floor is above the flood level. This can be done by elevating the entire house, including the floor, or by leaving the house in its existing position and constructing a new elevated floor within the house. The method used depends largely on construction type, foundation type, and flooding conditions.

Structural Elevation



Elevation project in the Acreage.

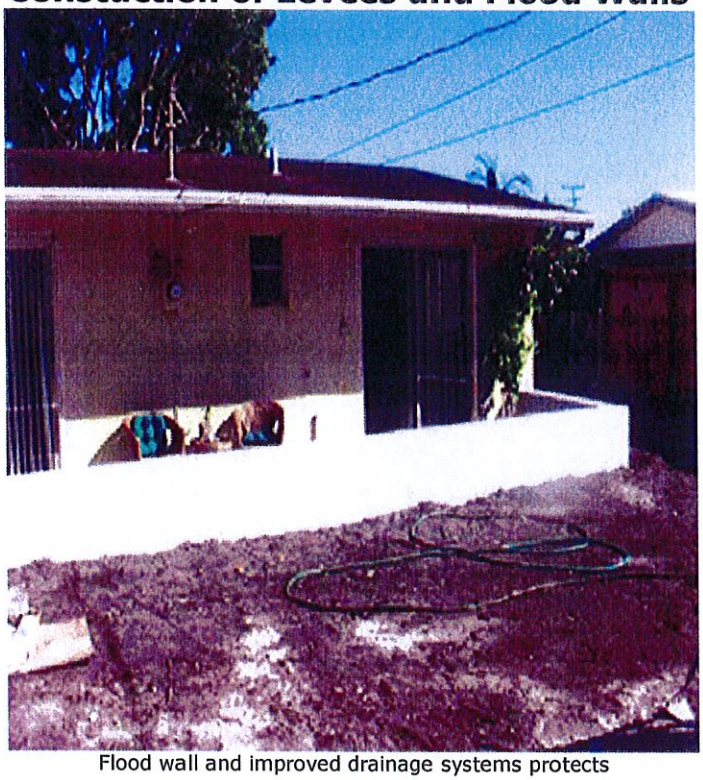
Wet Flood Proofing - Modifying the uninhabited portions of the house (crawlspace or unfinished basement) so that flood waters can enter but not cause significant damage to either the house or its contents. This allows interior and exterior hydrostatic pressures to equalize, reducing the likelihood of wall failures and structural damage.

Relocation - Moving your house to high ground, outside the flood hazard area. When space permits it may be possible to relocate the house to higher ground on the same piece of property. Once relocated, utility lines are connected.

Dry Flood Proofing - Sealing your house to prevent flood waters from entering. Making the house watertight requires sealing the walls with waterproof coatings, impermeable membranes, or supplemental layers of masonry or concrete. Doors, windows, and other openings below flood levels are equipped with permanent or removable shields and backflow valves must be installed in sewer lines and drains.

Construction of Levees and Floodwalls - Constructing flood protection barriers around the house to help hold back flood water. Levees are typically compacted earthen structures; floodwalls are engineered structures usually built of concrete, masonry, or a combination of both.

Constuction of Levees and Flood Walls



Flood wall and improved drainage systems protects
this north county home from future losses due to flood water runoff.

Demolition - Tearing down a damaged or high risk structure and either rebuilding properly somewhere on the same property or moving to a house onto other property, outside the regulatory floodplain.

Acquisition of Flood Prone Properties - Properties that meet FEMA's definition of repetitive flood losses may qualify for acquisition by federal, state and local governmental agencies with the stipulation that the land be maintained as open space and not be redeveloped.

Clearly, these measures are not cheap, but in the long run they may save you tens of thousands of dollars and a lot of grief. If you have a history of flood insurance claims, you may be able to get some financial assistance for the above-mentioned projects.

Explore these options with a qualified professional. Your local building department will explain permitting and regulatory requirements that apply to such projects.

Palm Beach County Community Rating System Users Group

Flood Safety & Recovery Tips

Before a Flood Threatens

- Find out if you live in a flood prone area. If you are new to the area ask neighbors, your local public works, planning and zoning, or emergency management organizations about local flood history.
- If you live in a frequently flooded area, stockpile emergency building materials like plywood, lumber, nails, hammers, saw, plastic sheeting, shovels, plastic bags, and sandbags.
- Consider raising or otherwise protecting your water heater, air conditioning equipment, electric panel, furnace, and other important appliances if they are likely to be flooded.
- Plan and practice alternative evacuation routes. Consult with emergency managers if you are unsure of flood evacuation routes. Your plan should include the safest route to where you plan to ride out the storm, public shelters, or evacuation routes out of the area.
- Have emergency supplies on hand:
  - First aid kit and essential medications
  - Canned foods, manual can opener, cooking equipment
  - Other emergency foods
  - At least 3 gallons of water per person for 3 days
  - Bleach or purification tablets for water purification and disinfecting
  - Protective clothing, raingear, and bedding or sleeping bags
  - Battery operated radio, flashlight, and extra batteries
  - Special items for infant, elderly, or disabled family members
  - Personal hygiene items
  - Cash and credit cards
- Develop an emergency communication plan. In case family members are separated during a flood disaster because of work, school, etc., choose a long distance relative or friend who can serve as the family contact. Make sure everyone knows the name, address and phone number of the emergency contact person.
- Include written instructions in your emergency kit for how to turn off electricity, gas, and water authorities advise you to do so. Teach adult family members how to shut off utilities. Teach children how to call 911, police and fire, and which radio station to tune to for emergency management.

- Give serious consideration to purchasing flood insurance. Keep insurance policies and contact information where you can find it in a hurry and take it with you. Keep an up to date inventory of household contents and prized possessions, including brand and model descriptions, serial numbers, purchase prices, etc.
- Prepare an inventory of household items, including valuables, vital records and irreplaceable keepsakes you will want to take with you.
- Safeguard Important Papers. Among the papers you may want to store at home in a water-proof, fire-proof locked box or take with you are:
  - Family advisors' names and addresses
  - Educational, employment and health records
  - Copies of birth and marriage certificates, insurance policies, investment records
  - Driver license numbers, income tax returns, current bank balances, loan payment books
  - Guarantees and warranties, appliance manuals, rental property records
  - Household inventory, safe-deposit records, copy of a list of valuable papers and their locations.
  - Other important documents you may want to store in a safe-deposit box include:
  - Property records, deeds, titles and/or leases
  - Copies of wills, birth/death and marriage certificates, divorce decrees, adoption or custody papers, citizenship papers, passports, military service records
  - Lists of insurance policies, automobile bills of sale and titles, social security cards
  - Government savings bonds, religious records, retirement papers, copyrights and patents
  - Household inventory (and/or videotape of home contents).

As a last resort, store important papers in sealed plastic bags in a secure area. Double bagging may further reduce the risk of water damage.

When a Flood Threatens

When a "Flood Watch" is issued:

- Listen to local radio or TV stations for weather information, advisories, and advice.
- Bring outdoor belongings, such as patio furniture, garbage cans, potted plants, etc., indoors.
- Move furniture and valuables to higher floors or elevate them as best you can. If you can't elevate furniture, place baggies around their legs.

- Top off your car's gas tank, in case an evacuation notice is issued or you decide to leave. (Don't expect to be able to purchase gas at the last minute)
- Fill bathtubs, sinks and jugs with clean water in case water becomes contaminated. Consult your home improvement store about ways to plug the drains of your tubs and sinks so they won't allow water to escape or become contaminated if water backs up in pipes.

When a "Flood Warning" is issued:

- Continue to monitor local TV and radio stations for storm developments.
- Be alert to signs of flooding and be ready to evacuate on a moment's notice.
- If it looks like evacuation will become necessary collect your emergency kit items.
- If instructed by authorities, turn off all utilities at the main power switch and in the house and close the main gas valve.
- Join with neighbors and volunteers to put sandbags or other protection in place.
- Listen for evacuation instructions. Follow recommended evacuation routes - shortcuts may be blocked.
- Do not drive over flooded roads (you may not be able to see abrupt drop offs in water depths and/or your vehicle could float into trouble). If your car stalls out escape to high ground immediately unless it is too dangerous to do so. As a last resort escape to the top of the vehicle and wait for assistance.

Returning to a Flood Damaged Home Can Be Dangerous

Be wary of downed power lines in floodwaters. In addition, floodwaters can turn your house into one gigantic live wire. In extreme cases, just touching the house could cause electrocution.

Shorted out wires may not be the only safety problem you encounter. Gas leaks, slippery mud covered floors and stairs, and loose water soaked ceilings/plaster are common bobby traps.

Some important safety tips:

- Take your time...fatigue and impatience can put you at risk
- Check for structural damage to see if it is safe to enter
- Don't enter the flooded house until you are sure the main electrical service is disconnected and cannot be turned on. Don't cross damp floors to shut off power at the fuse box
- Gas should be turned off outside, preferably by the utility company

- Gas lines should be turned off at the tank or meter... and let the house air out to remove gas fumes...and don't smoke or use any open flames that might cause an explosion
- Be careful of slippery surfaces...falls are a common post-disaster hazard
- Be alert for snakes, insects, and other animals that have been displaced and have chosen your house for higher ground.

Safely Cleaning a Flood-Damaged Home

Remove all water as soon as possible from your home. Also remove carpeting and other furnishings that are water soaked. Once water is removed, begin removing moisture that has been absorbed by wood and other materials. Consider using fans and dehumidifiers to speed the drying process. Shut windows and doors if you use dehumidifiers. If you experienced severe flooding, consider hiring a professional water removal contractor.

Avoid Health Risks

During food cleanup, the indoor air quality in your home or office may appear to be the least of your problems. However, failure to remove contaminated materials and to reduce moisture and humidity can present serious long-term health risks. Standing water and wet materials are a breeding ground for microorganisms, such as viruses, bacteria and mold. They can cause disease, trigger allergic reactions, and continue to damage materials after the flood. Throw away anything that was wet with flood water and can't be cleaned. Purchase and use an N-95 respirator and goggles if you are exposed to flood conditions for any length of time. For more information contact the Environmental Protection Agency at www.epa.gov/iaq/flood (1-800-438-4318) or the Center for Disease Control at www.bt.cdc.gov/floods.

After a Flood: The First Steps

Your home has been flooded. Although floodwaters may be down in some areas, many dangers still exist. Here are some things to remember in the days ahead.

- Roads may still be closed because they have been damaged or are covered by water. Barricades have been placed for your protection. If you come upon a barricade or a flooded road, go another way.
- Keep listening to the radio for news about what to do, where to go, or places to avoid.
- Emergency workers will be assisting people in flooded areas. You can help them by staying off the roads and out of the way.
- If you must walk or drive in areas that have been flooded
    - Stay on firm ground. Moving water only 6 inches deep can sweep you off your feet. Standing water may be electrically charged from underground or downed power lines.
    - Flooding may have caused familiar places to change. Floodwaters often erode roads and walkways. Flood debris may hide animals and broken bottles, and it's also slippery. Avoid walking or driving through it.
- Play it safe. Additional flooding or flash floods can occur. Listen for local warnings and information. If your car stalls in rapidly rising waters, get out immediately and climb to higher ground.

Staying Healthy

A flood can cause emotional and physical stress. You need to look after yourself and your family as you focus on cleanup and repair.

- Rest often and eat well.
- Keep a manageable schedule. Make a list and do jobs one at a time.

- Discuss your concerns with others and seek help. Contact Red Cross for information on emotional support available in your area.

Cleaning Up and Repairing Your Home

Turn off the electricity at the main breaker or fuse box, even if the power is off in your community. That way, you can decide when your home is dry enough to turn it back on.

Get a copy of the book Repairing Your Flooded Home. It will tell you:

- How to enter your home safely.
- How to protect your home and belongings from further damage.
- How to record damage to support insurance claims and requests for assistance.
- How to check for gas or water leaks and how to have service restored.
- How to clean up appliances, furniture, floors and other belongs.

Repairing Your Flooded Home is available free from the American Red Cross or your state or local emergency manager.

Getting Help

- The Red Cross can provide you with a cleanup kit: mop, broom, bucket, and cleaning supplies.
- Contact your insurance agent to discuss claims.
- Listen to your radio for information on assistance that may be provided by the state or federal government or other organizations.
- If you hire cleanup or repair contractors, be sure they are qualified to do the job. Be wary of people who drive through neighborhoods offering help in cleaning up or repairing your home. Check references.

Source: FEMA L-198 / ARC 4476

Last Modified: Monday, 26-Sep-2011 09:16:13 EDT

Palm Beach County Community Rating System Users Group

Flood & Hurricane Health/Safety Tips

Prevent carbon monoxide poisoning

Carbon monoxide is an odorless, colorless gas that is produced by many types of equipment and is poisonous to breathe. Don't use a generator, pressure washer, charcoal grill, camp stove, or other gasoline- or charcoal-burning device inside your home, basement, or garage or near a window, door, or vent. Don't run a car or truck inside a garage attached to your house, even if you leave the door open. Don't heat your house with a gas oven. If your carbon monoxide detector sounds, leave your home immediately and call 911. Seek prompt medical attention if you suspect carbon monoxide poisoning and are feeling dizzy, light-headed, or nauseated.

Avoid floodwater and mosquitoes

Follow all warnings about water on roadways. Do not drive vehicles or heavy equipment through water. If you have to work in or near floodwater, wear a life jacket. If you are caught in an area where floodwater is rising, wear a life jacket, or use some other type of flotation device. Prevent mosquito bites by wearing long pants, socks, and long-sleeved shirts and by using insect repellents that contain DEET or Picaridin.

Avoid unstable buildings and structures

Stay away from damaged buildings or structures until they have been examined and certified as safe by a building inspector or other government authority. Leave immediately if you hear shifting or unusual noises that signal that the structure is about to fall.

Beware of wild or stray animals

Avoid wild or stray animals. Take appropriate precautions to avoid animal bites and rabies exposure (see Rabies Exposure: What You Need to Know). Call local authorities to handle animals. Get rid of dead animals according to local guidelines.

Beware of electrical and fire hazards

NEVER touch a fallen power line. Call the power company to report fallen power lines. Avoid contact with overhead power lines during cleanup and other activities. If electrical circuits and equipment have gotten wet or are in or near water, turn off the power at the main breaker or fuse on the service panel. Do not turn the power back on until electrical equipment has been inspected by a qualified electrician. Do not burn candles near flammable items or leave the candle unattended. If possible, use flashlights or other battery-operated lights instead of candles.

Beware of hazardous materials

Wear protective clothing and gear (for example, a respirator if needed) when handling hazardous materials. Wash skin that may have come in contact with hazardous chemicals. Contact local authorities if you are not sure about how to handle or get rid of hazardous materials.

Clean up and prevent mold growth

Clean up and dry out the building quickly (within 24 to 48 hours). Open doors and windows. Use fans to dry out the building. To *prevent* mold growth, clean wet items and surfaces with detergent and water. To *remove* mold growth, wear rubber gloves, open windows and doors, and clean with a bleach solution of 1 cup of bleach in 1 gallon of water. Throw away porous items (for example, carpet and upholstered furniture) that cannot be dried quickly. Fix any leaks in roofs, walls, or plumbing.

Pace yourself and get support

Be alert to physical and emotional exhaustion or strain. Set priorities for cleanup tasks, and pace the work. Try not to work alone. Don't get exhausted. Ask your family members, friends, or professionals for support. If needed, seek professional help.

Prevent musculoskeletal injuries

Use teams of two or more people to move bulky objects. Avoid lifting any material that weighs more than 50 pounds (per person).

Stay cool

When it's hot, stay in air-conditioned buildings; take breaks in shaded areas or in cool rooms; drink water and nonalcoholic fluids often; wear lightweight, light-colored, loose-fitting clothing; and do outdoor activities during cooler hours.

Treat wounds

Clean out all open wounds and cuts with soap and clean water. Apply an antibiotic ointment. Contact a doctor to find out whether more treatment is needed (such as a tetanus shot). If a wound gets red, swells, or drains, seek immediate medical attention.

Wash your hands

Use soap and warm water to wash your hands. If water isn't available, you can use alcohol-based products made for washing hands.

Wear protective gear for cleanup work

Wear hard hats, goggles, heavy work gloves, and watertight boots with steel toes and insoles (not just steel shank). Wear earplugs or protective headphones to reduce risk from equipment noise.

Source: Centers for Disease Control and Prevention (CDC 24/7) Emergency Preparedness and Response

Dealing with the Aftermath

If you have experienced a flood, you can file your flood insurance claim by following these three steps:

STEP ONE:
After experiencing a flood, contact your agent or insurance company to file a claim. An adjuster should contact you within a few days of filing your claim. If you do not hear from an adjuster, you can contact your insurance agent or company again. Make sure you have the following information handy:

- The name of your insurance company
- Your policy number
- A telephone and/or email address where you can be reached at all times

STEP TWO:
Separate damaged from undamaged property. Your adjuster will need evidence of the damage to your home and possessions to prepare your repair estimate.

- Take photographs of all of the damaged property, including discarded objects, structural damage, and standing floodwater levels.
- Make a list of damaged or lost items and include their date of purchase, value, and receipts, if possible.
- Officials may require disposal of damaged items so, if possible, place flooded items outside of the home.

STEP THREE:
Your adjuster will provide you a Proof of Loss form for your official claim for damages. You'll need to file this claim with your insurance company within 60 days of the flood. This document substantiates the insurance claim and is required before the National Flood Insurance Program (NFIP) or insurance company can make payment.

You'll receive your claim payment after you and the insurer agree on the amount of damages and the insurer has your complete, accurate, and signed Proof of Loss form. If major catastrophic flooding occurs, it may take longer to process claims and make payments because of the sheer number of claims submitted.

Appendix R

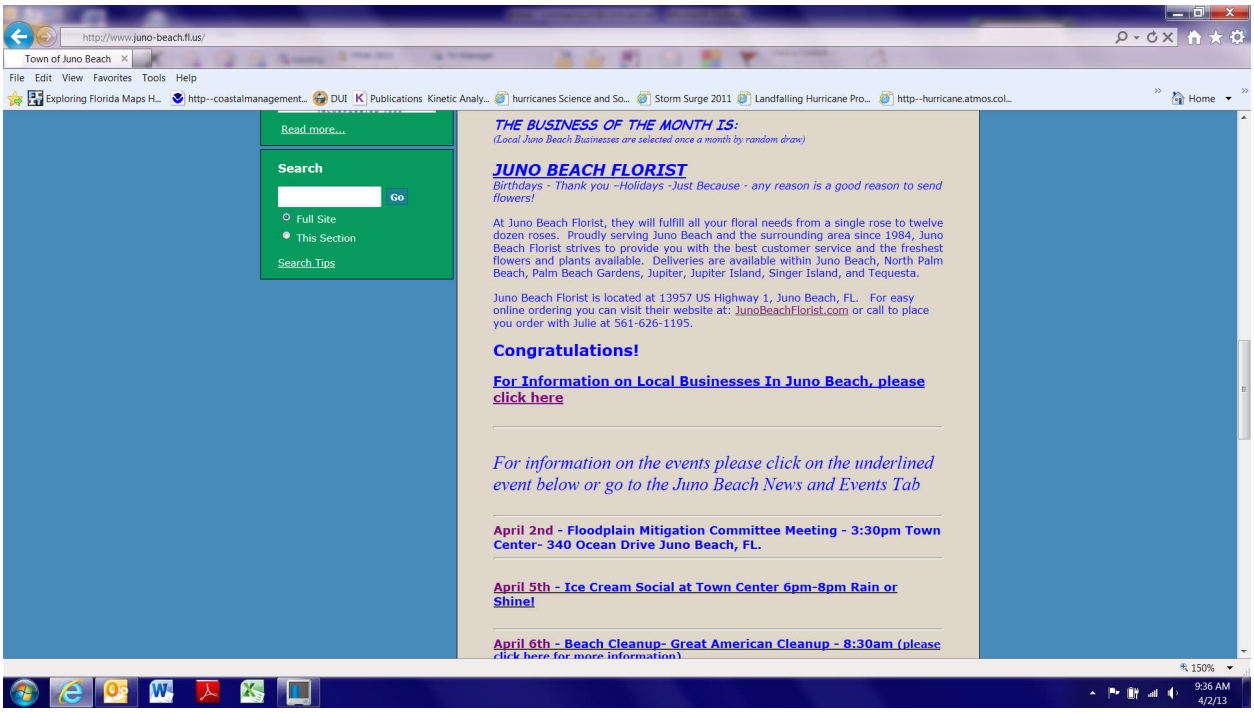
Capital Improvement Outlay

PUBLIC WORKS FUND/DEPARTMENT #01539	***FY 12-13 FINAL***	FY 12-13 TRANSFERS	FY 12-13 REVISED	EXPENDED 6/30/13	PERCENT EXPENDED	***FY 13-14 Final***	PERCENT CHANGED
52400 UNIFORMS (SHIRTS, PANTS, AND BOOTS.)	***1,500***	0	1,500	1,069	71.27%	***1,500***	0.00%
52500 COMPUTER SUPPORT (FOR COMPUTER CONSULTING, $2,800 & VARIOUS MAINTENANCE, SMALL EQUIPMENT, AND SUPPLIES)	***3,500***	0	3,500	2,331	66.60%	***3,500***	0.00%
53000 ROAD MAINTS. & SUPPLIES (STREET NAME, DIRECTIONAL AND INFORMATION SIGNS AND SUPPLIES.)	***2,500***	0	2,500	984	39.36%	***3,500***	40.00%
54000 BOOKS & PUBLICATIONS (RELATED PUBLICATIONS AND SUBSCRIPTIONS, ESTIMATE BASED ON HISTORICAL USAGE.)	***250***	0	250	0	0.00%	***250***	0.00%
54100 TRAINING (REGISTRATION FOR CONFERENCES, SEMINARS AND MEETINGS; AND COLLEGE TUITION REIMBURSEMENT.)	***1,500***	0	1,500	615	41.00%	***1,500***	0.00%
SUBTOTAL-OPERATING EXPENSES	**349,087**	0	349,087	226,131	64.78%	**365,937**	4.83%
62700 CAP IMPROVE-TOWN CENTER (TOWN CENTER PARKING LOT SEALCOAT)	***0***	0	0	2,100	0.00%	***0***	0.00%
63500 SIGNS, LIGHTS, ELECTRIC (NOT FUNDED THIS FISCAL YEAR, PRIOR YEAR INCLUDE MONUMENT AND IMPROVEMENTS TO NORTH A1A SIGNAGE)	***0***	0	0	12,450	0.00%	***0***	0.00%
63600 IRRIGATION (NOT FUNDED THIS FISCAL YEAR, PRIOR YEAR INCLUDED US 1 PUMPS)	***0***	0	0	3,865	0.00%	***0***	0.00%
63700 SIDEWALK PROJECTS (NOT FUNDED-CONCRETE & PAVER SIDEWALKS THROUGHOUT THE TOWN.)	***0***	0	0	0	0.00%	***0***	0.00%
63800 CAP IMP.-DUNE WALKOVER (Florida Recreation Development Assistance Program Grant for Dune Walkover (2) Enhancements-ROLLOVER ITEM)	***50,000***	0	50,000	0	0.00%	***50,000***	0.00%
63900 CAP IMP.-STREETS/DRAINAGE (RIGHT OF WAY AND SWALE IMPROVEMENTS)	***0***	0	0	0	0.00%	***5,000***	100.00%
64000 TOOLS & EQUIPMENT (PURCHASE OF TOOLS & EQUIPMENT ITEMS ABOVE THE $1,000 GENERAL FIXED ASSET LEVEL.)	***2,000***	0	2,000	0	0.00%	***3,000***	50.00%
64100 MAJOR REPAIRS & EQUIPMENT (VARIOUS MAJOR REPAIRS & EQUIPMENT)	***6,500***	0	6,500	0	0.00%	***7,500***	15.38%
64200 COMPUTER AND EQUIPMENT (COMPUTER & SOFTWARE)	***1,500***	0	1,500	0	0.00%	***1,500***	0.00%
64300 VEHICLE (NOT FUNDED THIS YEAR)	***0***	0	0	0	0.00%	***0***	0.00%
64600 FURNITURE & FIXTURES (NOT FUNDED THIS FISCAL YEAR)	***0***	0	0	0	0.00%	***0***	0.00%
SUBTOTAL-CAPITAL OUTLAY	**60,000**	0	60,000	18,415	30.69%	**67,000**	11.67%
DEPARTMENT TOTALS	***812,703***	***0***	***812,703***	***529,540***	**65.16%**	***851,330***	**4.75%**

Exhibit 1

Meeting Documentation

Town of Juno Beach Flood Mitigation Plan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THE BUSINESS OF THE MONTH IS:
(Local Juno Beach Businesses are selected once a month by random draw)
JUNO BEACH FLORIST
Birthdays - Thank you -Holidays -Just Because - any reason is a good reason to send flowers!
At Juno Beach Florist, they will fulfill all your floral needs from a single rose to twelve dozen roses. Proudly serving Juno Beach and the surrounding area since 1984, Juno Beach Florist strives to provide you with the best customer service and the freshest flowers and plants available. Deliveries are available within Juno Beach, North Palm Beach, Palm Beach Gardens, Jupiter, Jupiter Island, Singer Island, and Tequesta.
Juno Beach Florist is located at 13957 US Highway 1, Juno Beach, FL. For easy online ordering you can visit their website at: JunoBeachFlorist.com or call to place you order with Julie at 561-626-1195.
Congratulations!
For Information on Local Businesses In Juno Beach, please click here
For information on the events please click on the underlined event below or go to the Juno Beach News and Events Tab
April 2nd - Floodplain Mitigation Committee Meeting - 3:30pm Town Center- 340 Ocean Drive Juno Beach, FL.
April 5th - Ice Cream Social at Town Center 6pm-8pm Rain or Shine!
April 6th - Beach Cleanup- Great American Cleanup - 8:30am (please
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Congratulations!
For Information on Local Businesses In Juno Beach, please click here
For information on the events please click on the underlined event below or go to the Juno Beach News and Events Tab
April 5th - Ice Cream Social at Town Center 6pm-8pm Rain or Shine!
April 6th - Beach Cleanup- Great American Cleanup - 8:30am (please click here for more information)
April 9th - State of the Town Address presented by the Juno Beach Civic Association 7pm at Town Center
April 17th - Floodplain Mitigation Committee Meeting 3:30pm-5:00pm at Town Center - 340 Ocean Drive, Juno Beach
April 19th - Art Show presented by the Friends of the Arts- Town Center 5:30pm-7:00pm
April 27th - 28th OceanFest - A1A/ Juno Beach Ocean Park to Loggerhead Park (please click on this link for more information)
150%
7:53 AM
4/8/13

NOTICE OF PUBLIC MEETING

Flood Mitigation Plan Task Force
Public Outreach Meeting

Date: Wednesday, April 17th, 2013
Time: 4:30 pm

Location: 340 Ocean Drive, Juno Beach

Comments: The Town of Juno Beach will hold a public meeting on Wednesday, April 17th at 4:30 pm in the council chambers located at 340 Ocean Drive, Juno Beach FL 33408. The purpose of the public meeting is to receive public input and comments regarding the development of a flood mitigation plan. Any questions regarding the public meeting should be directed to Andrea Dobbins, Project Coordinator at 561-656-0326.

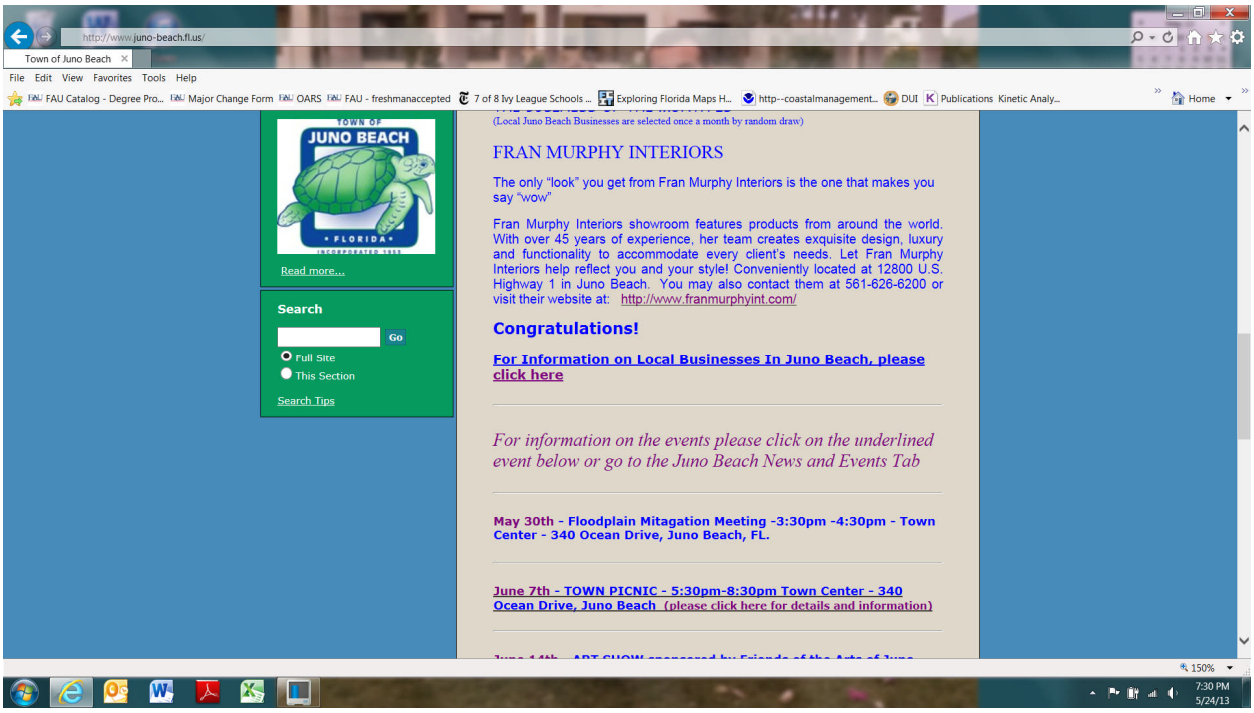
Pub: Palm Beach Post April 14, 2013

JUNO BEACH

Meeting Wednesday on flood information

Town residents can get information about whether their property lies in a flood plain and other flood map information by attending the a meeting Wednesday at 4:30 p.m. at Town Hall, 340 Ocean Drive. Prior registration is recommended. For more information, call 561-626-1122.

BILL DIPAOLO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Town of Juno Beach
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7 of 8 Ivy League Schools ...
Exploring Florida Maps H...
http--coastalmanagement...
DUI
Publications
Kinetic Analy...
Home
TOWN OF
JUNO BEACH
FLORIDA
Read more...
Search
Go
Full Site
This Section
Search Tips
(Local Juno Beach Businesses are selected once a month by random draw)
FRAN MURPHY INTERIORS
The only "look" you get from Fran Murphy Interiors is the one that makes you say "wow"
Fran Murphy Interiors showroom features products from around the world. With over 45 years of experience, her team creates exquisite design, luxury and functionality to accommodate every client's needs. Let Fran Murphy Interiors help reflect you and your style! Conveniently located at 12800 U.S. Highway 1 in Juno Beach. You may also contact them at 561-626-6200 or visit their website at: http://www.franmurphyint.com/
Congratulations!
For Information on Local Businesses In Juno Beach, please click here
For information on the events please click on the underlined event below or go to the Juno Beach News and Events Tab
May 30th - Floodplain Mitagation Meeting -3:30pm -4:30pm - Town Center - 340 Ocean Drive, Juno Beach, FL.
June 7th - TOWN PICNIC - 5:30pm-8:30pm Town Center - 340 Ocean Drive, Juno Beach (please click here for details and information)
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7:30 PM
5/24/13

http://www.juno-beach.fl.us/
Town of Juno Beach
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Welcome to Juno Beach
TOWN OF
JUNO BEACH
FLORIDA
Read more...
Search
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Full Site
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Search Tips
assortment of cookies, chocolates and pastries. Among the delicacies are cakes, cannoli, ricotta pies and profiteroles to name a few. Lucio's also offers a selection of savory foods such as penne pasta, lasagna, cheese pizza or try one of their subs made with freshly baked bread. Lucio's Gourmet Bakery and Deli is located within Juno Square at 13971 US Highway 1, Juno Beach. You may place your order by calling 561-626-2666 or stop by their shop which is open Monday through Saturday. Catering is available!
Congratulations!
For Information on Local Businesses In Juno Beach, please click here
For information on the events please click on the underlined event below or go to the Juno Beach News and Events Tab
June 26th - MAYOR'S OFFICE HOURS - 4:30pm-5:30pm - The Mayor is available to discuss items of interest or concerns you may have at Town Center on June 26th.
June 27th - Floodplain Mitigation Committee Meeting - 3:30pm-5:30pm at Town Center 340 Ocean Drive, Juno Beach
October 11th - Art Show sponsored by Friends of the Arts of Juno Beach- Town Center 5:30pm - 7:00pm
October 25th - Annual Oktoberfest Celebration at Town Center 5:30pm-8:00pm
November 20th - A Speaker Program sponsored by the Juno Beach Civic Association - Town Center -7pm
125%
8:04 PM
6/24/13

http://www.juno-beach.fl.us/
Town of Juno Beach
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Home
(Local Juno Beach Businesses are selected once a month by random draw)
TrueGlo MedSpa
Personalized solutions for your skin. That's TrueGlo MedSpas goal!
TrueGlo MedSpa, the most unique and wonderful experience of its kind who offer state-of-the-art, FDA approved medical aesthetic treatments in a luxurious spa environment. Service oriented; results driven; tranquil and relaxed, TrueGlo MedSpa was created to bring the most advanced medical skin care directly to the Palm Beaches and Treasure Coast.
Because your skin is unique, personalized solutions are needed to effectively address your problems and concerns. TrueGlo MedSpa's professionally trained medical staff will evaluate your needs and design a personalized program just for you. They are located at 13901 US Highway One Suite 2. To make your appointment today please call 561-691-8655 or visit their website at: http://www.trueglomedspa.com
Congratulations!
For Information on Local Businesses In Juno Beach, please click here
Please click on the underlined event item below for more information. Or please go to the Juno Beach News and Events Tab for current events.
July 23rd - Floodplain Committee Meeting 3:30pm-4:30pm - Town Center 340 Ocean Drive - Juno Beach
"Juno Beach Reflection on 9/11" - A Juno Beach Town Project.
The Town Council has selected professional artist, Mark Fuller to design the "Juno Beach Reflection on 9/11" project. Mr. Fuller is an accomplished artist with work that can be seen all around Palm Beach County as well as around the country. (please click here to view a photo rendition of the Juno Beach Reflection on 9/11 and more)
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Welcome to Juno Beach
TOWN OF JUNO BEACH FLORIDA
Read more...
Search
Go
Full Site
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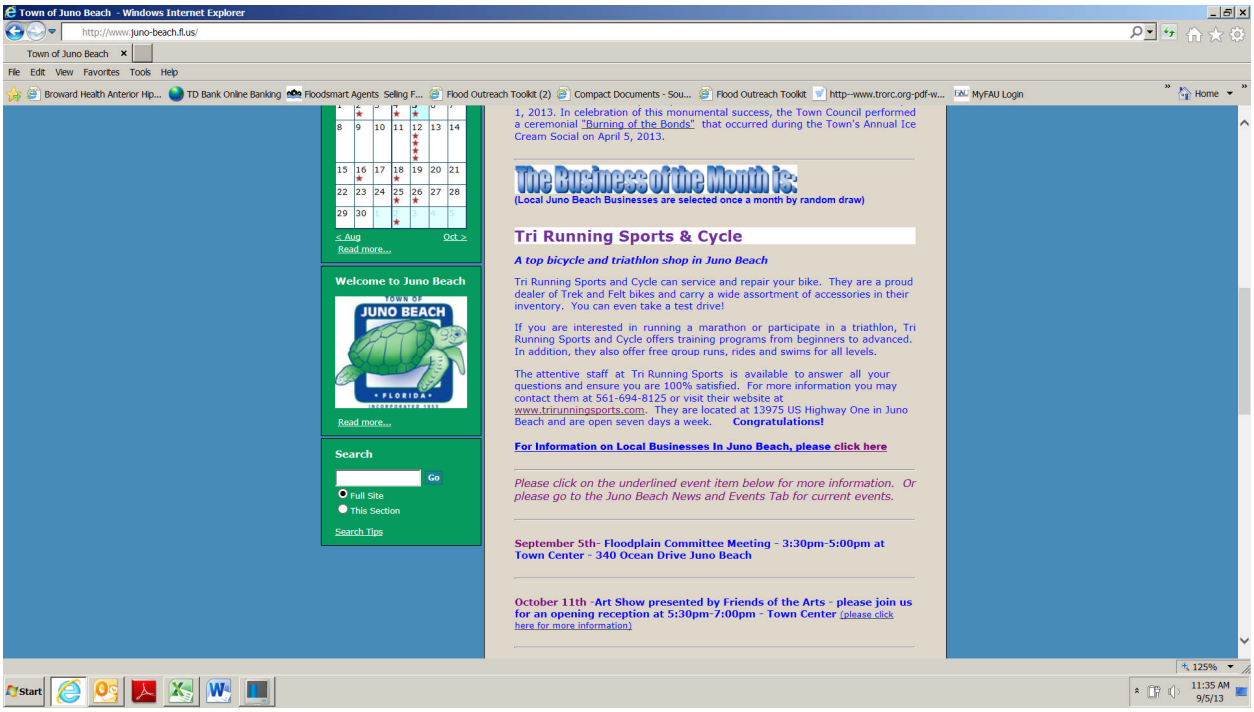
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File Edit View Favorites Tools Help
Broward Health Anterior Hip...
TD Bank Online Banking
Floodsmart Agents
Selling F...
Flood Outreach Toolkit (2)
Compact Documents - Sou...
Flood Outreach Toolkit
http--www.trorc.org-pdf-w...
MyFAU Login
Home
1, 2013. In celebration of this monumental success, the Town Council performed a ceremonial "Burning of the Bonds" that occurred during the Town's Annual Ice Cream Social on April 5, 2013.
The Business of the Month is:
(Local Juno Beach Businesses are selected once a month by random draw)
Tri Running Sports & Cycle
A top bicycle and triathlon shop in Juno Beach
Tri Running Sports and Cycle can service and repair your bike. They are a proud dealer of Trek and Felt bikes and carry a wide assortment of accessories in their inventory. You can even take a test drive!
If you are interested in running a marathon or participate in a triathlon, Tri Running Sports and Cycle offers training programs from beginners to advanced. In addition, they also offer free group runs, rides and swims for all levels.
The attentive staff at Tri Running Sports is available to answer all your questions and ensure you are 100% satisfied. For more information you may contact them at 561-694-8125 or visit their website at www.trirunningsports.com. They are located at 13975 US Highway One in Juno Beach and are open seven days a week. Congratulations!
For Information on Local Businesses In Juno Beach, please click here
Please click on the underlined event item below for more information. Or please go to the Juno Beach News and Events Tab for current events.
September 5th- Floodplain Committee Meeting - 3:30pm-5:00pm at Town Center - 340 Ocean Drive Juno Beach
October 11th -Art Show presented by Friends of the Arts - please join us for an opening reception at 5:30pm-7:00pm - Town Center (please click here for more information)
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Welcome to Juno Beach
TOWN OF JUNO BEACH FLORIDA
Read more...
Search
Go
Full Site
This Section
Search Tips
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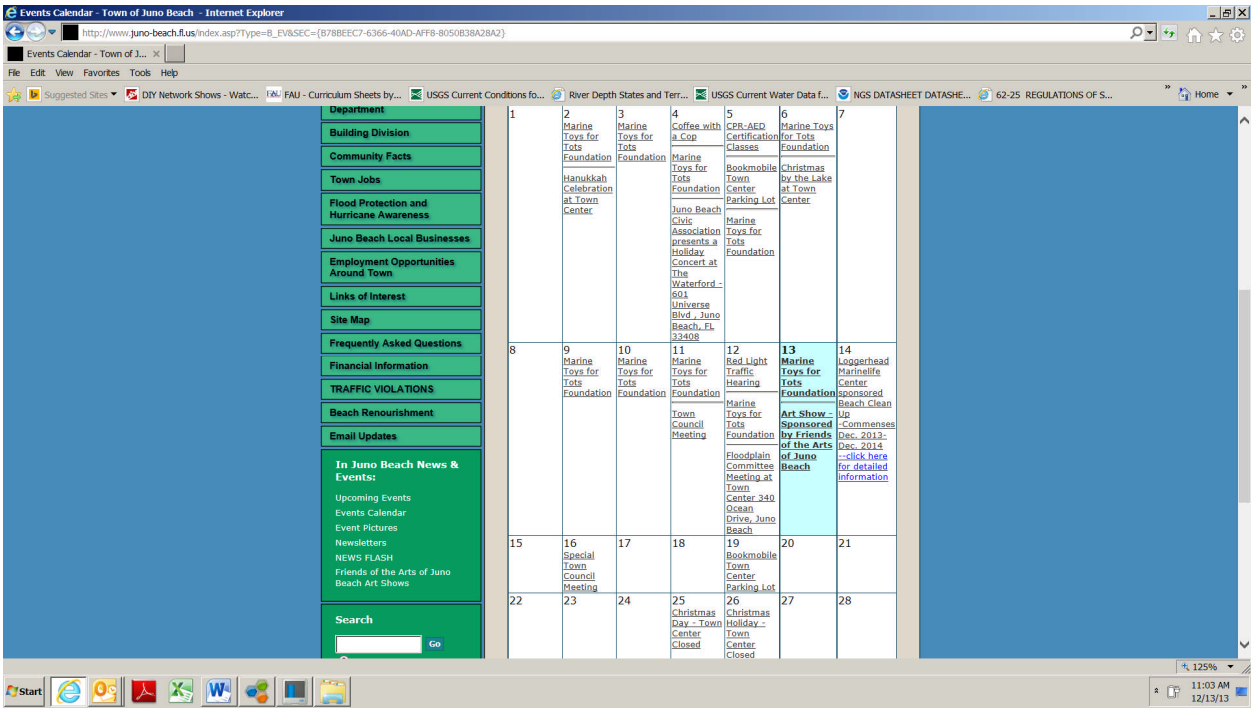
Events Calendar - Town of Juno Beach - Internet Explorer
http://www.juno-beach.fl.us/index.asp?Type=B_EV&SEC={B78BEEC7-6366-40AD-AFF8-8050B38A28A2}
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DIY Network Shows - Watc...
FAU - Curriculum Sheets by...
USGS Current Conditions fo...
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USGS Current Water Data f...
NGS DATASHEET DATASHE...
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Home
Department
Building Division
Community Facts
Town Jobs
Flood Protection and Hurricane Awareness
Juno Beach Local Businesses
Employment Opportunities Around Town
Links of Interest
Site Map
Frequently Asked Questions
Financial Information
TRAFFIC VIOLATIONS
Beach Renourishment
Email Updates
In Juno Beach News & Events:
Upcoming Events
Events Calendar
Event Pictures
Newsletters
NEWS FLASH
Friends of the Arts of Juno Beach Art Shows
Search
Go
1
2 Marine Toys for Tots Foundation
Hanukkah Celebration at Town Center
3 Marine Toys for Tots Foundation
4 Coffee with a Cop
Marine Toys for Tots Foundation
Juno Beach Civic Association presents a Holiday Concert at The Waterford - 601 Universe Blvd , Juno Beach, FL 33408
5 CPR-AED Certification Classes
Bookmobile Town Center Parking Lot
Marine Toys for Tots Foundation
6 Marine Toys for Tots Foundation
Christmas by the Lake at Town Center
7
8
9 Marine Toys for Tots Foundation
10 Marine Toys for Tots Foundation
11 Marine Toys for Tots Foundation
Town Council Meeting
12 Red Light Traffic Hearing
Marine Toys for Tots Foundation
Floodplain Committee Meeting at Town Center 340 Ocean Drive, Juno Beach
13 Marine Toys for Tots Foundation
Art Show - Sponsored by Friends of the Arts of Juno Beach
14 Loggerhead Marinelife Center sponsored Beach Clean Up -Commenses Dec. 2013- Dec. 2014 --click here for detailed information
15
16 Special Town Council Meeting
17
18
19 Bookmobile Town Center Parking Lot
20
21
22
23
24
25 Christmas Day - Town Center Closed
26 Christmas Holiday - Town Center Closed
27
28
125%
Start
11:03 AM
12/13/13

Home
9/11 Remembrance Project
TOWN DIRECTORY & CONTACT INFORMATION
Town Council
Town Departments
Agendas & Minutes
Ordinances & Resolutions
Juno Beach News & Events
Juno Beach Police Department
Building Division
Community Facts
Town Jobs
Flood Protection and Hurricane Awareness
Juno Beach Local Businesses
Employment Opportunities Around Town
Links of Interest
Site Map
Frequently Asked Questions
Financial Information
TRAFFIC VIOLATIONS
Beach Renourishment
Email Updates
In Juno Beach News & Events:

January 30th Floodplain Public Meeting - 3:00pm Town Center 340 Ocean Drive, Juno Beach, FL

Town in Final Stage of Flood Mitigation Planning

-Public Meeting to Review Action Plan on January 30, 2014-

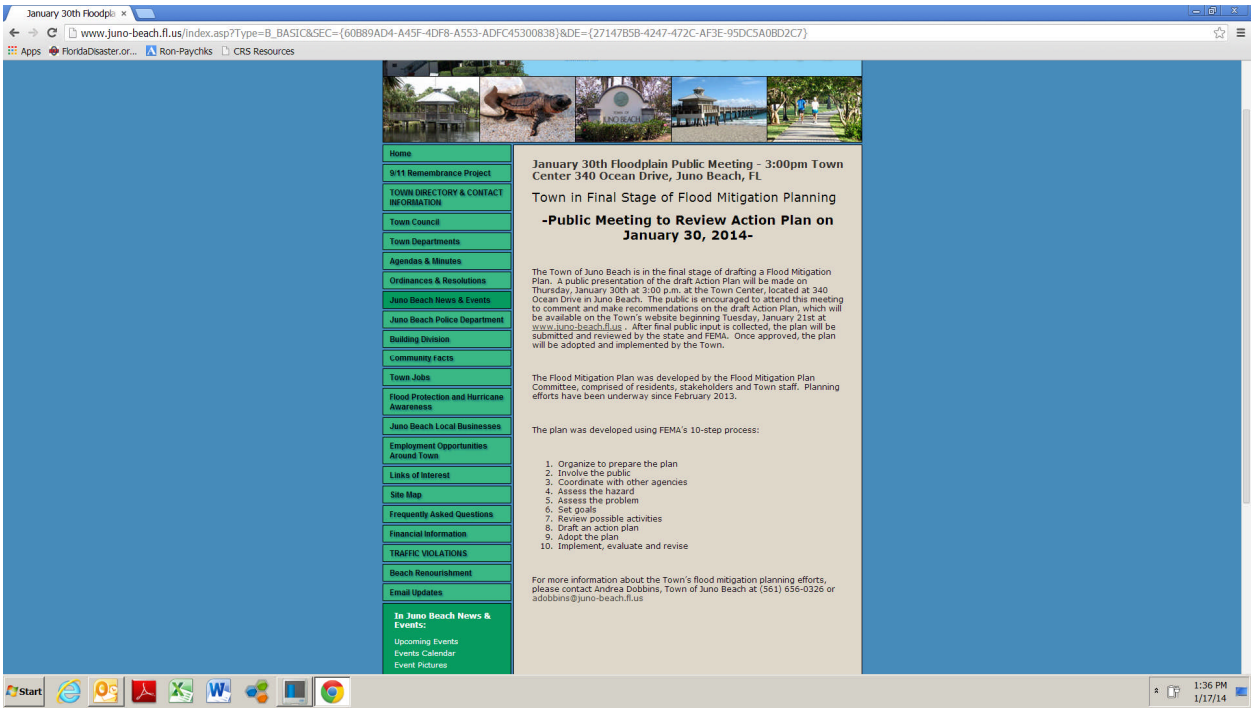
The Town of Juno Beach is in the final stage of drafting a Flood Mitigation Plan. A public presentation of the draft Action Plan will be made on Thursday, January 30th at 3:00 p.m. at the Town Center, located at 340 Ocean Drive in Juno Beach. The public is encouraged to attend this meeting to comment and make recommendations on the draft Action Plan, which will be available on the Town's website beginning Tuesday, January 21st at www.juno-beach.fl.us . After final public input is collected, the plan will be submitted and reviewed by the state and FEMA. Once approved, the plan will be adopted and implemented by the Town.

The Flood Mitigation Plan was developed by the Flood Mitigation Plan Committee, comprised of residents, stakeholders and Town staff. Planning efforts have been underway since February 2013.

The plan was developed using FEMA's 10-step process:

1. Organize to prepare the plan
2. Involve the public
3. Coordinate with other agencies
4. Assess the hazard
5. Assess the problem
6. Set goals
7. Review possible activities
8. Draft an action plan
9. Adopt the plan
10. Implement, evaluate and revise

For more information about the Town's flood mitigation planning efforts, please contact Andrea Dobbins, Town of Juno Beach at (561) 656-0326 or adobbins@juno-beach.fl.us


January 30th Floodpla
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CRS Resources
Home
9/11 Remembrance Project
TOWN DIRECTORY & CONTACT INFORMATION
Town Council
Town Departments
Agendas & Minutes
Ordinances & Resolutions
Juno Beach News & Events
Juno Beach Police Department
Building Division
Community Facts
Town Jobs
Flood Protection and Hurricane Awareness
Juno Beach Local Businesses
Employment Opportunities Around Town
Links of Interest
Site Map
Frequently Asked Questions
Financial Information
TRAFFIC VIOLATIONS
Beach Renourishment
Email Updates
In Juno Beach News & Events:
Upcoming Events
Events Calendar
Event Pictures
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1. Organize to prepare the plan
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10. Implement, evaluate and revise
For more information about the Town's flood mitigation planning efforts, please contact Andrea Dobbins, Town of Juno Beach at (561) 656-0326 or adobbins@juno-beach.fl.us
Start
1:36 PM
1/17/14

TOWN OF JUNO BEACH
FLOOD MITIGATION
PLAN TASK FORCE
MTG WED 3:30
PUBLIC OUTREACH
MTG 4:30

ype=B_EV&SEC={B78BEEC7-6366-40AD-AFF8-8050B38A28A2}&DE={5203130C-7C29-41BD-A9C3-88ED5BC8C371}

Project

&
ATION

Floodplain Committee Meeting - Town Ce
Ocean Drive, Juno Beach

Thursday, January 30, 2014 at 3:00 PM
to 5:00 PM

e.googleusercontent.com/search?q=cache:BeijgiiYh4sJ:www.juno-beach.fl.us/+&cd=2&hl=en&ct=clnk&gl=us

For Information on Local Businesses In Juno Beach, please click here

Please click on the underlined event item below for more information. C please go to the Juno Beach News and Events Tab for current events.

April 24th - Concert - A Tribute to Dean Martin sponsored by the Beach Civic Association 7pm - Town Center 340 Ocean Drive, Jun Beach - Please RSVP by calling 561-630-5778

SAFE DISPOSAL OF YOUR UNUSED MEDICATION

April 26th GOT DRUGS- Turn in your unused or expired medicati for safe disposal on Saturday April 26th 10am-2pm at the Drop B located at the Juno Beach Police Department - 340 Ocean Drive, Juno Beach.

June 6th - Annual PICNIC - 5:30pm-8:30pm at Town Center- 340 Ocean Drive (please click here for more information)

June 13th - Art Show sponsored by The Friends of the Arts- 5:30 7:00pm -Town Center 340 Ocean Drive

"Juno Beach Reflection on 9/11" - A Juno Beach Town Project. The Juno Beach Reflection on 9/11 monument can be seen o the property just north of the Juno Beach Police Department. (please click here for more information)

To view the Floodplain Action Plan - Please Click Here

CPR/AED Certification Classes

Read more...

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(Local Juno Beach Businesses are selected once a month by random draw)

John Kime Allstate Insurance

John Kime takes pride in assisting families protect the things that are important!

John Kime, a Personal Financial Representative for Allstate Insurance can assist you with everything from car insurance to property insurance, and even life insurance coverage. With a policy from Allstate, you can help keep your insurance costs low when you bundle multiple policies. John Kime's knowledge and understanding of the people in the community help him provide you with an outstanding level of service.

To schedule an appointment, please call 561-627-1806 or stop by John Kime Allstate Insurance located at 12832 U.S. Highway One in Juno Beach.

Congratulations John Kime Allstate Insurance!

For Information on Local Businesses In Juno Beach, please click here

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Please click on the underlined event item below for more information. Or please go to the Juno Beach News and Events Tab for current events.

The Town of Juno Beach Municipal Election Filing Period will take place January 28th at 12:00pm through February 11th at 12:00pm (please click here for election information)

January 30th - Floodplain Mitigation Committee Meeting - Public Meeting - 3:00pm -5:00pm - Town Center 340 Ocean Drive, Juno Beach, FL (click on this link for detailed information)

Floodplain Action Plan - Please Click Here

February 7th - Art Show presented by Friends of the Arts- opening reception for Marilyn Muller - 5:30pm-7:00pm - Town Center - 340 Ocean Drive, Juno Beach.

February 10th - Gulfstream Casino Bus Trip - For detailed information click here. *Please note: there will not be horse racing this day.*

February 14th - 50th Wedding Anniversary Celebration at Town Center 4:30pm *(Please note: There will not be a Valentine's Dance this year)*

February 16th -Lithuanian Independence Day Celebration at Town Center

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February 19th - Juno Beach Civic Association presents a Speaker Program Series 7:00pm

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March 8th & 9th - Annual Art Fest by the Sea - 10am-5pm - A1A between Donald Ross & Marcinski (please click here to be redirected for more information)

March 11th - Juno Beach Municipal Election 7am-7pm for precinct information please click here.

March 13th - Morikami Museum & Gardens Bus Trip - For detailed information click here.

Home
9/11 Remembrance Project
TOWN DIRECTORY & CONTACT INFORMATION
Town Council
Town Departments
Agendas & Minutes
Ordinances & Resolutions
Juno Beach News & Events
Juno Beach Police Department
Building Division
Community Facts
Town Jobs
Flood Protection and Hurricane Awareness
Juno Beach Local Businesses
Employment Opportunities Around Town
Links of Interest
Site Map
Frequently Asked Questions
Financial Information
TRAFFIC VIOLATIONS
Beach Renourishment
Email Updates

In Juno Beach News & Events:

Upcoming Events
Events Calendar
Event Pictures
Newsletters
NEWS FLASH
Friends of the Arts of Juno Beach Art Shows

Floodplain Action Plan

Floodplain Action Plan

Town of Juno Beach
Flood Mitigation Task Force Meeting
February 5, 2013

Print Name	Organization/Representation/ Positon	Phone	Email
RUBEN CRUZ	DIRECTOR of PLANNING + ZONING	(561) 656-0306	rcruz@juno-beach.fl.us
FRANK DAVILA	PLANNING TECHNICIAN	(961) 656-0312	fdavila@juno-beach.fl.us
MATT PAZANSKI	FINANCE DIRECTOR	656-0320	MPAZANSKI@JUNO-BEACH.FL.US
Tony Meriano	Director of Public Works	656-0310	ameriano@juno-beach.fl.us
Andrea Dobbins	Proj. Cordinator	656-0326	adobbins@juno-beach.fl.us
Joseph LoBello	Town Manager	656-0322	jlobello@juno-beach.fl.us
Earl King	CRS Max - VP	9544217794	crsmaxinc@bellsouth.net
Cathy King	CRS Max	"	"
Joan VanStone	CRS Max	/	crsmaxincjvs@Comcast.net

Town of Juno Beach
Flood Mitigation Task Force Meeting
March 12, 2013

Print Name	Organization/Representation	Phone	Email
GERI BRACKMAN	COTE DE LA MER	561-371-9111	Geri@GeriBrackman.com
Beverly Tartaglia	Juno Ocean Walk Condo Assoc.	561-625-1181	btag3444@att.net
Dave Manchester	Juno Ocean Walk Condo Asso.	8477677842	ddiverman@att.net
JoAnne Cassels Lander	Juno Ocean Walk Condo	914 391 3449	MISPIGGY23@AOL.COM
David Cox	The Manor Condo	626-6088	nomailplease
Tom Doyle	SEA OATS	624-4872	None Please
Andria Dobbins	Juno Beach	6560326	adobbins@juno-beach.fl.us
FRANK DAVILA	JUNO BEACH P+Z	656 0312	fdavila@juno-beach.fl.us
RUBEN CRUZ	JUNO BEACH DIRECTOR OF P+Z	656-0306	rcruz@juno-beach.fl.us
MATT PAZANSKI	JUNO BEACH, FINANCE DIRECTOR	656-0320	MPAZANSKI@JUNO-BEACH.FL.US
TONY MERIANO	JUNO BEACH PUBLIC WORKS DIR.	656.0310	amerianoC juno-beach.fl.us
Joan Van Stone	CRS Max Consultants	954-673-1582	crsmaxincjvs@comcast.net
Cathy King	CRS max Consultants	954-421-7794	crsmaxinc@bellsouth.net
CHRIS BARKER	Patriot Insurance Agency LLC	561-694-1776	Chris@gopatriotinsurance.com
BILL KOLLMER	RESIDENT	762-1946	billk@billkollmer.com
Warren Turner	Planning + Zoning Board	626-7343	wbturner@bellsouth.net
Earl King	CRS Max	954-421-7794	crsmaxinc@bellsouth.net

No email

scan

Town of Juno Beach
Flood Mitigation Task Force Meeting
April 2, 2013

No email addr

Print Name	Organization/Representation	Phone	Email
Joan Van Stone	CRS Max Consultants	954-6731582	crsmaxincjvs@Comcast.net
Tom Doyle	SEA OATS	561-624-4872	—
DAVE MANCHESTER	900 JUNO OCEAN WALK CONDO	561 6227500	
JOANNE CASSELS LANDER			MISPIGGY23@AOL.COM
Bev Tartaglia	900 Juno Ocean Walk Condo	5616251181	btag3447@att.net
David Cox	The Manor	561-626-6088	
GERI BRACKMAN	COTE DE LA MER	561-371-9241	Geri@GeriBrackman.com
[illegible] Turner	P+Z ; Brigadoon	561-626-7343	whturner@bellsouth.net
John Fiumm			
JACK Knevet	SPECTATORS JUNO	Beach.	civic Association
BILL KOLLMER	JUNO BEACH - OLYMPUS DR.	762-1946	bill@billkollmer.com
Andrea Dobbins	Juno Beach	6560326	
FRANK DAVILA	JUNO BEACH	656 0312	fdavila@juno-beach.fl.us
Tony Meriano	Juno Beach	656-0310	ameriano@juno-beach.fl.us
Cathy L King	CRS max Consultants Inc	954-428-0857	
Sheridan "Butch" Trierdale	Palm Beach Co		
Ruben Cruz, Director of P+Z	TOWN of JUNO BEACH	(561) 656-0300	
Joe La Bello, Town Manager	"		

Town of Juno Beach
Flood Mitigation Public Information Meeting
April 17, 2013

Print Name	Organization/Representation	Phone	Email
BILL KOLLMER		762-7946	bill@billkollmer.com
Dave Cox	The Manor	626-6088	
PETER TRAVIS	WYO FLOOD COMPANIES	596-3002	PETE.TRAVIS@TORRENTCORP.COM
Ruben Cruz	Juno Beach	656-0306	
Coco Basilone	" " Resident	7246120444	
Andrea Dobbins	Juno Beach		
Cathy L King	CRS Max Consultants	954-421-7794	crsmaxinc@bellsouth.net
Joan Van Store	"	"	
Tony Meriano	Juno Beach	561-626-1122	ameriano@juno-beach.fl.us

Town of Juno Beach
Flood Mitigation Task Force Meeting
April 17, 2013

Print Name	Organization/Representation	Phone	Email
Tom Doyle	Sea Oats	561-624-4872	—
David Cox	The Manor	626-6088	—
Geri Brackman	Cote de la Mer	371-9661	—
Bev Tartaglia	Juno Ocean Walk	561-625 1181	btag3447@att.net
JoAnne Cassels Lander	Juno Ocean Walk	914 391 3449	MISPIGGY23@AOL.COM
Bill Kollmer		762-1946	bill@billkollmer.com
Tony Meriano	Town of Juno Beach	561-656-0310	ameriano@juno-beach.fl.us
Frank Davila	Town of Juno Beach	561-656-0312	fdavila@juno-beach.fl.us
Joan Van Stone			
Cathy King	CRS Max Consultants	954-4217794	
Butch Truesdale	Palm Beach Co DEM		
Andrea Dobbins	Juno Beach	6560326	
Ruben Cruz	Juno Beach	656-0306	

Town of Juno Beach
Flood Mitigation Plan Committee Meeting
May 30, 2013

Print Name	Organization/Representation (only if first time attending or changed)	Phone	Email (only if first time or changed)
Joan VanStone	CRS Max Consultants	954 421 7794	crsmaxincjvs@comcast.net
Tom Doyle	SeA OATS	~~561-624-4572~~ 624-4572	mail goals
Warren Turner	Brigadoon; JB P+Z		
David Cox	The Manor		
Bev Tartaglia	Juno Ocean Walk		
Cheri Sova	Juno Ocean Walk	Cheri Sova	Joanne forward emails
C. Michael Clarey	Juno Ocean Walk Rd		
Wanda Ihrig	JOC	718 877-9108	execbd@gmail.com
Fred Ihrig	JOC	"	"
Andrea Dobbins	Juno	656 0326	
Joe Lo Bello	Juno		
Cathy King	CRS Max Consultants	954-421 7794	crsmaxinc@bellsouth.net

SIGN IN SHEET

June 27, 2013

Name	phone	email
Tom Doyle	561-624-4872	
Andrea Dobbins	6560326	
WARREN TURNER	626 7343	
Diane Quellet	818-3793	dqueller@bellsouth.net
Richard		
Debbie Battles	609-553-1221	
Dolores Kopski	561-389-0886	TRUTH43@aol.com
David Cox	6266088	
FRANK DAVILA	656-0312	fdavila@juno beach.fl.us
Ruben Cruz	656-0306	rcruz@juno-beach.fl.us
Bev Tartaglia	6251181	btag3447@att.net
Julie Richer	622-7500	justoljulie@aol.com
Chris Sora	630-6735	
Joseph LoBello	656-0322	JLobello@juno-beach.fl.us

BILL KOLLMER 762-1946 bill@billkollmer.com

GERI BRACHMAN 371-9611 GERI@GERIBRACHMAN.COM

Joan Van Stone
Cathy King

VIS

Town of Juno Beach
Flood Mitigation Plan Committee Meeting
July 23, 2013

Print Name	Organization/Representation (only if first time attending or changed)	Phone	Email (only if first time or changed)
Joseph F. LoBello			
RICHARD DOMIAN	RESIDENT	622-0216	RICKSTERRSO@ATT.NET
Warren Turner	Brigadoon	626-7343	
David Cox	Manor	626-6088	
Tony Meriano	Juno Beach P.W.	656.0310	ameriano@juno-beach.fl.us
Chris Sora	Juno RV Park	630-6735	
Beverly Tartaglia	Juno Ocean Walk RV	625 1181	btag3447@att.net
Bob HAMILTON	WEXFORD CP	691.0702	RHAMILTONR@HOTMAIL
Andrea Dolbbins	Town of Juno Beach		
Joan Van Stone	CRS Max Consultants	954-673-1582	crsmaxincjvs@comcast.net
Cathy Keing	"	954-421-7794	crsmaxinc@bellsouth.net
DAN OLSON	Beachbound	561-630-0852	danielbolson1@comcast.net
FRANK J DAVILA			
RUBEN CRUZ			

Town of Juno Beach
Flood Mitigation Plan Committee Meeting
August 13, 2013

Print Name	Organization/Representation (only if first time attending or changed)	Phone	Email (only if first time or changed)
Bev Tartaglia	Juno Ocean Walk RV Resort	625 1181	btag3447@att.net
Andrea Dobbins	Town	6560326	
Tom Doyle	Sea Oats	624-4872	—
Dovel Cox	The Manor		
GERI BRACKMAN	COTE D'AZUR MOBILE	371-8111	
Tony Merlano	JUNO BEACH	656-0310	
BILL KOLLMER		762-1946	
FRANK DAVILA	Town	656-0312	
Sydney Vickers	June Beach	799 9969	sydneyjean@bellsouth.net
Doreen Tucker	" "	626-7343	
Joseph LoBello	Town		
Cheri Sore	Juno RV Park	630-6735	
Ruben Cruz	Town		
Joan VanStore	CRS Max Consultants	954-421 7794	crsmaxincjvs@comcast.net
Cathy A. Kyng	"	"	crsmaxinc@bellsouth.net

Town of Juno Beach
Flood Mitigation Plan Committee Meeting
September 5, 2013

Print Name	Organization/Representation (only if first time attending or changed)	Phone	Email (only if first time or changed)
Chris Sora	Geo2 Solutions	630-6735	
Bev Tartaglia	Juno Ocean Walk	625-1181	btag3447@att.net
David Cox	The Manor	626 6088	
Joseph LoBello			
Tom Doyle	Sea Oats	624-4872	
Bill Kallmer		762-1946	
Warren Turner	Brigadoon	626-7343	
Tony Merriano	Juno Beach P.W.	656-0310	amerriano@juno-beach.fl.us
Ruben Cruz	Juno Beach	656-0306	
Joe LoBello	Juno Beach	656-0322	
Andrea Dobbins	Juno Beach	656-0326	

Town of Juno Beach
Flood Mitigation Plan Committee Meeting
September 26, 2013

Print Name	Organization/Representation (only if first time attending or changed)	Phone	Email (only if first time or changed)
GERI BRACKMAN	COTE DE LA MER	371-9611	
Tony Merriano	Juno Beach DPW	656-0310	
David Cox	The Manor	626 6088	
Ivan Stuart	Brigadoon	691-4696	
Joseph Semoff	Brigadoon	775-9971	
[illegible]	Juno By Park	630-6735	
Bev Tartaglia	Juno Ocean Walk	625-1181	
BILL KOLLMER		762-1946	
Joseph Lo Bello	Town J.B.	656-0321	
FRANK DAVILA	Town J.B.	656-0312	
Andrea Dobbins	Town J.B.	6560326	
Walter Tarn	Brigadoon	626-7343	

Town of Juno Beach
Flood Mitigation Plan Committee Meeting
November 7, 2013

Print Name	Organization/Representation (only if first time attending or changed)	Phone	Email (only if first time or changed)
Bev Tartaglia	Juno Ocean Walk RV		btag3447@att.net
Joseph Lo Bello	Town of Juno Beach	656-0322	jlobello@juno-beach.fl.us
GERI BRACKMAN			
WARREN TURNER	Brigadoon	626-2343	
BILL KOLLMER			
Ruben Cruz	Town of Juno Beach		
Andrea Dobbins	Juno Beach		
Tom Doyle	SEA OATS	624-4572	
FRANK DAVILA	JUNO BEACH.		

Town of Juno Beach
Flood Mitigation Plan Committee Meeting
December 12, 2013

Print Name	Organization/Representation (only if first time attending or changed)	Phone	Email (only if first time or changed)
Thomas B. Doyle	SEA OATS	561-624-4872	—
Bev Tartaglia	Juno Ocean Walk	561 625 1181	
David Cox	The Manor	626 6088	
Cheri Bova	Juno Ocean Walk RV	630-6735	
Dave Manchester	Juno Ocean Walk Park RV	847 767 7842	
Joseph Lo Bello	Town of Juno Beach	656-0322	
Andrea Dobbins	Town of Juno Beach	656 0326	
Tony Mariano	Town of Juno Beach	656-0310	
Joan Van Stone	CRS Max	9546731582	
Cathy King	"	954-421-7794	
Earl King	"	"	
Erika Davila	Juno Beach		
Ruben Cruz	" "		
Brian Grover	Juno Ocean Walk	720.320.1751	

FLOOD MITIGATION COMMITTEE
January 30, 2014

Name	Contact Information
Warren Turner	WHturner@bellsouth.com
Earl King	esk3@bellsouth.net
Andrea Dobbins	adobbins@juno-beach.fl.us
Joseph LoBello	jlobello@juno-beach.fl.us
Tom Doyle	624-4872
David Cox	626-6088
Tony Meriano	ameriano@juno-beach.fl.us
Ruben Cruz	rcruz@juno-beach.fl.us
FRANK DAVILA	Fdavila@juno-beach.fl.us.
Bill Kallmer	Bill@BillKallmer

Town of Juno Beach
Flood Mitigation Plan

Kickoff Meeting
Friday, January 18, 2013
4:00 PM

AGENDA

I. Description of Goals

- Flood Mitigation Plan – Key to obtaining grants: FMA, HMGP, PDM, and SRL
- Floodplain Management Plan – Key to improving community flood insurance discounts – Highest points total in history of CRS

II. Description of Process

- Ten-step process
- Required public involvement to maximize points

III. First Steps of Process

- Begin sending correspondence
- Begin documentation
- Begin to establish Flood Mitigation Plan Committee

IV. Organizational Meeting with Staff (January)

- Include Public Works, Engineering, Emergency Management, GIS and Development Services
- Preparation for first Flood Mitigation Plan Committee meeting

V. Concluding Comments

Town of Juno Beach
Floodplain Mitigation and Management Plan

Organizational Meeting
Tuesday, February 5, 2013, 3:30 PM

AGENDA

Introductions – *Andrea Dobbins, CFM, Project Coordinator, Chairperson*

I. Description of Goals – *Earl King, CFM, CRS Max Consultants*

- Flood Mitigation Plan – Key to obtaining grants: FMA, HMGP, PDM, and SRL
- Floodplain Management Plan – Key to improving community flood insurance discounts through the NFIP's Community Rating System

II. Description of Process – *Earl King, CFM, CRS Max Consultants*

- Ten-step process
- Required public involvement
  - Place advertisements to solicit members of the community to become members of the Citizens Planning Committee (1/2 members of public)
    - Include date of next meeting
  - Letters to other agencies and organizations
  - Suggestions for members of public to participate

III. History of Flooding in the City – *(Assign to individual who has knowledge of this)*

- Hotspots
- Mitigation plans

IV. Recent Flooding in the City – *Public Works Department*

V. City Codes Pertaining to Flood Mitigation – *Ruben Cruz, CFM, Acting Director of Planning and Zoning*

VI. Description of CRS Program in the City – *Andrea Dobbins, CFM, Project Coordinator*

VII. Concluding Comments – *Earl King, CFM, CRS Max Consultants*

- Tentatively schedule next meeting
  - Invite members of the public to become task force members
  - Begin Step 4, Assess the Problem

Town of Juno Beach
Floodplain Mitigation and Management Plan

Citizen Planning Committee Meeting
Tuesday, March 12, 2013, 3:30 PM

AGENDA

Introductions – *Andrea Dobbins, CFM, Project Coordinator, Chairperson*

I. Description of Goals – *Earl King, CFM, CRS Max Consultants*

- Flood Mitigation Plan – Key to obtaining grants: FMA, HMGP, PDM, and SRL
- Floodplain Management Plan – Key to improving community flood insurance discounts through the NFIP's Community Rating System

II. Description of Process – *Earl King, CFM, CRS Max Consultants*

- Ten-step process
- Required public involvement
  - The single most crucial component of public involvement is the Citizens Planning Committee
  - Letters to other agencies and organizations
  - Two community meetings

III. History of Flooding in the City – *Andrea Dobbins, CFM, Project Coordinator*

- Hotspots
- Mitigation plans

IV. Recent Flooding in the City – *Anthony Meriano, Public Works Director*

V. City Codes Pertaining to Flood Mitigation – *Ruben Cruz, CFM, Acting Director of Planning and Zoning*

VI. Description of CRS Program in the City – *Andrea Dobbins, CFM, Project Coordinator*

VII. Concluding Comments – *Earl King, CFM, CRS Max Consultants*

- Tentatively schedule next meeting
  - Continue Step 4, Assess the Problem

Town of Juno Beach
Floodplain Mitigation and Management Plan

Citizen Planning Committee Meeting
April 2, 2013
3:30 PM

AGENDA

I. Welcome and Introductory Comments – *Andrea Dobbins, CFM, Chairperson*

II. Recap – *Cathy King, CRS Max Consultants*

- First meeting – Brief look at the goals of the Committee and the process
- Began to assess the hazard – Local perspective:
    - Andrea Dobbins – 3 Repetitive Loss properties
      Hotspots and mitigation plans
    - Anthony Meriano - Recent Flooding in the City
    - Ruben Cruz - City Codes Pertaining to Flood Mitigation
- This meeting – Continued assessment of hazard, but from a more regional and a more inclusive perspective

III. Assess the Hazard

- Description of regional hazards, including storm surge, levee failure and sea level rise – *Butch Truesdale, Palm Beach County*

IV. Questions and Discussion – *Cathy King, CRS Max Consultants*

V. Concluding Comments – *Andrea Dobbins, CFM, Chairperson*

- Next meeting: "Assess the Problem"
- Community Meeting

Public Information Meeting
Flooding in Juno Beach

April 17, 2013
4:30 PM

AGENDA

I. Welcome and Introductory Comments – *Andrea Dobbins,*
Flood Mitigation Plan Committee Chairperson

II. Flood Mitigation Plan – Cathy *King, CRS Max Consultants*

- Goals and description of the process
- Purpose of this meeting – receive input from the Juno Beach community concerning flooding
    - Natural hazards
    - Problems
    - Possible solutions

III. Brief Overview of Flooding in Juno Beach

- Areas of particular concern in Juno Beach – *Anthony Meriano,*
Public Works Director
- Brief overview of insurance claims in Juno Beach – Cathy *King,*
CRS Max Consultants

IV. Community Input

- Natural hazards
- Problems
- Possible solutions

V. Questions and Discussion – *Cathy King, CRS Max Consultants*

VI. Concluding Comments – *Andrea Dobbins, Chairperson*

Town of Juno Beach
Floodplain Mitigation and Management Plan

Citizen Planning Committee Meeting
April 17, 2013
3:30 PM

AGENDA

I. Welcome and Introductory Comments – *Andrea Dobbins, CFM, Chairperson*

II. Assess the Problem

- Description of regional problems, including storm surge, levee failure and sea level rise – *Butch Truesdale, Palm Beach County*

III. Questions and Discussion – *Cathy King, CRS Max Consultants*

IV. Concluding Comments – *Andrea Dobbins, CFM, Chairperson*

- Next meeting: Continue the Assessment of the Problem
- Community-wide meeting following Citizen Planning Committee meeting

Town of Juno Beach
Floodplain Mitigation and Management Plan

Task Force Meeting
May 30, 2013
3:30 PM

AGENDA

I. Welcome and Introductory Comments – *Andrea Dobbins, CFM, Chairperson*

II. Recap – *Cathy King, CRS Max Consultants*

- First three meetings – Brief look at the goals of the Task Force and the process, followed by assessment of flood hazard (and other hazards) and assessment of the problem created by flooding and other hazards
- First three meetings – Informational, educational, preparatory
- This meeting – Begin to put learning into practice – practical, creative, powerful
- Begin by looking at the issue in a broad, general way

III. Set Goals – *Cathy King, CRS Max Consultants*

- This meeting – Lay out some general goals
- Brainstorm
- Look at other examples
- Discuss
- Formulate set of goals

IV. Concluding Comments – *Andrea Dobbins, CFM, Chairperson*

- Next meeting: begin "Review of Possible Activities"

Town of Juno Beach
Floodplain Mitigation and Management Plan

Task Force Meeting
June 27, 2013
3:30 PM

AGENDA

I. Welcome and Introductory Comments – *Andrea Dobbins, CFM, Chairperson*

II. Recap – *Cathy King, CRS Max Consultants*

- First three meetings – Brief look at the goals of the Task Force and the process, followed by assessment of flood hazard (and other hazards) and assessment of the problem created by flooding and other hazards
- First three meetings – Informational, educational, preparatory
- This meeting – Begin to put learning into practice – practical, creative, powerful

III. Continue Step 6, Set Goals – *Cathy King*

- Discuss "Proposed Goals"
- Brainstorm
- Look at other examples
- Formulate final set of goals

IV. Begin Next Step, Review of Possible Activities – *Cathy King*

V. Concluding Comments – *Andrea Dobbins*

- Next meeting: Continue "Review of Possible Activities"

Town of Juno Beach
Floodplain Mitigation and Management Plan

Task Force Meeting
July 23, 2013
3:30 PM

AGENDA

- Welcome and Introductory Comments – *Andrea Dobbins, CFM, Chairperson*

- Continue Step 6, Set Goals – *Cathy King*
  - Discuss REVISED "Proposed Goals"
  - Approval of goals

- Begin Next Step 7, Review of Possible Activities – *Cathy King*
  - "Possible Activities" versus "Action Plan"
  - Discuss the items on the handout from last month's meeting, "Review of Possible Activities" examples
  - Add activities suggested by Committee

- Concluding Comments – *Andrea Dobbins*
  - Next meeting: Continue "Review of Possible Activities"

Town of Juno Beach
Floodplain Mitigation and Management Plan

Task Force Meeting
August 13, 2013
3:30 PM

AGENDA

- Welcome and Introductory Comments – *Andrea Dobbins, CFM, Chairperson*

- Continue Step 7, Review of Possible Activities – *Cathy King*
  - "Possible Activities" versus "Action Plan"
  - Continue to discuss the items on the handout from last month's meeting, "Review of Possible Activities" examples
  - Add activities suggested by Committee

- Concluding Comments – *Andrea Dobbins*
  - Set date for next meeting: Continue "Review of Possible Activities"

Town of Juno Beach
Floodplain Mitigation and Management Plan

Committee Meeting
September 5, 2013
3:30 PM

AGENDA

- Welcome and Introductory Comments – *Andrea Dobbins, CFM, Chairperson*

- Brief Overview of Process

- Continue Step 7, Review of Possible Activities – *Cathy King*
  - "Possible Activities" versus "Action Plan"
  - Continue to discuss the items on the handout, "Review of Possible Activities" examples
  - Add activities suggested by Committee

- Concluding Comments – *Andrea Dobbins*
  - Set date for next meeting: Begin "Action Plan"

Town of Juno Beach
Floodplain Mitigation and Management Plan

Committee Meeting
November 7, 2013
3:30 PM

AGENDA

- Welcome and Introductory Comments – *Andrea Dobbins, CFM, Chairperson*

- Brief Overview of Process

- Complete Step 8, Action Plan – *Earl King*
    - Complete discussion concerning the items on the handout, "Review of Possible Activities" examples
    - Add activities suggested by Committee

- Concluding Comments – *Andrea Dobbins*
    - Set date for next meeting: Approve Plan

      Community Meeting

Town of Juno Beach
Floodplain Mitigation and Management Plan

Committee Meeting
November 7, 2013
3:30 PM

AGENDA

- Welcome and Introductory Comments – *Andrea Dobbins, CFM, Chairperson*

- Brief Overview of Process

- Step 8, Action Plan – *Earl King*
  - Discuss Action Plan Draft
  - Review wording, prioritization, etc.

- Concluding Comments – *Andrea Dobbins*
  - Set date for next meeting: Approve Action Plan
    Community Meeting

Town of Juno Beach
Floodplain Mitigation and Management Plan

Committee Meeting
December 12, 2013
3:30 PM

AGENDA

- Welcome and Introductory Comments – *Andrea Dobbins, CFM, Chairperson*

- Brief Overview of Process

- Step 8, Action Plan – *Earl King*
    - Presentation of revised Action Plan
    - Approval of revised Action Plan by Committee

- Concluding Comments – *Andrea Dobbins*
    - Set date for Community Meeting

Town of Juno Beach Flood Mitigation Plan

Organizational Meeting

Tuesday, February 5, 2013, 3:30 p.m.

Minutes

Attendees:
Andrea Dobbins, Town of Juno Beach Projects Coordinator
Joseph Lo Bello, Town of Juno Beach, Town Manager
Cathy King, CRS Max Consultants, Inc., President
Earl King, CRS Max Consultants, Inc., Project Manager
Joan Van Stone, CRS Max Consultants, Inc., Consultant
Ruben Cruz, Town of Juno Beach, Director of Planning and Zoning
Frank Davila, Town of Juno Beach, Planning Technician
Matthew Pazanski, Finance Director
Anthony Meriano, Public Works Director

Andrea Dobbins made introductions. Ruben Cruz is a Certified Floodplain Manager. Tony Meriano is in charge of the NPDES for the Town. Jo Lo Bello and Matthew Pazanski have been on the Town Staff for 25 years.

Notified staff to keep track of time spent working on Flood Mitigation Plan (FMP). There will be a spreadsheet on the "S" drive.

CRS Max offered to bring light refreshments to all FMP citizen committee meetings. This was approved by Juno Beach Staff.

Earl King explained that CRS Max Consultants has worked with the two highest scoring communities in the history of the Community Rating System (CRS) program to produce their FMPs. There will be more points available in the new *CRS Coordinator's Manual,* which is expected to be approved the summer of 2013. Earl King described the Goals of Floodplain Management and described the 10-step process that must be followed.

Earl King explained the types of stakeholders that would be valuable additions to the FMP committee. Staff recommended some of the following contacts. The Staff will contact potential committee members. Information contained in advertisement samples provided to Andrea by CRS Max will help with recruiting. CRS Max is available to assist with recruiting at Staff's request:

Florida Power & Light
Tire Kingdom
Chris Banker
Forum Homeowners Association
Eileen at the Trailer Park (drainage work in progress there)

Andrea Dobbins was given a document by CRS Max that describes the ideal makeup of the committee. Some others to consider:
Contractors
Bankers
Real Estate industry
Civil Engineer

Letters will be mailed to other agencies, organizations, neighboring communities, etc. to ask for their input and to ask if they are doing anything that could affect flooding in the Town of Juno Beach. An example letter was given to Andrea Dobbins for her approval. Typically the Town Manager will sign the letter. CRS Max will present a list of possible recipients (usually 60 to 140) to Andrea. Include the Palm Beach County Environmental Resources Management.

Example advertisements were presented to Andrea by CRS Max. These ads are to be used to recruit members of the public to serve on the FMP Civilian Committee. Half of the members must be non-government. For example, if there are four staff members on the committee, then there must be four members of the public as well. The public must be invited to every meeting, via website, marquee, social media, etc.

Andrea described the history of flooding in the Town:
Kagan Park – Tony Meriano replaced culvert & drainage recently. There are no insurable buildings

US1 - structures flood when it rains. Needs structural drainage system. Swales are being improved and installing impervious sidewalks, but that is not enough.

There are three Repetitive Loss (RL) properties in the Town: By Fran Murphy, World of Rugs; 500 Ocean Dr., Brigadoon pool house. No one at the location knows when this happened; Celestial, individual unit.

The Forum and the Colony have drainage issues, but are not RL properties.

Drainage has to be retained on the property in the Town. The Town does not have a drainage system. (AD: The town does have a "drainage" system but it consists of catch basins, French drains and exfiltration trenches and does not run through out the entire town only in certain areas. The structure map can be provided to you)

RV Park floods with heavy rain as it is located in a valley. At one time the Town helped to fund a study on this private property, but the property owners did not approve any of the recommendations of the Study. This is a gravity problem that requires that a structural system be designed. This RV Park has been the only life, safety, health issue related to flooding, due to the October, 1995 no name storm. There is environmentally protected land next door to the RV Park. Consequently drainage into that area is prohibited by the Palm Beach County Environmental Resources Management Department.

Town has little control over State and County roads. The Towns seeks cooperation and has been trying to resolve the drainage problems.

Ruben Cruz is currently doing a soil plan. Town has very sandy soil that percolates well and has good dunes. Also is working on the Comprehensive Plan and plans to integrate the Flood Mitigation Plan into the Comp Plan.

3-Year, 24 hr design storm in Central areas of Town. Good Percolation here.
5-year, 24 hr design storm in the north and south areas of Town.

Single-family homes have to retain on site. Water cannot drain into Pelican Lake.
Residents can use infiltration trench (costlier) or swale.

Tony described work completed to prevent sinkholes. A diver did grouting on the stormwater drainage system that extends on Universe Blvd and ultimately discharges into the Intracoastal. A developer owns the land and has agreed to maintain.

Town hired a consulting engineer to create a Stormwater Management Study. Town has recently implemented one of three recommended improvements. Two are on back burner. CRS Max would like to have a copy of this study.

Flooding at the Hampton Inn on US1 blamed on runoff from US1 due to work being done now. Town has worked with them to help alleviate the problem.

The County waits for 72 hours or greater to work on ponding on roads before reacting.

Andrea explains the CRS program in the Town. September is National Preparedness Month. There will be a display in the lobby and the CRS "10 topics" in the Town Newsletter. The Town gets CRS credit for PFI and sends information to all lenders and real estate agents. At least two local real estate agents have agreed to disclose the flood hazard to potential buyers. The Town is located on a barrier island.

CRS Max will contact Andrea with possible meeting dates for early March.

Town of Juno Beach Flood Mitigation Committee Meeting
March 12, 2013
Juno Beach Town Center

Attendees:
Andrea Dobbins – Town of Juno Beach Staff
Matt Pazanski – Town of Juno Beach Finance Director

Ruben Cruz - Director of Planning and Zoning, Town of Juno Beach

Frank Davila – Planning Technician, Town of Juno Beach

Tony Meriano – Town of Juno Beach Public Works Director

Joan Van Stone – CRS Max Consultants, Inc.

Cathy King – CRS Max Consultants, Inc.

Beverly Tartaglia – Juno Ocean Walk Condo Association

David Manchester – Secretary of the Board Juno Ocean Walk

David Cox – Vice President, The Manor Condo

JoAnne Lander - President of Juno Ocean Walk Condo

Tom Doyle – Sea Oats

Geri Brackman – Cote de la Mer, and local Real Estate Agent

Chris Banker – Patriot Insurance Agency, LLC in Juno Beach

Bill Kollmer – Resident since 1974

Warren Turner – 25 year resident, Planning and Zoning Board

Earl King – CRS Max Consultants, Inc.

Welcome and thanks by Andrea Dobbins and Town Manager

Meeting will be recorded for purpose of minutes, can be turned off if requested.

Earl: Oversight of what this is all about. You're doing a really important job for the town.
First, the purpose is to be able to get a plan in place that will help the town to look forward and help to deal with floodplain management. By putting our heads together both here and the town and also with

the County, we'll be able to come up with a plan that will help direct the steps of the town to make it better mitigate flooding in the future. Good for the community.

One has to do with the Division of Emergency Management for the State. It's the one from whom the town was able to get a grant. This grant is allowing us to put the plan together because the grant pays for 75% of the cost of putting the plan together and chances are the rest of the 25% the town will be able to get through in –king so this may not cost the town one penny if everything works out according to plan. The grant gives FEMA funding and by doing that we're able to put this plan together in a way that would n to be costly to the city. Once the plan is done it will be reviewed by the division of emergency management. It makes a good opportunity for grant funding to come in. There are several grant funding opportunities through FEMA. The Flood mitigation Assistance Grant, FMA, there's Hazard Mitigation Assistance Grant, HMGP, there's several grants for repetitive loss Properties, which are properties that have had quite a few different flooding events and there's pre-disaster mitigation grants PDM. Those are examples of grants that are available. As a result of having this plan together if we identify certain projects then those grants will be able to kick in. So this will be good for the city by making an avenue for grants to come in. Another thing that this is good for is the CRS program. This CRS program has been established by FEMA some time ago and the whole strategy for the program is to find a way for communities to be encouraged to do things that will mitigate, or reduce flooding in the community. The way that they do this was to establish interaction with the insurance. There's the Insurance Service Office, thrum whom the CRS program works and there's a rating system, where the communities to certain activities to get points and the more pints they get the more reduction in all of the people who live in the floodplain will have and also those who are outside the floodplain will also have a reduction for flood insurance premiums so it's a rather intricate type of systems. Communities that do a lot to try to reduce the flooding in their community (8:54) will get a lot of points and therefore a lot of reductions in flood insurance. The Town of Juno Beach has the best rate in all of Florida. There's no community in Florida that has a better rating than the Town of Juno Beach. As a result that has been done within the CRS program the Town of Juno Beach is able to save 25 % of the insurance premium m for all residents and businesses that are in the floodplain and 10% for all that are outside the floodplain. Kudos to the Town of Juno Beach for doing that. As a result of what we're doing we will strengthen the solid rating that they now have in the CRS program by adding more points. Right now there are points that the town is getting is less than 100 for this particular activity, Flood Mitigation Planning because they've been working with Palm Beach County. The County has done some good things but just hasn't been able to get a lot more than that. The last plan that we did for Santa Rosa County is scored in the CRS program scored more than any other plans that have ever been done in the history of the program. It scored 273 points out of a total of 294. Really help the county get to the next level. A good thing that has happened this year, is there's a new CRS Coordinators Manual that is coming out and the amount of points that is available in the new manual, The revised program is instead of topping off at 294 points, it's topping off at 382 points so we plan and intend to help Juno Beach become the community with the highest rating in their Floodplain Management Plan of any community throughout the history of the CRS Program. The most important thing is to have strong community participation like ewe have right here. Having so many from different aspects of the community, different professions. There are these two things; one is the grans through the FDM and the other is the insurance premium reductions through the CRS program. It will take we anticipate about 6 months, meeting about twice a month. Once we do that, once we've gone through the process then we'll have a product that is something to be proud of. There's a 10-step process that's involved:

1. Organize (that's been done)

2. Involve the public (being done right now) There's a total of 120 point in all the ways of involving the public.
3. Coordinate. That involves getting input from other agencies, other communities, from FEMA and that's going to be done. A letter is going to be sent out to over 100 different agencies or organization that may be able to input and we'll also coordinate with them on another level as well.
4. Assess the Hazard. As a committee, look at what's happening in the town, in the area and determine exactly what the risks are. In addition to what you'll be hearing today from some of the staff remember, two weeks from today, a gentleman from Palm Beach County to come and give us an overview of the whole county which would include the Town. So you get a larger scope of things.
5. Assess the Problem. Looking not only at the flooding but how it affects the community, As a consultant we'll help direct all of these steps,
6. The fun part. You've learning all this information, now you start setting goals; where we go from here.
7. Once you set the goals, no how do we meet those goals. Then come up with all sorts of ideas, or activities as they're called. There will be some discussion if these would be good to include in our plan or not.
8. Action Plan. That's how this community is going to work to reduce he negative effects of flooding over the next five or more years.
9. Implement, evaluate, and revise the plan.

There will be two community meetings that will not only invite those of us from the committee but also the rest of the community to give their input as well.
Andrea: (19:38) As the project Coordinator for the Town it is my responsibility to make sure that we keep that level of points that we receive through the grading of the ISO so that our residents receive the benefit on their flood insurance. Residents that are in the SFHA receive the 25% discount based on everything that the town does; Tony does a lot of work with his guys out in the field maintaining the infrastructure, working on the swales for flooding. They've done a number of projects where we have here at Pelican Lake, the outflow and the drainage actually goes over to Seminole and he repaired the pipe out there so there's a lot of work that goes on behind the scenes. Whether it's in the office, keeping track of the paperwork or the hands-on out there. Ruben and Frank do a lot from a planning perspective, they have managed what is called a GIS, which is the computer program that shows the FEMA map overlaid on our Town map. So that if you have somebody that's buying a and they want to know what their responsibility is going to be with that parcel; are they in a flood zone, how's that going to impact the bottom line? They call up the town and we can o,,edoate;u answer their questions for them. It's just an additional higher level of service. We're fortunate to have CRS Max working for us. Right now we do piggy back with the County. We utilize the local Mitigation Strategy, which is a Hazard Mitigation Plan that the County has compiled. It addresses every hazard here in Palm Beach County. They County has come up with ways to mitigate and to keep your property and your family safe. By putting together our own personalized plan, we're tailoring it for Juno Beach. It's going to benefit business owners and residents. A couple of the hot spots; a couple of properties are considered repetitive loss. That means that they've had 2 or more losses of $1000. Or more within a 10-year rolling timeframe. We have 3 properties; I can't disclose exactly where they are. There's one on Ocean Drive, not too far from us. One on Celestial and then one on US 1. As we get into this plan, hopefully we'll address these hot spots and better protect our home and businesses from flooding. Another area that is not repetitive loss but has shown to be a problem area is Garvey Park out back. Because of this structure and the topography out there, it lends itself to be kind of a basin and so we have a lot of runoff

and flooding that occurs and we've addressed that in the past with an engineering plan that the town engineer put together and we have some different options, but of course it takes time and money. You don't always have both.

Tony M : Everyone who lives in town has seen many of the locations that have been flooded or at least there has been stormwater on the roadways. During any type of heavy rain event we're in the process of doing a number of improvements to help mitigate that. I think there is going to be a significant improvement, particularly on US 1. As you see the state has been working on it for about the past decade. For about the last year and a half or so. Although a true structured drainage system is not part of it, what they've done is increase some of the size of the swales. They've increased some of the existing French drains where the water would percolate in the ground and will do and have done some other paving improvements that will help to get the water off the roadway quicker. Is it going to work in each and every storm? Unlikely, however I think in the majority of the quick, heavy rainfalls, you'll see water pond on the roadway, but it will runoff much quicker and it will percolate into the ground much quicker. Pictures that I had taken over the past few years. Some will show what the erosion occurred on the beaches. This is Ocean Drive, right down the street. I'm sure we've all seen it. Here's another one where I'm sure we've all seen it or waded through it. Here's one of the local streets where we see some ponding. Here's one of US 1 that we all know by the Mobile Station. I remember taking that particular one, and that was after he drove by and I had the window open and I got a shower inside. Even alongside the lake we can also see that there's some flooding. Here again this is by our park. Our police are not exempt from having to deal with it as well. See that we've had some erosion issues in the past from having some water running off. Typically it will be gone within 48 hours. The County has the operation and maintenance of Ocean Drive where most of the ponding occurs. As I understand it, if it's on the roadway beyond 72 hours they will react. I've never seen it last on the roadway for more than 72 hours. We're very fortunate that we have a soil composition that helps drain it very quick. The lake becomes the catalyst of what occurs on our roadways. We have a very limited public drainage system. It encompasses very small portion of town. However that water is conveyed through the stormdrain system into Pelican Lake, just to our south. Then it flows through a storm drain system that goes through our park area and into eventually the Seminole golf Course and eventually into Little Lake Worth. It's controlled by a structure that allows the water to outflow from the lake and then it goes through this cavernous pipe that we just recently repaired, had replaced, I should say. As you can see in the picture, this is probably the reason why. How old was that? Did it last as long as it should have? It was corrugated pipe which isn't good with salt in the water. So we replaced it with a plastic pipe as you can see. When you're working underground be careful where you dig. In closing, we know that there are some particular spots that we do get the ponding however we're one little bite at a time. We're working on various locations. We expect to see some improvements but not only on what's conveyed through the town, but what's conveyed on the State Highway as well, and hopefully we have everything working together we should less of a problem when we do have any rain events.
All these pictures are not all of the hotspots, correct?

No. There are other locations and the RV Park is one, there is one on Atlantic. There are some over on the west side of town. We've been very fortunate, that whatever situation has occurred tends to disappear rather quickly. Chris I know over by the front of your property there's always been a chronic issue. Down by the Hampton Inn you've seen how they've increased the size of some of those swales to capture the water by also removing some of that existing soil; they'll make the ground more pervious. The sidewalks that you've seen put into town, a large portion of them are pervious walks. That means when the water gets on there, instead of just sheeting over it now is absorbed through the concrete, and percolates into the ground. These are all types of processes construction wise that will help keep

water off the roadways, off of properties and putting it back into recharging the acquirer where it should be going.

Andrea; One other item that really impacts the town and our CRS rating is our town codes. Ruben has a number of ordinances and codes, the building code that he adheres to and makes sure that every single plan, every development that comes through (33:55) is built to a certain level. Ruben will talk about the higher level of standards the Town has in order to keep our property and our residents safe

Ruben: As you see with a lot of the projects that the Town does, takes on a lot of the private properties do so as well. So when they come in for building permits we look at it and when wesee that it's going to impact drainage that they, our codes have been written that they retain watedr on-site and it's also part of the SFWMD's requirement for on-site drainage. Our codes, because of our uniquie situation here in Juno Beach, that we have the ridge, the town is broken up into the Northern, the Central and the Southern portions and given this southern portion/central sits up higher on the ridge, the drainage requirements are different than that of the ones that are to the north of us because they're low-l;ying, so we have a 5-year, 24 hour storm event and a 3-year 24-hour storm event that we make sure when a plan comes in that theyre adhering to our town engineer reviews the plans for those requirements there are certain calculations that are qequired concidering volume of water that is retained on site and the RV park is one private property owner that has seen; they've had a drainage problem for quite a while and the town and they've asked the town for relief and we've explained tot hem that it's private property and you have to undertake thast project yourself. So they have and they've done a recent oproject that should help alleviate their situation there. And like Tony said

Town of Juno Beach Flood Mitigation Committee Meeting
April 17, 2013
Juno Beach Town Center

Attendees:
Andrea Dobbins – Town of Juno Beach Staff
Ruben Cruz - Director of Planning and Zoning, Town of Juno Beach
Frank Davila – Planning Technician, Town of Juno Beach
Tony Meriano – Town of Juno Beach Public Works Director
Joan Van Stone – CRS Max Consultants, Inc.
Cathy King – CRS Max Consultants, Inc.
Beverly Tartaglia – Juno Ocean Walk Condo Association
David Cox – Vice President, The Manor Condo
JoAnne Lander - President of Juno Ocean Walk Condo
Tom Doyle – Sea Oats
Geri Brackman – Cote de la Mer, and local Real Estate Agent
Bill Kollmer – Resident since 1974

Welcome and thanks by Andrea Dobbins.

Review of the 10- step planning process and which steps have been completed and which are to come. Introduction of Butch Truesdale from Palm Beach County Emergency Management Division by Cathy King.

Butch: This month we're supposed to see the Flood Insurance Rate Maps. We expect that those are going to increase the size of our Special Flood Hazard Area in the County, but we don't know the details yet so that's a second change and now the NFIP is going through some major changes. So it's a year or total chaos for the Feds. Florida writes 40% of all the flood insurance policies in the Country. Actually 42%. PBC is at the top or among the top several in Florida. So that means we're carrying a lot of the financial load. We have 157,000 policies the last count. That's county-wide, not just unincorporated. Why the changes are happening? They've been operating in the red, the NFIP. They haven't been renewed until the 11th hour the last several years. They claim that they've subsidized too many policies that don't reflect the true flood threat. That's probably true. They allow grandfathering. So if you were getting a break on your insurance the new owner would get the break too. They're going to stop that. They've had a lot of flood claims since 1985; there's been non-stop flooding around the country. Then the NFIP has had to borrow from the Treasure after they settle with New York and New Jersey, Sandy's flooding up there they'll be about $28 billion in the red. They've been given a 5-year extensive of life, but it's contingent on them following this Biggert-Waters Act of 2012. It's a reform act. Basically what it does is it eliminates subsidies and raises rates on certain classes of property over time. Who's effected: Starting in this past January if you had a non- primary residence, a second home, you're going to get effective this last Jan a 25% annual increase until the rates reflect the true risk. They say it's going to be three to 4 years of increases. You're looking at 100% increase in flood insurance. Flood insurance has always been a big bargain, but t's not going to be that/ Effective in Oct it's going to be a 25% rate increase for Severe repetitive loss properties. They're the ones that have 4 claims of over $500 within a 10-year period. They're going to have a 25% increase annually. Commercial properties that are in the SFHA are going to be hit for 25%. Substantially damaged or substantially improved properties; that's

where you're dealing with 50% of the value of the structure. They said there's no change on primary residences with current policies in the SFHA will keep their subsidized rates until the property is sold, the policy lapses, the property suffers severe repeated loss and purchase a new policy. So if you don't have those things and you already have a policy in the SFHA, they supposedly not going to touch you for the time being. One big catch effective 2014, properties affected by map changes will increase by 20% a year over 5 years. Keep in mind that we're getting new FIRM maps for the whole county. So in effect, if they're true to their word, hopefully they're wrong, that means that virtually everybody will be subject to increases in their flood insurance. That doesn't include the 5.3 % national rate increase to fill the reserve fund that they pay claims out of and a 10% federal policy fee for their administrative costs. What can you do to contain the cost as a homeowner talk to your insurance agent and your banks and see if you have any options. There won't be much. You could do some structural mitigation projects. Do something to reduce your flood loss. Community side: Optimize our CRS class ratings. As a 5 you're currently getting 25% savings on properties that are in the SFHA. You could explore state mitigation grants and there are some grants that are still available. They open up different times of the year. We're expecting some to open up soon and you could offer technical advice to property owners to try to reduce their obligation. (7:34) Even with the 25% savings through CRS you're losing ground. The program is going to be more important than ever before. Insurance costs will increase and the CRS and LMS programs will be becoming increasing important. It will be a while before we know the full impact, but it's pretty clear the on the 30th of this month when we look at the new FIRM map drafts, we're expecting to see an increase in the SFHA significant. And if this program goes forward the way it is it's going to create another crisis, just like the property insurance here in Florida, in my opinion. Ironically while all this is going on there are legislators who are lobbying for lower insurance rates and higher subsidies. So they're fighting up stream. The bottom line is nobody really knows what's going to happen but in any case it doesn't look like it's going to be good news. (8:59)

Question: Why do we see ads on TV about flood insurance saying that policies are $129 a year?

Butch: It's a preferred policy for somebody that has virtually no risk but has taken advantage of the plan. Most of us who don't have preferred policies are paying somewhere between $500 and up to $7-8 thousand a year in flood insurance. One of our assistant County Administrators pays about $3500 a year in flood insurance on a second home he has up in Tallahassee and he can't sell, he's in an A Zone. He's in a 4-unit building on the second floor but the association is having to pay big time and his share is $3500. He feels that he's trapped. There's going to be a ton of that going on.

Question: Do you anticipate that if you're in a V zone that you'll become an A or that those that are not in a SFHA will be brought into a B or an A?

Butch: It's hard to predict. If they're using a statistical, supposedly scientific method, using LIDAR data, which is digital data shot from planes, and that's supposed to be accurate in figuring elevation down to fractions of inches. So supposedly they'll be more accurate. But then the assumption is how they are going to classify the A, B, C, and X Zones. Are they going to change the rules at all?

Question: When is that coming out?

Butch: The 30th of this month there's just our flood mitigation technical Advisory Committee that's made up of the top engineering firms, the water control districts, SFWMD, the County's Water Resource Manager and was going to get t sneak preview. We can't even keep the maps. They're going o show us and see what we think of them. Eleven years ago they did that and we said this is garbage; you made all

kinds of errors. They made assumptions like on the C-51 canal, which is the main canal, that during a hurricane we would close the gates. That's absurd. There were all kinds of mistakes. They weren't using the LIDAR date. We have LIDAR data that we shared with them. But by the time we got the LIDAR in they were having financial troubles, Katrina came along, the Army Corps was spending their time there. Then after that they started working on the Herbert Hoover Dyke here and that was taking all their time and money. They said we should have the maps either by the end of this year or in 2014. If everything looks kosher with these drafts, it's possible that we'd have maps by the end of this year.

Question: Any rite of appeal?

Butch: Yes. The last time they said we don't agree with you, we're going to go to public hearing. Our group said, go to it, we'll be there with you with the media, and we'll respond. We have more horsepower on that committee than the Army Corp had to bring to bear, so they weren't about to go to public hearing. What I'm going to do today is talk about flood threats in PBC. I've tried to tailor it somewhat to Juno. We're going to talk about the flood risk. We've talked about the Hazard analysis and basically the hazards that we are most concerned with are flooding, hurricanes, storm surge. They're the primary. Things like the dike breach are far out of reach, and tsunami and rogue waves are not a big likelihood, nothing to be concerned about now.

Van Stone: We will write about that in the plan because it is in the LMS.

Butch: Sea level rise, which isn't in the County LMS, which definitely is a consideration. There are things that could go on here, the whole county, coastal area based on sea level rise. The water inundation problem, getting land that's permanently covered with water because of sea level rise; that's way down the road. 2060 if the worst scenarios come true it would start being a problem. However, right now we're having problems with other things that are being caused by a little bit of sea level rise. Our storm surge and our high tides have changed. Our drainage systems that are gradually fed into the ocean if they're piped; a little bit of rise on the end of the pipe and the water backs up and you get inland flooding. The same thing happens without the pipe in the canal systems. Any coastal area wells and the aquifer depend on the salt water intrusion is getting into there and that salt water/ fresh water line is moving further and further west. It's a concern.. We've had 3 wells closed so far: Lake Worth, Manalapan and it might be Lantana.

Question: What does that mean that 3 wells? Is that supplying drinking water for how big of a population?

Butch: For the whole population of those communities. They draw the water from the aquifer if they can't get it from the wells. But the wells have to close up three. Up here in Jupiter, they have a desalinization plant, which is the first one in the county and we'll start seeing more of those in the future, and they're not cheap. That's going to have to be our response. Because we're going to lose the battle ultimately to salt water intrusion.

Question: Do we have any account on that in the wells that you see?

Tony: No. We check our wells. As a matter of fact Verification didn't see any signs. Do you know what they're at? Actually we just replaced a pump yesterday and it was at 8 feet We have the irrigation right out front here. They're about 50-60

Butch: So far so good, but you can't afford to wait. You have to be trying to be as proactive as you can. If you look at that line where the salt water meets the fresh water, it stays pretty coastal here, but as it gets further south in our county it kind of creeps in. Florida leads the nation in flooding. It happens in all 50 states, but we're the most at-risk state. $1.8 million in insurance policies, 41% of the US totals. Yet it represents only 5.6% of the population. We pay to live in paradise. PBC is particularly susceptible because it's flat, low-lying, heavily developed, and coastal. We have frequent intense rain events. We have tropical storms, and as you'll see tropical storms are almost worse than hurricanes for flooding. The complex water management systems that we have. All contributors to our susceptibility. Three forms of flooding: Flash flooding, which is rapid buildup from intense rain in one place that exceeds our ability to drain. Then there's general flooding which is a buildup over time from separate rainfall events that gradually saturates the soil and over loads the drainage and retention systems. Then we have water body flooding, which is periodic flooding of land adjacent to the catchment canals, lakes, ponds, ditches and other stormwater bodies where the containment limits are exceeded where barriers fail. We don't have riverine flooding. We have one river and it hasn't flooded in a long time. I don't know if it's ever really flooded in recorded history. So riverine flooding, which is what the government is used to dealing with, doesn't really apply here. We get what they call sheet flooding. We're flat, so we're basically one big floodplain, the whole county. Isaac wasn't even the SFHA and it flooded big time. If the rain sits over you for a matter of time and gives you 18" over a 24 hour period, you're going to have some localized flooding. We get 60" of rain annually. 50% of that happens in a 4 month period. We've had a drought for the last 4 years so it's cyclical. The water control district SFWMD. 2300 miles of canals and levees. More than 60 pump stations, 400 flow control structures, and they're trying to control all the water from that standpoint. Where the SFHA areas are is not where most of the flooding occurs in the county. Isaac caused most flooding on the SR 7 corridor. The entire county is a floodplain. Flooding can and has occurred virtually everywhere. Intense rain, frequent rain, long duration rain, surface conditions, topography, and inadequate drainage contribute to flooding in the county. That surface conditions with development, we tend to raise our crowns of the road and we also tend to build adjacent homes at a higher elevation so you get runoff. SO we create a lot of our own problems. Some of the older areas out in West Palm Beach never flooded. Now in recent history, they get flooded all the time. That's one of the reasons. Tropical storm Isaac, we were pretty much out of the cone, really don't have any direct effects according to forecasts. This storm was huge that had rain bands that went out hundreds of miles. SR 7 corridor is where the rain is. It stayed there for 24 hours. That's over 400 miles from the center of the storm. Juno Beach only had only 5.85 inches in this storm Irene, and the October 1995 storm, you had a lot more rain. There was one recorded are that had 18", The Acreage. Led to a partial activation. Whchi means that we didn't bring everybody in, but needed people that were relevant to the flooding and to recovery capabilities. Some flooded areas were within the SFHA but almost all of them outside. The national average is 25% of structures flooded happens outside of the SFHA. In our case it's more like 60%. Most of the homes had little or none and they considered anything into the garage area as flooding. We went out and did damage assessments. Driving through the areas in high wheeled vehicles. We had teams made up of FEMA, the State, the County agencies and Emergency Management and we went out and talked to as many of the residents as we could get to. Road damage and a lot of infrastructure damage. We had new canals come through areas, where there wasn't one there before, but now there is. On a larger scale, when you're talking about hurricanes, we're going to see that on Singer Island, where it cuts through and all the sudden there's no connection between one part of the island and the other part. That's going to be difficult to deal with. Our theory is that if you build the pads high, the homes will be safe. But because of a lack of storage area, we use the streets and yards as part of the water retention area, so you can see that it worked very well. The homes are high and dry but they're isolated there. The problem was getting the water out of there. They're isolated; there's a loss of function. Some people were isolated for close to a week.

It isn't like we're dealing with gravity systems out there where we can move water fast. So we had to get very creative in how we had the water move. In fact most of the water was pumped west and then east to get it out of there. The private systems where the HOAs have they're notoriously bad because they don't keep the drains clear and functional. That was a major issue. That's the tier 1 at the homeowner level. Then the water control districts which take that water that the HOAs have and some of the lesser volumes of water, and they have their system. We have I think 20 water control districts and they have some issues with their drainage and they had a lot of infrastructure problems, with the roads and the canals that they had to deal with so they weren't quite up to speed with what they needed to do. The main systems which is the larger canals or SFWMD they have the overall system. Those three levels have to be working in harmony, but it starts with the local, privately owned lakes and canals and if they're not kept well, then everything else suffers. My message to homeowners' associations is to pay attention to that.

Fish kill was phenomenal, which created health issues. Then we had mosquitoes creating health issues. Presented the possibility of health issues. Dept. of Health did a great job. Nursery's a lot of small ones, took a hit, but they were really good at getting out there and salvaging what they could and walking out there and moving stuff around so the crop loss wasn't really significant/ We did get the SBA support, but not for Isaac. Livestock was in jeopardy. They had to send in _____, inaccessible during damage assessment; couldn't get to some people. Flood control through the indegraed systems that I described. Drainage system maintenance, regulatory measures, having ordinances floodplain permitting, elevation substantially improved structures, structural mitigation measures, drainage and retention improvement projects. This is the primary protective measures. More protective measures the CRS program, the LMS program, for every hazard that we've identified in there, we give a list of protective measure, or corrective measures, flood mitigation assistance programs, there are several of those. We've done pretty well with those over the years. Flood insurance, used to be . Self protective measures, taking care of yourself. Town of Juno; I looked, you have an entry in 1978 and your FIRM is probably dated back to just about that time but you had a 1992 date on one. 1982 was the last revision. So you can see how old the FIRMS are. These are some of the projects we've done primarily in the CRA area is West Glade, Belvedere area, that's a terrible area for flooding. That's one of those older areas. (37:11) Storm Surge: You're pretty lucky here because you've got a high ridge line at least I think in the northern part. Down further south you're not quite as protected. Definition of storm surge. It used to be the most deadly form of disaster, but we've gotten so we respect it and people will evacuation and evacuation routes are based on storm surge. So ere don't lose people but it is still a very damaging effect. And it's going to eventually take down a number of condos and other buildings that are on the ledge and that's not going to be a pretty sight. That's going to happen over time. Question: Do you predict any in town? You're back a little further from the line than Singer Island and Jupiter. Jupiter has a couple that are right on the edge. Manalapan has a couple structures that are right on the edge. We're going to lose them eventually, but that's the price you pay for the tourism and the great style of living. But those people are self-insured for the most part, or tend to be. More upscale financially. But the public is going to be less and less supportive. The renourishment projects are going to be cut back. The structural barriers that they were putting in the ocean haven't worked and the commissioners put a hold on those. We're not going to do any more of those. SO we're going to be doing less to protect those areas. But we're all paying for those few people that are enjoying that style of living. SO you can't really knock people for not being happy paying for that. Here's the coastal ridgeline. I think that's Juno. It's becoming economically unsustainable thinking buildings at risk. This one on Singer Island there's actually plumbing and piping and sewers and stuff that are hanging out of that wall. Gives you an idea. There's not much to work with. The beach is just about history. Some of these beaches are down to the rough stone. The re-nourishable parts are gone. All that sand is gone. That's a surge event. That

wasn't a major storm event. It was 10 mph winds that day. Really significant. Here's the storm surge line coming down and you see it gets thinner and thinner around Tequesta, Jupiter area. It's much deeper penetration. Then there's Lake Okeechobee and I can tell you know you don't have a major issue here but just to show you that storm surge does effect the lake. Storms push the water to the west and then it sloshes back and puts the Herbert Hoover Dike in jeopardy right at the wrong place which is reach one which is Bellglade, South Bay Pahokee Port Majorca area. In Juno there are approx. 1023 addresses that are in a Coastal High Hazard Area. That's a Cat 1 storm surge area. 32 of the 38 municipalities are subject to storm surge. Critical facilities I went through and the only one in Juno is the police Department, Juno Beach Police Department Headquarters as being possibly at risk. To a lot but the water could possible reach them. This is storm surge map that shows that a lot of the surge effects occur on the intracoastal. So if you get a deeper penetration in the storm surge because of that. Category 1 storm that's basically if you're in a manufactured home or you have sub-standard construction, get out of there. Shows slides of all categories with Juno highlighted. Wasn't designed to be a dam but Dike functions as a dam when the water gets over 15-1/2 feet. Droughts affect it as badly as high level water. There's internal erosion going on and there's a pretty remote chance of terrorism. It would be a soft target for somebody but they couldn't create much of a dent in the dike so we don't really consider that a big deal. Trouble signs, a sinkhole in the dike and other slides, forty by forty foot chunk that happened after Wilma. These are previous failures and near failures. Close calls in 2003, 2004 and 2005. Since then the main strategy is let's keep the lake down at 13 to 15 feet. That means it's below the breach level. Doing a very sophisticated job of protecting reach 1 but putting a cut wall down into the embankment which keeps the water from getting through. But they're running out of money so when they finish reach one now that have to come up with a cheaper solution for the other reaches. Question: Is reach one the one that protects South Florida? Butch: Yes, Reach 1 goes from Port Majorca down to South Bay and Reach 2 is over to Clewiston area and Reach 3 is the South Bay to Clewiston area. Those 2 and 3 are not going to get the full protective measure unless they can come up with something really good and we haven't heard what that is. One of the other things they're doing is they're putting the rocks there so they can fill a breach quickly. Very low probability of anything happening. Rogue wave is just one wave that comes out of an otherwise quiet sea. And it takes o a lot of our shipping and military interests. Ships that just go to the bottom. Remember Chuck Muir, restaurateur lost a sea. They think that it was probably a rogue wave that got him because there was not even any debris. Probably took him to the bottom. They almost never landfall but did have one impact in Daytona Beach in 1992 maybe. A wav e came in a damaged 75 cars and 14 people went to the hospital. I talked to one of the officers who was on the beach that day. He said it was amazing and surprised the heck out of them. It can happen but not very likely. They don't typically go that far inland. There's a tsunami theory a collapse of a volcano that could create a super wave. That's just about by most of the American scientists but there's a British groups that believes it could happen. We have now a measuring system so we can tell is one is coming our way. Typically if it came out of the Canary Islands under that mega tsunami theory, it would be about 6 hours. So that's 6 hours to evacuate the whole coast. Question: How far would it go? Butch: QA mega tsunami would go 10 to 20 miles. If it's the out of Puerto Rico, there's a trench out there and that's an earthquake scenario. That wouldn't produce nearly the wave, they think that by the time it got here it would pretty much be dissipated and wouldn't be a very big deal at all. A lot of people think because the Bahamas are out there that would protect us. Actually it's water is like the wind. If the water comes up to an island, it's going to seek to go around it and as it goes around it will pick up speed and when the water meets on the other side it will be the same amount of time as if had gone straight through. So they can be quick and damaging. It wouldn't slow them down for us that much. Sea Level Rise: (50:03) This is 6' what it would look like. We're taking it very seriously. We have a Climate Change Compact that's made up of Palm Bach/Broward/Miami-Dade/Monroe Counties. They've done some great work. This is the prediction for

2060; 24". 2030, you're talking 37". Doesn't sound like lot but when you factor in these other things that it can contribute to that salt water intrusion, that's significant. We're doing all kinds of analysis to see what facilities we would lose. This is the Port of Palm Beach and Good Sam Hospital; we have a concern about that and some of the coastal b businesses along the port. There will be a lot of shoaling, buildup of sand in the inlet that would probably bring our commercial shipping to a halt for a while. So we're trying to take a look at what the worst case scenarios would be. Potential effects slide. We have an action Plan that's over 100 actions that they've proposed and they're chipping away at. This is some miscellaneous. Florida Power and light is one of your great assets. You have the Waterford in Juno. That would be significant issue to deal with. The flood zones, you're basically AE or X500. There doesn't seem to be, it's all just elevation because you have a lot of variable terrain that you'll see on that map, the southern part. Sea turtles are another asset. And then you've got the other in the grass. Gopher tortoise. You've got some very prized assets here. Andrea: We're a B Flood Zone, but Flood Zone A is about 10' south of our town Center. Seminole Country Club just down the road flooded. Sea Coast Utilities. These are the coastal hot spots for erosion. Basically the whole coast. Here's the Juno Beach shore protection line. So you've got infrastructure that's definitely at risk. Sacrificial sand berm at Juno Beach, I don't believe that's there anymore. Comments: We've got a lot of beach out there now. Butch: Sandy picked on Tequesta, skipped Juno, got Singer Island, and further south. You guys were pretty much spared. Tequesta had a lot of vegetation to protect the dune but didn't survive Sandy. Singer Island. These are the water depths and basically we're talking 3 to 13-14 feet as I recall in your area. The pier is definitely an asset. I don't know how the structure is compared to the Lake Worth pier. It seems to be better built. Lake Worth Pier got wiped out in 2004, Frances and Jeanne got it. There's the Juno coastal erosion area. You were getting water up to the right onto the stairs and taking out some of the stairs. This is the Juno Beach renourishment project 2010-2011. Question: When does the Intracoastal get dredged again because that was a source of sand for a period of time. Butch: I have heard nothing about dredging the Intracoastal. I don't know if it's on the dockets or not. I can find out easily enough. Question: That would maybe our best source of sand in the future then because that would have to be done of r the navigability of the intracoastal. Butch: There's a lot of sand in the Lake Worth Inlet. The shoal builds up in there and Rick Morrel, the President of Tropical Shipping says if they dilly dally they're going to be out there dredging because you get that sand out of there real quick because they do it in the Caribbean all the time. So if gets to be politics they'll be out there dredging so it needs to be taken care of pretty quickly. Question: Where would they take it, what would be feasible? Butch: They try to recycle it. Use it where you need it so I would say something like putting into a large and taking it either north of south of the inlet and using it again. (59:15) It's the inlets are one of the reasons we have such a problem. They cause a lot of problems with erosion, but where would we be without the inlets. Basically I would say you've got to watch the storm surge and sea level rise. The way we looked at sea level rise; we're predicting 3' in the fairly near future, but it's the storm water surge on top of that and then the wave action on top of that. So when you accumulate that's where structures start getting into trouble and it's way before 2060. 2060 is when we have permanent water inundation and I have pictures of Miami and Broward at peak high tide right now they flood down in the cities and it never used to do that. So it's coming. Question: Back in the 80's we had some pretty severe erosion here mostly due to nor'easters coming through . A lot of the condominiums are concerned about what's going to happen to their structures. The town hired a (1:01:07) a coastal engineering, you may know him, Gary Ward, and he grew up here and he came and had a workshop meeting for mostly the BODs of the condos. He had surveys of the coast here going back to the 1850s the coastline was virtually in the same location that it is now.

Butch: It probably hasn't moved too far west but it's a different formation than it was, with the _____ kicking up. But Ken Todd our water resource guy has some analysis of sea level rise and he hasn't seen

much of any evidence of any rising water here but yet Broward Miami Dade have. It's different in different locations. Member: Our coast here has a lot of coquina below the sand and during some severe erosion you can actually see the coquina rock. I think that helps to stabilize where our coast is and then we have the sand is kind of the skin over the bones and that can be up to 10' thick some years and ..

Butch: We have the coastline with the Gulfstream and that seems to affect the storm surge and the tides so we get a little break form that. I think down in Broward, Miami Dade it's a little further out.

Member: That's closer here than any place else. TMerano: 2010 put a million cubic yards of sand on the beach. CKing: We wanted Butch to speak to us about the global broader flood hazard because the water does not know oops, we're at Juno Beach line, we can't cross that line. So we have to look at it globally and plus Jupiter effects what happens here, different municipalities effect each other what they do sometimes so thank you for the global viewpoint. Butch: I got what I could for Juno only, but it's not that easy to do with all the municipalities we have. CKing: Butch received lifetime Contribution Award at the Governor's Hurricane Conference. Butch: I'll give you the PowerPoint. ADobbins: Let's set our next meeting for this committee: May 30th okay? At 3:30 pm. Questions: Joan will email a reminder. ADobbins: You are welcome to stay for the community outreach meeting. We adjourn the task force meeting at this time. 1:08:05.

Town of Juno Beach Flood Mitigation Community Outreach Meeting
April 17, 2013
Juno Beach Town Center

Attendees: See sign-in sheet

ADobbins: I am the Project Coordinator for the town. This is our task force, diligently serving in trying to help mitigate the potential risk for flood within our community. Tony Meriano, our Public Works Direct and Ruben Cruz, our Director of Planning and Zoning. Cathy King is our consultant for this FMP.

CKing: Bring you up to date on why we hold this meeting. The Town of Juno Beach has been very knowledgeable proactive in the area of CRS. Under the NFIP and any city or county can be a part of it. If they do certain things and follow certain criteria, they can help any citizen that has flood insurance in a SFHA, can lower the cost of that insurance. Juno beach is doing a phenomenal job and they have been for years, rated a 5 out of ten, 10 being the lowest. 7.5% of the communities in Florida have reached that. We are writing a floodplain mitigation plan with the Town, or a floodplain management plan. It strengthens the Town of Juno Beach in their CRS program; they can get grants from the State of Florida for different projects. It helps us analyze and acknowledge look at all the food hazards and problems in Juno Beach and hopefully mitigate that so that there is no loss of life and loss of property. We marry it to the PBC LMS so that they really do go hand in hand together. It is turned in to the State and to the CRS. They both score it and that helps the Town of Juno Beach. The CRS program under the NFIP asked us to do a 10-step process and this is part of one of the steps. Put an ad in the paper and ask the public to speak about any flood problems they know of any flood issues they know of. We can't fix it today, but we might be able to put it on a list of projects (1:13:16)

Juno Beach Flod Mitigation Plan Committee Meeting
May 30, 2013

Step 6 – Set Goals first goals meeting May 30, 2013

Sherry and former mayor talking about new maps

Andrea:

There was a study done, we had engineers come in and work with the RV Park; this is what can be done, these are your options to help protect your residents, the property but it was at the cost to the folks that own in there, because it's private property, there's that responsibility that the burden of the cost falls on you guys, because it's not.

Sherry: But that doesn't answer why they're not showing it to be flooded

Mayor former this committee is to go through these steps and cover all these steps so the Feds will say, you've done what you can whether that's right or wrong, that's a whole nuther subject.

The RV park is private. But everybody here is really private development, right? Then that's not true then, they should be part of the discussion. I think the worst flooding is actually there. Whether they participated in some plan that was supposed to be regional, they had agreed to go forward with the plan, but none of the other communities wanted to do that, so all the cost would have been to them. A big part of the problem is because they're at the bottom of a hill and everybody else is

Town of Juno Beach Flood Mitigation Plan

Review of Possible Activities- First Meeting

Tuesday, July 23, 2013, 3:30pm

Minutes

Attendees:

Andrea Dobbins	Project Coordinator	Town Hall
Joseph Lo Bello	Town Manager	Town Hall
Ruben Cruz	Director	Planning & Zoning
Frank Davila	Technician	Planning & Zoning
Tony Meriano	Director	Public Works
Cathy King	Consultant	CRS Max
Joan Van Stone	Consultant	CRS Max
Warren Turner	Resident/Board Member	Brigadoon/ Planning & Zoning Board
David Cox	Resident/HOA Vice President	The Manor
Beverly Tartaglia	Resident/ Neighborhood Rep.	Juno Ocean Walk RV Park
Cheri Sova	Engineer/Resident/Business Owner	Civil Solutions, Inc. / J. O. W. RV Park

CRS Max representative Cathy King began the meeting with a review of the planning process. She explained the difference between the Review of Possible Activities and the Action Plan, describing the list of Possible Activities as a "Wish List". She clarifies how Possible Activities should be discussed and evaluated for inclusion in the Action Plan according to the requirements of the CRS manual. Activities from each of the 6 CRS categories (Preventative, Property Protection, Natural Resource Protection, Emergency Services, Structural Projects, and Public Information) should be discussed and the categories were explained. Cathy also explained that discussion should not be limited to the activities on the list, but rather additional action items should be proposed and discussed as well. Cathy King and Joan Van Stone (also of CRS Max) then led the group as they began discussing each of the items on the list of Possible Activities.

The following notes summarize the discussion:

PREVENTATIVE

1. Pursue appropriate grants to enhance flood mitigation, including one or more of the following:

- **Flood Mitigation Assistance Grant**
- **Hazard Mitigation Grant**
- **Pre-Disaster Mitigation Grant**
- **Repetitive Flood Claims**
- **Severe Repetitive Loss**

Discussion: It was mentioned that following this flood mitigation planning process qualifies the Town for new grant opportunities. Overall it was deemed too general to be listed in the Action Plan. It is decided that pursuing grants for individual activities will be discussed on an activity by activity basis.

2. Review Town Code of Ordinances to strengthen maintenance requirements of private stormwater management facilities, including structures controlling flow.

Discussion: Private stormwater facilities are not inspected by the town. They are currently addressed by supplemental regulations.

Cruz- "We will seek code enforcement action on these. If we have a project where their exfiltration system is dirty and they need to clean it out we can go in there and take a look... We can send them a notice of violation saying your storm drain is dirty and needs to be cleaned out" **Van Stone-** "What would prompt you to even go look at it though?" **Cruz-** "A complaint or if we notice that there's flooding there or storm basins that are not working properly..." **Town Employee-** "Well, It's pretty tough for us to be the private storm drain police you know because frankly in many cases we have no right to be on their private property to begin with." **Van Stone-** "But to go on private property you will have to make a new regulation or law or something? You don't have that right now?" **Cruz-** "It depends on the project. Typically we can see things from public view which is the right-of-way so we can drive along the street and take a look and say okay that's not working and we just give them a call and say your storm drain is flooding a lot and we want to make sure: Are you cleaning out your system and your pipes?..." **Town Employee-** "By and large most of the ... [owners of private systems]... They maintain them because they know it creates problems on their own properties so they want to do something proactive. As a matter of fact, more often than not, they come to the Town asking if there is anything we can do to assist and we can provide them with some guidance and some direction even if physically we can't put a shovel in the ground…."

(21:26) **Dobbins-** "There's an important distinction… If the development is in compliance with their permit and all of their discharge pipes have been permitted and authorized and are still causing a problem there's nothing the Town can do. But, if they are not in compliance with the permit and they're illegally discharging into a lower development and causing problems, there should be some recourse. Not just civil action but the Town needs to be part of that I think." **Cruz-** "That's for taking code enforcement action" **King-** "That's what we're talking about here …reviewing the town code of ordinances to make sure that if a private storm water management facility is not maintained that you have codes in place" **Town Employee-** "We do. And we've recently revised one that was in regards to being able to asses for the repairs."

It was agreed that no further strengthening of requirements was needed and this issue could be handled satisfactorily with the codes and regulations already in place.

Discussion then gave rise to an additional Possible Activity:
It was proposed that the Town could begin reviewing all Juno Beach permits issued by South Florida Water Management District and, if the special conditions section requests/ requires monitoring reports on water management systems (not often requested), require that those reports be submitted to Juno Beach as well as South Florida Water Management District. A Town employee explained that new permitting of private facilities is currently governed by South Florida Water Management District and permit inspections and monitoring reports are currently conducted by [and filed with?] South Florida Water Management District, but can be followed up by Juno Beach. Discussion covered ways in which the Town could keep track of this information. Among the ideas discussed was the possibility that the Town personnel develop a database/spreadsheet/PUB of developments, their permits and reports in the future (resources allowing)?, or ask to be sent a copy of each report?

The possibility of including this item in the Action Plan was discussed extensively and eventually agreed upon. (23:05-31:35)

3. Encourage FEMA to update Flood Insurance Rate Maps (FIRMs) to include base flood elevations in all Special Flood Hazard Areas.

Discussion: A question was raised as to whether FEMA can be "encouraged" to complete FIRMS with base flood elevations, but it was decided that since updates are already in progress it is best to follow FEMA's progress. When striking the activity was discussed the Town Project Coordinator responded as follows:

Dobbins- "Why would you strike that? ... I think we could have it [in the Action Plan] because we're always wanting them [FEMA] to update them [the maps]... We're not going to take an active approach and petition them...but I don't think there is any harm in leaving it [the activity] in [the action plan].... What's good about having base flood elevations is that you know what elevation to put new homes at. This sets a minimum elevation for finished floor elevations." (Discussed 31:35-34:45)

4. Continue Town's semi-annual inspection program of Town owned stormwater control structures to ensure the proper functioning of such structures.

Discussion: This activity is already in progress and achieving results as expected. **Town Employee-**"That's a condition of our NPDES" (Discussed 34:45-35:35)

5 Continue practice of correcting localized drainage problems so that the Level of Service standards are maintained.

Discussion: This activity is also already in progress and achieving results as expected. If at any time an improvement opportunity is noted, then Project Coordinator will seek appropriate funding source. (Discussed 35:35-36:48)

6 Consider the relocation, mitigation or replacement of infrastructure currently present within the Coastal High Hazard Area where state funding is anticipated to be needed, as identified in the Local Mitigation Strategy Priority List.

Discussion: It was discussed as to whether this would be State, County or local responsibilities. Question was raised as to what qualifies as locally affected "infrastructure" existing in the Coastal High Hazard Area? Possible infrastructure was discussed and qualified infrastructure is determined to include the sea wall and dune walk-overs. Dune walk overs were installed in 1995-1996? **Town Employee**-"It definitely needs maintenance" (Discussed 36:48-44:00)

7 Maintain the Town's strong regulatory flood mitigation standards, including:
- **Utilization of hundred year storm for development**
- **Closed basin design**
- **Lot grading plan**
- **Requirement of 18" freeboard over crown of road, if under 7.5' elevation**

Discussion: Activity is already in progress, achieving results as expected. Will be enforced by Planning and Zoning and reviewed by Project Manager (Flood Plain Manager). Group discussed the reasons for changing terminology from 'hundred year storm' to '1% chance storm'. Agreed this action should be included in Action Plan. (Discussed 44:00-53:15)

8 Incorporate into the Town's review process for infrastructure planning an assessment of the appropriateness of public capital improvements in coastal high hazard areas as identified in the Coastal Management Element of the Comprehensive Plan.

Discussion: This is for Planning and Zoning: **Cruz-** "It [the Town's review process for infrastructure planning] goes back to the site plan approval process... (54:29) During our site plan review process everybody looks at the planning, our engineers look at it, we look at the infrastructure [affected]. So, if we see something is missing, we can make a comment so we can provide an explanation..." **Van Stone-** "For capital improvements also?" **Cruz-** "We just don't NOT review a building permit because it's the Town's. We want to make sure it's done properly" It was agreed that this activity will continue. Discussed (53:15-55:20)

9 Continue to maintain the Town's practice of denying development permits for projects that do not meet the design criteria for correcting existing deficiencies, or do not meet future drainage requirement.

Discussion: All Agreed- Already Town policy and important to continue. (Discussed 55:20-56:40)

Further discussion then arose about an additional Possible Activity:
It was brought up that when there are property owners seeking permits the Town may want to notify the property owners of adjoining properties. This may make residents feel more empowered and engage them in the permitting process as well as provide the body reviewing the permits with real world knowledge about locally specific issues. The Town already does this but needs to improve and emphasize it. After discussion, it was determined that the Town notifies all owners of properties within 300ft of a property seeking a permit and does post required public notices, but it was also agreed that encouraging the public to participate in and learn more about the permitting process would be beneficial to the community.

Possible Action Item wording:

"Use the website to inform residents about all the information publically available (and the locations for obtaining that information) about permit applications, permit issuance and other proposed land use projects so that they may actively participate in public discussion, consider and voice any concerns they may have about possible water management impacts caused by changes in adjacent properties. Encourage residents to become aware of and engaged in the process." (Discussed 56:40-1:07:01)

*****SKIPPED TO ACTIVITY # 11*****

11 Evaluate the Flood Mitigation Plan, particularly the Action Plan, annually.

Discussion: Attendees agreed- "We have to do that". (Discussed 1:07:01-1:07:15)

12 Update the Flood Mitigation Plan every five years.

Discussion: All agreed- The Town staff are committed to reviewing/ updating the FMP every 5 years. (Discussed 1:07:15-1:07:25)

It was asked if inventories could be compiled and brought to next meeting to facilitate discussion of items #13 1nd #19 during the next meeting.

Time and date of next meeting was agreed upon. **Dobbins-** "Next meeting: Tuesday, August the 13th at 3:30?" Attendees: "Yes" It was also agreed that the Committee would meet every three weeks until the Review of Possible Activities is completed.

Town of Juno Beach Flood Mitigation Plan

Review of Possible Activities- Second Meeting

Tuesday, August 13, 2013, 3:30pm

Minutes

Attendees:

Andrea Dobbins	Project Coordinator	Town Hall
Joseph Lo Bello	Town Manager	Town Hall
Ruben Cruz	Director	Planning & Zoning
Frank Davila	Technician	Planning & Zoning
Tony Meriano	Director	Public Works
Cathy King	Consultant	CRS Max
Joan Van Stone	Consultant	CRS Max
Warren Turner	Resident/Board Member	Brigadoon/ Planning & Zoning Board
David Cox	Resident/HOA Vice President	The Manor
Beverly Tartaglia	Resident/ Neighborhood Rep.	Juno Ocean Walk RV Park
Cheri Sova	Engineer/Resident/Business Owner	Civil Solutions, Inc. / J. O. W. RV Park
Tom Doyle	Resident/ Neighborhood Rep.	Sea Oats
Bill Kollmer	Realtor/ Business Owner/ Former Mayor	Platinum Properties
Geri Brackman	Resident/ Real Estate Agent	Cote De La Mer/ REMAX Ocean Properties
Sydney Vickie	Resident	visitor

CRS Max representative Cathy King began the meeting with a review of the planning process as defined by the CRS Manual. King: "I'm going to read you what the new CRS manual says about Review of Possible Activities… This is a systematic review of a wide range of activities to ensure that all possible measures are explored… The review, including the pros and cons of each activity, must be included in the Plan document. We got to about #9. We really got passed #9, because we skipped to 11 and 12"

Cathy King and Joan Van Stone (also of CRS Max) then facilitated a discussion of Possible Activities picking up at with a review of items #8 and #9, since the previous meeting covered Items #1-8, #11 & #12.

The following notes summarize the discussion:

PREVENTATIVE Activities (continuation)

8 Incorporate into the Town's review process for infrastructure planning an assessment of the appropriateness of public capital improvements in coastal high hazard areas as identified in the Coastal Management Element of the Comprehensive Plan.

Discussion: Review of item discussed in detail during last meeting. Town staff confirm that they have already begun this process, will continue until comprehensive plan is completed.

Warren- "The Comp plan is under review now by the P&Z Board. We've already looked at the CM Element. Before the P&Z Board is finished, by then end of this year I think, that will have been updated. Some of these items that we're discussing here can be appropriately addressed in that plan. Maybe we should charge Ruben, the planning director with [seeing that] after this is complete, it is reflected in the P&Zs review of the Comp Plan. Just to tie the two together." **King-** "Absolutely and that's really what it's addressing: that we incorporated and integrated with other plans. " **Kollmer-** "Is that part of the process." **King-** "Yes" Town **Employee-** "As the state requires, the comp plan is under review right now." **Van Stone-** "And as an action item in the FMP we will say

that this item will be complete when the comp plan is complete." (Expected to be done at the end of 2014). (Discussed 1:46-5:56)

9 Maintain the Town's practice of denying development permits for projects that do not meet the design criteria for correcting existing deficiencies, or do not meet future drainage requirement.

Discussion: The importance of continuing this policy was discussed with an emphasis placed on the Town's strict permit approval requirements. (Discussed 5:56-6:29)

10 Continue to require that installation of stormwater management facilities made necessary by new development is the responsibility of the developer.

Discussion: This activity is already required and all attendees agreed it is important to continue. There are no plans to change the Town's requirement. (Discussed 6:29-6:57)

13 Identify Town parks that could be reserved for permanent open space and encourage such designation where possible and/or apply/enforce deed restrictions where applicable.

Discussion:
Research is needed to find out what deed restrictions are already in place and consider applying additional deed restrictions to prevent future development of open space. Town staff will also continue to look for parks and land that can be designated as permanent open space.

Cruz- "We've already done that, already designated our parks as open space." **Dobbins-** "I think they're deed restricted. Recreation/open space."… "Our inter-local agreements with ESO and all that." **Attendee-** "What is the status of the old town hall site?" **Meriano-** "It's not designated as a park. Passive recreation. It's not for sale, but would you consider making it deed restricted open space?"… " No it's too valuable." … **Van Stone-"**We'll research if there are some open space Deed Restricted areas in the town?" **Cruz-** "Do we have to do that?" **Dobbins-** "I have that documentation. I want to say that there are already some Deed Restricted areas in place, so there isn't anything additional for us to do. This is something that we've already been doing for a long time. We're going to continue to honor it." **King-** "Five years from now, you're not going to take this open space and develop it?" **Cruz- "**Based on population we have to have open space and parks." (Discussed 6:57-10:28)

14 Require designation of open space property for all major development.

Discussion: "We do that already" No plans to change. (Discussed 10:28-10:40)

15 Encourage drainage solutions such as the use of pervious concrete and pavement.

Discussion: This has been something the Town Planning and Zoning Dept. encourages and intends to continue. (Discussed 10:40-11:10)

16 Look for areas that can be used for storage of floodwaters, such as public rights of way, parks, ball fields in locations that have flooding problems.

Discussion: Meeting attendees could not identify any areas off hand, but agreed that this is worth further investigation especially for the Ocean Drive area.

Brackman- "We've got around the lake, the park, and places on Ocean Drive that flood where the water could be diverted elsewhere to alleviate the flooding. I know you've done swales on both sides." **Meriano-** "The answer

is yes, but in reality that's diverting toward the ocean." **Attendee-** "Nothing from the street flooding can be diverted to the beach or the ocean?" **Meriano-** "Not what is flowing. That's not allowed." (12:36) **Sova- "**One thing you can do is take advantage of the good soils. Where they put the swales in along there is one." **Meriano-** "What they did was took that had material that had accumulated basically filled all those spots cleared it all out, now they have fresh materials so it percolates much quicker." **Cox-** "Ocean Drive was incredible." **Sova**- "That's something: look for green areas that could be used for swales or detention areas because the soils are so good." **Van Stone- "**The area that you were just talking about Mr. Cox, did you put those soils in? I don't know where you're talking about." **Cox-** "There's areas that are not fully done yet. We've got areas that are not completely done yet and we'd like to get permission from those property owners. There's areas like 700 Ocean Drive… [We are] still trying to look for… Continue to look for areas." **Van Stone- "**Would you like to see each of those areas as an action item?" **Meriano- "**We're somewhat limited in what we can because we have to work in the right of way." **Attendee-** "Be sure that we're not creating some adverse effect to someone else property. So, Tony has to be careful." **Van Stone-** "What do you have to do to get the right?" **Lo Bello- "**Our practice is talk to the property owner and we ask them to buy into our plan and then if they don't sign off on it, then we can't do it." **Van Stone-** "So then, we talked to them and they won't go along with it, this item is deleted. At least FEMA knows you've identified them… and then if the homeowner doesn't agree, then it shows that you've attempted, but you can't go any further along with it." **Lo Bello- "**That's our practice." **Dobbins- "**Tony do you have a list of those addresses where there's potential for? ... Tony will get that list together."
(Discussed 11:10-16:52)

The above discussion of item #16 led to the recommendation of adding an additional activity to the list. Possible wording: "Identify areas where water drainage and ground permeation can be improved through soil replacement, as has been done and proven successful along US 1. This will require identifying, engaging, educating and seeking the support of adjacent property owners."

17 Continue to require new commercial development to incorporate historical drainage patterns in the analysis of the required stormwater storage.

Discussion: Historical drainage patterns are already mentioned in the Town codes and consideration of them are required of both commercial and residential new development. **(**16:52-17:34) Further discussion refined the action item to include all developers of both new and old developments and replace 'require' with 'encourage' because sometimes improved on-site drainage is more appropriate than historical drainage systems (18:25-21:36)**.**

18 Encourage developing provisions for stormwater design management practices in low-impact development.

Discussion: A question was raised as to what constitutes "Low-impact development"? After discussing it, the group agreed to strike this item since the Town code does not define "Low-impact development" and the term can be rather arbitrary if applied without being specifically defined. It was mentioned that all of the Towns codes are designed to reduce the negative 'impact' of development so this action item is neither required nor applicable. (Discussed 17:34-18:25, 21:36-24:49)

19 Complete an inventory of the Town's drainage structures.

Discussion: A discussion ensued about the wording of the activity. It was agreed that "Complete inventory" should be changed to "maintain inventory" since the inventory has already been completed, and will be reviewed annually by the Public Works department. The inventory is currently in the form of a schematic and is accessible on the Town's website. (Discussed 24:49-26:43)

20 Continue the Town's maintenance program to clear debris from the stormwater drainage areas.

Discussion: Meeting member requested that "Stormwater drainage areas" be changed to "stormwater drainage infrastructure". It was confirmed during the discussion that the Town already has a maintenance program and each component is inspected and maintained at least annually and more often if required. Should read: Continue the Town's maintenance program to clear debris and maintain the unimpeded flow of water through the stormwater drainage infrastructure. Such maintenance is conducted routinely and as required. during meeting 2 (26:43-29:29) After reading the next item, questions arose as to whether this item (#20) was too similar to #5 and #21 to be included in the Action Plan. For this reason, the recommendation was made to omit this item from the Action plan or combine it with the other activities.

21 As part of the Town's NPDES program, continue sediment control to prevent clogged drainage systems such as street sweeping, curb and gutter cleaning and planting vegetation on bare ground.

Discussion: "All part of the NPEDS. Yes, yes and yes." (29:29-29:44)

22 Encourage the use of flood prone areas as open space.

Discussion: Discussed briefly. Open space already addressed by recommended Activities #14 and #15? (29:44-30:25)

23 Continue to support the Town's efforts to improve its classification in the Community Rating System, thus enhancing the Town's flood mitigation efforts while securing insurance premium rewards for its residents and businesses.

Discussion: (30:25-30:55) The Town has contracted consultants (CRS Max) to work with the CRS Coordinator in an effort to improve CRS classification.

24 Following the model set by Monroe County, link rate of new construction permit insurance to conservation land acquisition rate.

Discussion: Attendee- "I'm not sure that is practical here.", "I'm sure it's a sophisticated engineering process required to do that. I'm sure it's costly." All agreed to strike this activity from the list since it is not practical for such a small municipality with limited resources. (30:55-31:48)

Additional Discussion: After a request was made for the committee members to think of any new preventative measures that could be considered, discussion arose about exploring the practically of using the amply available environmentally sensitive areas to capture and manage excess stormwater from flood prone roadways, thus recharging the natural water supply. The group agreed that proper stormwater filtering mechanisms must be researched and the required government agencies should be consulted and included in the process of developing and implementing such practices if they are deemed practical and possible.

This was brought up as a Town "Wish List" item, and after extensive discussion about the possible benefits of such a project, it was agreed to initiate an investigation into the feasibility of implementing it. Further research is needed and funding must be secured. (32:30-35:40)

PROPERTY PROTECTION

25 Research the benefits of including base flood finished floor elevations on Certificates of Occupancy, for implementation within one year if possible.

Discussion: Attendees- "We require one [base flood/ finished floor elevation] upon issuance of Certificate of Completion or Certificate of Occupancy depending on the project itself, but I'm not clear on this item." "I don't understand the language on this one… Research including base flood finished floor elevations? ..." "On the CO?, No; I wouldn't make that mandatory. It's having the accompanying paperwork [elevation certificate and survey] that's important." **Discussed in meeting 2 (36:05-42:34)**

A tangent discussion about upcoming changes to flood insurance laws and maps led the committee to suggest adding the following activity: Explore the possible effects of new insurance law provisions eliminating "Grand Fathered" property exemptions to existing homes and home owners, where base flood and finished floor elevations are concerned. Develop actions to mitigate the financial burdens of the new law on homeowners if such action is deemed appropriate. Recommendation added: Perhaps it should even include educating homeowners about conforming to these new laws? (42:34-44:11)

26 Prioritize the reduction of repetitive loss properties through various means of mitigation, update repetitive loss forms and remove properties from the Repetitive Loss List.

Discussion: This is an ongoing activity that will continue as a priority of the Town's CRS Coordinator, the results of which will be reported annually to the Flood Mitigation Task Force. Three properties in question had flooding for unknown reasons. Attempt has been made and needs to continue to be made to ascertain the cause of the flooding, so that prevention and mitigation efforts can be considered, thus eliminating the likelihood of additional losses. (44:11-47:15)

27 Include notification of grants, loans and service availability in all Town media publications, seminars and websites that addressed flood mitigation.

Discussion: "We already do" This would include publishing this information in the two local Newsletters and on the Town's website (47:15-51:08)

Also discussed was the Town's annual Preparedness Month Display & Event (held every September) and their intention to continue holding the event every year as part of public outreach efforts. (51:08-52:47)

28 Collaborate with Florida Communities' Trust to assist with funds in acquiring properties in the SFHA.

Discussion: There are currently no funds available for this activity but should funds become available acquisition would be pursued. Without funding such purchases were deemed too costly to be given any priority at this time. (Discussed 52:47-53:39)

29 Collaborate with Review the Southeast Florida Regional Climate Change Compact recommendations for land development standards with respect to low-lying coastal areas.

Discussion: Town Staff Members-"I can't see us [aligning] with a non-profit that is one way or another too radical..." … "As a practice the Town doesn't do that because we don't know what this non-profit will do in the future" "Can we change 'work with' to 'review'?"

The group agreed that the recommendations put forth by the Southeast Florida Regional Climate Change Compact were worth reviewing independent of any agreement or endorsement of the group. If the recommendations were in fact applicable to Juno they could each be evaluated for feasibility. (Discussed 53:39-57:17). Then a minute later in the meeting (58:07-59:10), a group member who had gone to the SFRCCC website said "I can't agree with putting this in there. See that's what I mean. They have a political sign on there… And I'm

sure they mean well but they don't realize that's too political." The group discussed the political polarity associated with the term "climate change" and voiced concerns over aligning with a group that may have political undertones. As a result, it was agreed to drop this action item from the list.

30 Encourage all property owners to purchase flood insurance.

Discussion: One group member suggested that the term 'Encourage all property owners' could be replaced with 'Encourage property owners in affected areas' to which the Town CRS Coordinator responded with a statement about the importance of encouraging all property owners to purchase flood insurance because of the large number of flood claims that originate from properties outside of the designated flood zones. Another committee member added: "If it can rain, it can flood" (57:17-1:00:19)

31 "Consider the following forms of retrofitting for areas or buildings with major flooding issues:
- **Install backflow valves on sewer and drain systems**
- **Elevation of structures by piers, posts and columns, and pilings**
- **Create a secondary water barrier**
- **Elevate the lowest floor above the 100 Year Flood Level**
- **Wet flood proofing (allowing water to enter uninhabited areas of the structure)**
- **Dry flood proofing (sealing the structure to prevent floodwaters from entering)**
- **Levees and flood walls (constructing a barrier around the structure to keep out floodwaters)**
- **Demolition (tearing down the structure and rebuilding with appropriate flood proof techniques or relocating the structure)**
- **Elevate the main breaker or fuse box above the 100 year Flood Level**

Discussion: The Planning and Zoning Department confirmed that they do in fact recommend property owners and developers to adapt these forms of flood proofing. It was also recommended that "100 Year Flood" be replaced with "1% Chance of Flood" to discourage the public from becoming complacent immediately following a flood event with the mindset that it will not happen again for another 100 years. (1:00:19-1:03:38)

32 Encourage flood proofing techniques in order to preserve and revitalize neighborhoods.

Discussion: Already do. Agreed to continue. (Discussed 1:00:19-1:03:46)

33 Encourage property owners to use qualified hazard mitigation professionals to inspect building foundations and assess damage after flood events. FEMA, Insurance agents, the State NFIP office and the local building department can provide contact information.

Discussion: "We do that" Agreed to continue. (Discussed 1:03:46-1:04:33)

Time and date of next meeting was agreed upon after discussion. **Dobbins-** “Let’s quickly set the next date for the next meeting and we’ll go from there and then we’ll be adjourned.” … “We could do the last week of August? Which is the 26th. Do we want do one that soon?”… **Committee member-** “No because the 26th is a Monday” **Dobbins-**“What if we did the 29th of August?” **Various Attendees-** “No” **Dobbins-** “How about the 5th of September 5th?”

All agreed to the next meeting time of Thursday, September the 5th at 3:30.

Town of Juno Beach Flood Mitigation Plan

Review of Possible Activities- Third Meeting

Thursday, September 5th, 2013, 3:30pm

Minutes

Attendees:

Andrea Dobbins	Project Coordinator	Town Hall
Joseph Lo Bello	Town Manager	Town Hall
Ruben Cruz	Director	Planning & Zoning
Tony Meriano	Director	Public Works
Warren Turner	Resident/Board Member	Brigadoon/ Planning & Zoning Board
David Cox	Resident/HOA Vice President	The Manor
Beverly Tartaglia	Resident/ Neighborhood Rep.	Juno Ocean Walk RV Park
Cheri Sova	Engineer/Resident/Business Owner	Civil Solutions, Inc. / J. O. W. RV Park
Tom Doyle	Resident/ Neighborhood Rep.	Sea Oats
Bill Kollmer	Realtor/ Business Owner/ Former Mayor	Platinum Properties
Cathy King	Consultant	CRS Max
Joan Van Stone	Consultant	CRS Max

CRS Max representative Cathy King began the meeting with a review of the planning process as defined by the CRS Manual. Cathy recommended that they skip the review of items in the Natural Resource Protection Section for the moment, in favor of Emergency Service and Public Information, due to the presence of several staff members with interest in these areas. Time permitting, they will return to the section on Natural Resources later in the meeting. If unable to cover it all during this meeting, they will schedule another meeting to continue the review.

Cathy King and Joan Van Stone (also of CRS Max) then facilitated a discussion of Possible Activities picking up at Item #44.

The following notes summarize the discussion:

EMERGENCY SERVICES

44 Assign an individual to continually update information pertaining to hurricane and flood warnings. This update responsibility will include, but not limited to, the following media:

- **Town website**
- **Door to door, and bullhorn (notification of evacuation orders)**
- **Television Government Access Channel (conducted by Palm Beach County)**
- **Reverse 911 telephone system**
- **Public Service Announcements through local media (radio, newspapers, etc.)**

Discussion: This is done on a Town and County level and is currently performed as noted in Town procedures. It was suggested that Town policy be amended to begin posting county-wide evacuations on the Town website. Currently Ada (Town Employee) updates the Town website and Palm Beach County Emergency Management initiates a reverse 911 telephone message. Bullhorn notification (by police) of required evacuations are also conducted per current Town policy. (4:20-8:00)

45 Ensure adherence to the Town's Emergency Procedures Manual, particularly in the event of evacuation orders. Key components of the procedures should be reviewed beginning June 1st of each year.

Discussion: Already do. During discussion, it was decided to begin the review on June 1st so the review aligns with the beginning of Hurricane Season and information is as up-to-date as possible. (Discussed 8:00-10:08)

46 In May of each year, Juno Beach Police Department will confirm and update Hurricane Evacuation Assistance; Juno Beach Residents Evacuation Assistance Forms submitted by residents and review evacuation procedures.

Discussion: The Town already completes this activity annually, but wants to change the wording concerning the timeframe. It was formerly done in May, but all at the meeting agreed that the "beginning of Hurricane Season" is best time to perform these updates. (10:08-10:58)

47 Immediately prior to, during and after a hurricane or flood event, post pertinent information concerning major points of interest, such as bridge and road closures, evacuation orders, emergency shelter locations and electrical outages, utilizing the following media:
- **Town website**
- **Television Government Access Channel**
- **Electronic message boards**
- **Reverse 911 telephone system**
- **Public Service Announcements through local media (conducted by Palm Beach County)**

Discussion: It was mentioned at the meeting that the Town does have the email addresses of local condo/ home owners associations but is often unable to get email addresses of individual citizens who are dissuaded from providing them due to current Public Information laws. Otherwise this is the current policy of the police department and has been deemed effective. No reason was mentioned to change this policy. (10:58-15:03) Additionally: Providing health inoculations to first responders was mentioned, but struck from activity list due to Town's inability to provide them. They may be provided by the County Health Department but that was not confirmed during the meeting.

48 Ensure optimal staffing of emergency management personnel to receive and respond to emergency events. This practice will continue as in the past, in accordance with Incident Command System (ICS) standards.

Discussion: Already do this. There are SOPs currently in place to govern emergency staffing needs. Everyone in attendance agreed to continue utilizing current SOPs. (Discussed 15:03-15:25)

49 Integrate response to flooded homes with appropriate response organizations (Read Cross, faith-based organizations, other non-profit entities CERT etc.)

Discussion: The Town already works with, and refers residents to, the organizations mentioned. The desire to develop a CERT team was brought up and discussed but no one was able to commit the time or resources to it at this time. It was also emphasized that all staff are trained and encouraged to provide citizens with necessary information about available emergency response resources. (15:25-16:28)

50 Advertise evacuation routes.

Discussion: This will be a new activity for the Town because it was previously handled by the County. The Town will begin to advertise evacuation routes, which should not be very difficult, since the route options are limited due to the barrier island geography. (16:28-18:17)

51 Identify all critical facilities located within SFHAs in the Town and make contingency plans for each, in the event of flooding.

Discussion: The Town does have contingency plans for all critical facilities but no facilities are located within SFHAs. Mainly the focus of such plans has been to assure access and relocation of critical vehicles and equipment. (18:17-19:55)

52 Ensure that all public buildings that serve first response and critical emergency/public needs, include record/data collection and communication centers/infrastructure, are located outside of flood zones or flood prone areas and are equipped with back-up emergency generators.

Discussion: This has already been completed. All critical facilities are outside flood prone areas and also already have back-up generators. No further action to be taken at this time and therefore this activity can be omitted from the Action Plan.

Van Stone- "They are?" **Town Employee-**"Yes" **Another Town Employee-"**And they have back-up generators too." **Van Stone-** "Would you like to have generators someplace where they aren't? We could put that on here?" **Response from Group-"**No" (Discussed 19:55-20:50)

53 Training and evaluation of the CERT program.

Discussion: After an earlier discussion about the possible development of a CERT Team yielded no results and failed to garner any commitments, the topic was discussed again. Further discussion once more resulted in the activity being struck from the activities list due to lack of available human resources. (20:50-20:58)

54 Explore funding opportunities to retrofit critical facilities to be more flood and wind resistant.

Discussion: This is already done. No further action is required. **Van Stone-** "Are you hardened here?" **Dobbins-** "We are…. We are doubly hardened" **Town Employee-** "We have impact glass plus... roll up shutters" (Discussed 20:58-21:30)

55 Annually update the list of nursing home(s) and smaller home center(s) (Type 1 group home(s)) in the Town.

Discussion: There is only 1 nursing home so there is no need to prioritize; the Town only needs to confirm its emergency plan. **Group**- "Yes we do that." **Dobbins-**"We don't do a priority list, though?" **Someone in the Group-** "There is only one.", "There is only one" **Dobbins-** "Oh. Okay. So it is 'numero UNO' then" (21:30-21:56)

56 Confirm that all nursing homes have an emergency plan.

Discussion: The Town does this now and will continue to/ follow-up as necessary. **King-**"Confirm that all nursing homes have an emergency plan?" **Town Employee-** "I've done that" (Discussed 21:56-22:03)

57 Implement the Following Unranked Project on the Palm Beach County LMS space Prioritized Project List (January 2009):

- **Communication Console System, microprocessor-based ($50,000)**

Discussion: This activity is no longer needed since dispatch is now a regional service. It is no longer the Town's responsibility. (Discussed briefly 22:03-23:29)

*****SKIPPED AHEAD*****

PUBLIC INFORMATION

64 Ensure that citizens know how to contact FEMA post-flood.

Discussion: The Town already lists all contact numbers on Town website, and they plan to also insert a link taking readers directly to the FEMA website. Someone mentioned trying to find FEMA brochures to have available for residents. Committee members talked about the services provided at recovery stations during an emergency and the availability of a FEMA smartphone App. (23:29-27:42)

65 Based on availability and prioritized needs, provide knowledgeable staff to assist citizens before, during and after a flood event to help them understand their repair/rebuilding/flooding/mitigation options.

Discussion: All staff are already briefed before, during and after weather advisories are issued to facilitate accurate dissemination of information should citizens call for updates. (27:42-28:47)

66 Assure annual distribution of Palm Beach County Hurricane Survival Guide in multiple languages.

Discussion: The Town does not currently supply these materials in any language other than English, however, they are available in multiple languages directly from Palm Beach County. They are also available online. Committee members agreed that there is no particular need for the Town to provide these materials when they are so readily available from other sources, such as the County. (28:47-29:39)

67 Post the Palm Beach County Hurricane Survival Guide on that Town website in a location that is easily accessed by the community.

Discussion: This activity is already done. No additional action is required. (29:39-29:47)

68* Advertise the availability of evacuation assistance provided by the Juno Beach Police Department. The Hurricane Evacuation Assistance, Juno Beach Residents Evacuation Assistance Form is available on the Town's website.

Discussion: The form is available on the website under Hurricane and Flood information. Already do advertise this information in newsletter and Emergency Preparedness Display. Achieving results as expected. (29:47-31:00)

69 Implement the Town's Public Information Outreach Strategy, a copy of which can be found in Appendix ____ [Appendix # is to be added later].

Discussion: Agreement confirmed, after a very briefly discussion (31:00-31:30). PPI planning and discussion were reserved for PPI planning meetings.

70 The Town should continue its current policy of conducting a public outreach campaign.

Discussion: They already do this. Agreement to continue this activity was reached without much discussion. Public outreach details to be handled during PPI planning meetings. (31:30-31:56)

71 Work with County Housing Program to provide education to home buyers regarding flood information.

Discussion: Town staff explain that they provide information directly to home buyers. Town demographic doesn't provide much interaction with County Housing Program, but the Town is willing to collaborate if needed. (Discussed 31:30-32:35**)**

72 Recruit local business owners, and leaders of civic organizations to assist with the distribution of flood and disaster outreach projects.

Discussion: The Town doesn't do this yet, but staff members are willing to add it to the Action Plan. Discussed the need to identify and contact stakeholders. (32:35-36:52)

73 Provide flood property protection, safety information on the Town's website.

Discussion: This activity is already done and no additional action is required. (36:52-37:03)

74 Educate residents on the care and proper use of swales.

Discussion: The Town already does this regularly through articles in the Town Newsletter. No additional action is required. (37:03-38:09)

75 Develop early warning systems and social media applications to both inform residents and visitors of extreme high-tied events and raise overall awareness on sea level rise and climate change issues. Also consider roadway signage for tidal flooding zones.

Discussion: The Town does not currently have any social media accounts. No other methods of disseminating this information were identified during a discussion of this activity. Additionally, no coastal flooding zones were identified within Town jurisdiction. Side discussion about the political polarity associated with the term "climate change" ended with an agreement to strike this activity from the list. (38:09-42:41)

76 Initiate a regional public education campaign to educate residents, business owners, policymakers on the merits of preserving open land as an "insurance policy" for adaptation to sea level rise in South Florida.

Discussion: It was mentioned during the meeting that "We do so much [to protect environmentally sensitive open lands] already." It was then asked: Can we highlight and continue our outstanding job of applying land use deed restrictions w/ catches intended to designate the restrictions for perpetuity? Currently 43% of the land area in the Town's jurisdiction is governed by such restrictions. It was agreed that more public education about the merits and benefits of these efforts could be undertaken. (42:41-45:32)

It is noted here that although it is not on the original activity list, the Town discussed their intentions to continue hosting the annual National Preparedness Month display and event every September in the Town center lobby in order to provide the public with pertinent flood and emergency preparedness information. This is an annual event hosted by the Town, which has been deemed effective and is showing positive results. Also, though not on the original activity list, the Staff members took a moment to mention the Town's outstanding job of applying land use deed restrictions w/ catches intended to designate the restrictions for perpetuity. Currently 43% of the land area in the Town's jurisdiction is governed by such restrictions. They briefly suggested an organized effort to inform the public of their efforts may be beneficial. Summary of discussion: We do so much [to protect environmentally sensitive open lands] already. Can we highlight and continue our outstanding job of applying land use deed restrictions w/ catches intended to designate the restrictions for perpetuity? Currently 43% of the land

area in the Town's jurisdiction is governed by such restrictions. More public education about the merits and benefits of these efforts could be undertaken. Ultimately, this topic was just a call for accolades, and a request that the Town be recognized for their efforts. No definite action item arose from the discussion.

***** Jumped Back to Earlier Section*****

NATURAL RESOURCE PROTECTION

34 Implement the following project ranked as #47 on the Palm Beach County Local Mitigation Strategy Prioritized Project List (January 2009) Not included in 2012 Priority List:
18 vacant lots - restore wetlands ($430,000 unfunded) Potential funding sources Primary Funds (PDA, HMGP, FMA) and Flood Mitigation Funds.

Discussion: Currently there are some privately owned lots that border a natural and beneficial area and that would be extremely difficult to develop due to existing regulations. The Town would consider purchasing them if funding were to become available, but it may prove to be cost prohibitive. This activity would require more research into costs and funding sources, but there were no objections to including it in the Action Plan. (46:47-49:22)

35 Consider dune restoration programs. Continue successful dune restoration and maintenance programs. Contact consultants and work to secure additional grants as needed/ available.

Discussion: The Town is currently undertaking a very successful dune restoration project with Grant funding. They [the dunes] are being restored to their natural state and are flourishing. In the past, the Town has employed environmental consultants to oversee these restorations. The attendees agree that the Dune restoration efforts should continue and they would like to do more if additional funding can be secured. Town staff members reinforced the well-received success of the current restorations and the Town's Arbor Foundation distinction as an "Arbor City" several years in a row. (49:22-54:50)

36 There are no plans for changes to the Town's policy to encourage designation, protection and maintenance of wetlands, mangroves and environmental sensitive lands.

Discussion: The Town has already proven that it is dedicated to the designation and protection of ESL lands. There are no plans to change this. Previous discussions throughout this meeting, emphasized the Town's exceptional and un-wavering commitment to protect environmentally sensitive areas and these points were reiterated. (54:50-55:06)

37 Identify, inform and encourage homeowners' associations to install littoral/upland buffer plantings around lakes.

Discussion: Per Town codes, Juno Beach does encourage older developments/ and require new developments to allow native plant growth surrounding lakes. Most communities use lake maintenance consultants. Suggested that this activity [educate HOAs about the benefits] could possibly be done via articles in the Town newsletter. (Discussed 55:06-1:01:00)

38 Identify privately-owned and public natural and beneficial areas in the Town and consider expansion of the Town's properties that are designated natural and beneficial areas.

Discussion: Currently 43% of Town lands are designated as such. Town employees will attempt to identify additional lands that can be designated, but are not sure that there is much more land available for this purpose. (1:01:00-1:01:49)

39 Maintain and enforce designation of Coastal Barrier Resources Act (CBRA) property.

Discussion: Meeting attendees were not sure this applies within the Town's jurisdiction. Staff members mentioned assigning someone to look into it, but thought it was unlikely to be included in the Action Plan. (1:01:49-1:03:40)

40 Maintain strong enforcement of South Florida Water Management District regulations pertaining to floodplain management.

Discussion: In a brief discussion it was confirmed that the Town already does this. It was deemed important to continue with no plans to change. (1:03:40-1:03:52)

41 Encourage individual property owners to pursue percolation-oriented drainage improvements using best management practices through outreach and education. Drainage that seeps into the soil, rather than being direct it out to the ocean, provides multiple benefits. Not only does it mitigate flooding, but it also recharges the aquifer, enhances water quality, and reduces erosion.

Discussion: This is one of things the Town is currently doing to improve drainage. It has so far proven effective and should be continued. (Discussed 1:03:52-1:04:21)

42 Implement strict enforcement of best management practices for reducing erosion during development activity.

Discussion: Town Staff Member- "Yes! We are very pro-active on that." Agreed- the Town will continue this activity. (1:04:21-1:04:33)

43 Examine water control structures to ensure that they can provide for inland or upstream migration of riparian species as freshwater habitats become more saline.

Discussion: Attendees attempted to define applicable "control structures" within Town jurisdiction. It was determined that the weir at end of lake and any catch basins qualify as water control structures. [Wells?] are tested quarterly for salt water intrusion and thankfully no salt water intrusion has been detected yet. (1:04:33-1:07:44)

Time and date of next meeting was agreed upon after discussion. **Van Stone-** "Okay, you want to set the time and date for our next meeting then?" … **Dobbins-**"Yea it's going to have to be at the end of the month." **Various Van Stone-** "The 26th is three weeks from today"… **Dobbins-** "We can do the 26th at 3:30?" Although one committee member mentioned that he would be unable to attend the meeting, the remaining committee members agreed to go ahead with scheduling the next meeting for Thursday, September 26th at 3:30.

Town of Juno Beach Flood Mitigation Plan

Review of Possible Activities- Fourth Meeting

Thursday, September 26th, 2013, 3:30pm

Minutes

Attendees:

Andrea Dobbins	Project Coordinator	Town Hall
Joseph Lo Bello	Town Manager	Town Hall
Tony Meriano	Director	Public Works
Warren Turner	Resident/Board Member	Brigadoon/ Planning & Zoning Board
David Cox	Resident/HOA Vice President	The Manor
Beverly Tartaglia	Resident/ Neighborhood Rep.	Juno Ocean Walk RV Park
Cheri Sova	Engineer/Resident/Business Owner	Civil Solutions, Inc. / J. O. W. RV Park
Bill Kollmer	Realtor/ Business Owner/ Former Mayor	Platinum Properties
Frank Davila	Technician	Planning & Zoning
Geri Brackman	Resident/ Real Estate Agent	Cote De La Mer/ REMAX Ocean Properties
Ivan Stuart	Resident/ Neighborhood Rep.	Brigadoon
Joseph Semoff	Resident/ Neighborhood Rep.	Brigadoon
Earl King	President/ Consultant	CRS Max Consultants, Inc.
Joan Van Stone	Consultant	CRS Max Consultants, Inc.

CRS Max representative Earl King began the meeting with a review of the planning process as defined by the CRS Manual and a specific definition of Structural projects.

Earl King and Joan Van Stone (also of CRS Max) then facilitated a discussion of Possible Activities picking up at Item #58.

The following notes summarize the discussion:

58 Implement the following Capital Improvement Program projects:

- **Sidewalk Projects: Concrete and paver sidewalks throughout the Town (not funded)**
- **Capital Improvement- Street/Drainage (not funded)**
- **Major Repairs and Equipment: Various major repairs and equipment**

Discussion: Sidewalk projects have been completed. The Town has replaced some sidewalks with pervious walkways in areas that previously had ponding. As a result, the problem was resolved in those areas. A recent project to double the Town's sidewalks is also underway and will completed within the next two months. Additionally, the Town has expanded the swales. (Discussed 1:00-5:00) Further discussion defined specific capital improvement projects (outlined below) that were considered high priority and should ultimately be ranked high on the Action Plan**. These projects were discussed in detail (5:00-21:08)**

Discussion focused on implementing the following Capital Improvement Programs:

a) Two unfunded Capital Improvement Projects are on an ongoing improvement list.

▪ **Juno Ocean Walk-** Design and build exfiltration trench and French drains needed to capture and slow storm water drainage from the roadway to minimize localized flooding.
▪ **Zenith Lane –** Design and construct storm drainage structures and exfiltration trenches to facilitate the drainage of storm water. ($23,000)

b) A $50,000 [partially unfunded] Capital Improvement Project is currently underway.

▪ **Universe Boulevard Project -** Large diameter drainage pipes that discharge into the Intracoastal required maintenance and repairs. FP&L lead the study of the existing pipes' condition, researched viable repair options and costs.

Additional Discussion: The group described the scope of the above mentioned projects. Juno Ocean Walk and Zenith Lane are both awaiting funding, but the Universe Boulevard Project is underway with funds provided by FP&L and the town will then asses the other affected properties for their share of the remaining cost. The Universe Boulevard Project is very complex involving cleaning and repair, requiring divers and engineers. It is made more complex because it is not possible to stop or re-route the water during the repair. They also mentioned that a Kagan Park project has recently been completed.

A mostly unrelated discussion ensued about the need/desire to purchase new equipment (sump pump) and maintain existing equipment. The Town is in need of a new sump pump that can be used to remove water during emergencies. The current one is old and no longer reliable. It was recommended that sump pump purchase and equipment maintenance activity be added to the Action Plan (26:15-29:29)

59 Implement the following project ranked #16 on the Palm Beach County LMS Prioritized Project List (January 2009) Not included in 2012 Priority List:

- **Drainage System Development on US 1 ($700,000 unfunded). Potential funding sources: Primary Funds (PDA, HMGP, FMA) and Flood Mitigation Funds**

Discussion: It was briefly confirmed that this project has been completed. (Discussed 29:29-30:44)

60 Prioritize addressing of flooding issues in repetitive loss areas and implement capital projects to mitigate flooding. Drainage issues should continue to be given top priority in the capital improvement program, particularly in areas containing repetitive loss properties in repetitive loss areas. To supplement funding, the Town must continue to be proactive in obtaining funding for this program. The following sources are recommended:

- **Community Development Block Program**
- **Community Redevelopment Agency**
- **Flood Mitigation Assistance Grant**
- **Hazard Mitigation Grant Program**
- **Repetitive Flood Claims**
- **Severe Repetitive Loss**

Discussion: There are no repetitive loss AREAS within the Town's jurisdiction. There are repetitive loss properties but they are not located in any designated area. There are general flooding issues and the Town does wish to identify them and seek funding in order to mitigate the issues. The addresses of repetitive loss properties are being withheld from public record in order to protect the owner's privacy, but contact has been made with the owners, investigation of the cause of flooding are being made, and the owners are aware of the Town's willingness to assist them with implementing solutions and securing funding. (Discussed 30:44-35:15)

61 Contact FDOT about drainage problems on US 1, especially if their projects do not work to alleviate flooding.

Discussion: It was explained by staff members that there is at least one area where the storm water drainage responsibilities of the Town intersect with the responsibilities of FDOT. Further study should be made to determine the best solution and all responsible parties should be collaboratively engaged to participate in solving the issue. The Town is willing to act on this issue, but needs to contact FDOT. (21:08-26:15)

62 Maintain overgrown swales. The catchment areas, swales have grown out and the water can't come off the road into the swales because the grass has overgrown.

Discussion: It was agreed that some of the swales are currently overgrown and that continuing/ improving a swale maintenance program is a good idea.

63 Coordinate with the South Florida Water Management District, Drainage/ Water Control Districts, and public works officials to identify flood control and stormwater management infrastructure already operating below the design capacity.

Discussion: Item was discussed but the discussion was not captured by recorder. Notes indicate that the attendees agree their normal Public Works Maintenance Program would immediately address any lowered capacity or poor infrastructure performance. So, it may not be necessary to include this item in the Action Plan.

*** (35:15) END OF RECORDING***

Town of Jupiter
FMP Committee Meeting
November 7, 2013

See sign-in sheet for attendees

Earl King: In preparing for this meeting we have pieced together what has been discussed the last few times we met together. We came up with some thoughts on how they action items should be prioritized. We want the committee to say if they don't like the way it is prioritized, or worded, we will talk about that and make the changes. This is the Town's Plan.

Tony: Andrea and I met and do have short discussion and we saw some areas that need to be modified or changed a little bit. In that discussion we thought that there should be merging of some of the items. Take 35 items and turn them into a lesser but more meaningful number. Not to say that what is here is not meaningful, but we feel it could be condensed.

Andrea: I had a few comments. This is redundant, could 60 be combined with number 34 because it seemed like we were saying the same thing again. My perception is that Juno Beach is a very small community and we don't have a lot of issues that other communities might have. Rather than making a mountain out of a mole hill can we take the mountain and make it back into a molehill. How can we scale this down to maybe a really good meaningful 15 or 20, whatever the group deems necessary. 18 pages of an action plan seemed a little excessive. (3:48)

Bill: I think that's a good point, if we can get higher points for the town with more items than a more streamlined and only get 4 points instead of 5. If it's overkill, but it works, I'd rather keep the overkill and get the points.

Joan: If you have 10 items broken down to one item, then when it comes time at the end of the year and evaluate this, is it better to say, we've done these ten things instead of, we did part of this one item. There are not extra points for the number of items.

Earl: One of the comments of one of the reviewers was that it looks like you have several that you're continuing to do, but we'd like to see is things that you're improving rather than that. Given that perspective there could be some wisdom in cutting back on some of these. I think it's important just to be careful which ones we cut back on. We certainly can reduce this.

Andrea: We don't want to do anything detrimental to the overall plan. I think that there are a few that could be put together to accomplish the same thing. How about a one page Executive Summary of this? The first paragraph talks about the LMS PPL; I wasn't clear on if this is something that is changing or are they currently accepted year-round. JVS: Currently accepted year round but prioritized twice a year. AD: Change to: However, mitigation initiatives are accepted year-round. It looked like it was going to be something new. The last sentence of that paragraph I would cross out, please see" and make it Appendix ___ includes a description of the LM projects….. Item 1, spell out "2". It's "Juno Ocean Walk". Are you going to go through all of the grammar, capitalization, etc. EK: This was done without having been gone through by our best proof-reader right here. This is preliminary. We're going to make it look a lot nicer. You could give us a copy of your notes.

The first item, the action on page 2. Tony and I were nervous about putting in an actual time frame and painting ourselves into a corner that within two years, etc. we would like to have that taken out. EK: That is one item that is required.
Joe: It is in our five-year Capital Improvement plan. EK: Would you like to just keep it at that, or would you like to say we'll try to aim at 3 years.
Joe: 5 years is the only accurate statement we can make.
Sherry: Thank you for that one. Five years sounds great.
AD: Proposed CIP on Universe Blvd. I had crossed out under the action I had crossed out, Town Manager will explore the option of placing this on the LMS. I don't know if that is appropriate. And the funding, correct me if I'm wrong Joe, that area along Universe all of those properties were going to be assessed whatever the cost was. It wasn't going to be a town-wide. So people up on Donald Ross aren't paying for a project that doesn't affect them. Is that how we were still planning to fund that?
Joe: No, because it's been approved by council. We need to strengthen that. We're participating in that too, because we're paying for the road, we're a stakeholder. It's really working; it's actually going on today. Tony: It's almost complete. Joe: We'll work on the language.
Andrea: 2, the action portion of it:
Action: This is the responsibility of the Director of Public Works. The Projects Coordinator can assist with the grant applications. A yearly report of all efforts and findings will be presented to the Flood Mitigation Task Force.
I want to change some of the verbiage with, the Public Works director may provide flood documentation in areas of concern. That would take the place of the first sentence. I wasn't sure about the funding,
Funding: Staff time (operating funds). Matching funds, if required, will have to be budgeted or will be assumed by the homeowner, if agreed.
EK: Several of these grants are grants that work together with homeowners, like the SRL grant, or repetitive floodplains grant; FEMA actually has a contract with the town, but the town has a contract with the owner. We can take that sentence out. Joe: I'm fine with the way it reads. I understand how it works.
AD: 4. **Action**: This is the responsibility of the Planning and Zoning/ Code Compliance Department. This is can be implemented through outreach and education.
It's enforceable via the town ordinances and the state building code. Can you comment on that Ruben?
Ruben: I have no comments on that one. Joe: I don't know if it's the responsibility of the PW, it's everybody's responsibility. We can tweak the language. Joe: Every does it. Ruben: Do we have to say p&Z? Can we say the town will educate? Joe: We don't like blacktop; nobody likes blacktop. It's horrible for everything, the environment. All of our staff is educated on that. Sherry: The property management associations also should be part of the educating. That's one of the things that we're planning on doing with leaders up to green areas. They got letters from the town but in addition what we're going to try to do is educate our residents so that they can be part of the solution. And for the Board to promote it. JV: Recruit HOAs as stakeholders Tony: Part of the action could be, more prudent that is practice of town staff, to implement that. Rather than response. Sherry: Or initiating by the town. Tony: I agree. Joe: It is a practice of the whole town to be cross-trained and to educated that if see something, at least bring it back to us so we can discuss it. Tony: One of my guys out on the street might see something like puddlling or flooding that's repetitive in nature, we want to know about it.
Man: HOAs. Do you want to put that in the first sentence? Encourage HOAs and individual property owners? And maybe other stakeholders. JVS: Identify other stakeholders maybe?
AD: 5.. **Action**: The Public Works Director will contact FDOT about drainage problems. If FDOT is unable to address the issue/ alleviate the problem the Town will consider commissioning an engineering study to determine the scope of FDOT's responsibilities under current water management regulations.

It's a little confusing. Joe: I get it but I don't like it. I'm not saying it's not in the bag of tricks to do it. Sometimes you have to get an engineer to get an engineer to say it's FDOT's responsibility and it has to be done. Sherry: They have engineers too. Work with their engineers to address those issues. Joe: I'm okay with it. We'll consider that. When somebody is really not cooperating sometimes you have to take certain measures. Tony: Wise to say if FDOT is unable to address the issue or alleviate the problem, the town will use whatever resources necessary to correct that condition. Joe: I'm ok with it. Sometimes you have to use measures that you really don't want to. Sherry: Are you thinking about US1? Joe: We have a great relationship with FDOT. Sherry: _____ currently with SFWMD. (23:11) Sherry: Are there drainage problems now that you have in mind? Joe: There are some issues out there, yes. Tony: Just a couple of them but they're Joe: There's one right there. Joe: If you want to know what we're doing, just ask us and we'll tell you. JVS: Does the squeaky wheel" work with them at all? Joe: Yes. They are concerned about liability. They have been working with us. Tony: They are a big asset. Joe: Tony really breaks it down to common sense and they react; usually.
Andrea: 11. And 12. Ruben, do you want to speak about this? Ruben: Is this a standard that they want to see? EK: NO, this just an option. Once you get into working with private a system, that's the type of thing that some municipalities don't want to worry about. JVS: Didn't we talk about this in the review of items? That must be why it's in the action plan. EK: They want us to have something from each of the different areas, structural, public information, etc. They don't care how many, they want to be sure that we covered each of the five areas. JV: Somebody must have liked it at one time. Joe: How difficult is it? They're asking for a database. Ruben: The thing with private is we go in there say, hey your system is messed up and you need to go in there and drain it out. (27:13)

End of recording – battery ran out.

Town of Juno Beach
FMP Committee Meeting
December 12, 2014

See Sign in sheet for attendees

Andrea: I don't know if anyone had time to review or has any comments. Staff had gone through and made comments and submitted it to Joan.

Tony: The page numbers in the footer are not right.

Earl: Today's meeting will depend on what comments there might be. We are ready to wrap things up today. Wanted to give you an idea that the Action Plan is the heart of the plan, but not all that the plan entails. Passing around the Santa Rosa County FMP. Includes a lot of descriptive stuff and appendices and exhibits that demonstrate some of the things said inside. We didn't want you to have the idea that a 14 page action plan is all that it's about.

Tony: How often is it reviewed and what is reviewed?

Andrea: #21 had a question mark –

> Evaluate the condition of infrastructure such as dune walkovers and the sea wall, currently present within the Coastal High Hazard Area where state funding is anticipated to be needed, as identified in the *Local Mitigation Strategy Prioritized Project List*. Develop an improvement program, if warranted.
>
> **Action**: The Town Manager may consider replacement of the Atlantic Avenue seawall should funding be secured. The Town is currently performing dune walkover maintenance with grant funding.
>
> **Funding:** Need to seek funding sources, possibly State funding.

Which sea wall are they talking about? EK: We can reword that to make that less of a long- drawn out sentence make 2 sentences out of it. Currently present, period. These are infrastructures where state funding is anticipated to be needed. These items are infrastructure where state funding is anticipated. Tony: the town is currently performing dune walkover maintenance with grant funding. AD: The grant funding is not the actual dune walkover. Tony: It's not done with grant money; it's done with regular budget money. Any grant funding is for upgrading, improvements, capital improvements versus maintenance.(42:14) AD: it depends on how you look at maintenance because we're doing maintenance on the dune walkover down there but the fencing, so it's not the actual boardwalks, that would be considered maintenance on the dune walkover though. Man: Are you maintaining the dune or just the wooden structure? Tony: The walkover. Man: Is it deferred maintenance or just repair. Tony: Some of the maintenance is coming out of grant money, however there's also a lot that comes out of regular operational budget as well. Joe: The Town's portion of the Atlantic, that would be
Because we don't want residents coming to us and saying we're going to replace the whole seawall. AD: How much of it is the town's portion. Joe: 50' AD: How long is that seawall. Joe: _____

The town manager may consider replacement of the Atlantic Avenue seawall. Joe: I would say replacement or maintenance. Man: What was the estimated life of that when it was put in? Joe: They said at least 30 years. Joe: Since 1996. It's in great shape last I heard. Man: Have you seen any deterioration? Tony; There's a lot of vegetation on it. Has a thorough inspection been done on it? No. Man: Is that iron or steel. Tony: I don't remember. DC: They were driven in so they had to be steel. They couldn't have driven in iron. So they poured concrete over the top. So the steel contoured sheeting is what goes down in the sand into the bedrock. So over time it will corrode. Don't know how long that will take before it's weakened. EK: The town manager may consider replacement or maintenance of the town's portion of the Atl ave seawall. Sherry: Or how about maintenance, rehabilitation, could you do that? Joe: I think that's even better. EK: Okay, or rehabilitation AD: Specifically the 50'. DC: The only portion is the 50' atlantic. JVS: It might be interesting for the citizens to be able to read about the 50'. Does the town own it? Joe: Yes because it's on our property, it's right-of-way.

#30

Continue the Town's practice of insistence that approval of permits for development projects meet the high-standard design criteria for correcting existing deficiencies and meeting future drainage requirements.

> **Action:** This is current Town policy and will continue as is. This is the responsibility of the Planning and Zoning Department.
>
> **Funding:** Staff time (operating funds)

Tony: Maybe the practice of requiring or the policy of requiring. Practice of insistence, I don't like. JVS: This is the one that we thought sounded negative, so we reworded it. Joe: Continue the Town's practice of high standard design criteria. EK: We could just stop it at that. AD: any deficiencies in meeting for correcting future drainage requirements

Flood Mitigation Committee/ Citizen Planning Committee Meeting Attendees

Stakeholder? (Y/N)	Name	Title	Department/ Company/Neighborhood/ Org.	Designation	Organize Committee, Explain the FMP process	Gather Input, Begin to Asses Local Hazards	Continue Assessing Local Hazards, begin Community Hazards, Introduce Mr. Truesdale	Butch Truesdale Discusses Locally & County Specific Flood Hazards	Community Outreach, Gather Input Concerning Local Problems	Identify Problems and Discuss Possible Goals to Correct Problems	Finish Establishing Goals in Preparation for RoPA	Approval of Goals, Explanation of RoPA and Action Plan, Begin RoPA	Continue Review of Possible Activities	Continue Review of Possible Activities	Finish Review of Possible Activities	Review of Action Plan	Review of Action Plan	Community Outreach: Public Review of Action Plan	Total # of meetings attended
	Meeting Purpose:				Organize Committee, Explain the FMP process	Gather Input, Begin to Asses Local Hazards	Continue Assessing Local Hazards, begin Community Hazards, Introduce Mr. Truesdale	Butch Truesdale Discusses Locally & County Specific Flood Hazards	Community Outreach, Gather Input Concerning Local Problems	Identify Problems and Discuss Possible Goals to Correct Problems	Finish Establishing Goals in Preparation for RoPA	Approval of Goals, Explanation of RoPA and Action Plan, Begin RoPA	Continue Review of Possible Activities	Continue Review of Possible Activities	Finish Review of Possible Activities	Review of Action Plan	Review of Action Plan	Community Outreach: Public Review of Action Plan	
	Meeting Date:				2/5/2013	3/12/2013	4/2/2013	4/17/2013	4/17/2013	5/30/2013	6/27/2013	7/23/2013	8/13/2013	9/5/2013	9/26/2013	11/7/2013	12/12/2013	1/30/2014	
	# of Attendees/ meeting				**9**	**17**	**18**	**13**	**9**	**12**	**18**	**14**	**15**	**10**	**12**	**9**	**14**	**10**	
N	Andrea Dobbins	Project Coordinator	Town Hall	staff	x	x	x	x	x	x	x	x	x	x	x	x	x	x	14 / 14
N	Ruben Cruz	Director	Planning & Zoning	staff	x	x	x	x	x		x	x	x	x		x	x	x	12 / 14
N	Frank Davila	Technician	Planning & Zoning	staff	x	x	x	x			x	x	x		x	x	x	x	11 / 14
N	Joseph Lo Bello	Town Manager	Town Hall	staff	x		x			x	x	x	x	x	x	x	x	x	11 / 14
N	Tony Meriano	Director	Public Works	staff	x	x	x	x				x	x	x	x		x	x	10 / 14
N	Cathy King	Consultant	CRS Max	prof	x	x	x	x	x	x	x	x	x				x		10 / 14
N	Joan Van Stone	Consultant	CRS Max	prof	x	x	x	x	x	x	x	x	x				x		10 / 14
N	Warren Turner	Resident/Board Member	Brigadoon/ Planning & Zoning Board	res		x	x			x	x	x	x	x	x	x		x	10 / 14
N	Earl King	Consultant	CRS Max	prof	x	x											x	x	4 / 14
N	Matt Pazanski	Director	Finance	staff	x	x			x										3 / 14
N	Jack Kneuer	Resident/ Board Member	Juno Beach Civic Association, P&Z Board	org			x												1 / 14
Y	David Cox	Resident/HOA Vice President	The Manor	res		x	x	x	x	x	x	x	x	x	x		x	x	12 / 14
Y	Beverly Tartaglia	Resident/ Neighborhood Rep.	Juno Ocean Walk RV Park	res		x	x	x		x	x	x	x	x	x	x	x		11 / 14
Y	Tom Doyle	Resident/ Neighborhood Rep.	Sea Oats	res		x	x	x		x	x		x	x		x	x	x	10 / 14
Y	Bill Kollmer	Realtor/ Business Owner/ Former Mayor	Platinum Properties	b-own/ agent		x	x	x	x		x		x	x	x	x		x	10 / 14
Y	Geri Brackman	Resident/ Real Estate Agent	Cote De La Mer/ REMAX Ocean Properties	res/ agent		x	x	x			x		x		x	x			7 / 14
Y	Cheri Sova	Engineer/Resident/Business Owner	Civil Solutions, Inc./ J. O. W. RV Park	b-own/ prof						x	x	x	x	x	x		x		7 / 14
Y	Dave Manchester	Resident/ HOA Secretary	Juno Ocean Walk RV Park	res		x	x										x		3 / 14
Y	Joanne Cassels Lander	Resident/ HOA President	Juno Ocean Walk RV Park	res		x	x	x											3 / 14
N	Sheridan Butch Truesdale	Emergency Manager/**Guest Speaker**	PB County	com/ prof			x	x											2 / 14
Y	Chris Banker	Insurance Agent/ Company President	Patriot Insurance Agency, LLC	b-own/ agent		x													1 / 14
Y	John Frymm	Resident	visitor	res			x												1 / 14
Y	Peter Travis	Director Client Growth (Ins. Industry)	Torrent Ins. (WYO Flood Companies)	agent					x										1 / 14
Y	Wanda Ihrig	Resident/ Neighborhood Rep.	Juno Ocean Club	res						x									1 / 14
Y	Fred Ihrig	Resident/ Neighborhood Rep.	Juno Ocean Club	res						x									1 / 14
Y	C. Michael Clarey	Resident/ Neighborhood Rep.	Juno Ocean Walk RV Park	res						x									1 / 14
Y	Diane Queller	Resident	visitor	res							x								1 / 14
Y	Richard Queller	Resident	visitor	res							x								1 / 14
Y	Debbie Battles	Resident	visitor	res							x								1 / 14
Y	Dolores Koski	Resident	visitor	res							x								1 / 14
Y	Bob Hamilton	Resident/ Neighborhood Rep.	Wexford Court	res								x							1 / 14
Y	Richard Domian	Resident	visitor	res								x							1 / 14
Y	Dan Olson	Resident/ Neighborhood Rep.	Beachbound	res								x							1 / 14
Y	Sydney Vickie	Resident	visitor	res									x						1 / 14
Y	Ivan Stuart	Resident/ Neighborhood Rep.	Brigadoon	res											x				1 / 14
Y	Joseph Semoff	Resident/ Neighborhood Rep.	Brigadoon	res											x				1 / 14
Y	Brian Grover	Resident/ Neighborhood Rep.	Juno Ocean Walk RV Park	res													x		1 / 14
Y	Geo Basilone	Resident	visitor	res					x										1 / 14
Y	Julie Pilcher	Resident/ RV Park Office Manager	Juno Ocean Walk RV Park	res							x								1 / 14

Committee Members:
Stakeholder/ Public
Town Staff

Designation Key	**Symbol**
Staff:	staff
Resident:	res
Local Business Owner:	b-own
Non-Staff Professional/ Expert:	prof
Civic Organization:	org
Adjacent Community:	com
Insurance/ Real Estate:	agent

Exhibit 2

Contact with Agencies and Organizations

Comments and Recommendations Solicited From Other Agencies and Organizations

	Name	Organization	Address	Address2	City	State	Zip	Category-JVS
1	Battalion Chief Mike Wells	Palm Beach County Fire Rescue	12870 S, U.S. Hwy 1		Juno Beach	FL	33408-0000	2e
2	Community Relations	The Waterford	601 Universe Blvd		Juno Beach	FL	33408-0000	2e
3	Julie Pilcher, Office Manager	Juno Ocean Walk Condominium Association	900 Juno Ocean Walk		Juno Beach	FL	33408-0000	2e
4	Mr. Greg Leach, Chair	Northern Palm Beach County Chamber of Commerce	800 North US Highway One		Jupiter	FL	33477-0000	2e
5	To Whom it May Concern	Florida Power & Light Company, Community Outreach	700 Universe Blvd		Juno Beach	FL	33408	2e
6	To Whom it May Concern	Seacoast Utilities	PO Box 109602		Palm Beach Gardens	FL	33410-9602	2e
7	Police Chief Brian Smith	Juno Beach Police Department	340 Ocean Drive		Juno Beach	FL	33408-0000	2e
8	To Whom it May Concern	Hospice of Palm Beach County	801 Donald Ross Road		Juno Beach	FL	33408-0000	2e
9	To Whom it May Concern	Villas of Juno	12801 US Hwy 1		Juno Beach	FL	33408-0000	2e
10	Ms. Donna Hamilton, President	Juno Beach Civic Association	340 Ocean Drive		Juno Beach	FL	33408-0000	2e
11	To Whom it May Concern	Toll Brothers	250 Gibralter Road		Horsham	PA	19044-0000	2e
12	Mr. Robert Weese	Florida Power & Light Company	700 Universe Blvd		Juno Beach	FL	33408	3b
13	Kevin J. Foley, Chairman	Treasure Coast Regional Planning Council	12056 Birkdale Run		Tequesta	FL	33469	3b
14	Earl King	CRS Max Consultants, Inc.	3331 NW 71st Street		Coconut Creek	FL	33073-0000	3b
15	To Whom it May Concern	U.S. Army Corps of Engineers, South Florida Area Office	4400 PGA Blvd, Suite 203		Palm Beach Gardens	FL	33410-6555	3b
16	Andrew D. Lukasik, Town Manager	Town of Jupiter	210 Military Trail		Jupiter	FL	33458-0000	3b
17	Vice-Mayor Bert Premuroso	City of Palm Beach Gardens	10500 N. Military Trail		Palm Beach Gardens	FL	33410-0000	3b
18	Alyssa Dodd, Environmental Analyst, Public (	Palm Beach County Environmental Resources Management	2300 North Jog Road	Fourth Floor	West Palm Beach	FL	33411-743	3b
19	Paul Souza, Field Supervisor	U.S. Fish & Wildlife Service	Ecological Services Field Office	1339 20th Street	Vero Beach	FL	32960-0000	3b
20	Susan Mason, Program Manager	Florida Department of Environmental Protection	Southeast District Watershed Management A	400 North Congress Ave, Ste 2	West Palm Beach	FL	33401-0000	3b
21	Mr. Francis Lewis, Distric Drainage Engineer	Florida Department of Transportation	District Four Office	3400 West Commercial Blvd	Fort Lauderdale	FL	33309-0000	3b
22	Robert Weisman, County Administrator	Palm Beach County	301 N. Olive Avenue		West Palm Beach	FL	33401-0000	3b
23	To Whom it May Concern	Community Asphalt Company, Inc.	7795 Hooper Road		West Palm Beach	FL	33411-0000	3b
24	To Whom it May Concern	Tire Kingdom	823 Donald Ross Road		Juno Beach	FL	33408-0000	3b
25	To Whom it May Concern	A World of Rugs	12800 US Hwy 1	#110B	Juno Beach	FL	33408-0000	3b
26	Joy Duperault, CFM	NFIP Program Manager	Florida Division of Emergency Management	2555 Shumard Oak Blvd	Tallahassee	FL	32399-2100	3c
27	Miles Anderson	Florida State Hazard Mitigation Officer/NFIP Coordinator	Florida Division of Emergency Management	2555 Shumard Oak Blvd	Tallahassee	FL	32399-2100	3c
28	C. Douglas Bass	South Florida Water Management District	Emergency Management and Safety	3301 Gun Club Road	West Palm Beach	FL	33046-0000	3c
29	Brad Loar	Director, Mitigation Division	FEMA Region IV	3003 Chamblee Tucker Rd	Atlanta	GA	30341-0000	3c
30	Susan Wilson	Floodplain Management and Insurance Branch Chief	FEMA Region IV	3003 Chamblee Tucker Rd	Atlanta	GA	30341-0000	3c
31	Sheridan Truesdale	Senior Mitigation Planner	Palm Beach County Div of Emergency Mgmt	20 South Military Trail	West Palm Beach	FL	33415-0000	3c
32	To Whom it May Concern	Florida Coastal Management Program	3900 Commonwealth Blvd	Douglas Building, Mail Sta 47	Tallahassee	FL	32399-0000	3c
33	Mr. Robert Molleda	National Weather Service	South Florida Weather Forecast Office	11691 SW 17th Street	Miami	FL	33165	3d
34	Chris Roog, Director of Government Affairs	Gold Coast Builders' Association		2617 North Australian Ave	West Palm Beach	FL	33407-0000	3d
35	Jill Masters, Regional Manager of Communic	American Red Cross	Palm Beaches Region	825 Fern Street	West Palm Beach	FL	33401	3d
36	To Whom it May Concern	The Nature Conservancy in Florida	222 S. Westmonte Drive	Suite 300	Altamonte Springs	FL	32714-0000	3d
37	Mr. David Kennedy	National Oceanic and Atmospheric Administration	Ocean Services and Coastal Zone Managem	1305 E West Highway 13632	Silver Spring	MD	20910-0000	3d
38	To Whom it May Concern	Palm Beach Soil and Water Conservation District	420 S. State Road 7	Suite 162	Royal Palm Beach	FL	33414-0000	3d
39	Angela D. Usher, AICP, Manager FPIC	Palm Beach County School District	Fulton-Holland Educational Services Center	3300 Forest Hill Bouldvard	West Palm Beach	FL	33406-0000	
40	To Whom it May Concern	USDA, Natural Resources Conservation Service	2614 NW 43rd St		Gainesville	FL	32606-6611	3d
41	Dan DuBray, Chief, Public Affairs	U.S. Bureau of Reclamation	1849 C Street NW		Washington DC		20240-0001	

Town of Juno Beach
340 Ocean Drive
Juno Beach, FL 33408
Phone (561) 626-1122 Fax (561) 775-0812
www.juno-beach.fl.us

Battalion Chief Mike Wells
Palm Beach County Fire Rescue
12870 S. U.S. Highway 1
Juno Beach, Florida 33408

RE: TOWN OF JUNO BEACH FLOOD MITIGATION PLAN

Dear Battalion Chief Wells:

The Town of Juno Beach is in the process of developing a Flood Mitigation Plan for our community. In addition to gathering information from the Town's own staff, residents and businesses, we are also seeking input from other groups or agencies whose plans and activities may affect the mitigation planning effort.

The intent of this letter is to request your input in the Town's planning efforts. Should you have information that you feel would be pertinent to us or if your agency is doing anything that will affect our community's flood hazard mitigation program or other mitigation efforts, we would appreciate if you would share that with us. In addition, if there is any way you would like to support our efforts, we welcome your participation.

Andrea Dobbins, Project Coordinator, is the staff lead for this project. She can be reached at (561) 656-0326 or you may email her at adobbins@juno-beach.fl.us . You may also call our Flood Mitigation Plan consultant, CRS Max Consultants, Inc. at (954) 421-7794. We welcome your attendance at any one of the meetings of the Flood Mitigation Plan Task Force, which will be advertised on the Town's website.

We look forward to hearing from you and thank you for your support.

Sincerely,

Joseph F. Lo Bello
Town Manager

Town of Juno Beach
340 Ocean Drive
Juno Beach, FL 33408
Phone (561) 626-1122 Fax (561) 775-0812
www.juno-beach.fl.us

Community Relations
The Waterford
601 Universe Boulevard
Juno Beach, Florida 33408

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Julie Pilcher, Office Manager
Juno Ocean Walk Condominium Association
9020 Juno Ocean Walk
Juno Beach, Florida 33408

RE: TOWN OF JUNO BEACH FLOOD MITIGATION PLAN

Dear Ms. Pilcher:

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Mr. Greg Leach, Chair
Northern Palm Beach County Chamber Of Commerce
800 North U.S. Highway 1
Jupiter, Florida 33477

RE: TOWN OF JUNO BEACH FLOOD MITIGATION PLAN

Dear Mr. Leach:

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Seacoast Utilities
PO Box 109602
Palm Beach Gardens, Florida 33410-9602

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Hospice of Palm Beach County
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Juno Beach, Florida 33408

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Ms. Donna Hamilton, President
Juno Beach Civic Association
340 Ocean Drive
Juno Beach, Florida 33408

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Toll Brothers
250 Gibraltar Road
Horsham, Pennsylvania 19044

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Mr. Robert Weese
Florida Power & Light Company
700 Universe Boulevard
Juno Beach, Florida 33408

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We look forward to hearing from you and thank you for your support.

Sincerely,

Joseph F. Lo Bello
Town Manager

Town of Juno Beach
340 Ocean Drive
Juno Beach, FL 33408
Phone (561) 626-1122 Fax (561) 775-0812
www.juno-beach.fl.us

Kevin J. Foley, Chairman
Treasure Coast Regional Planning Council
12056 Birkdale Run
Tequesta, Florida 33469

RE: TOWN OF JUNO BEACH FLOOD MITIGATION PLAN

Dear Mr. Foley:

The Town of Juno Beach is in the process of developing a Flood Mitigation Plan for our community. In addition to gathering information from the Town's own staff, residents and businesses, we are also seeking input from other groups or agencies whose plans and activities may affect the mitigation planning effort.

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340 Ocean Drive
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Phone (561) 626-1122 Fax (561) 775-0812
www.juno-beach.fl.us

Town Manager Andrew D. Lukasik
Town of Jupiter
210 Military Trail
Jupiter, Florida 33458

RE: TOWN OF JUNO BEACH FLOOD MITIGATION PLAN

Dear Town Manager Lukasik:

The Town of Juno Beach is in the process of developing a Flood Mitigation Plan for our community. In addition to gathering information from the Town's own staff, residents and businesses, we are also seeking input from other groups or agencies whose plans and activities may affect the mitigation planning effort.

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www.juno-beach.fl.us

U.S. Army Corps of Engineers
South Florida Area Office
4400 PGA Boulevard, Suite 203
Palm Beach Gardens, Florida 33410-6555

RE: TOWN OF JUNO BEACH FLOOD MITIGATION PLAN

To Whom It May Concern:

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340 Ocean Drive
Juno Beach, FL 33408
Phone (561) 626-1122 Fax (561) 775-0812
www.juno-beach.fl.us

Vice-Mayor Bert Premuroso
City of Palm Beach Gardens
10500 North Military Trail
Palm Beach Gardens, Florida 33410

RE: TOWN OF JUNO BEACH FLOOD MITIGATION PLAN

Dear Vice-Mayor Premuroso:

The Town of Juno Beach is in the process of developing a Flood Mitigation Plan for our community. In addition to gathering information from the Town's own staff, residents and businesses, we are also seeking input from other groups or agencies whose plans and activities may affect the mitigation planning effort.

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340 Ocean Drive
Juno Beach, FL 33408
Phone (561) 626-1122 Fax (561) 775-0812
www.juno-beach.fl.us

Alyssa Dodd, Environmental Analyst
Palm Beach County Environmental Resources Management
2300 North Jog Road Fourth Floor
West Palm Beach, Florida 33411

RE: TOWN OF JUNO BEACH FLOOD MITIGATION PLAN

Dear Ms. Dodd:

The Town of Juno Beach is in the process of developing a Flood Mitigation Plan for our community. In addition to gathering information from the Town's own staff, residents and businesses, we are also seeking input from other groups or agencies whose plans and activities may affect the mitigation planning effort.

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Town Manager

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340 Ocean Drive
Juno Beach, FL 33408
Phone (561) 626-1122 Fax (561) 775-0812
www.juno-beach.fl.us

Paul Souza, Field Supervisor
U.S. Fish & Wildlife Service
Ecological Services Field Office
1339 20th Street
Vero Beach, Florida 32960

RE: TOWN OF JUNO BEACH FLOOD MITIGATION PLAN

Dear Mr. Souza:

The Town of Juno Beach is in the process of developing a Flood Mitigation Plan for our community. In addition to gathering information from the Town's own staff, residents and businesses, we are also seeking input from other groups or agencies whose plans and activities may affect the mitigation planning effort.

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340 Ocean Drive
Juno Beach, FL 33408
Phone (561) 626-1122 Fax (561) 775-0812
www.juno-beach.fl.us

Susan Mason, Program Manager
Florida Department of Environmental Protection
Southeast District Watershed Management
400 North Congress Avenue, Suite 200
West Palm Beach, Florida 33401

RE: TOWN OF JUNO BEACH FLOOD MITIGATION PLAN

Dear Ms. Mason:

The Town of Juno Beach is in the process of developing a Flood Mitigation Plan for our community. In addition to gathering information from the Town's own staff, residents and businesses, we are also seeking input from other groups or agencies whose plans and activities may affect the mitigation planning effort.

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Town Manager

Town of Juno Beach
340 Ocean Drive
Juno Beach, FL 33408
Phone (561) 626-1122 Fax (561) 775-0812
www.juno-beach.fl.us

Mr. Francis Lewis, District Drainage Engineer
Florida Department of Transportation
3400 West Commercial Boulevard
Fort Lauderdale, Florida 33309

RE: TOWN OF JUNO BEACH FLOOD MITIGATION PLAN

Dear Mr. Lewis:

The Town of Juno Beach is in the process of developing a Flood Mitigation Plan for our community. In addition to gathering information from the Town's own staff, residents and businesses, we are also seeking input from other groups or agencies whose plans and activities may affect the mitigation planning effort.

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Joseph F. Lo Bello
Town Manager

Town of Juno Beach
340 Ocean Drive
Juno Beach, FL 33408
Phone (561) 626-1122 Fax (561) 775-0812
www.juno-beach.fl.us

County Administrator Robert Weisman
Palm Beach County
301 N Olive Avenue
West Palm Beach, Florida 33401

RE: TOWN OF JUNO BEACH FLOOD MITIGATION PLAN

Dear County Administrator Weisman:

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340 Ocean Drive
Juno Beach, FL 33408
Phone (561) 626-1122 Fax (561) 775-0812
www.juno-beach.fl.us

Community Asphalt Company, Inc.
7795 Hooper Road
West Palm Beach, Florida 33411

RE: TOWN OF JUNO BEACH FLOOD MITIGATION PLAN

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Phone (561) 626-1122 Fax (561) 775-0812
www.juno-beach.fl.us

Tire Kingdom
823 Donald Ross Road
Juno Beach, Florida 33408

RE: TOWN OF JUNO BEACH FLOOD MITIGATION PLAN

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Town Manager

Town of Juno Beach
340 Ocean Drive
Juno Beach, FL 33408
Phone (561) 626-1122 Fax (561) 775-0812
www.juno-beach.fl.us

A World of Rugs
#110B
12800 U.S. Highway 1
Juno Beach, Florida 33408

RE: TOWN OF JUNO BEACH FLOOD MITIGATION PLAN

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340 Ocean Drive
Juno Beach, FL 33408
Phone (561) 626-1122 Fax (561) 775-0812
www.juno-beach.fl.us

Joy Duperault, NFIP Program Manager
Florida Division of Emergency Management
2555 Shumard Oak Boulevard
Tallahassee, Florida 32399-2100

RE: TOWN OF JUNO BEACH FLOOD MITIGATION PLAN

Dear Ms. Duperault:

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Phone (561) 626-1122 Fax (561) 775-0812
www.juno-beach.fl.us

Miles Anderson
Florida State Hazard Mitigation Officer
Florida Division of Emergency Management
2555 Shumard Oak Boulevard
Tallahassee, Florida 32399-2100

RE: TOWN OF JUNO BEACH FLOOD MITIGATION PLAN

Dear Mr. Anderson:

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Juno Beach, FL 33408
Phone (561) 626-1122 Fax (561) 775-0812
www.juno-beach.fl.us

C. Douglas Bass
South Florida Water Management District
3301 Gun Club Road
West Palm Beach, Florida 33046

RE: TOWN OF JUNO BEACH FLOOD MITIGATION PLAN

Dear Mr. Bass:

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Phone (561) 626-1122 Fax (561) 775-0812
www.juno-beach.fl.us

Brad Loar, Director, Mitigation Division
FEMA Region IV
3003 Chamblee Tucker Road
Atlanta, Georgia 30341

RE: TOWN OF JUNO BEACH FLOOD MITIGATION PLAN

Dear Mr. Loar:

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Juno Beach, FL 33408
Phone (561) 626-1122 Fax (561) 775-0812
www.juno-beach.fl.us

Susan Wilson
Floodplain Management & Insurance Branch Chief
FEMA Region IV
3003 Chamblee Tucker Road
Atlanta, Georgia 30341

RE: TOWN OF JUNO BEACH FLOOD MITIGATION PLAN

Dear Ms. Wilson:

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340 Ocean Drive
Juno Beach, FL 33408
Phone (561) 626-1122 Fax (561) 775-0812
www.juno-beach.fl.us

Sheridan Truesdale, Senior Mitigation Planner
Palm Beach County Division of Emergency Management
20 South Military Trail
West Palm Beach, Florida 33415

RE: TOWN OF JUNO BEACH FLOOD MITIGATION PLAN

Dear Mr. Truesdale:

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340 Ocean Drive
Juno Beach, FL 33408
Phone (561) 626-1122 Fax (561) 775-0812
www.juno-beach.fl.us

Florida Coastal Management Program
3900 Commonwealth Boulevard
Douglas Building Mail Station 47
Tallahassee , Florida 32399

RE: TOWN OF JUNO BEACH FLOOD MITIGATION PLAN

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Town of Juno Beach
340 Ocean Drive
Juno Beach, FL 33408
Phone (561) 626-1122 Fax (561) 775-0812
www.juno-beach.fl.us

Mr. Robert Molleda
Nation Weather Service
South Florida Weather Forecast Office
11691 SW 17th Street
Miami, Florida 33165

RE: TOWN OF JUNO BEACH FLOOD MITIGATION PLAN

Dear Mr. Molleda:

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The intent of this letter is to request your input in the Town's planning efforts. Should you have information that you feel would be pertinent to us or if your agency is doing anything that will affect our community's flood hazard mitigation program or other mitigation efforts, we would appreciate if you would share that with us. In addition, if there is any way you would like to support our efforts, we welcome your participation.

Andrea Dobbins, Project Coordinator, is the staff lead for this project. She can be reached at (561) 656-0326 or you may email her at adobbins@juno-beach.fl.us . You may also call our Flood Mitigation Plan consultant, CRS Max Consultants, Inc. at (954) 421-7794. We welcome your attendance at any one of the meetings of the Flood Mitigation Plan Task Force, which will be advertised on the Town's website.

We look forward to hearing from you and thank you for your support.

Sincerely,

Joseph F. Lo Bello
Town Manager

Town of Juno Beach
340 Ocean Drive
Juno Beach, FL 33408
Phone (561) 626-1122 Fax (561) 775-0812
www.juno-beach.fl.us

Chris Roog, Director of Government Affairs
Gold Coast Builders' Association
2617 North Australian Avenue
West Palm Beach. Florida 33407

RE: TOWN OF JUNO BEACH FLOOD MITIGATION PLAN

Dear Mr. Roog:

The Town of Juno Beach is in the process of developing a Flood Mitigation Plan for our community. In addition to gathering information from the Town's own staff, residents and businesses, we are also seeking input from other groups or agencies whose plans and activities may affect the mitigation planning effort.

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340 Ocean Drive
Juno Beach, FL 33408
Phone (561) 626-1122 Fax (561) 775-0812
www.juno-beach.fl.us

Jill Masters, Regional Manager of Communications
American Red Cross-Palm Beaches Region
825 Fern Street
West Palm Beach, Florida 33401

RE: TOWN OF JUNO BEACH FLOOD MITIGATION PLAN

Dear Ms. Masters:

The Town of Juno Beach is in the process of developing a Flood Mitigation Plan for our community. In addition to gathering information from the Town's own staff, residents and businesses, we are also seeking input from other groups or agencies whose plans and activities may affect the mitigation planning effort.

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340 Ocean Drive
Juno Beach, FL 33408
Phone (561) 626-1122 Fax (561) 775-0812
www.juno-beach.fl.us

The Nature Conservancy in Florida
222 S Westmonte Drive Suite 300
Altamonte Springs, Florida 32714

RE: TOWN OF JUNO BEACH FLOOD MITIGATION PLAN

To Whom It May Concern:

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Town of Juno Beach
340 Ocean Drive
Juno Beach, FL 33408
Phone (561) 626-1122 Fax (561) 775-0812
www.juno-beach.fl.us

Mr. David Kennedy
NOAA
Ocean Services & Coastal Management
1305 E West Highway 13632
Silver Spring, Maryland 20910

RE: TOWN OF JUNO BEACH FLOOD MITIGATION PLAN

Dear Mr. Kennedy:

The Town of Juno Beach is in the process of developing a Flood Mitigation Plan for our community. In addition to gathering information from the Town's own staff, residents and businesses, we are also seeking input from other groups or agencies whose plans and activities may affect the mitigation planning effort.

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Town Manager

Town of Juno Beach
340 Ocean Drive
Juno Beach, FL 33408
Phone (561) 626-1122 Fax (561) 775-0812
www.juno-beach.fl.us

Palm Beach Soil & Water Conservation District
420 S State Road 7
Suite 162
Royal Palm Beach, Florida 33414

RE: TOWN OF JUNO BEACH FLOOD MITIGATION PLAN

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Joseph F. Lo Bello
Town Manager

Town of Juno Beach
340 Ocean Drive
Juno Beach, FL 33408
Phone (561) 626-1122 Fax (561) 775-0812
www.juno-beach.fl.us

Angela D. Usher, Manager FPIC
Palm Beach County School District
Fulton-Holland Educational Services Center
3300 Forest Hill Blvd
West Palm Beach, Florida 33406

RE: TOWN OF JUNO BEACH FLOOD MITIGATION PLAN

Dear Ms. Usher:

The Town of Juno Beach is in the process of developing a Flood Mitigation Plan for our community. In addition to gathering information from the Town's own staff, residents and businesses, we are also seeking input from other groups or agencies whose plans and activities may affect the mitigation planning effort.

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340 Ocean Drive
Juno Beach, FL 33408
Phone (561) 626-1122 Fax (561) 775-0812
www.juno-beach.fl.us

USDA
Natural Resources Conservation Svc
2614 NW 43rd Street
Gainesville, Florida 32606-6611

RE: TOWN OF JUNO BEACH FLOOD MITIGATION PLAN

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Sincerely,

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Town Manager

Town of Juno Beach
340 Ocean Drive
Juno Beach, FL 33408
Phone (561) 626-1122 Fax (561) 775-0812
www.juno-beach.fl.us

Chief Dan DuBray, Public Affairs
U.S. Bureau of Reclamation
1849 C Street NW
Washington DC 20240-0001

RE: TOWN OF JUNO BEACH FLOOD MITIGATION PLAN

Dear Chief DuBray:

The Town of Juno Beach is in the process of developing a Flood Mitigation Plan for our community. In addition to gathering information from the Town's own staff, residents and businesses, we are also seeking input from other groups or agencies whose plans and activities may affect the mitigation planning effort.

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We look forward to hearing from you and thank you for your support.

Sincerely,

Joseph F. Lo Bello
Town Manager

From: Kearns, Alison [mailto:Alison.Kearns@em.myflorida.com]
Sent: Friday, May 24, 2013 1:00 PM
To: Andrea Dobbins
Subject: Flood Mitigation Plan Input

Hi Andrea,

I just was given a letter concerning the development of the Flood Mitigation Plan for Juno Beach from my supervisors, Joy Duperault and Miles Anderson. The best input that I can give you for now is that a lot of jurisdictions that I have worked with are trying to integrate the Flood Mitigation Plans into their Local Mitigation Strategies (LMS) to make it most effective. This is certainly something to look into so the documents can support each other and improve mitigation strategies. FDEM has a document that can shed some light on this which can be found at, http://www.floridadisaster.org/Mitigation/Local/Documents/Integration%20Plan_120801.pdf.

During the development of this process, if you have any questions or concerns at all, don't hesitate to get in touch with me. I look forward to seeing the great work being done in Juno Beach. ☺

Alison Kearns
Mitigation Planner
Florida Division of Emergency Management
2555 Shumard Oak Boulevard
Tallahassee, FL 32399
Office: 850-413-9925
alison.kearns@em.myflorida.com
www.floridadisaster.org

From: Lewis, Francis [mailto:Francis.Lewis@dot.state.fl.us]
Sent: Tuesday, April 16, 2013 4:36 PM
To: Andrea Dobbins
Subject: Town of Juno Beach Flood Mitigation Plan

Hello Andrea,

It was good speaking with you earlier today regarding the development of the Town's Mitigation Plan.

As discussed during our conversation, SR 5 (US-1) is the only jurisdictional roadway of the Department that is within the City's limits.

There are no planned projects for this section of roadway identified in our 5-year work program. However, there is a project (Financial Project No. 422964-1) currently under construction with an expected completion date of June 2013. This is a Resurfacing, Rehabilitation and Restoration (RRR) project with limits from North of Parker Bridge to South of SR 706 (Indian Town Rd.). The drainage work associated with this project included the installation of Exfiltration Trench and regrading of roadside swales to address added impervious areas due to sidewalk and turn lane additions.

Please feel free to keep us involved as your plan develops.

Regards,

Francis Lewis, PE
District Drainage Engineer
FDOT - District 4
3400 West Commercial Boulevard
Fort Lauderdale, Fl 33309
Tel: (954) 777-4146, Fax: (954) 777-4482
Email: francis.lewis@dot.state.fl.us

Drainage..."Weir" Here for you!

From: Bailey, Cynthia B [mailto:Cynthia.Bailey@fema.dhs.gov]
Sent: Monday, April 15, 2013 4:07 PM
To: Andrea Dobbins
Subject: Town of Juno Beach Flood Mitigation Plan

Hello Andrea,

As we discussed on our phone conversation this afternoon, the letter to FEMA from the Juno Beach Town Manager concerning the Town of Juno Beach Flood Mitigation Plan has been forwarded to the FEMA R4 Flood Management and Insurance Branch for their review.

I am also including contact information for Laura Herbert, the Lead Mitigation Planner at the Florida Division of Emergency Management. Please contact Laura for input concerning the Town of Juno Beach's planning efforts and the Palm Beach County Unified Local Mitigation Strategy.

Laura Herbert
Lead Mitigation Planner
Florida Division of Emergency Management
850-922-5580
laura.herbert@em.myflorida.com

Please let me know if I can be of further assistance.
Thank you,

Cynthia "Cindy" Bailey
Hazard Mitigation Program Analyst
DHS/FEMA Region IV
Mitigation Division - Risk Analysis Branch
3003 Chamblee Tucker Road – Hollins Bldg
Atlanta, GA 30341-4112
Desk Phone: 770-220-5408
FEMA Cell: 404-698-0739
FAX: 770-220-8783
cynthia.bailey@fema.dhs.gov
Please note: cynthia.b.bailey@fema.dhs.gov has been discontinued

From: Angela Usher [mailto:angela.usher@palmbeachschools.org]
Sent: Wednesday, April 03, 2013 5:09 PM
To: Andrea Dobbins
Subject: Town of Juno Beach Flood Mitigation Plan

Good Afternoon Ms. Dobbins:

I received the Town's letter for input on its Flood Mitigation Plan. We do not have any schools currently in the Town of Juno and we have none planned in our Capital Plan. However, I would like to be involved in the planning process, so could you please keep me informed of the upcoming meetings.

Thank you.

Angela D. Usher, AICP
Manager, Planning & Real Estate Services
Division of Support Operations
Exceeding Expectations
The DSO Scoop: http://weblogs.pbspaces.com/dso/

School District Palm Beach County
3300 Forest Hill Blvd., C-110
West Palm Beach, FL 33406
Phone 561.434.8800 Px48800 FAX 561.434.8815
Angela.Usher@palmbeachschools.org
www.PlanningandRealEstate.info

Each year, the School District of Palm Beach County recycles enough paper and cardboard to save over 68,000 trees and 28 million gallons
of water. You can help save even more by not printing this email.

Palm Beach County Schools
Rated "A" by the Florida Department of Education 2005-2011
Home of Florida's first LEED Gold Certified School
www.palmbeachschools.org

The School District of Palm Beach County is an Equal Education Opportunity Provider and Employer.

The Latest School District News: Good Luck Students and Teachers on
FCAT Testing

Disclaimer: Under Florida law, e-mail addresses are public records. If you do not want your e-mail address released in response to a public records request, do not send electronic mail to this entity. Instead, contact this office by phone or in writing.

TOWN OF JUPITER

UTILITIES
PO BOX 8900
JUPITER, FL 33468-8900
FAX (561) 747-5634

May 9, 2013

Andrea Dobbins, Project Coordinator
Town of Juno Beach
340 Ocean Drive
Juno Beach, Fl. 33408

Re: Town of Juno Beach Flood Mitigation Plan

Dear Mrs. Dobbins:

The Town of Jupiter is willing to be of assistance in the development of Juno's Flood Mitigation Plan.

Presently the only issue that I recommend you look at is the discharge from Ocean Dunes. It appears that they have a discharge from the lake in their development into the lake at the mobile home park.

If you have any questions please feel free to contact me at 561-748-2705.

Sincerely,

David J Rotar
Utility Services Manager

DJ:cf

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Coastal Services Center
2234 South Hobson Avenue
Charleston, South Carolina 29405-2413

MAY 0 2 2013

Joseph F. Lo Bello
Town Manager
Town of Juno Beach
340 Ocean Drive
Juno Beach, FL 33408

Dear Mr. Lo Bello:

Thank you for your recent letter to the National Oceanic and Atmospheric Administration (NOAA) seeking input for the Town of Juno Beach's flood mitigation plan. I am responding to your letter on behalf of NOAA's Assistant Administrator for Ocean Services and Coastal Zone Management, Dr. Holly Bamford.

Experts from across NOAA's National Ocean Service deliver products and services that strengthen our nation's preparedness and ability to recover from coastal flooding events. Here are some resources to assist your community in identifying and addressing coastal flooding risks in your area:

Planning Toolkits and Guides

- *Coastal Inundation Toolkit* provides the context and guidance for connecting the resources within NOAA's Digital Coast to assist communities understand and address coastal flooding. (http://www.csc.noaa.gov/digitalcoast/inundation/understand)
- *Adapting to Climate Change: A Planning Guide for State Coastal Managers* assists coastal managers develop and implement adaptation plans to reduce the risks associated with climate change impacts affecting their coasts. (http://coastalmanagement.noaa.gov/climate/adaptation.html)
- *Shoreline Management Technical Assistance Toolbox* offers resources, case studies and other helpful information to create effective and appropriate approaches to shoreline erosion. (http://coastalmanagement.noaa.gov/shoreline.html)
- *Habitat Priority Planner* aids in developing critical habitat analyses that can be used with other spatial data to evaluate climate-related impacts. (http://www.csc.noaa.gov/digitalcoast/tools/hpp)

Coastal Hazard Data and Tools

- *Sea Level Rise and Coastal Flooding Impacts Viewer* displays future potential sea levels allowing users to visualize the impacts from sea level rise and coastal flooding. (http://csc.noaa.gov/digitalcoast/tools/slrviewer/)
- *Storm Events Database* is a searchable database of storm events recorded by county. (http://www.ncdc.noaa.gov/stormevents/)
- *Critical Facilities Flood Exposure Tool* provides an initial assessment of a community's facilities and roads that lie within FEMA's 1% annual chance flood zone. (http://csc.noaa.gov/digitalcoast/tools/criticalfacilities)

- *Coastal Change Analysis Program (C-CAP)* produces a nationally standardized database of land cover and land change information. (http://www.csc.noaa.gov/digitalcoast/data/ccapregional)
- *Coastal County Snapshots* turns complex county-level data into easy-to-understand graphs and visuals to help communities assess their resilience to flooding. (http://www.csc.noaa.gov/snapshots/)
- *Social Vulnerability Index (SOVI)* measures the social vulnerability of U.S. counties to environmental hazards. (http://csc.noaa.gov/digitalcoast/data/sovi)
- *Economics: National Ocean Watch (ENOW)* offers time-series data on the ocean economy, which includes six economic sectors dependent on the oceans and Great Lakes. (http://csc.noaa.gov/digitalcoast/data/enow)
- Coastal lidar data is available at http://csc.noaa.gov/digitalcoast/data/coastallidar.

Training

- A two-day instructor-led course on coastal inundation issues and mapping methods that combines lecture and hands-on exercises using GIS. (http://www.csc.noaa.gov/digitalcoast/training/inundationmap)

Many of the above resources are available through NOAA's Digital Coast website. If you need assistance in accessing or using any of these data or tools, NOAA Coastal Services Center staff can be reached through csc.info@noaa.gov to answer questions over the phone. Feel free to contact staff at any point in your mitigation planning efforts.

NOAA's National Ocean Service has a range of products and services available to determine ocean depths and coastal elevation and to monitor storm surge. Florida also has a state geodetic advisor that liaises with NOAA to guide and assist the state's geodetic and surveying programs. More information on this program and Florida's geodetic advisor is available at: https://www.ngs.noaa.gov/ADVISORS/AdvisorsIndex.shtml

I appreciate your interest in NOAA's products and services to support your community's flood mitigation plan. If you have further questions, please contact me at 843-740-1207.

Sincerely,

Jeffrey Payne, Ph.D.
Acting Director, Coastal Services Center

From: Dressler, Theo T. [mailto:theo.dressler@redcross.org]
Sent: Wednesday, April 03, 2013 11:58 AM
To: Andrea Dobbins
Cc: Romano, Lizzette
Subject: Flood Planning

Andrea:

I was given your letter today concerning your planning efforts.

The Red Cross responds to disasters of all types when families and individuals are affected or displaced and also at the request of 1st responders. During flooding, should a shelter be needed for displaced persons, we would open a shelter, and staff and resource that shelter for as long as needed.

As an example: If Juno-Beach had a rain event and 40 homes were affected, likely we would be contacted by Fire Rescue or Emergency Management that these homes are being evacuated and that potentially there could be 120 adults and children in need to immediate shelter. We would contact the organizations we have agreements with in your area and open a shelter for the affected persons. In addition to our other support efforts during disaster, for the affected households, whose homes were damaged and uninhabitable, we would assign a caseworker to each affected household and work with them (referrals, etc.) to help get them further longer-term assistance.

Concerning longer term planning and mitigation efforts, we go into the communities and do presentations for all age groups on hurricane, flooding, fires and other disaster preparedness actions all of which are part of our Community Disaster Education (CDE) program. Of course we also offer a variety of health and safety classes (first aid, etc). Another possibility you may wish to discuss for preparedness and mitigation efforts could be a partnership, where the Town of Juno Beach forms a team of volunteers to staff a shelter during disaster, for your community and for CDE events. Red Cross would work with your group for training, etc.

Lizzette Romano will be our POC to work with you and can be contacted at Lizzette.romano@redcross.org. She will reach out to you as well to get more information.

Thanks and call anytime,
Theo

Theo Dressler
Senior Director, Emergency Services

Join the Movement
American Red Cross
Palm Beaches – Treasure Coast Region
825 Fern Street
West Palm Beach, FL 33401
561-650-9144 (Office)
561-676-0670 (Cell)
http://www.redcross-pbc.org
Proudly serving some 2 million people
Across the Palm Beaches & Treasure Coast

Exhibit 3

Explain Planning Process to the Public and Other Outreach Activities

Public Information Meeting
Flooding in Juno Beach

April 17, 2013
4:30 PM

AGENDA

I. Welcome and Introductory Comments – *Andrea Dobbins,*
Flood Mitigation Plan Committee Chairperson

II. Flood Mitigation Plan – Cathy *King, CRS Max Consultants*

- Goals and description of the process
- Purpose of this meeting – receive input from the Juno Beach community concerning flooding
    - Natural hazards
    - Problems
    - Possible solutions

III. Brief Overview of Flooding in Juno Beach

- Areas of particular concern in Juno Beach – *Anthony Meriano,*
Public Works Director
- Brief overview of insurance claims in Juno Beach – Cathy *King,*
CRS Max Consultants

IV. Community Input

- Natural hazards
- Problems
- Possible solutions

V. Questions and Discussion – *Cathy King, CRS Max Consultants*

VI. Concluding Comments – *Andrea Dobbins, Chairperson*

Home
9/11 Remembrance Project
TOWN DIRECTORY & CONTACT INFORMATION
Town Council
Town Departments
Agendas & Minutes
Ordinances & Resolutions
Juno Beach News & Events
Juno Beach Police Department
Building Division
Community Facts
Town Jobs
Flood Protection and Hurricane Awareness
Juno Beach Local Businesses
Employment Opportunities Around Town
Links of Interest
Site Map
Frequently Asked Questions
Financial Information
TRAFFIC VIOLATIONS
Beach Renourishment
Email Updates
In Juno Beach News & Events:

January 30th Floodplain Public Meeting - 3:00pm Town Center 340 Ocean Drive, Juno Beach, FL

Town in Final Stage of Flood Mitigation Planning

-Public Meeting to Review Action Plan on January 30, 2014-

The Town of Juno Beach is in the final stage of drafting a Flood Mitigation Plan. A public presentation of the draft Action Plan will be made on Thursday, January 30th at 3:00 p.m. at the Town Center, located at 340 Ocean Drive in Juno Beach. The public is encouraged to attend this meeting to comment and make recommendations on the draft Action Plan, which will be available on the Town's website beginning Tuesday, January 21st at www.juno-beach.fl.us . After final public input is collected, the plan will be submitted and reviewed by the state and FEMA. Once approved, the plan will be adopted and implemented by the Town.

The Flood Mitigation Plan was developed by the Flood Mitigation Plan Committee, comprised of residents, stakeholders and Town staff. Planning efforts have been underway since February 2013.

The plan was developed using FEMA's 10-step process:

1. Organize to prepare the plan
2. Involve the public
3. Coordinate with other agencies
4. Assess the hazard
5. Assess the problem
6. Set goals
7. Review possible activities
8. Draft an action plan
9. Adopt the plan
10. Implement, evaluate and revise

For more information about the Town's flood mitigation planning efforts, please contact Andrea Dobbins, Town of Juno Beach at (561) 656-0326 or adobbins@juno-beach.fl.us

Town of Juno Beach

Flood Mitigation Plan

Flood Mitigation Plan Community Forum

January 30, 2014

Town of Juno Beach Florida

One Major Challenge In South Florida:

Flooding

The Town of Juno Beach has chosen to be proactive and to take a comprehensive approach to flood mitigation:

Develop its own

Flood Mitigation Plan

Comprehensive Approach

Establish Flood Mitigation Plan Committee

- Review flood-related ordinances
- Identify capital improvements
- Plan for procurement of grants
- Evaluate public works maintenance
- Evaluate emergency response
- Consider community education
- Consider coordination with community

Flood Mitigation Plan

Background

- Applied for FMA Planning Grant – October 2011
- Awarded FMA Planning Grant – September 2012
- Awarded Consultant Services – December 2012
- Commenced Work on Plan – January 18, 2013
- Implemented Flood Mitigation Plan Committee – February – December, 2013

Flood Mitigation Plan

Strategy: "Two birds with one stone"

Flood Mitigation Plan

- Submit to State of Florida
- Complements LMS
- Enables receipt of State and Federal Grants

Floodplain Management Plan

- Submit to ISO/CRS Specialist
- Component of CRS Program
- Enables improvement of CRS Class and further reduction of flood insurance premiums

Flood Mitigation Plan Task Force

Flood Mitigation Plan Task Force

City Staff

Andrea Dobbins, Chair	**Project Coordinator**
Joseph Lo Bello	**Town Manager**
Anthony Meriano	**Public Works Director**
Ruben Cruz, CFM	**Planning & Zoning Director**
Frank Davila	**Planning Technician**

Flood Mitigation Plan Task Force

Residents/Stakeholders

Geri Brackman	Real Estate
Beverly Tartaglia	Resident
David Cox	Property Management
Warren Turner	Resident
Bill Kollmer	Real Estate
Tom Doyle	Resident
Joanne Cassels Lander	Property Manager
Cheri Sova	Engineering
Dave Manchester	HOA Board Member

- Many other residents attended the Committee meetings and offered input

Flood Mitigation Plan

Process

1. Preparation of the Plan
2. Public Involvement
3. Coordination with Other Agencies
4. Assessment of the Hazard
5. Assessment of the Problem

Process (continued)

6. Establishment of Goals
7. Review of Possible Activities
8. Development of Action Plan
9. Adoption of the Plan
10. Implementation, Evaluation and Revision

Action Plan
(the Heart of the Process)

- 60 Items
- Address wide variety of issues:
  - Preventative
  - Property Protection
  - Natural Resource Protection
  - Emergency Services
  - Structural Projects
  - Public Information

Action Plan

Departments or Divisions Responsible

- Public Works
- Special Projects
- Planning & Zoning
- Police Department
- Palm Beach County Emergency Management
- Town Manager's Office
- Code Enforcement
- Administration

What's Next?

Flood Mitigation Plan

- Approval by Task Force – December , 2013
- Presentation to Community – January 30, 2014
- Submission to State of Florida – April 2014
- Review by State of Florida and ISO/CRS – April 2014 – July 2014
- Adoption of State-approved Flood Mitigation Plan – August 2014

What's Next?

Floodplain Management Plan

- Submission to ISO/CRS Specialist
- Anticipate improving 150+ points in CRS Program due to Plan
- Anticipate maintaining Class 5 in 2015

(This is a significant accomplishment, given the challenges of the *2013 CRS Coordinator's Manual*.)

CRS Rating

Class 5 (Best in Florida)

25% premium reduction SFHA
10% premium reduction non-SFHA

Anticipated benefits:

- Realize flood mitigation benefits resulting from implementation of Action Plan
- Secure FEMA grants to supplement City's funds for flood-related capital improvements
- Maintain flood insurance premium reductions for all policy holders in Town of Juno Beach

THANK YOU!

CRS Max Consultants, Inc.

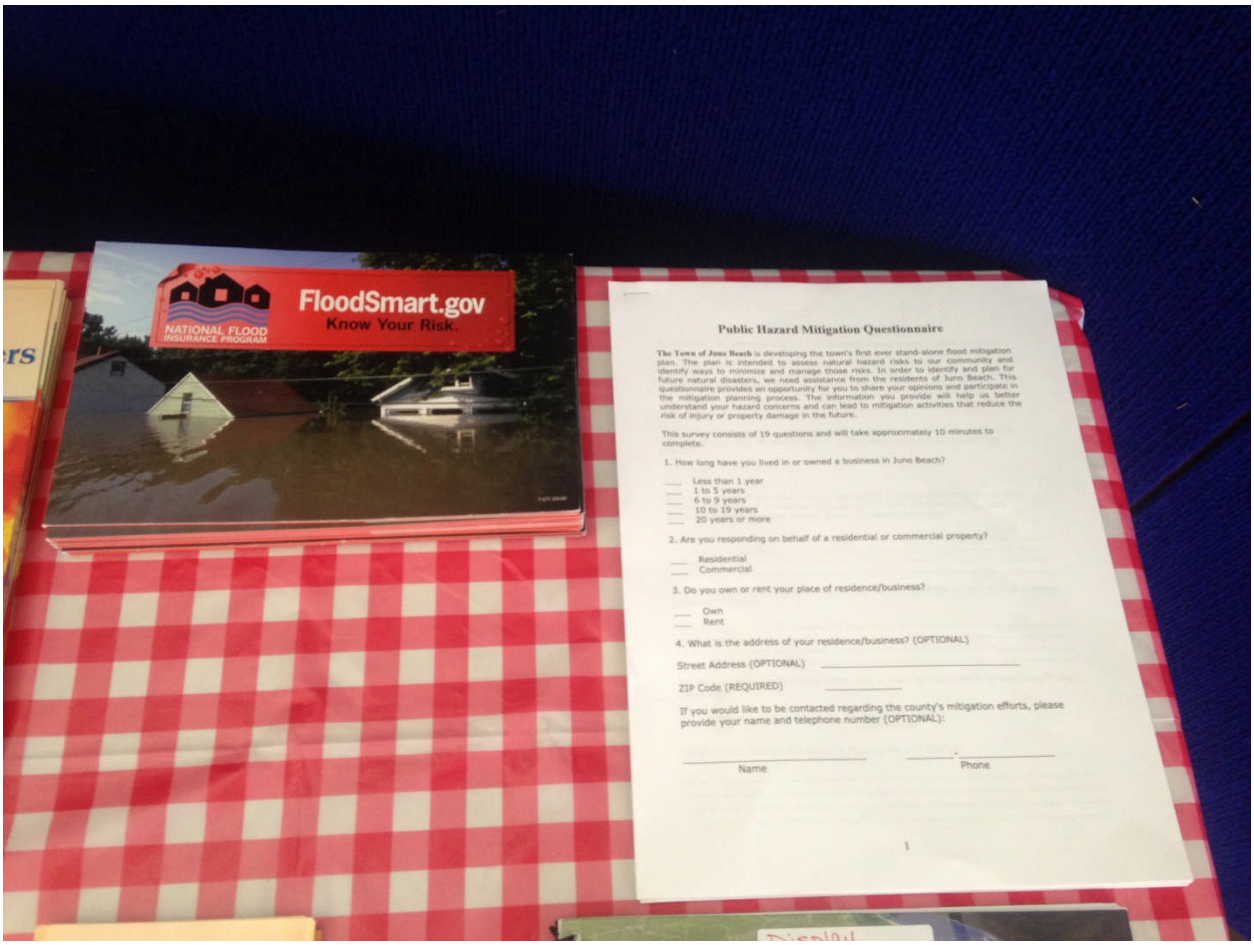
Questions??

Comments??

Input??

Free Information
Take One
Quick Guide
Condominium Coverage
FEMA
Fire Extinguishers
Choosing Them and Using Them
FloodSmart.gov
GET OUT!
STAY OUT!
Your Fire Safe Response
Preparing Makes Sense for Older Americans
Get Ready Now.
Homeland Security
Carbon Monoxide
Guard Against a Silent Killer
Best Practices
Promoting Successful Mitigation in Florida
Third Edition
Florida Hurricane Season 2004
FEMA
Smoke Alarms
First Defense Against Fire
Best Practices
Promoting Successful Mitigation in Florida
Florida Hurricane Season 2005
FEMA

September is National Preparedness Month
Get A Kit.
Make a Plan.
Be Informed.
Be Ready.
FEMA FLOOD ZONES
JUNO BEACH, FLORIDA
Free Information
Take One


FloodSmart.gov
Know Your Risk.
NATIONAL FLOOD INSURANCE PROGRAM
Public Hazard Mitigation Questionnaire
The Town of Juno Beach is developing the town's first ever stand-alone flood mitigation plan. The plan is intended to assess natural hazard risks to our community and identify ways to minimize and manage those risks. In order to identify and plan for future natural disasters, we need assistance from the residents of Juno Beach. This questionnaire provides an opportunity for you to share your opinions and participate in the mitigation planning process. The information you provide will help us better understand your hazard concerns and can lead to mitigation activities that reduce the risk of injury or property damage in the future.
This survey consists of 19 questions and will take approximately 10 minutes to complete.
1. How long have you lived in or owned a business in Juno Beach?
___ Less than 1 year
___ 1 to 5 years
___ 6 to 9 years
___ 10 to 19 years
___ 20 years or more
2. Are you responding on behalf of a residential or commercial property?
___ Residential
___ Commercial
3. Do you own or rent your place of residence/business?
___ Own
___ Rent
4. What is the address of your residence/business? (OPTIONAL)
Street Address (OPTIONAL) _____
ZIP Code (REQUIRED) _____
If you would like to be contacted regarding the county's mitigation efforts, please provide your name and telephone number (OPTIONAL):
_____ _____-_____
Name Phone
1

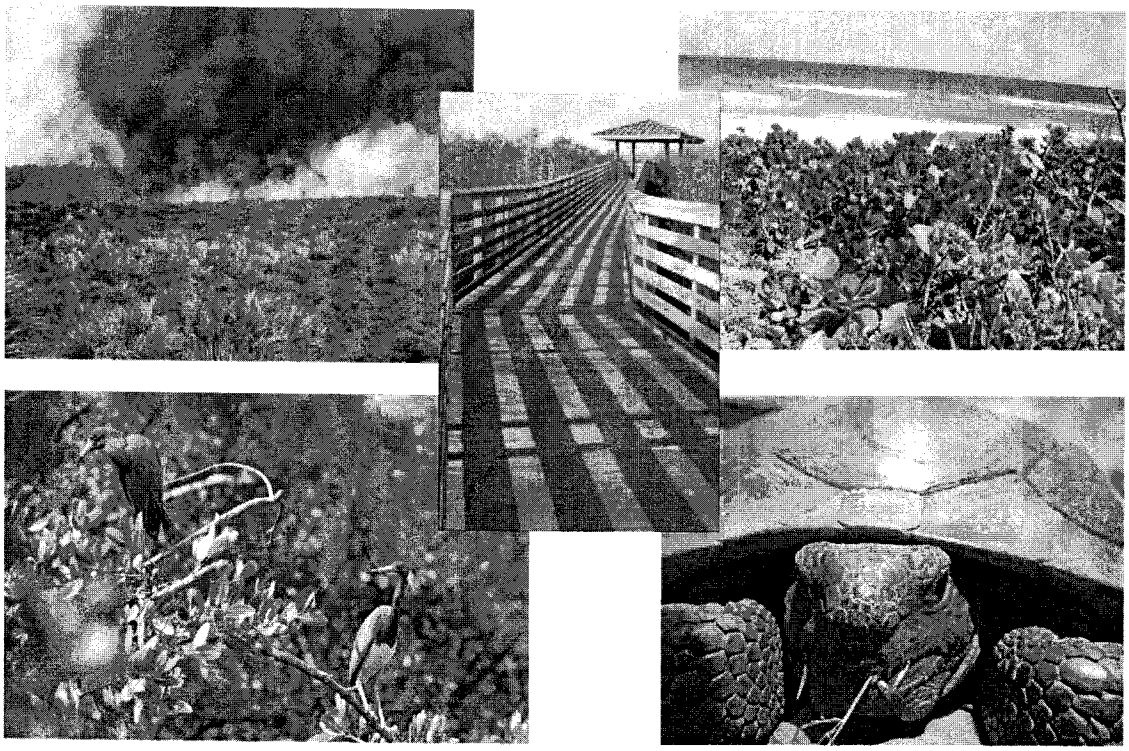
TOWN OF JUNO BEACH
FLOOD MITIGATION
PLAN TASK FORCE
MTG WED 3:30
PUBLIC OUTREACH
MTG 4:30

Exhibit 4

Juno Beach Open Space

DR/NTB

MANAGEMENT PLAN FOR
JUNO DUNES
NATURAL AREA



NOVEMBER 2011

Prepared by:

Palm Beach County
Department of Environmental Resources Management
2300 North Jog Road, 4th Floor
West Palm Beach, Florida 33411-2743

ARC 4/20/2012

Liles, Heidi

From: Andrea Dobbins [adobbins@juno-beach.fl.us]
Sent: Tuesday, July 31, 2012 3:18 PM
To: Liles, Heidi
Subject: FW: Juno Dunes Mgmt Plan BCC 12 20 11- ARC 4 20 12
Attachments: Juno Dunes Mgmt Plan BCC 12 20 11- ARC 4 20 12.pdf

Heidi,
This document will support our open space showing natural & beneficial lands that will not be developed. I had our clerk try to put this on a disc to send to you and it had some problems and we could not put it on the disc. please include this in my submission for the documentation you requested in your last email.
Thank you.

Andrea L Dobbins

Project Coordinator

Town of Juno Beach

561-656-0326

561-656-0327 fax

Please consider the environment before printing

* LEASE AGREEMENT FOR STATE-OWNED LAND FOR (ESL) JUNO DUNES MANAGEMENT PLAN.

NB DOCS

BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA

LEASE AGREEMENT

R97-1040D

Lease No. 4161

THIS LEASE AGREEMENT, made and entered into this _____ day of AUG 19 1997 19__ , by and between the BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA hereinafter referred to as "LESSOR," and PALM BEACH COUNTY, FLORIDA, hereinafter referred to as "LESSEE."

LESSOR, for and in consideration of mutual covenants and agreements hereinafter contained, does hereby lease to said LESSEE, the lands described in paragraph 2 below, together with the improvements thereon, and subject to the following terms and conditions:

1. DELEGATIONS OF AUTHORITY: LESSOR'S responsibilities and obligations herein shall be exercised by the Division of State Lands, Department of Environmental Protection.

2. DESCRIPTION OF PREMISES: The property subject to this lease, is situated in the County of Palm Beach, State of Florida and is more particularly described in Exhibit "A" attached hereto and hereinafter called the "leased premises".

3. TERM: The term of this lease shall be for a period of fifty (50) years commencing on August 19, 1997 and ending on August 18, 2047 unless sooner terminated pursuant to the provisions of this lease.

4. PURPOSE: LESSEE shall manage the leased premises only for the conservation and protection of natural and historical resources and for resource based public outdoor activities and education which are compatible with the conservation and protection of these public lands, as set forth in subsection 259.032(11), Florida Statutes, along with other related uses necessary for the accomplishment of this purpose as designated in the Management Plan required by paragraph 8 of this lease.

5. QUIET ENJOYMENT AND RIGHT OF USE: LESSEE shall have the right of ingress and egress to, from and upon the leased premises for all purposes necessary to the full quiet enjoyment by said LESSEE of the rights conveyed herein.

6. UNAUTHORIZED USE: LESSEE shall, through its agents and employees, prevent the unauthorized use of the leased premises or any use thereof not in conformity with this lease.

7. ASSIGNMENT: This lease shall not be assigned in whole or in part without the prior written consent of LESSOR, which consent shall not be unreasonably withheld. Any assignment made either in whole or in part without the prior written consent of LESSOR shall be void and without legal effect.

8. MANAGEMENT PLAN: LESSEE shall prepare and submit a Management Plan for the leased premises in accordance with Chapter 18-2, Florida Administrative Code, within twelve months of the effective date of this lease. The Management Plan shall be submitted to LESSOR for approval through the Division of State Lands, Department of Environmental Protection. The leased premises shall not be developed or physically altered in any way other than what is necessary for security and maintenance of the leased premises without the prior written approval of LESSOR until the Management Plan is approved. LESSEE shall provide LESSOR with an opportunity to participate in all phases of preparing and developing the Management Plan for the leased premises. The Management Plan shall be submitted to LESSOR in draft form for review and comments within ten months of the effective date of this lease. LESSEE shall give LESSOR reasonable notice of the application for and receipt of any state, federal or local permits as well as any public hearings or meetings relating to the development or use of the leased premises. LESSEE shall not proceed with development of said leased premises including, but not limited to, funding, permit applications, design or building contracts until the Management

Plan required herein has been submitted and approved. Any financial commitments made by LESSEE which are not in compliance with the terms of this lease shall be done at LESSEE'S own risk. The Management Plan shall emphasize the original management concept as approved by LESSOR at the time of acquisition which established the primary public purpose for which the leased premises were acquired. The approved Management Plan shall provide the basic guidance for all management activities and shall be reviewed jointly by LESSEE and LESSOR at least every five years. LESSEE shall not use or alter the leased premises except as provided for in the approved Management Plan without the prior written approval of LESSOR. The Management Plan prepared under this lease shall identify management strategies for exotic species, if present. The introduction of exotic species is prohibited, except when specifically authorized by the approved Management Plan.

9. EASEMENTS: All easements including, but not limited to, utility easements are expressly prohibited without the prior written approval of LESSOR. Any easement not approved in writing by LESSOR shall be void and without legal effect.

10. SUBLEASES: This lease is for the purposes specified herein and subleases of any nature are prohibited without the prior written approval of LESSOR, which approval shall not be unreasonably withheld. Any sublease not approved in writing by LESSOR shall be void and without legal effect.

11. RIGHT OF INSPECTION: LESSOR or its duly authorized agents, representatives or employees shall have the right to reasonably inspect the leased premises and the works and operations of LESSEE in any matter pertaining to this lease.

12. PLACEMENT AND REMOVAL OF IMPROVEMENTS: All buildings, structures and improvements shall be constructed in accordance with plans that are in accordance with the approved Management Plan or shall require the prior written approval of LESSOR as to

purpose, location and design which approval shall not be unreasonably withheld. Further, no trees, other than non-native species, shall be removed or major land alterations done without the prior written approval of LESSOR. Removable equipment and removable improvements placed on the leased premises by LESSEE which do not become a permanent part of the leased premises will remain the property of LESSEE and may be removed by LESSEE before or upon termination of this lease.

13. INSURANCE REQUIREMENTS: During the term of this lease LESSEE shall procure and maintain policies of fire, extended risk, and liability insurance coverage. The extended risk and fire insurance coverage shall be in an amount equal to the full insurable replacement value of any improvements or fixtures located on the leased premises. The liability insurance coverage shall be in amounts not less than $100,000 per occurrence and $200,000 per accident for personal injury, death, and property damage on the leased premises. Such policies of insurance shall name LESSOR, the State of Florida and LESSEE as co-insureds. LESSEE shall submit written evidence of having procured all insurance policies required herein prior to the effective date of this lease and shall submit annually thereafter, written evidence of maintaining such insurance to the Bureau of Land Management Services, Division of State Lands, Department of Environmental Protection, Mail Station 130, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399-3000. LESSEE shall purchase all policies of insurance from a financially-responsible insurer duly authorized to do business in the State of Florida. Any certificate of self-insurance shall be issued or approved by the Insurance Commissioner, State of Florida. The certificate of self-insurance shall provide for casualty and liability coverage. LESSEE shall immediately notify LESSOR and the insurer of any erection or removal of any building or other improvement on the leased premises and any changes affecting the value of any

improvements and shall request the insurer to make adequate changes in the coverage to reflect the changes in value. LESSEE shall be financially responsible for any loss due to failure to obtain adequate insurance coverage, and the failure to maintain such policies or certificate in the amounts set forth shall constitute a breach of this lease.

14. LIABILITY: Each party is responsible for all personal injury and property damage attributable to the negligent acts or omissions of that party and the officers, employees and agents thereof. Nothing herein shall be construed as an indemnity or a waiver of sovereign immunity enjoyed by any party hereto, as provided in Section 768.28, Florida Statutes, as amended from time to time, or any other law providing limitations on claims.

15. PAYMENT OF TAXES AND ASSESSMENTS: LESSEE shall assume full responsibility for and shall pay all taxes, assessments, liens or other similar liabilities that accrue to the leased premises or to the improvements thereon arising after this lease commences including any and all ad valorem taxes and drainage and special assessments or personal property taxes of every kind and all construction or materialman's liens which may be hereafter lawfully assessed and levied against the leased premises subsequent to the effective date of this lease. In no event shall the LESSEE be held liable for such liabilities which arose prior to the effective date of this lease.

16. NO WAIVER OF BREACH: The failure of LESSOR to insist in any one or more instances upon strict performance of any one or more of the covenants, terms and conditions of this lease shall not be construed as a waiver of such covenants, terms or conditions, but the same shall continue in full force and effect, and no waiver of LESSOR of any of the provisions hereof shall in any event be deemed to have been made unless the waiver is set forth in writing, signed by LESSOR.

17. TIME: Time is expressly declared to be of the essence of this lease.

18. NON-DISCRIMINATION: LESSEE shall not discriminate against any individual because of that individual's race, color, religion, sex, national origin, age, handicap, or marital status with respect to any activity occurring within the leased premises or upon lands adjacent to and used as an adjunct of the leased premises.

19. UTILITY FEES: LESSEE shall be responsible for the payment of all charges for the furnishing of gas, electricity, water and other public utilities to the leased premises and for having the utilities turned off when the leased premises are surrendered.

20. MINERAL RIGHTS: This lease does not cover petroleum or petroleum products or minerals and does not give the right to LESSEE to drill for or develop the same.

21. RIGHT OF AUDIT: LESSEE shall make available to LESSOR all financial and other records relating to this lease, and LESSOR shall have the right to audit such records at any reasonable time during the term of this lease. This right shall be continuous until this lease expires or is terminated. This lease may be terminated by LESSOR should LESSEE fail to allow public access to all documents, papers, letters or other materials made or received in conjunction with this lease, pursuant to the provisions of Chapter 119, Florida Statutes.

22. CONDITION OF PREMISES: LESSOR assumes no liability or obligation to LESSEE with reference to the conditions of the leased premises. The leased premises herein are leased by LESSOR to LESSEE in an "as is" condition, with LESSOR assuming no responsibility for the care, repair, maintenance or improvement of the leased premises for the benefit of LESSEE.

23. COMPLIANCE WITH LAWS: LESSEE agrees that this lease is contingent upon and subject to LESSEE obtaining all applicable permits and complying with all applicable permits, regulations,

ordinances, rules, and laws of the State of Florida or the United States or of any political subdivision or agency of either.

24. NOTICE: All notices given under this lease shall be in writing and shall be served by certified mail including, but not limited to, notice of any violation served pursuant to Section 253.04, Florida Statutes, to the last address of the party to whom notice is to be given, as designated by such party in writing. LESSOR and LESSEE hereby designate their address as follows:

LESSOR: Department of Environmental Protection
Division of State Lands
Bureau of Land Management Services, M. S. 130
3900 Commonwealth Boulevard,
Tallahassee, Florida 32399-3000

LESSEE: Palm Beach County
Department of Environmental Resources Management
3323 Belevedere Road, BLDG. 502
West Palm Beach, Florida 33406

25. BREACH OF COVENANTS, TERMS, OR CONDITIONS: Should LESSEE breach any of the covenants, terms, or conditions of this lease, LESSOR shall give written notice to LESSEE to remedy such breach within sixty days of such notice. In the event LESSEE fails to remedy the breach to the satisfaction of LESSOR within sixty days of receipt of written notice, LESSOR may either terminate this lease and recover from LESSEE all damages LESSOR may incur by reason of the breach including, but not limited to, the cost of recovering the leased premises and attorneys' fees or maintain this lease in full force and effect and exercise all rights and remedies herein conferred upon LESSOR.

26. DAMAGE TO THE PREMISES: (a) LESSEE shall not do, or suffer to be done, in, on or upon the leased premises or as affecting said leased premises or adjacent properties, any act which may result in damage or depreciation of value to the leased premises

or adjacent properties, or any part thereof. (b) LESSEE shall not generate, store, produce, place, treat, release or discharge any contaminants, pollutants, or pollution, including, but not limited to, hazardous or toxic substances, chemicals or other agents on, into, or from the leased premises or any adjacent lands or waters in any manner not permitted by law. For the purposes of this lease, "hazardous substances" shall mean and include those elements or compounds defined in 42 USC Section 9601 or which are contained in the list of hazardous substances adopted by the United States Environmental Protection Agency (EPA) and the list of toxic pollutants designated by the United States Congress or the EPA or defined by any other federal, state or local statute, law, ordinance, code, rule, regulation, order or decree regulating, relating to, or imposing liability or standards of conduct concerning any hazardous, toxic or dangerous waste, substance, material, pollutant or contaminant. "Pollutants" and "pollution" shall mean those products or substances defined in Chapters 376 and 403, Florida Statutes, and the rules promulgated thereunder, all as amended or updated from time to time. In the event of LESSEE's failure to comply with this paragraph, LESSEE shall, at its sole cost and expense, promptly commence and diligently pursue any legally required closure, investigation, assessment, cleanup, decontamination, remediation, restoration and monitoring of (1) the leased premises, and (2) all off-site ground and surface waters and lands affected by LESSEE's such failure to comply, as may be necessary to bring the leased premises and affected off-site waters and lands into full compliance with all applicable federal, state or local statutes, laws, ordinances, codes, rules,

regulations, orders and decrees, and to restore the damaged property to the condition existing immediately prior to the occurrence which caused the damage. LESSEE'S obligations set forth in this paragraph shall survive the termination or expiration of this lease. This paragraph shall not be construed as a limitation upon LESSEE'S obligations as set forth in paragraph 14 of this lease, nor upon any other obligations or responsibilities of LESSEE as set forth herein. Nothing herein shall relieve LESSEE of any responsibility or liability prescribed by law for fines, penalties and damages levied by governmental agencies, and the cost of cleaning up any contamination caused directly or indirectly by LESSEE'S activities or facilities. Upon discovery of a release of a hazardous substance or pollutant, or any other violation of local, state or federal law, ordinance, code, rule, regulation, order or decree relating to the generation, storage, production, placement, treatment, release or discharge of any contaminant, LESSEE shall report such violation to all applicable governmental agencies having jurisdiction, and to LESSOR, all within the reporting periods of the applicable governmental agencies. This paragraph shall not be deemed to apply to any conditions existing prior to the effective date of this lease.

27. ENVIRONMENTAL AUDIT: At LESSOR'S discretion, LESSEE shall provide LESSOR with a current Phase I environmental site assessment conducted in accordance with the Department of Environmental Protection, Division of State Land's standards prior to termination of this lease, and if necessary a Phase II environmental site assessment.

28. SURRENDER OF PREMISES: Upon termination or expiration of this lease, LESSEE shall surrender the leased premises to LESSOR. In the event no further use of the leased premises or any part thereof is needed, LESSEE shall give written notification to the Bureau of Land Management Services, Division of State Lands, Department of Environmental Protection, Mail Station 130, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399-3000, at least six months prior to the release of any or all of the leased premises. Notification shall include a legal description, this lease number, and an explanation of the release. The release shall only be valid if approved by LESSOR through the execution of a release of lease instrument with the same formality as this lease. Upon release of all or any part of the leased premises or upon termination or expiration of this lease, all permanent/capital improvements, including both physical structures and modifications to the leased premises, shall become the property of LESSOR, unless LESSOR gives written notice to LESSEE to remove any or all such improvements at the expense of LESSEE. The decision to retain any improvements upon termination of this lease shall be at LESSOR'S sole discretion. Prior to surrender of all or any part of the leased premises a representative of the Division of State Lands, Department of Environmental Protection, shall perform an on-site inspection and the keys to any building on the leased premises shall be turned over to the Division.

29. BEST MANAGEMENT PRACTICES: LESSEE shall implement applicable Best Management Practices for all activities conducted under this lease in compliance with Paragraph 18-2.018(2)(h), Florida Administrative Code, which have been selected, developed,

or approved by LESSOR, LESSEE or other land managing agencies for the protection and enhancement of the leased premises.

30. PUBLIC LANDS ARTHROPOD CONTROL PLAN: LESSEE shall identify and subsequently designate to the respective arthropod control district or districts within one year of the effective date of this lease all of the environmentally sensitive and biologically highly productive lands contained within the leased premises, in accordance with Section 388.4111, Florida Statutes and Chapter 5E-13, Florida Administrative Code, for the purpose of obtaining a public lands arthropod control plan for such lands.

31. PROHIBITIONS AGAINST LIENS OR OTHER ENCUMBRANCES: Fee title to the leased premises is held by LESSOR. LESSEE shall not do or permit anything to be done which purports to create a lien or encumbrance of any nature against the real property contained in the leased premises including, but not limited to, mortgages or construction liens against the leased premises or against any interest of LESSOR therein.

32. PARTIAL INVALIDITY: If any term, covenant, condition or provision of this lease shall be ruled by a court of competent jurisdiction to be invalid, void, or unenforceable, the remainder of the provisions shall remain in full force and effect and shall in no way be affected, impaired or invalidated.

33. ARCHAEOLOGICAL AND HISTORIC SITES: Execution of this lease in no way affects any of the parties' obligations pursuant to Chapter 267, Florida Statutes. The collection of artifacts or the disturbance of archaeological and historic sites on state-owned lands is prohibited unless prior authorization has been obtained from the Department of State, Division of Historical Resources. The Management Plan prepared pursuant to Chapters

18-2 and 18-4, Florida Administrative Code, shall be reviewed by the Division of Historical Resources to insure that adequate measures have been planned to locate, identify, protect and preserve the archaeological and historic sites and properties on the leased premises.

34. SOVEREIGNTY SUBMERGED LANDS: This lease does not authorize the use of any lands located waterward of the mean or ordinary high water line of any lake, river, stream, creek, bay, estuary, or other water body or the waters or the air space thereabove.

35. ENTIRE UNDERSTANDING: This lease sets forth the entire understanding between the parties and shall only be amended with the prior written approval of LESSOR.

36. MAINTENANCE OF IMPROVEMENTS: LESSEE shall maintain the real property contained within the leased premises and the improvements located thereon, in a state of good condition, working order and repair including, but not limited to, keeping the leased premises free of trash or litter, meeting all building and safety codes for the location situated, maintaining the planned improvements as set forth in the approved Management Plan and maintaining any and all existing roads, canals, ditches, culverts, risers and the like in as good condition as the same may be on the effective date of this lease, reasonable wear and tear excepted; provided, however, that any removal, closure, etc, of the above improvements shall be acceptable when the proposed activity is consistent with the goals of conservation, protection, enhancement, or safety of the natural and historical resources within the leased premises and with the approved Management Plan.

37 GOVERNING LAW: This lease shall be governed by and interpreted according to the laws of the State of Florida.

38. SIGNS: LESSEE shall ensure that the area is identified as being publicly owned and operated as a public facility in all signs, literature and advertising. If federal grants or funds are used by LESSEE for any project on the leased premises LESSEE shall erect signs identifying the leased premises as a federally assisted project.

39. SECTION CAPTIONS: Articles, subsections and other captions contained in this lease are for reference purposes only and are in no way intended to describe, interpret, define or limit the scope, extent or intent of this lease or any provisions thereof.

40. ADMINISTRATIVE FEE: LESSEE shall pay LESSOR an annual administrative fee of $300. The initial annual administrative fee shall be payable within thirty days from the date of execution of this lease agreement and shall be prorated based on the number of months or fraction thereof remaining in the fiscal year of execution. For purposes of this lease agreement, the fiscal year shall be the period extending from July 1 to June 30. Each annual payment thereafter shall be due and payable on July 1 of each subsequent year.

IN WITNESS WHEREOF, the parties have caused this lease to be executed on the day and year first above written.

BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA

Witness

By: _____ (SEAL)
CHIEF, BUREAU OF LAND MANAGEMENT SERVICES, DIVISION OF STATE LANDS, DEPARTMENT OF ENVIRONMENTAL PROTECTION

Print/Type Witness Name

Witness

"LESSOR"

Print/Type Witness Name

STATE OF FLORIDA
COUNTY OF LEON

The foregoing instrument was acknowledged before me this 15th day of September, 1997, by Daniel T. Crabb, as Chief, Bureau of Land Management Services, Division of State Lands, Department of Environmental Protection, as agent for and on behalf of the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida, who is personally known to me.

Notary Public, State of Florida

(SEAL)

OFFICIAL NOTARY SEAL
PATRICIA TOLODAY
COMMISSION NUMBER
CC545665
MY COMMISSION EXPIRES
APR. 18,2000
NOTARY PUBLIC STATE OF FLORIDA

Print/Type Notary Name

Commission Number:

Commission Expires:

Approved as to Form and Legality

By: _____
DEP Attorney

PALM BEACH COUNTY, FLORIDA
By its Board of County Commissioners

Gloria Madison
Witness
GLORIA MADISON
Print/Type Witness Name

Barbara J. Volkmuth
Witness
BARBARA J. VOLKMUTH
Print/Type Witness Name

By: _____
AUG 19 1997

Print/Type Name

Title: Chairman Burt Aaronson

"OFFICIAL SEAL"

APPROVED AS TO FORM
AND LEGAL SUFFICIENCY
BY _____
County Attorney

ATTEST: DOROTHY H. WILKEN, *CLERK*
~~Board of County Commissioners~~
By _____
DEPUTY CLERK
Print/Type Name

Title: _____

"SUBLESSEE"

STATE OF FLORIDA
COUNTY OF PALM BEACH

The foregoing instrument was acknowledged before me this ____ day of AUG 19 1997 19__, by Chairman Burt Aaronson, as _____, Board of County Commissioners of Palm Beach County, Florida, who is/~~are~~ personally known to me. ~~or who has produced~~ N/A as ~~identification~~.

_____
Notary Public, State of Florida
Willa Oswalt
Deputy Clerk
Type Notary Name

(SEAL)

WILLA OSWALT
COMMISSION # CC 364437
EXPIRES MAY 6,1998
BONDED THRU
ATLANTIC BONDING CO., INC

Commission Number:

Commission Expires:

R97-1040D

THIS DOCUMENT WAS PREPARED BY
AND RETURN TO:

HEIDI JUHL
ASSISTANT COUNTY ATTORNEY
PALM BEACH COUNTY ATTORNEY'S OFFICE
301 N. OLIVE AVENUE
WEST PALM BEACH, FL 33401

COUNTY DEED R96 1173

THIS DEED, made this 18 day of March, 1997, by PALM BEACH COUNTY, a political subdivision of the State of Florida, Grantor, and the BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA, located at c/o Florida Department of Environmental Protection, Division of State Lands, 3900 Commonwealth Blvd., Mail Station 115, Tallahassee, FL 32399, Grantee.

WITNESSETH: That said party of the first part, for and in consideration of the sum of Ten Dollars ($10.00) to it in hand paid by the party of the second part, receipt whereof is hereby acknowledged, has granted, bargained, and sold to the party of the second part, its legal representatives, successors and assigns forever, the following described land lying and being in Palm Beach County, Florida:

SEE EXHIBIT 'A' ATTACHED HERETO AND MADE A PART HEREOF;

Together with all of the Grantor's interest relating to timber rights, water rights, mineral and oil/gas rights; streams, canals, ditches and other water bodies; alleys, roads, streets and easements included within the above-described lands or providing access to the above-described lands.

IN WITNESS WHEREOF, the said party of the first part has caused these presents to be executed in its name by its Board of County Commissioners acting by the Chair or Vice-Chair of said Board, the day and year aforesaid.

(OFFICIAL SEAL)

ATTEST:

DOROTHY H. WILKEN, Clerk

By: _____
Deputy Clerk

PALM BEACH COUNTY, FLORIDA,
BY ITS BOARD OF COUNTY
COMMISSIONERS

By: _____
Chair

R96 1173

APPROVED AS TO FORM
AND LEGAL SUFFICIENCY

By: _____
Assistant County Attorney

APPROVED BY BOARD OF COUNTY COMMISSIONERS, PALM BEACH COUNTY, ON AUGUST 20, 1996, BY RESOLUTION NO. R-96-1173

By: _____
Assistant County Attorney

G:\COMMON\WPDATA\ENVIRL\HATHEROUB\DEED.FRM

Approved for Closing
By: _____
DEP Attorney
Date: 3-12-97

Approved for Agenda
Purposes Only
By: _____
DEP Attorney
Date: _____

TOTAL P.10

Exhibit "A"
Page 16 of 18 Pages
Lease No. 4161

EXHIBIT "A"

A parcel of land lying in Sections 20, 28 and 29, Township 41 South, Range 43 East, Palm Beach County, Florida and being more particularly described as follows:

All of the South Half (S 1/2) of the Southeast Quarter (SE 1/4) of said Section 20, East of the Easterly right of way line of the Intracoastal waterway, as said right of way is shown on plat recorded in Plat Book 17, page 6, of the public records of Palm Beach County, Florida, Less the South 50 feet thereof for a County Road;

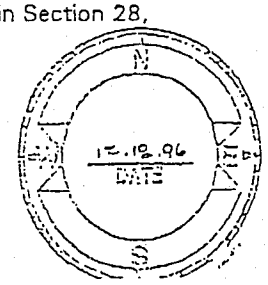
Together with the Northwest Quarter (NW 1/4) of the Southeast Quarter (SE 1/4) of said Section 20, East of the Easterly right of way line of the Intracoastal Waterway, as said right of way is shown on plat recorded in Plat Book 17, page 6 of the public records of Palm Beach County, Florida; LESS that part of the Northwest Quarter (NW 1/4) of the Southeast Quarter (SE 1/4) conveyed to the Florida Inland Navigation District, as described in Deed Book 658, page 430 of the public records of Palm Beach County, Florida;

Together with the Northeast Quarter (NE 1/4) of the Southwest Quarter (SW 1/4) of said Section 28, Township 41 South, Range 43 East, LESS the right of way of State Road No. 5; and LESS a strip of land 30 feet wide lying parallel with and adjacent to the West right of way line of State Road No. 5;

Together with the South Half (S 1/2) of the Southwest Quarter (SW 1/4) of Section 28, Township 41 South, Range 43 East; LESS AND EXCEPTING THEREFROM the right of way of State Road 5, ALSO LESS those parcels described in Official Records Book 1876, page 844, Official Records Book 1935, page 1869, and Official Records Book 1951, page 225 of the public records of Palm Beach County, Florida, ALSO LESS the right of way of Ellison Wilson Road, and ALSO LESS a strip of land 30 feet wide lying parallel with and adjacent to the West right of way line of State Road 5. ALSO LESS the right of way for Rolling Green Road as recorded in Official Records Book 1883, page 593 of said public records.

Together with Government Lot 2, Section 28, Township 41 South, Range 43 East, in Palm Beach County, Florida, LESS AND EXCEPTING THEREFROM the North 106 feet of said Section 28;

Together with the North 595 feet of Government Lot 3 and all that part of the North 595 feet of Government Lot 4 lying West of a line 500 feet Westerly of and parallel to the West right of way line of U.S. Highway No. 1 in Section 28, Township 41 South, Range 43 East;



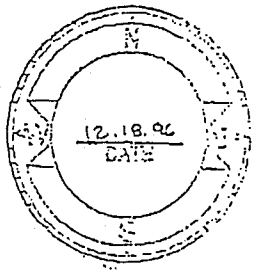
1

Together with the Northwest Quarter (NW 1/4) of the Southwest Quarter (SW 1/4) of Section 28, Township 41 South, Range 43 East, in Palm Beach County, Florida; Together with the South 170.92 feet of Government Lot 3 and the South 170.92 feet of Government Lot 4, lying West of State Road No. 5, Section 28, Township 41 South, Range 43 East, Palm Beach County, Florida; LESS a strip of land 30 feet wide lying parallel with and adjacent to the West right of way line of State Road No. 5;

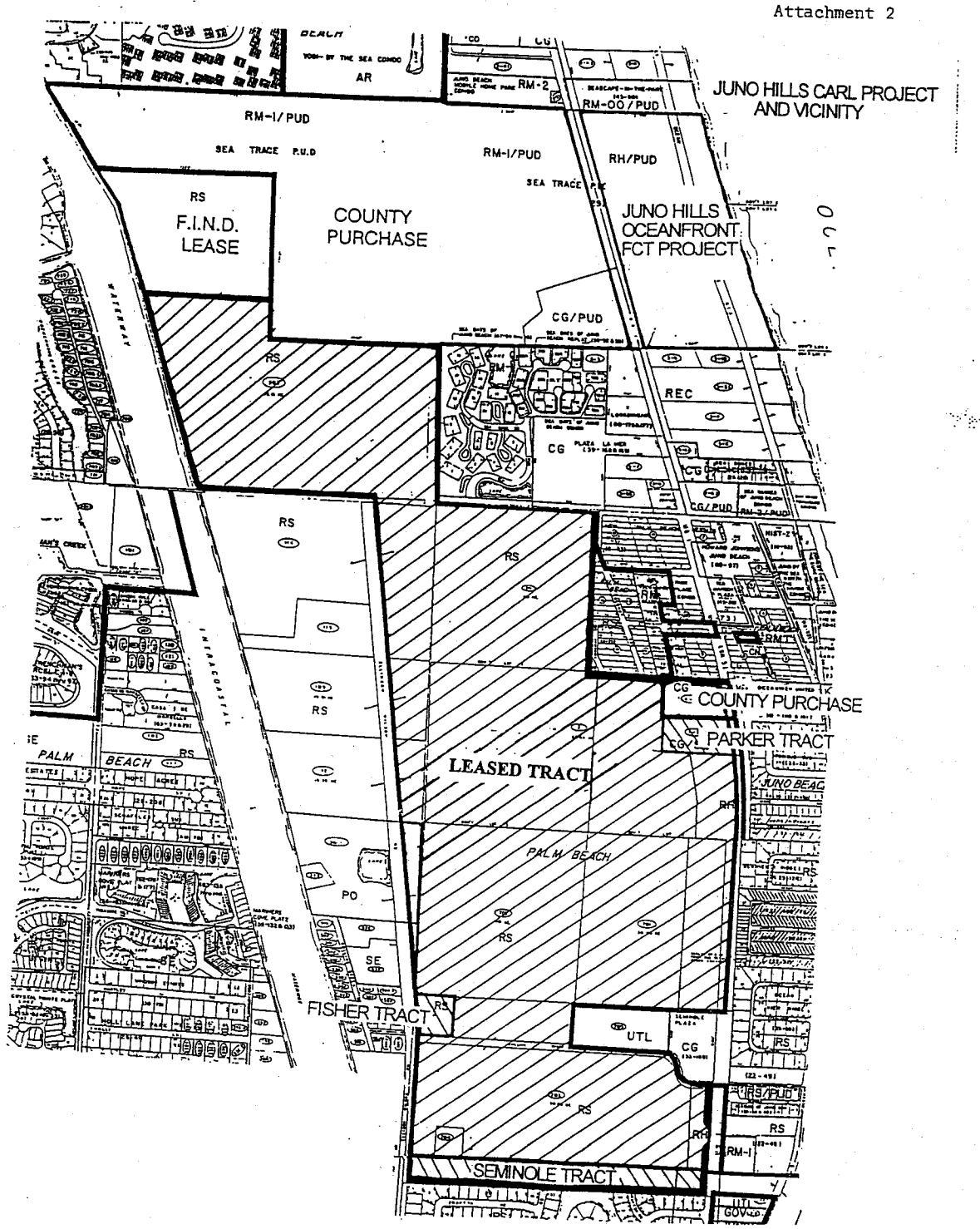
Together with the North 572.20 feet of the South 743.12 feet of Government Lot 3 and all of that part of the North 572.20 feet of the South 743.12 feet of Government Lot 4 lying West of U.S. Highway No. 1 in Section 28, Township 41 South, Range 43 East; LESS AND EXCEPTING THEREFROM that part of the North 572.20 feet of the South 743.12 feet of Government Lot 4 lying North of the South line of the North 595.00 feet of Government Lot 4, East of a line 500.00 feet Westerly of and parallel to the West right-of-way line of State Road No. 5; ALSO LESS a strip of land 30 feet wide lying parallel with and adjacent to the West right of way line of State Road No. 5;

Together with that part of the Northeast Quarter (NE 1/4) of Section 29, Township 41 South, Range 43 East lying Easterly of the East right of way line of Ellison Wilson Road; LESS AND EXCEPTING THEREFROM the North 106 feet of said Section 29.

F:\USERS\BSM\CCSLS13\WWP\JUNOHILL.LEG. December 18, 1996



Attachment 2



* LEASE AGREEMENT FOR FIND PROPERTY AS PART OF JUNO DUNES MANAGEMENT PLAN (ESL)

NB

R97-1047D

AUG 19 1997

REAL PROPERTY LAND LEASE AGREEMENT FOR

FLORIDA INLAND NAVIGATION DISTRICT PROPERTY KNOWN AS MSA 614B

to be included as a portion of

PALM BEACH COUNTY PROPERTY KNOWN AS THE JUNO HILLS NATURAL AREA

THIS LAND LEASE AGREEMENT
is between the

FLORIDA INLAND NAVIGATION DISTRICT

and

PALM BEACH COUNTY

LEASE AGREEMENT R97-1047D

This LEASE AGREEMENT ("LEASE") is made and entered into this _____day of AUG 19 1997, 19__, between the Florida Inland Navigation District, a special district existing under the laws of the State of Florida (the District), and Palm Beach County, a political subdivision of the State of Florida (the County).

RECITALS

WHEREAS, the District is the owner in fee of a parcel of land in Palm Beach County, Florida designated as MSA 614B, which is utilized by the District and the United States of America for the improvement and maintenance of the Intracoastal Waterway from Nassau County to Dade County, Florida, and the District holds title within this area subject to an easement heretofore granted by it to the United States of America for such use; and

WHEREAS, the District desires to continue in the assurance of the proper utilization and management of District's property for the benefit of the Intracoastal Waterway and the public; and

WHEREAS, the County desires to lease MSA 614B from the District to become an addition to the County's Juno Hills Natural Area and to be utilized for passive recreation and conservation purposes, subject to said prior right and easement of the United States of America and to the terms and conditions of this LEASE; and

WHEREAS, the District is of the opinion that such use by the County is in the public interest and will benefit the Intracoastal Waterway; and

WHEREAS, the District maintains that a lease should be executed for a limited term at a nominal rental, subject to the terms and conditions stated herein.

WITNESSETH

NOW THEREFORE, in consideration of the promises, mutual covenants and agreements herein contained, the receipt and sufficiency of which is hereby acknowledged, it is agreed by the parties hereto:

1. RECITALS: The recitals contained herein above are true and correct and incorporated herein by reference.

2. LEASE: The District hereby leases to the County Site MSA 614B, to be included as a portion of the County's Juno Hills Natural Area as described in Paragraph 3 below, subject to the terms and conditions set forth herein.

3. DESCRIPTION OF PREMISES: The properties which are the subject of this LEASE are situated in Palm Beach County, State of Florida. District property MSA 614B is described on Exhibit "A", which is attached hereto and made a part of this LEASE, and hereinafter will be referred to as the "Leased Premises". County property known as the Juno Hills Natural Area is described on Exhibit "B", which is attached hereto and made a part of

this LEASE, and hereinafter will be referred to as the "County Premises".

4. PROJECT MANAGEMENT: The Project Manager for the District is its Executive Director, and all correspondence and communications from the County shall be directed to him/her. The District's Project Manager shall be responsible for overall coordination and oversight related to the performance of this LEASE by the District. The Project Manager for the County is the Director of its Department of Environmental Resources Management, and all correspondence and communications from the District shall be directed to him/her. The County's Project Manager shall be responsible for overall coordination and oversight related to the performance of this LEASE by the County.

5. EXISTING CONDITIONS: The County agrees to accept the Leased Premises in as is condition.

6. RENT AND TERM: The term of this LEASE shall be for an initial twenty-five (25)-year period, with options to renew for additional ten (10)-year terms. Rent shall be one dollar ($1.00) per year. Prepayment of rent shall not affect in any way the District's rights under paragraph 28 below. The initial period shall commence on the date of execution of this LEASE by both parties. Additional terms shall automatically commence, absent written notice of termination by the District to the County at least 90 days prior to the end of the initial term.

7. PURPOSE: The County shall include and manage the Leased Premises as a portion of the County Premises for the conservation and protection of its natural resources; for passive, resource-based public outdoor recreation which is compatible with the conservation and protection of these lands and the resources they contain; and for the restoration and enhancement of these resources.

8. QUIET ENJOYMENT AND RIGHT OF USE: The County shall have the right of ingress and egress to, from, and upon the Leased Premises for all purposes that are necessary for the full enjoyment by said County of the rights conveyed herein. Notwithstanding the foregoing, the County acknowledges that the District is statutorily mandated to assist the U.S. Army Corps of Engineers in the improvement and maintenance of the Intracoastal Waterway. In connection herewith, dredged material management activities on other District sites may result in the necessity that environmental mitigation be performed. Therefore, the District retains, for itself and the U.S. Army Corps of Engineers, the right to perform mitigation activities on the Leased Premises. The District shall notify the County in writing of its intent to perform such activities sixty (60) days prior to commencement of these activities.

9. UNAUTHORIZED USE: The County shall through its agents and employees use its best effort to prevent the unauthorized use of the Leased Premises or any use thereof not in conformance with this LEASE.

10. ASSIGNMENT: This LEASE shall not be assigned in whole or in part without the prior written consent of the District. Any assignment made either in whole or in part without the prior written consent of the District shall be void and without legal effect.

11. INTERIM MANAGEMENT PLAN: Upon execution of this LEASE, and prior

to the District's Board of Commissioners approval of the Management Plan ("MP") for the Leased Premises, the County shall assume management activities necessary to protect the Leased Premises, as described in the interim management plan ("IMP") included as Exhibit "C" to this lease. The IMP is established as the primary public purpose for which the Leased Premises is leased by the County. This IMP will be utilized by the County to manage the Leased Premises until the final management plan is developed, in accordance with the schedule and requirements of Paragraph 12 of this Lease.

12. MANAGEMENT PLAN:

A. The County shall develop at its sole cost, and implement in consultation with the District, a MP for the Juno Hills Natural Area, which shall include the Leased Premises. The MP shall be developed within eighteen (18) months of the effective date of this LEASE. The MP shall provide general background data on the property; contain information on the property's resources; set forth general and specific management goals, objectives, and guidelines; and outline the specific procedures for funding requirements, staffing levels, and management practices necessary for their accomplishment, and shall include the provisions and content of the IMP as approved by District at the time of this Lease. The MP will include a phased plan of development which will account for funding aesthetic, engineering, operational, management, cultural, and sociological considerations. The District will provide the County with any information that the District has on the Leased Premises, including surveys, engineering plans, and other data, to assist in the development of the MP.

B. The MP shall be submitted for approval to the District's Board of Commissioners. In the event the parties are not able to come to agreement on the MP within one hundred eighty (180) days of submittal, this shall be sufficient cause for either party to terminate the LEASE pursuant to Paragraph 27 below. The District shall approve the MP, as it relates to the Leased Premises, prior to its submission to the State for approval. Any changes made after District approval will be resubmitted to the District for approval prior to implementation. The Leased Premises shall not be developed or physically altered in any way, other than what is necessary for the security and maintenance of the Leased Premises, without the prior written approval of the District or until the MP is approved.

C. The County and the District will meet at least once annually to review and discuss the management activities authorized by this MP. The District acknowledges that regulations governing public use of the lands covered by the MP that may be deemed appropriate have been adopted (the County's Natural Areas Ordinance [No. 94-13]). The County shall prepare and submit for discussion at the annual meeting a yearly summary report, which will include:

1. The status of the County's management program and activities on the property.
2. The status of the development program and any information available on visitor use.
3. A review of special problems and concerns encountered over the previous year.

D. The annual report submitted by the County to the State may also serve as the County's annual report to the District.

13. MITIGATION PLAN: The County shall develop, in consultation with the District, a Mitigation Plan for the Leased Premises, to provide advanced mitigation for District projects. The mitigation plan shall be developed in accordance with the Conceptual Mitigation Plan ("CMP") included as Exhibit "D".

A. The County shall pay for and provide to this lease staffing for the design, permitting, contractor procurement, construction oversight, and monitoring for the advanced mitigation project. The County shall commence these services within 30 days of receipt of a notice to proceed from the District for any portion of the above. Such notice to proceed will include a commitment for non-staff costs. The County shall use its best efforts to obtain permits and provide the services in a timely manner.

B. The District, at its option, shall pay all of the non-staff costs for the mitigation project, which shall include surveys, permit fees, engineering costs, and construction. The District shall receive all mitigation credits provided by any and all regulatory agencies for the mitigation project, if paid for by the District. While this may be a phased effort, the District funding commitment for construction must occur within three years of execution of this agreement. After three years, the County shall be entitled to complete the mitigation plan at County cost and credit.

14. EASEMENTS: All easements to be granted by the County, including but not limited to utility easements, are expressly prohibited without the prior written approval of the District. Any easement not approved in writing by the District shall be void and without legal effect.

15. SUBLEASES: This LEASE is for the purposes specified herein, and subleases of any nature are prohibited without the prior written approval of the District. Any sublease not approved in writing by the District shall be void and without legal effect.

16. RIGHT OF INSPECTION: The District or its duly authorized agents, representatives, or employees shall have the right at any and all times to inspect the Leased Premises and the works and operations of the County in any manner pertaining to this LEASE.

17. PLACEMENT AND REMOVAL OF IMPROVEMENTS: All buildings, structures, improvements, and signs shall be constructed at the expense of the County, in accordance with the MP approved by the District. Removable equipment and removable improvements placed on the Leased Premises by the County which do not become a permanent part of the Leased Premises will remain the property of the County and may be removed by the County upon termination of this LEASE, pursuant to Paragraph 29 below.

18. INDEMNITY BY COUNTY: To the extent permitted by Florida law, the County hereby covenants and agrees to investigate all claims of every nature at its own expense and to indemnify, protect, defend, and hold and save harmless the District from any and all claims, bodily injury, personal injury, property injury, actions, lawsuits and demands of any kind or nature arising out of this lease. Nothing contained herein shall be construed

as a waiver of sovereign immunity enjoyed by the parties hereto, as provided in section 768.28, F.S., as amended or any other law providing limitations on claims. Further, nothing herein shall be construed as a waiver of the limitations on liability enjoyed by a landowner providing land to the public for outdoor recreational purposes, as provided in section 375.251, F.S.

19. INDEMNITY BY DISTRICT: To the extent permitted by Florida law, the District hereby covenants and agrees to investigate all claims of every nature at its own expense and to indemnify, protect, defend, and hold and save harmless the County from any and all claims, bodily injury, personal injury, property injury, actions, lawsuits and demands of any kind or nature arising out of the activities of the District with respect to the Leased Premises. Nothing contained herein shall be construed as a waiver of sovereign immunity enjoyed by the parties hereto, as provided in section 768.28, F.S., as amended or any other law providing limitations on claims. Further, nothing herein shall be construed as a waiver of the limitations on liability enjoyed by a landowner providing land to the public for outdoor recreational purposes, as provided in section 375.251, F.S.

20. INSURANCE:

A. The County shall procure and maintain through the term of this LEASE Workers' Compensation Insurance up to the limits specified by Florida Statute. The County shall provide an insurance certificate demonstrating such coverage prior to the commencement of performance. Notwithstanding the number of the employees or any other statutory provisions to the contrary, the Workers' Compensation insurance shall extend to all employees of the County. The Workers' Compensation insurance policy required by this LEASE shall also include Employer's Liability. Contractors and subcontractors shall be required to provide Workers' Compensation for their employees.

B. Without waiving the right to sovereignty immunity, the County acknowledges that it is self-insured under State Sovereign Immunity Statutes, with coverage limits of $100,000.00 per person and $200,000.00 per occurrence, or such monetary waiver limits as may from time to time during the term of the Lease Agreement be set forth in the State Sovereignty Immunity Statutes, which the District recognizes as acceptable regarding General Liability. This policy shall provide coverage for death, personal injury or property damage that could arise directly or indirectly from the performance of this Lease. This shall include the following endorsements: I. premises and operations; ii. products and completed operations; and iii. contractual liability.

C. The County acknowledges and agrees that in the event the District is named in any legal action as a result of the acts and omissions of the County in the County's use and occupancy of the Leased Premises under the terms of this LEASE, the County shall respond with all necessary defense of the District and provide payment of all judgments and costs against the District in the same manner and to the same extent as if the District were identified as an Additional Insured with the County's Self-insured Program.

D. The District acknowledges and agrees that in the event the County is named in any legal action as a result of the acts and omissions of the District in the District's use of

and/or access over the Leased Premises, the District shall respond with all necessary defense of the County and provide payment of all judgments and costs against the County in the same manner and to the same extent as if the County were identified as an Additional Insured with the District's Self-insured Program.

E. All insurance by third party contractors shall specifically include the County and the District as "additional insured".

21. PAYMENT OF TAXES AND ASSESSMENTS: The County shall assume full responsibility for and shall pay taxes and assessments that accrue to the Leased Premises and/or to the improvements thereon including any and all ad-valorem taxes and drainage and special assessments or any other taxes or assessments of every kind which may be hereafter lawfully assessed and levied against the Leases Premises.

22. NO WAIVER OF BREACH: The failure of the District to insist in one or more instances upon strict performance of any one or more of the covenants, terms and conditions of this LEASE shall not be construed as a waiver or voidance of such covenants, terms or conditions, but the same shall continue in full force and effect. No waiver by the District of any of the provisions hereof shall in any event be deemed to have been made unless the waiver is set forth in writing and signed by the District.

23. NON-DISCRIMINATION: The County shall assure and certify that it will comply with Title IV of the Civil Rights Act of 1964 (PL 88-52), as amended, and in accordance with that Act shall not discriminate against any individual's race, color, creed, sex, national origin, age, handicap or marital status with respect to any activity occurring within the Leased Premises or upon lands adjacent to and used as an adjunct of the Leased Premises.

24. UTILITY FEES: The County shall be responsible for payment of all charges for the furnishing of gas, electricity, water and other public utilities to the Leased Premises and for having the utilities turned off when the Leased Premises are surrendered.

25. COMPLIANCE WITH LAWS: The County agrees that this LEASE is contingent upon and subject to the County obtaining all applicable permits and complying with all applicable permits, regulations, ordinances, rules and laws of the State of Florida or the United States or of any political subdivision or agency of either.

26. NOTICE: All notices given under this LEASE shall be in writing and shall be served by certified mail, including, but not limited to, notice of any violation served pursuant to section 253.04, F.S., to the last address of the party to whom notice is to be given, as designated by such party in writing. The District and the County hereby designate their addresses as follows:

To District:

Florida Inland Navigation District
1314 Marcinski Road
Jupiter, Florida 33477
Attn.: Executive Director

To County:

Palm Beach County
Department of Environmental Resources Management
3323 Belvedere Road, Building 502
West Palm Beach, Florida 33406
Attn.: Director

A copy of each notice also shall be provided to:

Palm Beach County Attorney's Office
301 N. Olive Avenue, Suite 601
West Palm Beach, Florida 33401

27. BREACH OF COVENANTS, TERMS OR CONDITIONS: Should the County breach any of the covenants, terms, or conditions of this LEASE, the District shall give written notice to the County to remedy such breach within thirty (30) days of receipt of such notice. In the event the County fails to remedy the breach to the satisfaction of the District within thirty (30) days of receipt of the written notice, the District may either terminate this LEASE and recover from the County all damages the District may incur by reason of the breach, including, but not limited to, the cost of recovering the Leased Premises and attorney's fees, or maintain this LEASE in full force and effect and exercise all rights and remedies herein conferred upon the District.

28. DAMAGE TO THE PREMISES: The County agrees that it will not do, or cause to be done, in, on, or upon the Leased Premises or as affecting said Leased Premises, any act which may result in damage or depreciation of value to the Leased Premises, or any part thereof. The County shall not dispose of any contaminants, including, but not limited to, hazardous or toxic substances, chemicals, or other agents used or produced in County operations, on the Leased Premises or on any adjacent State land or in any manner not permitted by law. In the event of an accident or the discovery of such disposal, the County shall immediately report such occurrence to the District, indicating what is being disposed of and where and how disposal is to take place.

29. SURRENDER OF PREMISES: Upon termination or expiration of this LEASE, the County shall surrender the Leased Premises to the District. In the event no further use of the Leased Premises or any part thereof is needed, the County shall give written notification to the District at least six (6) months prior to the release of any or all of the Leased Premises. Notification shall include a legal description of the Leased Premises, the LEASE number, and an explanation of the release. The release shall only be valid if approved by the District through the execution of a release of lease instrument with the same formality of this LEASE. Upon termination or expiration of this LEASE, all structures permanently affixed to the land and all improvements made will become the property of the District, provided,

however, that if any structures are such in the District's determination that they can be moved without harm to the area where they are situated, then the County may within thirty (30) days following termination of the LEASE remove the same. Upon final termination, the Leased Premises must be left in essentially the same condition as when it was first leased to the County, save for ordinary wear and tear, unless otherwise approved in writing by the District.

30. PROHIBITIONS AGAINST LIENS OR OTHER ENCUMBRANCES: Fee title to the Leased Premises is held by the District. The County shall not do or permit anything to be done which purports to create a lien or encumbrance of any nature against the real property contained in the Leased Premises, including but not limited to mortgages or construction liens against the Leased Premises or against any interest of the District therein.

31. PARTIAL INVALIDITY: If any term, covenant, condition, or provision of this LEASE shall be ruled by a court of competent jurisdiction to be invalid, void, or unenforceable, the remainder of the provisions shall remain in full force and effect and shall in no way be attested, impaired or invalidated.

32. DUPLICATE ORIGINALS: This LEASE is executed in duplicate originals, each of which shall be considered an original for all purposes.

33. ENTIRE UNDERSTANDING: This LEASE sets forth the entire understanding between the Parties and shall only be amended with the prior written approval of the Parties.

34. MAINTENANCE OF IMPROVEMENTS: The County shall maintain the real property contained within the Leased Premises and the improvements located thereon in a state of good condition working order and repair, including but not limited to keeping the Leased Premises free of trash or litter, meeting all building and safety codes in the location situated, and maintaining the planned improvements as set forth in the MP.

35. GOVERNING LAW: This LEASE shall be governed by and interpreted according to the laws of the State of Florida.

36. SECTION CAPTIONS: Article, subsection and other captions contained in this LEASE are for reference purposes only and are in no way intended to describe, interpret, define or limit the scope or extent of intent of this LEASE or any provisions thereof.

37. SPECIAL CONDITIONS: The following special conditions shall apply to this LEASE:

A. The County shall construct appropriate signage recognizing the contribution of the District to the Juno Hills Natural Area. The language of such signs shall have prior written approval of the District. The District's contribution will also be identified in all literature produced by the County about the Juno Hills Natural Area.

38. BUDGETARY FUNDING /TERMINATION: The parties hereto acknowledge that the performance of the County's obligations under the terms of this Lease is contingent on annual budgetary funding by the Board of County Commissioners. In the event the County is unable to satisfy a time for performance specified herein solely because of insufficient funding, the County shall be granted a six (6)-month opportunity to cure such default. If the County fails to complete performance within the time to cure, the District, in its sole and exclusive discretion, may elect to terminate this LEASE by written notification

to the County. Notwithstanding the foregoing failure by the County to fulfill the obligation of maintenance (as outlined in Paragraph 34 above) as a result of insufficient funding, this lease shall be enforceable in accordance with Paragraph 27 above. In the event that FIND, in its sole discretion, determines that the Leased Premises are needed for use by FIND or by the U.S. Army Corps of Engineers, then FIND may, upon sixty (60) days written notice to the County, terminate this LEASE without penalty.

IN WITNESS WHEREOF, the parties have caused this LEASE to be executed on the day and year first written above.

ATTEST:

Dorothy H. Wilken, Clerk

BY: April C. Smith
Deputy Clerk

DATE: AUG 19 1997 (SEAL)

COUNTY:

PALM BEACH COUNTY
BOARD OF COUNTY COMMISSIONERS

BY:
Chair

DATE: AUG 19 1997

APPROVED AS TO FORM AND
LEGAL SUFFICIENCY

BY:
Assistant County Attorney

DATE: 8/27/97

LEGAL FORM APPROVED
BY DISTRICT COUNSEL

BY:

DATE: 8/2/97

ATTEST:
Secretary

DISTRICT:

BOARD OF COMMISSIONERS OF THE
FLORIDA INLAND NAVIGATION DISTRICT

BY: (SEAL)
Chair

R97-1047D

EXHIBIT C

INTERIM MANAGEMENT PLAN

MSA 614B (the Leased Premises) will be managed as part of the Juno Hills Natural Area (the County Premises) by the County's Department of Environmental Resources Management (ERM), in consultation and cooperation with the District. The primary public purpose of the lease is to preserve the unique biological and environmental values of the Leased Premises. The secondary purposes are to provide passive, resource-based public outdoor recreation which is compatible with the protection of these resources and to restore and enhance the resources. Resource enhancement will focus on eradicating non-native vegetation, removing deposited dredge spoil materials, removing trash, and securing the site from unauthorized uses. Public use activities may include environmental education, scientific research, nature appreciation and study, hiking, photography, and canoeing. Motorized vehicles will be prohibited, except as necessary for approved management activities.

No physical structures or improvements are proposed for the Leased Premises, except for site security measures and an unpaved access trail. A parking area will be constructed in a disturbed area on the adjacent County Premises, which will provide access to trails that will lead to the Leased Premises. Initial management activities will consist of the County Premises being fenced for security and to prohibit unauthorized use. Leased Premises will not require fencing. Public use and management facilities (a nature trail, a kiosk, and firebreaks) will be sited on the County Premises. No other alterations of land use or character shall be permitted, except with the approval of both parties. Access from the Leased Premises to the Intracoastal Waterway will be maintained, but no docking facilities will be provided at this time.

A management plan will be developed for the entire Juno Hills Natural Area, including the Leased Premises. This plan will be provided to the District for its approval prior to approval by the Board of County Commissioners and the State. The natural area will be managed by the County, with assistance from the Town of Juno Beach (Town) and volunteers from the local community.

The management plan will contain a description of how the natural resources of the site will be protected, how degraded resources will be enhanced, and how public use will be accommodated. It will include a survey of listed plant and animal species and vegetative communities, provisions for the reintroduction and protection of listed species and imperiled vegetative communities on the site, and a prescribed burn plan. Because the site is in a residential area, a public education program on the benefits of prescribed burning will be conducted prior to the first burn. The management plan also will include a description of the monitoring program through which the results of management and restoration activities will be evaluated and management practices adjusted, if necessary.

EXHIBIT D

CONCEPTUAL MITIGATION PLAN

As a result of the construction of the Intracoastal Waterway and the permanent opening of the Jupiter and Lake Worth inlets, a portion of the Leased Premises (MSA 614B) changed from a freshwater to a brackish water system. During channel construction, dredged material was placed onto wetlands within the site. Subsequent construction of mosquito ditches further impacted those wetlands. Exotic vegetation, chiefly Australian pine (*Casuarina equisetifolius*) and Brazilian pepper (*Schinus terebinthifolius*), presently covers the spoil site and mosquito ditch banks. Although several areas of mangroves still exist on the site, they have been impacted by dredged material and exotic vegetation, and lack sufficient tidal flushing to be considered biologically productive. These areas are shown on the attached map (Attachment D-1).

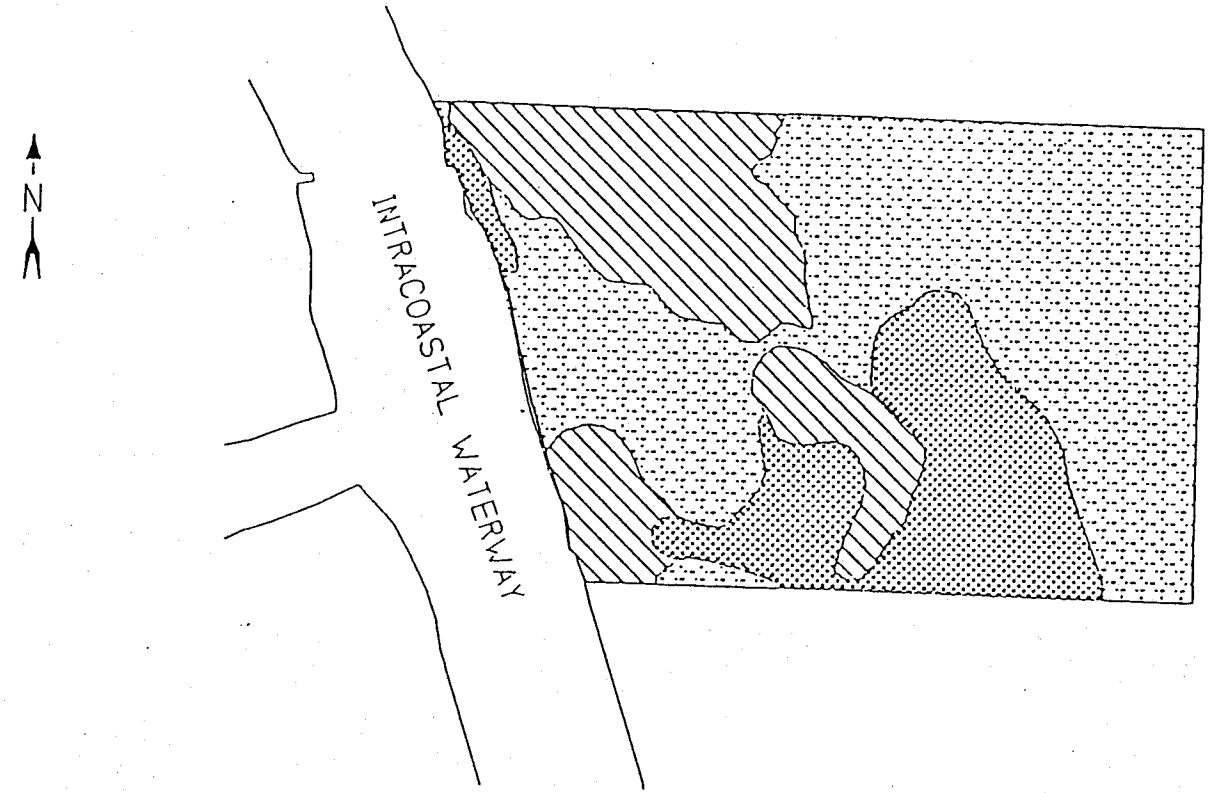
The Mitigation Plan will include the removal of exotic vegetation and the implementation of measures to increase flushing within the site. The scope of work includes the creation of approximately 8.1 acres of mangrove/spartina wetlands and the improvement of flushing in, and environmental enhancement of, an additional 5.2 acres of impacted exotics within existing mangroves.

Upon approval of the Mitigation Plan, the County will have the site topographically, and vegetatively surveyed to determine: 1) the number of acres to be restored to wetlands; 2) the number of acres to be improved through increased flushing and selective exotic removal; and 3) the amount of cubic yards of dredged material to be removed. Based on these surveys, the County will begin the design work and apply for any environmental permits related to the establishment of a mitigation area.

Construction work will begin after securing all permits. The County will provide oversight of all activities for the protection of surrounding environmentally sensitive areas and ensure quality control of the project. The County will provide long-term management of the site, which will include removal of exotic vegetation, replacement of any plants that die within the restoration area, and the submittal of monitoring reports to the District.

Mitigation construction activities on the Leased Premises may be funded by the District at its option; and if so funded, all mitigation credits will then be held by the District.

CONCEPTUAL MITIGATION PLAN
FIND SITE (MSA 614B)



PALM BEACH COUNTY

DEPARTMENT OF ENVIRONMENTAL
RESOURCES MANAGEMENT

UPLAND NATIVE VEGETATION (16.9 ACRES)

MIXED MANGROVES AND EXOTICS (5.2 ACRES)

EXOTICS (8.1 ACRES)

INTERLOCAL AGREEMENT
TOWN OF JUNO BEACH / PBC
ALL LANDS INCLUDED (ESL)

R97 1486D

INTERLOCAL AGREEMENT BETWEEN THE TOWN OF JUNO BEACH, FLORIDA AND PALM BEACH COUNTY FOR THE ACQUISITION OF THE JUNO HILLS SITE AND ITS MANAGEMENT AS A NATURAL AREA

OCT 7 1997 NB

THIS AGREEMENT made and entered into on this _____ day of _____, 1997, by and between the Town of Juno Beach, hereinafter referred to as the "Town", and Palm Beach County, Florida, hereinafter referred to as the "County", a political subdivision of the State of Florida.

WITNESSETH:

WHEREAS, on March 12, 1991, the voters of Palm Beach County approved a $100 million bond referendum for the acquisition of environmentally sensitive lands; and

WHEREAS the Juno Hills site (Ecosite 53) in Juno Beach was designated as one of the high-priority sites to be acquired with funds from this bond referendum; and

WHEREAS, both the Town and the County have deemed that it is in the best interest of the residents and citizens of Palm Beach County and the Town of Juno Beach to acquire the Juno Hills site in order to preserve the site in its natural state for future generations as an intact native Florida ecosystem; and

WHEREAS, the County has purchased several tracts of land in the Juno Hills site that are now collectively known as the Juno Hill Natural Area; and

WHEREAS, the County has sold several of these tracts to the Board of Trustees of the Internal Improvement Trust Fund (BTIITF) to receive state matching funds from the Conservation and Recreation Lands Program (CARL) for the acquisition of the tracts, which are adjacent to the tracts retained in County ownership; and

WHEREAS, the County will enter into a 50-year lease agreement with BTIITF to manage these lands on behalf of the State, which holds the title to these properties; and

WHEREAS, the County has entered into a 25-year lease agreement with the Florida Inland Navigation District (FIND), with options for additional 10-year terms, to manage a parcel owned by FIND that is adjacent to the State's property; and

WHEREAS, the Board of County Commissioners and the Town of Juno Beach have submitted a partnership grant application to the Florida Communities Trust (FCT) for state matching funds to acquire the Juno Hills Oceanfront tract; and

WHEREAS, the County and the Town, as the FCT Recipients, have signed a Conceptual Approval Agreement with FCT for the receipt of these funds; and

WHEREAS, the County has purchased the Juno Hills Oceanfront tract as an addition to the Juno Hills Natural Area, and wishes to be reimbursed by FCT for the County's portion of the acquisition costs; and

WHEREAS, the Conceptual Approval Agreement requires that the parties of the partnership application enter into an Interlocal Agreement which sets forth the relationship among the partners and the fiscal and management responsibilities and obligations incurred by each partner for the acquisition and management of the site and that the Interlocal Agreement be made a part of the project plan; and

WHEREAS, the execution of this agreement is in the best interest of both governmental units and the residents and citizens of same; and

WHEREAS, Section 163.01, Florida Statutes, allows governmental units to enter into intergovernmental agreements to make the most efficient use of their powers by enabling them to cooperate with each other on the basis of mutual advantage.

NOW, THEREFORE, in consideration of the mutual covenants, agreements, and restrictions set forth herein, the parties to this agreement agree as follows:

ARTICLE I - IN GENERAL

1. The County and Town agree that the County has acquired and will manage certain real property located with the corporate limits of the Town of Juno Beach, Florida, known as the "Juno Hills Natural Area", which real property is more particularly described in Exhibit A attached hereto and made a part hereof, (the "Natural Area").

2. The management of the Natural Area of the County, with assistance from the Town, shall serve to preserve the biological community on the property in its natural state as an example of a high quality native Florida scrub, tidal swamp, pine flatwoods, depression marsh, wet prairie coastal stand, beach dune, and remnant maritime tropical hammock ecosystems in Palm Beach County. It is the intent of the parties to comply with subsection 253.023 (11) Florida Statutes, which requires that the site be managed for conservation and protection of natural and historic resources. Both parties intend to manage the Natural Area solely as a nature preserve, to provide certain scientific and educational benefits and to provide passive recreational opportunities for residents and citizens of the Town and the County. The Natural Area shall be kept in its natural state, such that present and future generations will be able to experience the natural values currently exhibited on the property, acts of God or other events beyond the control of the Town and the County notwithstanding.

3. The parties hereto agree to review their respective zoning ordinances and comprehensive plans and to take steps to designate the Natural Area appropriately in the future under their comprehensive land use plans and zoning ordinances, given its intended use as a natural area. The future land use designation assigned to the Natural Area shall be for conservation. If an amendment

to the Town's and/or County's comprehensive land use plan is required, the amendment shall be proposed at the next comprehensive plan amendment cycle available.

4. The Natural Area shall be managed only for the conservation, protection and enhancement of natural and historical resources and for passive, natural resource-based public outdoor recreation that is compatible with the conservation, protection and enhancement of the Natural Area. The parties may make and maintain physical improvements to the Natural Area only for the conservation, protection and enhancement of natural resources and for public outdoor recreation that is compatible with the conservation, protection and enhancement of the Natural Area along with other related uses necessary for the accomplishment of this purpose. The County shall provide outdoor recreational facilities, including but not limited to a nature trail, dune crossover, interpretive kiosk and limited parking, on the Natural Area. The facilities shall be on the Natural Area. The facilities shall be developed in a manner that allows the general public reasonable access for observation and appreciation of the significant natural resources on the Natural Area without causing harm to those resources. The County shall include the Natural Area in the regional greenway network that extends from North Palm Beach to the Town of Jupiter and develop a greenway management strategy for the Natural Area.

5. The Natural Area shall be open to the public. The locations of public access points and any restrictions on access will be described in the management plan. Access to the Natural Area by pedestrians, bicyclists and persons on non-motorized vehicles shall be promoted except in those areas where resource protection considerations warrant limiting access.

6. The parties shall use their best efforts, through their agents and employees, to prevent the unauthorized use of the Natural Area of any use not compatible with the management of the site as a natural area or nature preserve.

7. In the acquisition, management, and maintenance of the Natural Area, each party shall be liable for its own actions and negligence.

8. The title to the Natural Area shall be held by the County, except for the portion containing the Juno Hills CARL project, which will be held by the State of Florida, and the portion owned by FIND.

9. This Interlocal Agreement shall be recorded in the Public Records of Palm Beach County, Florida, in accordance with applicable law.

10. This Agreement shall be deemed to be the sole agreement between the parties, and no prior agreements or other writings shall supersede that which is contained in this Interlocal Agreement.

11. For the purposes of this Interlocal Agreement, notices to the other party shall be deemed sufficient when addressed to the following address and deposited in the United States Mail:

a. Town of Juno Beach
Office of the Town Manager
340 Ocean Drive
Juno Beach, FL 33408

b. Palm Beach County
Department of Environmental Resources Management
3323 Belvedere Road, Bldg. 502
West Palm Beach, FL 33406

12. This Agreement shall be rendered null and void if not executed by all parties hereto on or before October 31, 1997.

ARTICLE II - JOINT RESPONSIBILITIES

13. The County, in cooperation with the Town and pursuant to a management plan, shall manage the Natural Area for habitat preservation and passive recreation, keeping the property in its natural state except for the maintenance of fences, firebreaks and physical improvements set forth in Article I, Paragraph 4 and other management activities appropriate for a nature preserve. Management activities will initially consist of removal of trash and invasive vegetation from the Natural Area. Long-term management of the the Natural Area will require controlling invasive vegetation, monitoring listed plant and animal species, and prescribed burning. Subject to annual appropriations by the County's Board of County Commissioners and the Town of Juno Beach, personnel time and expertise for on-going, site-specific management of the Natural Area will be provided by both parties. A detailed division of responsibilities for the management of the Natural Area will be provided in the management plan. The County with the cooperation of the Town shall apply for any funds available from the state for management purposes, and will minimize management costs through the involvement of volunteers.

14. The parties shall prepare, separately or jointly, brochures, and other educational material describing the natural resources, uses, and joint management of the Natural Area. Any material prepared by one party shall be submitted to the other party for its prior review and approval. Approval shall not be unreasonably withheld. The cost of any jointly-prepared materials shall be shared equally by the parties, and the costs of any material prepared individually shall be solely that party's responsibility. Both parties shall encourage students, residents and visitors to use the Natural Area for educational and passive recreational purposes.

15. The Natural Area will be identified as being publicly owned and operated as a passive natural resource-based public outdoor recreational site in all signs, literature and advertising.

16. The parties agree that the County will erect signs or monuments identifying the Natural Area as being open to the public, as having been purchased with funds from the State and the County, and as being managed by the County, with the cooperation of the Town.

ARTICLE III - RESPONSIBILITIES OF THE COUNTY

17. The County agrees to comply with all requirements of FCT for provision to the County of the State's share of forty-five percent (45%) of the acquisition costs for the 42.43-acre Juno Hills Oceanfront parcel that will become a part of the larger Juno Hills Natural Area. The Natural Area may total up to 575 acres when all land acquisitions and leases for the site are complete.

18. The County agrees to plan and, subject to FCT and Land Acquisition and Management Advisory Council (LAMAC) approval and a budget approved by the Board of County Commissioners, to pay for physical improvements to the Natural Area that would encourage public use of the Natural Area as a nature preserve. These facilities may include, but not be limited to, walking and interpretative trails, a dune crossover, an educational display (kiosk), and parking facilities. The Town and County shall use their best efforts to plan and construct these facilities, taking into consideration primarily the sensitivity and needs of the biological and secondarily the intended research, educational and recreational uses of the Natural Area.

19. The County agrees to secure the Natural Area with fencing, gates and signage to discourage unauthorized activities such as dumping of trash and off-road vehicle usage, while permitting public access to the Natural Area for scientific research, environmental education, and passive recreational activities. The County will be responsible for upkeep of the fences, gates, kiosk, parking area, and signs.

20. The County will develop a management plan and a controlled burn plan for the Natural Area in consultation with the Town. The management plan will be subject to the approval of FCT and the state Land Acquisition Management Advisory Council (LAMAC).

21. The management plan will contain a mechanism for the Town and the County to determine jointly the future of the Natural Area, should any unforeseen events or activities, either natural or man-made severely limit or eliminate the natural values presently on the property.

22. The County, in coordination with the Town, will prepare and submit an annual report to FCT as required in the Conceptual Approval Agreement, and a report every five years to LAMAC, as required in the management lease. The annual report to FCT shall serve as the County's annual report to FIND.

23. Management of all natural areas acquired by the County will be coordinated on a county-wide basis to protect ecosystems and populations of listed species throughout the County.

24. The County agrees to identify a County employee as the public contact person to coordinate group usage and research on the Natural Area and to answer public inquiries about the site.

25. The County agrees to support the Town in applying to the Department of Environmental Protection and any other appropriate state agency for receipt of payment in lieu of taxes pursuant to Florida Statutes Section 259.032 (12) (a) and (c).

26. The County acknowledges that as the Town has an integral role in the acquisition and the future management of the Natural Area, the Natural Area should be within the municipal limits of the Town. To further that end and subject to approval by all applicable County agencies and service providers, and subject to the annexation meeting all statutory requirements of Florida Statutes Chapter 171, the County agrees to support the Town's efforts to annex those properties within the Natural Area that are not currently within the municipal limits of the Town.

ARTICLE IV - RESPONSIBILITIES OF THE TOWN

27. The Town agrees to assume primary responsibility for public safety and law enforcement at the Natural Area for those parcels within the municipal boundaries of the Town. This includes routine patrols of the boundaries and the prevention of vandalism, vehicular trespass, dumping, and damage to property and natural resources.

28. The Town agrees to provide assistance to the County in the long term maintenance of the site, including weekly garbage pick-up from parking lots and police services to those portions of the Natural Area within the municipal boundaries of the Town. The Town will assume responsibility for the daily opening and closing of any gates providing public access to the Natural Area. This responsibility may be delegated to a local resident or stewardship group if approved by both the County and the Town.

29. The Town agrees to assist the County in the long-term management of the site including removal of exotic vegetation, removal of trash and debris collected during volunteer activities, periodic prescribed burns and other activities.

30. The Town agrees that in reviewing any proposed changes and uses of, or activities on, real property immediately adjacent to the Natural Area it shall consider the protection of the biological community and any impact on the species present.

31. The Town agrees to identify a Town employee as the contact person to interact with the County in planning for and managing the Natural Area.

32. The Town will encourage students, residents and visitors to use the site for educational and recreational purposes.

33. The Town agrees to review the proposed management plan and to provide comments to the County on that document. For those engineering design plans covering properties within Town limits and which require Town Council approval, the Town agrees to review them in an expedient manner. The Town further agrees to waive any municipal fees, assessments, or permits applicable to the Natural Area due to the construction, use or maintenance of public facilities, such as those applied to storm water drainage, utilities, or buildings.

WHEREFORE, the parties hereto have set their hands and seals on the day set forth next to their signatures.

PALM BEACH COUNTY, FLORIDA, BY
ITS BOARD OF COUNTY COMMISSIONERS

ATTEST:

Dorothy H. Wilken, Clerk

BY: Karen Claeboud
Deputy Clerk

DATE: OCT 7 1997

BY: Maude Ford Lee
~~Chairman~~ Vice - Chair Maude Ford Lee

DATE: OCT 7 1997

(SEAL)

BOARD OF COUNTY COMMISSIONERS ★ PALM BEACH COUNTY, FLORIDA ★ CLERK

R97 1486D

APPROVED AS TO FORM AND
LEGAL SUFFICIENCY:

By: Assistant County Attorney

DATE: 10/1/97

ATTEST:

BY: Deborah S. Manjo
Clerk

DATE: 9/24/97

APPROVED AS TO FORM AND
LEGAL SUFFICIENCY:

BY:
Town Attorney

DATE: 9/24/97

TOWN OF JUNO BEACH, FLORIDA
BY ITS COUNCIL

BY: Frank W. Harris
Mayor

DATE: 9/26/97

EXHIBIT A
LEGAL DESCRIPTIONS OF TRACTS PURCHASED OR LEASED BY PALM BEACH COUNTY

148-ACRE JUNO ASSOCIATES, LTD. TRACT

Parcel 1, Sea Trace P.U.D., Plat Book 57, Pages 128-129, Public Records of Palm Beach County, Florida.

42-ACRE JUNO ASSOCIATES, LTD. OCEANFRONT TRACT

Parcel 2, Sea Trace, according to the Plat thereof as recorded in Plat Book 57, page 128, among the Public Records of Palm Beach County, Florida and being more particularly described as follows:

Commencing at said Point 'A'; thence South 87 degrees, 33 minutes, 53 seconds East, along the southerly line of said Government Lot 4, a distance of 125.70 feet to a point of intersection with the Easterly Right-of-Way line of said State Road Number 5, said point being the POINT OF BEGINNING of Parcel 2; thence North 14 degrees, 53 minutes 05 seconds West along the said Easterly Right-of-Way Line, a distance of 2167.91 feet; thence South 89 degrees, 24 minutes, 39 seconds East along the Southerly Line of Seascape-in-the-Park as recorded in Plat Book 43, Pages 90 and 91 of the said Public Records, a distance of 920 feet, more or less, to the approximate mean high water line of the Atlantic Ocean; thence Southeasterly along the said approximate mean high water line, a distance of 2215 feet, more or less, to a point of intersection with the Southerly line of said Government Lot 4; thence North 87 degrees, 33 minutes 53 seconds West along the said Southerly line of Government Lot 4, a distance of 985 feet, more or less to the POINT OF BEGINNING of Parcel 2. Parcel 2 42.43 Acres, more or less together with the riparian and littoral rights appertaining to the land herein platted.

Parcel 2 subject to Coastal Construction Control Line as recorded in Plat Book 36, Page 91 of the said Public Records.

Excepted from Parcel 2, State Road A-1-A (formerly State Road Number 5) Right-of-Way, being 66 feet in width as shown on Palm Beach County Engineering Department Right-of-Way Map, drawing Number 3-74-270 R/W, Sheets 2 and 3, dated 2-10-75.

3.5-ACRE RESOLUTION TRUST CORPORATION TRACT

Legal Description as per Exhibit "A", as found in Official Record Book 6841, Page 1296, in and for the Public Records of Palm Beach County, Florida.

A parcel of land with 300 foot frontage on the west side of State Road No. 5, with approximately 500 feet depth, more particularly described as follows:

That part of the north 300 feet of the south one-half (S ½) of the northwest one-quarter (NW¼) of Section 28, Township 41 South, Range 43 East, Palm Beach County, Florida, which is bounded on the east by the west right of way of State Road No. 5 (see Road Plat Book 2, Pages 43 through 56, inclusive), and bounded on the west by a line parallel with and 500 feet westerly of said west right of way of State Road No. 5. 3.44 acres (as surveyed, parcel contains 3.5398 acres or 154,194.55 square feet more or less).

334-ACRE JOHN D. AND CATHERINE T. MACARTHUR FOUNDATION TRACT

A parcel of land lying in Sections 20, 28 and 29, Township 41 South, Range 43 East, Palm Beach County, Florida and being more particularly described as follows:

All of the South Half (S ½) of the Southeast Quarter (SE ¼) of said Section 20, East of the Easterly right of way line of the Intracoastal Waterway, as said right of way is shown on plat recorded in Plat Book 17, Page 6 of the public records of Palm Beach County, Florida, Less the South 50 feet thereof for a County Road;

Together with the Northwest Quarter (NW ¼) of the Southeast Quarter (SE ¼) of said Section 20, East of the Easterly right of way line of the Intracoastal Waterway, as said right of way is shown on plat recorded in Plat Book 17, page 6 of the public records of Palm Beach County, Florida; LESS that part of the Northwest Quarter (NW ¼) of the Southeast Quarter (SE ¼) conveyed to the Florida Inland Navigation District, as described in Deed Book 658, page 430 of the public records of Palm Beach County, Florida;

Together with the Northeast Quarter (NE ¼) of the Southwest Quarter (SW ¼) of said Section 28, Township 41 South, Range 43 East, LESS the right of way of State Road No. 5; and LESS a strip of land 30 feet wide lying parallel with and adjacent to the West right of way line of State Road No. 5;

Together with the South Half (S ½) of the Southwest (SW ¼) of Section 28, Township 41 South, Range 43 East; LESS AND EXCEPTING THEREFROM the right of way of State Road 5, ALSO LESS those parcels described in Official Records Book 1876, page 844, Official Records Book 1935, page 1869, and Official Records Book 1951, page 225 of the public records of Palm Beach County, Florida, ALSO LESS the right of way of Ellison Wilson Road, and ALSO LESS a strip of land 30 feet wide lying parallel with and adjacent to the West right of way line of State Road 5. ALSO LESS the right of way for Rolling Green Road as recorded in Official Records Book 1883, page 593 of said public records.

Together with Government Lot 2, Section 28, Township 41 South, Range 43 East, in Palm Beach County, Florida, LESS AND EXCEPTING THEREFROM the North 106 feet of said Section 28;

Together with the North 595 feet of Government Lot 3 and all that part of the North 595 feet of Government Lot 4 lying West of a line 500 feet Westerly of and parallel to the West right of way line of U.S. Highway No. 1 in Section 28, Township 41 South, Range 43 East.

2-ACRE FISHER TRACT

The West 275 feet of the North 370 feet of the Southwest Quarter of the Southwest Quarter of Section 28, Township 41 South, Range 43 East, Palm Beach County, Florida, Less the rights of way for Rolling Green Road as described in instrument recorded in Official Record Book 1883, page 595, and Less the rights of way for Ellison-Wilson Road as described in instrument recorded in Official Record Book 1054, page 665 and Official Record Book 539, page 483 of the Public Records of Palm Beach County, Fla.

FLORIDA INLAND NAVIGATION DISTRICT MSA 614B TRACT (LEASE)

That part of the NE ¼ of the SW ¼, Section 20, Township 41 South, Range 43 East, Palm Beach County, Florida, lying East of the East right of way line of the Intracoastal Waterway, said right of way line being shown on Plat recorded in Plat Book 17, Page 6 of the Public Records of said County; also that part of the North 1000 feet of the NW ¼ of the SE ¼ of said Section 20, lying East of the said East right of way line; said tract containing 30.15 acres, more or less, being the same tract described in a Deed from Palmwood Investment Company to the Commissioners of the Florida Inland Navigation District dated January 5, 1944, and recorded in Deed Book 658, Page 430, of the said public records.

Town of Juno Beach and Palm Beach County
Juno Hills Oceanfront
FCT Project #95-046-P56
FCT Contract # 98-CT-3M-45-56-K1-046
Date: 12-9-97

* PBC GRANT AWARD & PROPERTY PURCHASE CALCULATIONS

GRANT AWARD CALCULATION

TOTAL PROJECT COSTS

Land Purchase Price		$15,800,000.00(1)	
Acquisition Expenses			
Appraisals	$ 7,050.00		
Appraisal Review	1,534.00		
Title Search	300.00		
Commission	158,000.00(2)		
Total Acquisition Expenses		$ 166,884.00(3)	
Total Project Costs			$15,966,884.00

COMPUTATION OF GRANT AWARD AND LOCAL MATCH AMOUNT

FCT Award Computation			
Share of Purchase Price	$ 7,375,440.00		
Share of Acquisition Expenses	77,901.45		
Total Share of Project Costs		$ 7,453,341.45	
COUNTY			
Share of Purchase Price	$ 8,424,560.00		
Share of Acquisition Expenses	88,982.55		
Total Share of Project Costs		$ 8,513,542.55	
Total Project Costs			$15,966,884.00

COMPUTATION OF PREPAIDS, REIMBURSEMENTS AND ADDITIONAL COSTS

FLORIDA COMMUNITIES TRUST

FCT Prepaid Project Costs		
Appraisal Review	$ 1,534.00	
Total Prepaid Costs	$ 1,534.00	
FCT Amount Due		
Share of Total Project Costs	$ 7,453,341.45	
Less Total Prepaid Costs	1,534.00	
Total Amount Due from FCT		$ 7,451,807.45

COUNTY

County Prepaid Project Costs

Land Purchase Price	$15,800,000.00
Appraisals	7,050.00
Title Search	300.00
Commission	158,000.00
Total Prepaid Costs	$15,965,350.00

County Amount Due

County Share of Total Project Costs	$ 8,513,542.55	
Less County Prepaids	15,965,350.00	
Total Amount Due To County		$ 7,451,807.45

County Additional Costs

Record Grant Award Agreement	$ 55.50(5)	
Total Additional Costs	$ 55.50	

Notes:

(1) Maximum approved purchase price is $20,600,000.00 pursuant to memorandum dated September 7, 1997, from Stephen J. Boyle to Caroline C. Sutton. Palm Beach County purchased the project site on February 13, 1997, at a cost of $15,800,000.00.

(2) Paid to The Nature Conservancy

(3) Pursuant to the terms of the option agreement the seller paid the costs of the Survey, Environmental Site Audit and Title Insurance.

(4) Pursuant to the terms of the Conceptual Approval Agreement, as amended by FCT governing board action, the amount of the grant shall be the lesser of $7,453,854.00 or 46.68% of the total project costs.

(5) Disbursed to Clerk of the Court, Palm Beach County, at time of reimbursement from FCT.

The foregoing calculation of grant award and total project costs is hereby approved by the undersigned.

TOWN OF JUNO BEACH

By: Frank W. Harris
Its: MAYOR

Date: NOVEMBER 13, 1997

Approved as to form and legality

TOWN ATTORNEY

Date: Nov 13, 1997

FLORIDA COMMUNITIES TRUST

James F. Murley, Chair

Date: 12/9/97

Approved as to form and legality

Date: 12-8-97

PALM BEACH COUNTY
BOARD OF COUNTY COMMISSIONERS
By: _____
Its: Chairman

Date: NOV 18 1997

R97 2042D

Approved as to form and legality

_____
County Attorney

Date: 11/14/97

DOROTHY H. WILKEN, CLERK
Board of County Commissioners

By: _____
Deputy Clerk

DOROTHY H. WILKEN, CLERK
Board of County Commissioners
By _____
DEPUTY CLERK

BOARD OF COUNTY COMMISSIONERS ★ PALM BEACH COUNTY, FLORIDA

Florida Communities Trust

December 10, 1997

Mr. Richard E. Walesky
Director, Department of Environmental Resources Management
3323 Belvedere Road
Building 502
West Palm Beach, Florida 33406

Re: **Juno Hills Oceanfront**
Palm Beach County/Town of Juno Beach
Project #95-046-P56

Dear Mr. Walesky:

Enclosed please find three fully-executed originals of the Addendum III to the Conceptual Approval Agreement for the above-referenced Florida Communities Trust Project.

Please call me at (850) 922-2207 or Suncom 292-2207, if you have any questions.

Sincerely,

A. Diane Langston

A. Diane Langston
Grant Specialist III
Florida Communities Trust

ADL/

Enclosure

RECEIVED
DEC 15 1997
ENVIRONMENTAL RESOURCE MGMT.

CONTRACT #96-CT-3M-95-56-A1-046

FLORIDA COMMUNITIES TRUST
56 AWARD #95-046-P56

ADDENDUM III TO CONCEPTUAL APPROVAL AGREEMENT

THIS ADDENDUM III to the Conceptual Approval Agreement is entered into by and between the FLORIDA COMMUNITIES TRUST ("FCT"), a nonregulatory agency within the State of Florida Department of Community Affairs, and the TOWN OF JUNO BEACH and PALM BEACH COUNTY ("FCT Recipient"), this 7th day of December, 1997.

WHEREAS, the parties hereto entered into a Conceptual Approval Agreement which sets forth the conditions of conceptual approval that must be satisfied by FCT Recipient prior to the receipt of the FCT Preservation 2000 award and the restrictions that are imposed on the Project Site subsequent to its acquisition with the FCT Preservation 2000 award; and

WHEREAS, the initial term of the Conceptual Approval Agreement expired November 8, 1996; and

WHEREAS, the Conceptual Approval Agreement was amended by ADDENDUM I to expire May 8, 1997, and by ADDENDUM II to expire November 8, 1997; and

WHEREAS, the FCT Recipient in accordance with GENERAL CONDITIONS paragraph 3 of the Conceptual Approval Agreement and in compliance with Rule 9K-4.010(2)(k), F.A.C., has timely submitted to FCT a written request for extension of the November 8, 1997, deadline; and

WHEREAS, the parties hereto desire to extend the term of the Conceptual Approval Agreement as provided by Rule 9K-4.010(2)(k), F.A.C.; and

WHEREAS, the FCT Recipient requested that the FCT governing body amend the Conceptual Approval Agreement from a 45 percent award to a 46.68 percent award and increase the amount of the grant by $1,979,491.50 and the FCT governing body approved this request on September 24, 1997; and

WHEREAS the parties hereto desire to amend the Conceptual Approval Agreement to increase the percentage and amount of the grant award as provided by Rule 9K-4.011(2)(a), F.A.C.; and

WHEREAS, the Conceptual Approval Agreement provides for the disbursement of FCT Preservation 2000 funds at the closing of the acquisition of the Project Site; and

WHEREAS, the FCT Recipient acquired the fee simple title to the Project Site on February 13, 1997, from Juno Associates, Ltd.; and

WHEREAS, the FCT Recipient has requested disbursement of FCT Preservation 2000 award funds from FCT subsequent to the closing on the acquisition of the Project Site for the project costs expended for the acquisition of the Project Site by the FCT Recipient; and

WHEREAS, the parties hereto desire to amend the Conceptual Approval Agreement to provide for the disbursement of FCT Preservation 2000 funds subsequent to the FCT Recipient's acquisition of the Project Site; and

WHEREAS, the purpose of this Addendum is to extend the term of the Conceptual Approval Agreement, increase the percentage and amount of the grant award, and to set forth the conditions of Conceptual Approval that must be satisfied by FCT Recipient prior to the disbursement of any FCT Preservation 2000 funds; and

WHEREAS, GENERAL CONDITIONS paragraph 14 of the Conceptual Approval Agreement states that the agreement may be amended at any time prior to FCT giving final project plan approval to the FCT Recipient. Any agreement must be set forth in a written instrument and agreed to by both the FCT Recipient and FCT;

NOW THEREFORE, the FCT and FCT RECIPIENT mutually agree as follows:

1. Notwithstanding the language of Section I. GENERAL CONDITIONS, paragraph 3. and paragraph 14., if this Addendum III is executed after November 8, 1997, the parties hereby agree to revive the Conceptual Approval Agreement nunc pro tunc as though it had not lapsed in accordance with paragraph 3.

2. In every respect, this Addendum III is to be construed and applied as though the parties had signed it before November 8, 1997.

3. The Conceptual Approval Agreement by and between FCT and FCT Recipient is hereby extended through and until completion of the reimbursement process.

4. Section I.2. is hereby replaced, revised and superseded by the following:

> 2. The name *Conceptual Approval Agreement* is used to indicate that the project has been approved as a concept that was described in FCT Application #95-046-P56. The Conceptual Approval Agreement is in every respect a grant contract between the parties. The Agreement describes activities that will be conducted both prior and subsequent to reimbursement for acquisition costs for the project site, which is the subject of the application that was submitted and selected for funding by the FCT.

5. Section I.6. is hereby replaced, revised and superseded by the following:

6. FCT Recipient agrees to make diligent efforts to submit the documentation that is required in this Agreement as soon as is reasonably possible to FCT so that acquisition costs for the Project Site may be reimbursed in an expeditious manner. Deadlines stated in this Agreement, as well as deadlines associated with any FCT activity relating to the project, are strictly enforced. Failure to adhere to deadlines, whether stated in this Agreement or associated with meetings of the FCT Governing Body, may result in delays in the project, may result in allocation of time or resources to other recipients that responded timely, and may result in this Agreement being voidable. It is the responsibility of the FCT Recipient to know all project deadlines, to devise a method of monitoring the project, and to adhere to all deadlines.

6. Section I.7. is hereby replaced, revised and superseded by the following:

7. The FCT Preservation 2000 award granted to the FCT Recipients will in no event exceed the lesser of Forty-Six and sixty-eight hundredths percent (46.68%) of the final total project costs, as defined in Rule 9K-4.002(31), F.A.C., or Seven Million Four Hundred Fifty-three Thousand Eight Hundred Fifty-four and 00/100 Dollars ($7,453,854.00), unless the FCT Governing Body approves a greater amount pursuant to Rule 9K-4.011(2)(a), F.A.C.

7. Section I.10. is hereby replaced, revised and superseded by the following:

10. The FCT funds shall be delivered either in the form of eligible Project Costs prepaid by FCT to vendors or in the form of a state warrant to the FCT Recipient. FCT award funds shall only be delivered after FCT approval of the project plan and terms of the acquisition of the Project Site. If the Project Site is comprised of multiple parcels, FCT shall deliver only the share of the FCT award that corresponds to the parcel for which reimbursement is being made. FCT will prepare a grant reconciliation statement prior to the reimbursement that will evidence the amount of local match, if any is required, provided by the FCT Recipient and the portion of the FCT award that corresponds to the parcel for which reimbursement is being made. Cash expended by the FCT for eligible Project Costs incurred by the FCT will be recognized as part of the FCT grant award amount on the grant reconciliation statement.

8. Section I.11. is hereby replaced, revised and superseded by the following:

11. The FCT Recipient's local match, if any is required, shall be delivered either in the form of eligible Project Costs prepaid to vendors by the FCT Recipient or eligible donation of land value. If the Project Site is comprised of multiple parcels, the FCT Recipient shall only be reimbursed for the eligible project costs that correspond to the parcel being reimbursed. The cash expended by the FCT Recipient for eligible Project Costs

incurred by the FCT Recipient will be recognized as part of the local match, if any is required, on the grant reconciliation statement prepared pursuant to paragraph 10 above. In the event FCT Recipient's application #95-046-P56 represents that land is the source of local match, if any is required, the value attributed to the land local match shall be determined after an appraisal report that complies with the procedures and requirements set forth in Rule 9K-6.007, F.A.C.

9. Section II. is hereby replaced, revised and superseded by the following:

II. REQUIREMENTS THAT MUST BE MET PRIOR TO PROJECT PLAN APPROVAL AND THE DELIVERY OF AWARD FUNDS FOR REIMBURSEMENT OF PROJECT COSTS EXPENDED BY FCT RECIPIENT TO ACQUIRE PROJECT SITE

1. By execution of this Agreement, the FCT Recipient affirms that:

a. the FCT Recipient reaffirms the representations made in FCT Application #95-046-P56;

b. the FCT Recipient shall, on the anniversary date of the approval of the project plan by the Governing Body, prepare and submit to FCT an annual report as required by Rule 9K-4.013, F.A.C.

c. The FCT Recipient authorizes the individual named in this paragraph to execute all documents in connection with this project on behalf of the FCT Recipient, including but not limited to the Conceptual Approval Agreement or any addenda thereto, grant reconciliation statement, statements submitted as a part of the project plan, and Grant Award Agreement pursuant to Rule 9K-6.014(6), F.A.C.:

Name: Chairman of the Palm Beach County Board of County Commissioners, or his designee,
c/o Richard E. Walesky
Director of the Department of Environmental Resources Management
Address: Palm Beach County Department of Environmental Resources Management
3323 Belvedere Road, Building. 502
West Palm Beach, Florida 33406
Phone: 561-233-2400 Fax: 561/233-2414

2. Prior to final disbursement of award funds by FCT, the FCT Recipient must prepare a project plan that complies with Rule 9K-4.01 l, F.A.C. This project plan is

a compilation of the following items listed below, which must be reviewed and approved by FCT in a meeting of the Governing Body. In the event that the FCT Recipient is a partnership, the FCT Recipient must provide FCT with the interlocal agreement that sets forth the relationship among the partners and the fiscal and management responsibilities and obligations incurred by each partner for the Project Site as a part of its project plan.

The project plan shall include, and shall not be considered by FCT unless it includes all of the following:

a. A statement that the acquisition activities were conducted consistent with either Rule 9K-6.OOl(3)(d)(1) or (2), F.A.C., whichever applies.

b. The following documents, to be reviewed by FCT to ensure that the interest of the State of Florida will be protected:

(1) A copy of the real estate contract for sale and purchase of the Project Site between FCT Recipient and Juno Associates, Ltd.

(2) A copy of Buyer and Seller closing statements for the purchase of the Project Site.

(3) A copy of the recorded deed evidencing conveyance of title to the Project Site to the FCT Recipient.

(4) Certified survey of the Project Site that meets the requirements of Rule 9K-6.006, F.A.C., and dated within 90 days of the date of acquisition of Project Site by FCT Recipient.

(5) Appraisal report(s) prepared for the FCT Recipient's acquisition of the Project Site that complies with the requirements of Rule 9K-6.007, F.A.C.

(6) A copy of the title insurance policy evidencing marketable title in FCT Recipient to the Project Site and effective the date of acquisition of the Project Site by the FCT Recipient, including a statement from the title insurer as to the minimum promulgated rate if premium was paid by FCT Recipient, and all documents referenced in the title policy.

(7) Environmental site assessment of the Project Site certified to the FCT Recipient, which meets the standards and requirements of

the FCT Recipient, and with a date of certification within 45 days before the date of acquisition of the Project Site by FCT Recipient, together with the statement required by Rule 9K-6.012(4), F.A.C.

c. A management plan that complies with the following: written according to Exhibit A (FCT Technical Assistance Bulletin #2--Writing a Management Plan), which is attached hereto and incorporated herein by reference; acceptable to FCT; addresses the criteria and conditions set forth in Section IV, V, VI, and VII herein below; and, at a minimum, sets forth how the site will be managed to further the purpose of the project, contains a description of all planned improvements to the Project Site, identifies the costs of management and site improvement and funding sources, and identifies the management entity and its funding source.

If the FCT Recipient is not the proposed managing entity, the project plan must include a signed agreement between the FCT Recipient and the managing entity stating the managing entity's willingness to manage the site, the manner in which the site will be managed to further the purpose(s) of the project, and identification of the source of funding for management.

d. A statement of the total Project Cost, including all non-recurring costs of project development.

e. A statement of the amount of the award being requested from FCT.

f. A statement from each FCT Recipient in whose jurisdiction the Project Site is located that the project plan is consistent with the local comprehensive plan.

g. Evidence that conditions imposed as a part of the Conceptual Approval Agreement have been satisfied.

h. An affidavit from the FCT Recipient evidencing that after conducting a diligent search, the FCT Recipient, to the best of its knowledge, represents that there are no existing or pending violations of any local, state, regional and federal laws and regulations on the Project Site.

3. The FCT strongly encourages the FCT Recipient to request a courtesy review of its entire project plan, but especially its management plan, well in advance of the meeting of the FCT Governing Body where the project plan will be considered for approval and funds will be authorized for disbursement. As a part of its duties to the Governing Body, FCT Staff will make a recommendation of approval of complete

and accurate project plans or disapproval of incomplete or insufficient project plans. FCT Recipient is strongly urged to coordinate with the FCT staff in order that the FCT review of the management plan coincides with the anticipated Governing Body approval.

4. Pursuant to 9K-4.011(2)(h), F.A.C., FCT shall withhold project plan approval if the local comprehensive plan(s) of the FCT Recipient or the FCT Recipient's partner is, for any reason found not in compliance by the Department after conceptual approval has been granted by FCT, unless the FCT Recipient has executed a Compliance Agreement (formerly called a stipulated settlement agreement) with the Department to resolve all of the issues raised by the Department in a statement of intent to find a plan not in compliance issued to pursuant to Section 163.3184(8), F.S.

5. Pursuant to Rule 9K-4.010(3), F.A.C., the FCT shall publish a Notice of Approval for Preservation 2000 Funds in the Florida Administrative Weekly that shall list each project plan that has received approval for funding and the amount of funding approved. Any person with a substantial interest that are or may be determined by the decision of the FCT to reject or approve the project plan may request an administrative proceeding pursuant to Section 120.57, F.S. within 21 days from publication of the Notice of Approval for Preservation 2000 Funds. Reimbursement of costs of acquisition of the Project Site may only take place after expiration of the 21-day notice period, so long as no requests for an administrative proceeding have been filed.

9. Section III. is hereby deleted.

10. Section IV. is hereby replaced, revised and superseded by the following:

IV. PROJECT SITE ACQUISITION REQUIREMENTS IMPOSED BY CHAPTER 259, CHAPTER 375, AND CHAPTER 380, PART III, F.S.

FCT RECIPIENT AGREES AS FOLLOWS:

1. FCT shall approve the terms under which the interest in land was acquired, pursuant to Section 380.510(3), F.S. Such approval is deemed given when the FCT governing body approves the project plan containing a copy of the document vesting title to the Project Site in the FCT Recipient.

2. Title to the Project Site shall be titled in the FCT Recipient.

3. Each parcel to which the FCT Recipient acquires title in the Project Site shall be subject to such covenants and restrictions as are, at a minimum, sufficient to

ensure that the use of the Project Site at all times complies with Section 375.045 and 375.051, F.S.; Section 9, Article XII of the State Constitution; the applicable bond indenture under which the Bonds were issued; and any provision of the Internal Revenue Code or the regulations promulgated thereunder that pertain to tax exempt bonds and shall contain clauses providing for the conveyance of title to the Project Site in the Board of Trustees of the Internal Improvement Trust Fund upon failure to use the Project Site conveyed thereby for such purposes. Such covenants and restrictions as are described in this paragraph shall be in the form of a Grant Award Agreement, prepared by FCT, executed by the parties to the Conceptual Approval Agreement and recorded at the time of reimbursement for acquisition of the Project Site. The recordable Grant Award Agreement shall restate the conditions that were placed on the Project Site at the time of project selection and initial grant approval. All statements contained in the recordable Grant Award Agreement are contained in this Conceptual Approval Agreement, with the exception of statements that do not survive the reimbursement for the acquisition of the Project Site.

4. The Grant Award Agreement containing such covenants and restrictions as referenced in paragraph 3 above and describing the real property subject to the Agreement shall be executed by the FCT and FCT Recipient at the time of the reimbursement for the Project Site and shall be recorded in the county in which the Project Site is located.

5. If any essential term or condition of the Grant Award Agreement is violated, and the FCT Recipient does not correct the violation within 30 days of written notice of violation, title to all interest in the Project Site shall be conveyed to the Board of Trustees of the Internal Improvement Trust Fund. The Grant Award Agreement referenced in paragraph 3 above shall set forth the executory interest of the Board of Trustees of the Internal Improvement Trust Fund.

6. The interest acquired by the FCT Recipient in the Project Site shall not serve as security for any debt of the FCT Recipient.

7. If the existence of the FCT Recipient terminates for any reason, title to all interest in real property it has acquired with the FCT award shall be conveyed or revert to the Board of Trustees of the Internal Improvement Trust Fund, unless FCT negotiates an agreement with another local government or nonprofit organization which agrees to accept title to all interest in and to manage the Project Site.

8. The Project Site shall be managed only for the conservation, protection and enhancement of natural resources and for public outdoor recreation that is compatible with the conservation, protection and enhancement of the Project Site, along with other related uses necessary for the accomplishment of this purpose. The proposed

uses for the Project Site must be specifically designated in the management plan approved by the FCT as part of the project plan.

The date of execution of this addendum shall be the date that the last party signs this addendum.

THIS ADDENDUM III TO CONCEPTUAL APPROVAL AGREEMENT, ADDENDUM II, ADDENDUM I, the CONCEPTUAL APPROVAL AGREEMENT and its Exhibits "A", "B", and "C" embody the entire Agreement between the parties.

IN WITNESS WHEREOF, the parties hereto have duly executed this ADDENDUM III to CONCEPTUAL APPROVAL AGREEMENT.

PALM BEACH COUNTY, FLORIDA
Department of Environment
Resources Management

By: _____
Director

Date: 11-17-97

Accepted as to Form and
Legal Sufficiency:

By: _____
County Attorney

Date: 11/19/97

FLORIDA COMMUNITIES TRUST

By: _____
James F. Murley, Chair

Date: 12/7/97

TOWN OF JUNO BEACH

By: Frank W. Harris

Title: MAYOR

Date: NOVEMBER 13, 1997

Accepted as to Form and
Legal Sufficiency:

By: _____
Ann J. Wild, Trust Counsel

Date: 12/2/97

Accepted as to Form and
Legal Sufficiency:

By: _____
Town Attorney

Date: NOV 13, 1997

GRANT AWARD FOR COUNTY PURCHASE PROPERTY

420 DEEDS

This instrument prepared by:
Ann J. Wild
Florida Communities Trust
Department of Community Affairs
2555 Shumard Oak Blvd.
Tallahassee, FL 32399-2100

R97 20420

NOV 18 1997

CONTRACT #98-CT-3M-95-56-J1-046

FLORIDA COMMUNITIES TRUST
P56 AWARD# 95-046-P56

GRANT AWARD AGREEMENT

THIS AGREEMENT is entered into this 9th day of December, 1997, by and between the FLORIDA COMMUNITIES TRUST ("FCT"), a nonregulatory agency within the State of Florida Department of Community Affairs, and TOWN OF JUNO BEACH AND PALM BEACH COUNTY ("FCT Recipient"), in order to impose terms, conditions, and restrictions on the use of the proceeds of certain bonds, hereinafter described, and the lands acquired with such proceeds and as described in Exhibit "A" attached hereto and made a part hereof ("Project Site"), as shall be necessary to ensure compliance with applicable Florida Law and federal income tax law and to otherwise implement provisions of Chapters 253, 259, and 380 Florida Statutes.

WHEREAS, Part III Chapter 380, Florida Statutes, the Florida Communities Trust Act, creates a nonregulatory agency within the Department of Community Affairs, which will assist local governments in bringing into compliance and implementing the conservation, recreation and open space, and coastal elements of their comprehensive plans and in otherwise conserving natural resources and resolving land use conflicts by providing financial assistance to local governments to carry out projects and activities authorized by the Florida Communities Trust Act;

WHEREAS, Section 259.101(3)(c), Florida Statutes, provides for the distribution of ten percent (10%) of the net Preservation 2000 Revenue Bond proceeds to the Department of Community Affairs to provide land acquisition grants and loans to local governments through the FCT;

WHEREAS, the Governor and Cabinet authorized the sale and issuance of State of Florida Department of Natural Resources Preservation 2000 Revenue Bonds ("Bonds");

WHEREAS, the Bonds were issued as tax-exempt bonds, meaning that the interest on the Bonds is excluded from the gross income of Bondholders for federal income tax purposes;

WHEREAS, Rule 9K-4.010(2)(e), F.A.C. , authorizes FCT to impose conditions for funding on those FCT applicants whose projects have been selected for funding in accordance with Rule Chapter 9K-4, F.A.C.;

WHEREAS, the FCT has approved the terms under which the Project Site was acquired and the FCT Recipient has acquired title to the Project Site and the Project Site shall be subject to such covenants and restrictions as are sufficient to ensure that the use of the Project Site at all times complies with Section 375.051, Florida Statutes and Section 9, Article XII of the State Constitution and such covenants and restrictions shall contain clauses providing for the conveyance of title to the Project Site to the Board Qf Trustees of the Internal Improvement Trust Fund upon the failure of the FCT Recipient to use the Project Site acquired thereby for such purposes; and

WHEREAS, such covenants and restrictions shall be imposed by an agreement which shall describe with particularity the real property which is subject to the agreement and shall be recorded in the county in which the real property is located; and

WHEREAS, the purpose of this Agreement is to set forth the covenants and restrictions that are imposed on the Project Site subsequent to its acquisition with FCT Preservation 2000 Bond Proceeds.

NOW THEREFORE, in consideration of the mutual covenants and undertakings set forth herein, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, FCT and FCT Recipient do hereby contract and agree as follows:

I. GENERAL CONDITIONS.

1. Upon execution and delivery by the parties hereto, the FCT Recipient shall cause this Agreement to be recorded and filed in the official public records of Palm Beach County, Florida, and in such manner and in such other places as FCT may reasonably request, and shall pay all fees and charges incurred in connection therewith.

2. The FCT Recipient and FCT agree that the State of Florida Department of Environmental Protection will forward this Agreement to Department of Environmental Protection Bond Counsel for review. In the event Bond Counsel opines that an amendment is required to this Agreement so that the tax exempt status of the Preservation 2000 Revenue Bonds is not jeopardized, FCT and FCT Recipient shall amend the Agreement accordingly.

3. This Agreement may be amended at any time. Any amendment must be set forth in a written instrument and agreed to by both the FCT Recipient and FCT.

4. This Agreement and the covenants and restrictions contained herein shall run with the Property herein described and shall bind, and the benefits shall inure to, respectively, the FCT and the FCT Recipient and their respective successors and assigns.

5. This Agreement shall be governed by and construed in accordance with the laws of the State of Florida, with respect to both substantive rights and with respect to procedures and remedies.

6. Any notice required to be given hereunder shall be given by personal delivery, by registered mail or by registered expedited service at the addresses specified below or at such other addresses as may be specified in writing by the parties hereto, and any such notice shall be deemed received on the date of delivery if by personal delivery or expedited delivery service, or upon actual receipt if sent by registered mail.

FCT:

Florida Communities Trust
Department of Community Affairs
2555 Shumard Oak Blvd.
Tallahassee, Florida 32399-2100
ATTN: Executive Director

FCT Recipients:

Palm Beach County Dept. of Envl.
Resources Management
3323 Belvedere Road Building 502
West Palm Beach, FL 33406
ATTN: Richard E. Walesky, Director

Town of Juno Beach
340 Ocean Drive
Juno Beach, FL 33408
ATTN: Gail F. Nelson, Town Manager

7. If any provision of the Agreement shall be invalid, illegal or unenforceable, the validity, legality and enforceability of the remaining provisions shall not in any way be affected or impaired.

II. PROJECT SITE REQUIREMENTS IMPOSED BY CHAPTER 259, CHAPTER 375, AND CHAPTER 380, PART III, FLORIDA STATUTES.

1. If any essential term or condition of this grant agreement is violated by the FCT Recipient or by some third party with the knowledge of the FCT Recipient and the FCT Recipient does not correct the violation within 30 days of notice of the violation, fee simple title to all interest in the Project Site shall be conveyed to the Board of Trustees of the Internal Improvement Trust Fund. The FCT shall treat such property in accordance with Section 380.508(4)(e), Florida Statutes.

2. Any transfer of the Project Site shall be subject to the approval of FCT and FCT shall enter into a new agreement with the transferee, containing such covenants, clauses, or other restrictions as are sufficient to protect the interest of the people of Florida.

3. The interest, if any, acquired by the FCT Recipient in the Project Site will not serve as security for any debt of the FCT Recipient unless FCT approves the transaction.

4. If the existence of the FCT Recipient terminates for any reason, title to all interest in the Project Site it has acquired with the FCT award shall be conveyed to the Board of Trustees of the Internal Improvement Trust Fund, unless FCT negotiates an agreement with another local government or nonprofit organization which agrees to accept title to all interest in and to manage the Project Site.

5. In the event that the Project Site is damaged or destroyed or title to the Project Site, or any part thereof, is taken by any governmental body through the exercise or the threat of the exercise of the power of eminent domain, the FCT Recipient shall deposit with the FCT any insurance proceeds or any condemnation award, and shall promptly commence to rebuild, replace, repair or restore the Project Site in such manner as is consistent with the Agreement. The FCT shall make any such insurance proceeds or condemnation award moneys available to provide funds for such restoration work. In the event that the FCT Recipient fails to commence or to complete the rebuilding, repair, replacement or restoration of the Project Site after notice from the FCT, the FCT shall have the right, in addition to any other remedies at law or in equity, to repair, restore, rebuild or replace the Project Site so as to prevent the occurrence of a default hereunder.

6. Notwithstanding any of the foregoing, FCT will have the right to seek specific performance of any of the covenants and restrictions of this Agreement concerning the construction and operation of the Project Site.

III. PROJECT SITE OBLIGATIONS IMPOSED BY FCT ON THE FCT RECIPIENT

1. The Project Site shall be managed only for the conservation, protection and enhancement of natural and historical resources and for resource-based public outdoor recreation which is compatible with the conservation, protection and enhancement of the Project Site, along with other related uses necessary for the accomplishment of this purpose. The proposed uses for the Project Site are specifically designated in the Project Plan as approved by FCT.

2. The FCT Recipient shall prepare and submit to FCT an annual report as required by Rule 9K-4.013, F.A.C.

3. The FCT Recipient shall ensure that the future land use designation assigned to the Project Site is for a category dedicated to open space, conservation, or outdoor recreation uses as appropriate. If an amendment to the FCT Recipient's comprehensive plan is required to comply with this paragraph, the amendment shall be proposed at the next comprehensive plan amendment cycle available to the FCT Recipient.

4. FCT Recipient shall ensure, and provide evidence thereof to FCT, that all activities under this Agreement comply with all applicable local, state, regional and federal laws and regulations, including zoning ordinances and the adopted and approved comprehensive plan for the jurisdiction as applicable. Evidence shall be provided to FCT that all required licenses and permits have been obtained prior to the commencement of any construction.

5. The FCT Recipient shall, through its agents and employees, prevent the unauthorized use of the Project Site or any use thereof not in conformity with the FCT approved project plan.

6. FCT staff or its duly authorized representatives shall have the right at any time to inspect the Project Site and the operations of the FCT Recipient at the Project Site.

7. All buildings, structures, improvements, and signs shall require the prior written approval of FCT as to purpose. Further, tree removal, other than non-native species, and/or major land alterations shall require the written approval of FCT. The approvals required from FCT shall not be unreasonably withheld by FCT upon sufficient demonstration that the proposed structures, buildings, improvements, signs, vegetation removal or land alterations will not adversely impact the natural resources of the Project Site. The approval by FCT of the FCT Recipient's management plan addressing the items mentioned herein shall be considered written approval from FCT.

8. If archaeological and historic sites are located on the Project Site, the FCT Recipient shall comply with Chapter 267, Florida Statutes. The collection of artifacts from the Project Site or the disturbance of archaeological and historic sites on the Project Site will be prohibited unless prior written authorization has been obtained from the Department of State, Division of Historical Resources.

9. The FCT Recipient shall ensure that the Project Site is identified as being publicly owned and operated as a passive, natural resource-based public outdoor recreational site in all signs, literature and advertising regarding the Project Site. The FCT Recipient shall erect a sign(s) identifying the Project Site as being open to the public and as having been purchased with funds from FCT and FCT Recipient.

IV. OBLIGATIONS INCURRED BY FCT RECIPIENT AS A RESULT OF BOND PROCEEDS BEING UTILIZED TO PURCHASE THE PROJECT SITE.

1. If the Project Site is to remain subject, after its acquisition by the State and the FCT Recipient, to any of the below listed activities or interests, the FCT Recipient shall provide at least 60 days written notice of any such activity or interest to FCT prior to the activity taking place, and shall provide to FCT such information with respect thereto as FCT reasonably requests in order to evaluate the legal and tax consequences of such activity or interest:

a. any lease of any interest in the Project Site to a non-governmental person or organization;

b. the operation of any concession on the Project Site to a non-governmental person or organization;

c. any sales contract or option to buy things attached to the Project Site to be severed from the Project Site, with a non-governmental person or organization;

d. any use of the Project Site by non-governmental persons other than in such person's capacity as a member of the general public;

e. a management contract of the Project Site with a non-governmental person or organization; and

f. such other activity or interest as may be specified from time to time in writing by FCT to the FCT Recipient.

2. FCT Recipient agrees and acknowledges that the following transaction, events, and circumstances may not be permitted on the Project Site as they may have negative legal and tax consequences under Florida law and federal income tax law:

a. a sale of the Project Site or a lease of the Project Site to a non-governmental person or organization;

b. the operation of a concession on the Project Site by a non-governmental person or organization;

c. a sale of things attached to the Project Site to be severed from the Project Site to a non-governmental person or organization;

d. any change in the character or use of the Project Site from that use expected at the date of the issuance of any series of bonds from which the disbursement is to be made;

e. any use of the Project Site by non-governmental persons other than in such person's capacity as a member of the general public;

f. a management contract of the Project Site with a non-governmental person or organization; and

g. such other activity or interest as may be specified from time to time in writing by FCT to the FCT Recipient.

DELEGATIONS AND CONTRACTUAL ARRANGEMENTS BETWEEN THE FCT RECIPIENT AND OTHER GOVERNMENTAL BODIES, NOT FOR PROFIT ENTITIES, OR NON GOVERNMENTAL PERSONS FOR USE OR MANAGEMENT OF THE PROJECT SITE WILL IN NO WAY RELIEVE THE FCT RECIPIENT OF THE RESPONSIBILITY TO ENSURE THAT THE CONDITIONS IMPOSED HEREIN ON THE PROJECT SITE AS A RESULT OF UTILIZING BOND PROCEEDS TO ACQUIRE THE PROJECT SITE ARE FULLY COMPLIED WITH BY THE CONTRACTING PARTY.

V. CONDITIONS PARTICULAR TO THE PROJECT SITE THAT MUST BE ADDRESSED IN THE MANAGEMENT PLAN.

1. The FCT Recipients shall provide outdoor recreational facilities including a nature trail, dune crossover, interpretive kiosk and limited parking on the Project Site. The facilities shall be developed in a manner that allows the general public reasonable access for observation and appreciation of the significant natural resources on the Project Site without causing harm to those resources.

2. The timing and extent of a vegetative communities and plant species survey of the Project Site shall be specified in the management plan. The FCT Recipients shall detail how the survey shall be used during development of the site to insure the protection, restoration, and preservation of the natural resources on the Project Site.

3. The oak scrub, beach dune, coastal strand and maritime hammock communities that exist on the Project Site shall be preserved and appropriately managed to ensure the long-term viability of these vegetative communities.

4. The Project Site shall be managed in a manner that optimizes habitat for listed wildlife species that utilize or could potentially utilize the Project Site, including the gopher tortoise, scrub jays and marine sea turtles. The FCT Recipients shall coordinate with the Game and Fresh Water Fish Commission and the Department of Environmental Protection's Office of Protected Species Management on the management of the Project Site for the protection of listed species and listed species habitat. The FCT Recipients shall also conduct periodic surveys of listed species using the Project Site and develop informational signs relating to the protection of listed animal species and their habitat.

5. The FCT Recipients shall ensure that the Project Site and listed animal species and their habitat are sufficiently buffered from the adverse impacts of adjacent land uses.

6. The FCT Recipients shall restore 10 acres of the Project Site by removing exotic vegetation and replanting with native vegetative species.

7. Prior to the commencement of any proposed development activities, measures will be taken to determine the presence of any archaeological sites. All planned activities involving known archaeological sites or potential site areas shall be closely coordinated with the Department of State, Division of Historic Resources, in order to prevent the disturbance of significant sites.

8. The FCT Recipients shall include the Project Site in the regional greenway network that extends from North Palm Beach to the Town of Jupiter and develop a greenway management strategy for the site.

9. Access to the Project Site by pedestrians, bicyclists and persons on non-motorized vehicles shall be promoted except in those areas where resource protection considerations warrant limiting access.

10. The FCT Recipients shall provide educational programs at the Project Site. The programs shall include guided tours and special programs for school groups and the general public.

11. The requirements imposed by other grant program funds that may be sought by the FCT Recipients for activities associated with the Project Site shall not conflict with the terms and conditions of the FCT award.

THIS GRANT AWARD AGREEMENT embodies the entire Agreement between the parties.

IN WITNESS WHEREOF, the parties hereto have duly executed this Agreement.

Witness:

DAMIAN PEDUTO
Notary Public, State of Florida
My Comm. Exp. Aug. 15, 1999
Comm. No. CC 488693

DAMIAN A. PEDUTO

Witness Name:

Witness Name:

Attest:

By: Damian Peduto

Title: Town Planner

Date: 11-13-97

TOWN OF JUNO BEACH, a municipality within the State of Florida

By: Frank W. Harris

Its: MAYOR

Date: NOVEMBER 13, 1997

Accepted as to Legal Form and Sufficiency:

By:

Town Attorney

Date: Nov. 13, 1997

STATE OF FLORIDA
COUNTY OF Palm Beach

The foregoing instrument was acknowledged before me this 13th day of November 1997, by Frank W. Harris, as Mayor. He is personally known to me, ~~or has produced~~ _____ ~~as identification.~~

DAMIAN PEDUTO
Notary Public, State of Florida
My Comm. Exp. Aug. 15, 1999
Comm. No. CC 488693

Notary Public
Print Name: Damian Peduto
Commission No.
My Commission Expires:

Witness:

Witness Name:

Witness Name:

PALM BEACH COUNTY
BOARD OF COUNTY COMMISSIONERS

By:
Its: Chairman

Date: NOV 18 1997

R97 2042D

Attest:
Dorothy H. Wilken, Clerk

By:

Title: Deputy Clerk

Date: NOV 18 1997

(SEAL)

Accepted as to Legal Form and Sufficiency:

By:
County Attorney

Date: 11/14/97

STATE OF FLORIDA
COUNTY OF Palm Beach

The foregoing instrument was acknowledged before me this 18th day of November, 1997, by Burt Aaronson, as Chair. He is personally known to me, or has produced N/A as identification.

Notary Public
Print Name:
Commission No.
My Commission Expires:

WILLA OSWALT
COMMISSION # CC 364437
EXPIRES MAY 6, 1998
BONDED THRU
ATLANTIC BONDING CO., INC

FLORIDA COMMUNITIES TRUST

Witness Name: JANICE D. DUGHI

Witness Name: Pamela J. Kugler

James F. Murley, Chair

Date: 12-9-97

Accepted as to Legal Form and Sufficiency:

Ann J. Wild, Trust Counsel

Date: 12/8/97

STATE OF FLORIDA
COUNTY OF LEON

The foregoing instrument was acknowledged before me this 9th day of December, 1997, by JAMES F. MURLEY, as Chair of the Florida Communities Trust. He is personally known to me.

Janice D. Dughi
MY COMMISSION # CC568851 EXPIRES
December 10, 2000
BONDED THRU TROY FAIN INSURANCE, INC.

Notary Public
Print Name:
Commission No.
My Commission Expires:

EXHIBIT "A"

PARCEL 2, SEA TRACE P.U.D., AS RECORDED IN PLAT BOOK 57, PAGES 128-129, PUBLIC RECORDS OF PALM BEACH COUNTY, FLORIDA.

Exhibit 5

Solicitation of Input on the Action Plan

Read more...

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This Section

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(Local Juno Beach Businesses are selected once a month by random draw)

John Kime Allstate Insurance

John Kime takes pride in assisting families protect the things that are important!

John Kime, a Personal Financial Representative for Allstate Insurance can assist you with everything from car insurance to property insurance, and even life insurance coverage. With a policy from Allstate, you can help keep your insurance costs low when you bundle multiple policies. John Kime's knowledge and understanding of the people in the community help him provide you with an outstanding level of service.

To schedule an appointment, please call 561-627-1806 or stop by John Kime Allstate Insurance located at 12832 U.S. Highway One in Juno Beach.

Congratulations John Kime Allstate Insurance!

For Information on Local Businesses In Juno Beach, please click here

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Please click on the underlined event item below for more information. Or please go to the Juno Beach News and Events Tab for current events.

The Town of Juno Beach Municipal Election Filing Period will take place January 28th at 12:00pm through February 11th at 12:00pm (please click here for election information)

January 30th - Floodplain Mitigation Committee Meeting - Public Meeting - 3:00pm -5:00pm - Town Center 340 Ocean Drive, Juno Beach, FL (click on this link for detailed information)

Floodplain Action Plan - Please Click Here

February 7th - Art Show presented by Friends of the Arts- opening reception for Marilyn Muller - 5:30pm-7:00pm - Town Center - 340 Ocean Drive, Juno Beach.

February 10th - Gulfstream Casino Bus Trip - For detailed information click here. *Please note: there will not be horse racing this day.*

February 14th - 50th Wedding Anniversary Celebration at Town Center 4:30pm *(Please note: There will not be a Valentine's Dance this year)*

February 16th -Lithuanian Independence Day Celebration at Town Center

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February 19th - Juno Beach Civic Association presents a Speaker Program Series 7:00pm

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March 8th & 9th - Annual Art Fest by the Sea - 10am-5pm - A1A between Donald Ross & Marcinski (please click here to be redirected for more information)

March 11th - Juno Beach Municipal Election 7am-7pm for precinct information please click here.

March 13th - Morikami Museum & Gardens Bus Trip - For detailed information click here.

Home
9/11 Remembrance Project
TOWN DIRECTORY & CONTACT INFORMATION
Town Council
Town Departments
Agendas & Minutes
Ordinances & Resolutions
Juno Beach News & Events
Juno Beach Police Department
Building Division
Community Facts
Town Jobs
Flood Protection and Hurricane Awareness
Juno Beach Local Businesses
Employment Opportunities Around Town
Links of Interest
Site Map
Frequently Asked Questions
Financial Information
TRAFFIC VIOLATIONS
Beach Renourishment
Email Updates
In Juno Beach News & Events:

January 30th Floodplain Public Meeting - 3:00pm Town Center 340 Ocean Drive, Juno Beach, FL

Town in Final Stage of Flood Mitigation Planning

-Public Meeting to Review Action Plan on January 30, 2014-

The Town of Juno Beach is in the final stage of drafting a Flood Mitigation Plan. A public presentation of the draft Action Plan will be made on Thursday, January 30th at 3:00 p.m. at the Town Center, located at 340 Ocean Drive in Juno Beach. The public is encouraged to attend this meeting to comment and make recommendations on the draft Action Plan, which will be available on the Town's website beginning Tuesday, January 21st at www.juno-beach.fl.us . After final public input is collected, the plan will be submitted and reviewed by the state and FEMA. Once approved, the plan will be adopted and implemented by the Town.

The Flood Mitigation Plan was developed by the Flood Mitigation Plan Committee, comprised of residents, stakeholders and Town staff. Planning efforts have been underway since February 2013.

The plan was developed using FEMA's 10-step process:

1. Organize to prepare the plan
2. Involve the public
3. Coordinate with other agencies
4. Assess the hazard
5. Assess the problem
6. Set goals
7. Review possible activities
8. Draft an action plan
9. Adopt the plan
10. Implement, evaluate and revise

For more information about the Town's flood mitigation planning efforts, please contact Andrea Dobbins, Town of Juno Beach at (561) 656-0326 or adobbins@juno-beach.fl.us

Home
9/11 Remembrance Project
TOWN DIRECTORY & CONTACT INFORMATION
Town Council
Town Departments
Agendas & Minutes
Ordinances & Resolutions
Juno Beach News & Events
Juno Beach Police Department
Building Division
Community Facts
Town Jobs
Flood Protection and Hurricane Awareness
Juno Beach Local Businesses
Employment Opportunities Around Town
Links of Interest
Site Map
Frequently Asked Questions
Financial Information
TRAFFIC VIOLATIONS
Beach Renourishment
Email Updates

In Juno Beach News & Events:

Upcoming Events
Events Calendar
Event Pictures
Newsletters
NEWS FLASH
Friends of the Arts of Juno Beach Art Shows

Floodplain Action Plan

Floodplain Action Plan

Exhibit 6

Action Items
Documents

Town of Juno Beach Flood Mitigation Plan

Evolution from
REVIEW OF POSSIBLE ACTIVITIES to **ACTION PLAN**

MEETING DATES- 1st Meeting: 7/23/2013, 2nd Meeting: 8/13/2013, 3rd Meeting: 9/5/2013, 4th Meeting: 9/26/2013

Activity #	Recommended Activity	New/ Continued	Discussion Notes	Responsible Party:	Funding Secured?	Funding Source:	Time frame:	Determined Appropriate for Action Plan?	Priority ranking in the Action Plan
Preventative: These items keep problems from getting worse. The use and development of floodprone areas is limited through planning, land acquisition, or regulation. Building, zoning, planning and/or enforcement offices usually administer them.									
1*	Pursue appropriate grants to enhance flood mitigation, including one or more of the following: • Flood Mitigation Assistance Grant • Hazard Mitigation Grant • Pre-Disaster Mitigation Grant • Repetitive Flood Claims • Severe Repetitive Loss		Too general to be listed in the Action Plan. Pursuing grants for individual activities is discussed on an activity by activity basis.					**No**	
2*	Review Town Code of Ordinances to strengthen maintenance requirements of private stormwater management facilities, including structures controlling flow.		Private stormwater facilities are not inspected by the town. They are currently addressed by supplemental regulations. ** (see note following Table for transcription of discussion) Discussion of this activity gave rise to Action Plan item ranked #11					**No**	
Not on original activity list, added later	Review all Juno Beach permits issued by South Florida Water Management District and if the special conditions section requests/ requires monitoring reports on water management systems (not often requested) require that those reports be submitted to Juno Beach as well as South Florida Water Management District	New	Permitting of private facilities is currently governed by South Florida Water Management District- Permit inspections and monitoring reports are currently conducted by [and filed with?] South Florida Water Management District, but can be followed up by Juno Beach. May require town personnel to develop a database/spreadsheet/PUB of developments, their permits and reports in the future (resources allowing)?, or ask to be sent a copy of each report? Discussed extensively in first meeting 23:05-31:35.	Director of Planning & Zoning	Yes	Staff time. (operating funds)	ongoing	**Yes**	**11**

Activity #	Recommended Activity	New/ Continued	Discussion Notes	Responsible Party:	Funding Secured?	Funding Source:	Time frame:	Determined Appropriate for Action Plan?	Priority ranking in the Action Plan
3	Encourage FEMA to update Flood Insurance Rate Maps (FIRMs) to include base flood elevations in all Special Flood Hazard Areas.		Question was raised as to whether FEMA can be "encouraged" to complete FIRMS with base flood elevations, but it was decided that since updates are already in progress it is best to follow FEMA's progress. When striking the activity was discussed the Town Project Coordinator responded as follows: **Dobbins-** "Why would you strike that?... I think we could have it because we're always wanting them [FEMA] to update them [the maps]... We're not going to take an active approach and petition them...but I don't think there is any harm in leaving it [the activity] in [the action plan].... What's good about having base flood elevations is that you know what elevation to put new homes at. This sets a minimum elevation for finished floor elevations." Discussed in first meeting 31:35-34:45	Project Coordinator	Yes	Staff time. (operating funds)		**Yes**	**25**
4	Continue Town's semi-annual inspection program of Town owned stormwater control structures to ensure the proper functioning of such structures.	✓ Already do	Already in progress, achieving results as expected. ????- "That's a condition of our NPDES" Discussed in first meeting 34:45-35:35	Public Works Dept.	Yes	Staff time. (operating funds)	ongoing	**Yes**	**33**
5	Continue practice of correcting localized drainage problems so that the Level of Service standards are maintained.	✓ Already do	Already in progress, achieving results as expected. If improvement opportunity noted, then Project Coordinator will seek appropriate funding source. Discussed in first meeting: 35:35-36:48	Public Works Dept.	Yes	Staff time. (operating funds), additional sources as needed	ongoing	**Yes**	**13**
6	Consider the relocation, mitigation or replacement of infrastructure currently present within the Coastal High Hazard Area where state funding is anticipated to be needed, as identified in the Local Mitigation Strategy Priority List.	New	Discussed as to whether this would be State, County or local responsibilities. Locally affected "infrastructure" existing in the Coastal High hazard area are discussed and determined to include the sea wall and dune walk-overs. Dune walk overs were installed in 1995-1996? - "It definitely needs maintenance" Discussed in first meeting: 36:48-44:00	Town Manager	No	Possibly State funding		**Yes**	**21**

Activity #	Recommended Activity	New/ Continued	Discussion Notes	Responsible Party:	Funding Secured?	Funding Source:	Time frame:	Determined Appropriate for Action Plan?	Priority ranking in the Action Plan
7	Maintain the Town's strong regulatory flood mitigation standards, including: • Utilization of 1% chance storm for development • Closed basin design • Lot grading plan • Requirement of 18" freeboard over crown of road, if under 7.5' elevation	✓ Already do	Already in progress, achieving results as expected. Will be enforced by Planning and Zoning and reviewed by Project Manager (Flood Plain Manager). Discussed the reasons for changing terminology from 'hundred year storm' to '1% chance storm'. Agreed this action should be included in Action Plan. Discussed in first meeting: 44:00-53:15	Director of Planning & Zoning	Yes	Staff time. (operating funds)	ongoing	**Yes**	**19**
8	Incorporate into the Town's review process for infrastructure planning an assessment of the appropriateness of public capital improvements in coastal high hazard areas as identified in the Coastal Management Element of the Comprehensive Plan.	Underway	This is for Planning and Zoning: **Cruz-** "It [the Town's review process for infrastructure planning] goes back to the site plan approval process... (54:29) During our site plan review process everybody looks at the planning, our engineers look at it, we look at the infrastructure [affected] so if we see something is missing we can make a comment so we can provide an explanation... " **Van Stone-** "For capital improvements also?" **Cruz-** "We just don't NOT review a building permit because it's the Town's. We want to make sure it's done properly" Will continue. Discussed in first meeting: 53:15-55:20 Discussed again in meeting 2 (1:46-5:56): Town staff confirm that they have already begun this process, will continue until comprehensive plan is completed (expected to be done at the end of 2014).	Planning & Zoning Dept.	Yes	Staff time. (operating funds)	end of 2014	**Yes**	**17**
9	Continue to maintain the Town's practice of denying development permits for projects that do not meet the design criteria for correcting existing deficiencies, or do not meet future drainage requirement.	✓ Already do	Agreed- Already Town policy and important to continue. Discussed in first meeting 55:20-56:40. Further discussion gave rise to Action Plan item ranked #27 (meeting 1, 56:40-1:07:01) Strict permit approval requirements discussed again during meeting 2 (5:56-6:29)	Planning & Zoning Dept.	Yes	Staff time. (operating funds)	ongoing	**Yes**	**30**
10	Continue to require that installation of stormwater management facilities made necessary by new development is the responsibility of the developer.	✓ Already do	Already required. Deemed important to continue. No plans to change this requirement. Discussed during meeting 2 (6:29-6:57)	Town Council & Town Manager with help, as needed, of Floodplain Manager	Yes	Staff time. (operating funds)	ongoing	**Yes**	**34**

Activity #	Recommended Activity	New/ Continued	Discussion Notes	Responsible Party:	Funding Secured?	Funding Source:	Time frame:	Determined Appropriate for Action Plan?	Priority ranking in the Action Plan
11	Evaluate the *Flood Mitigation Plan*, particularly the Action Plan, annually.	✓ Already do	Agreed- "We have to do this". Discussed in first meeting (1:07:01-1:07:15)	CRS Coordinator	Yes	Staff time. (operating funds)	annually	**Yes**	**48**
12	Update the *Flood Mitigation Plan* every five years.	✓ Already do	Agreed- The Town staff have committed to review/ update the FMP every 5 years. Discussed in first meeting (1:07:15-1:07:25)	CRS Coordinator with PB County United Local Strategy's update committee	Yes	Staff time. (operating funds)	every 5 years	**Yes**	**49**
13	Continue to identify Town parks that could be reserved for permanent open space and encourage such designation where possible and/or apply/enforce deed restrictions where applicable.	New	Research is needed to find out what deed restrictions are already in place and consider applying additional deed restrictions to prevent future development of open space. Town staff will also continue to look for parks and land that can be designated as permanent open space. Discussed during meeting 2 (6:57-10:28)	Planning & Zoning Dept. with Public Works Dept.	Yes	Staff time. (operating funds)		**Yes**	**12**
14	Continue to require designation of open space property for all major development.	✓ Already do	"We do that already" No plans to change. Discussed during meeting 2 (10:28-10:40)	Director of Planning & Zoning	Yes	Staff time. (operating funds)	ongoing	**Yes**	**9**
15	Continue to encourage drainage solutions such as the use of pervious concrete and pavement.	✓ Already do	This has been something the Town Planning and Zoning Dept. encourages and intends to continue. Discussed during meeting 2 (10:40-11:10)	Planning & Zoning Dept.	Yes	Staff time. (operating funds)	ongoing	**Yes**	**38**
16	Look for areas that can be used for storage of floodwaters, such as public rights of way, parks, ball fields in locations that have flooding problems.	New	Meeting attendees could not identify any areas off hand, but agreed that this is worth further investigation especially for the Ocean Drive area. Discussion also led to soil replacement Action Item, ranked #39 on final Action Plan. Discussed during meeting 2 (11:10-12:36)	Director of Planning & Zoning	Yes	Staff time. (operating funds)		**Yes**	**32**

Activity #	Recommended Activity	New/ Continued	Discussion Notes	Responsible Party:	Funding Secured?	Funding Source:	Time frame:	Determined Appropriate for Action Plan?	Priority ranking in the Action Plan
Not on original activity list, added later	Identify areas where water drainage and ground permeation can be improved through soil replacement, as has been done and proven successful along US 1. This will require identifying, engaging, educating and seeking the support of adjacent property owners.	New	This idea was brought up in response to a discussion of recommended activity #16. It is a drainage solution that the Town has used successfully in the past and may be practical in areas that experience flooding were no additional open space is available to divert excess water to. One issue raised with implementing this solution beyond the right-of-way is the need to solicit cooperation from private property owners. The group discussed ways to educate property owners about the benefits of cooperating with the Town on these types of projects. Discussed during meeting 2 (12:36-16:52)	Director of Public Works	Yes	Staff time. (operating funds)		**Yes**	**39**
17	Continue to require new commercial development to incorporate historical drainage patterns in the analysis of the required stormwater storage.	✓ Already do	Historical drainage patterns are already mentioned in the Town codes and consideration of them are required of both commercial and residential new development. Discussed during meeting 2 (16:52-17:34) Further discussion refined the action item to include all developers of both new and old developments and replace 'require' with 'encourage' because sometimes improved on-site drainage is more appropriate than historical drainage systems (18:25-21:36)	Planning & Zoning Dept.	Yes	Staff time. (operating funds)	ongoing	**Yes**	**46**
18*	Encourage developing provisions for stormwater design management practices in low-impact development.		Group agreed to strike this item since the Town code does not define "Low-impact development" and the term can be rather arbitrary if applied without being specifically defined. All of the Towns codes are designed to reduce the negative 'impact' of development so this action item is neither required nor applicable. Discussed during meeting 2 (17:34-18:25, 21:36-24:49)					**No**	
19	Complete an inventory of the Town's drainage structures.	✓ Already do	"Complete inventory" changed to "maintain inventory" since inventory has already been completed, and will be reviewed annually by the Public Works department. The inventory is currently in the form of a schematic and is accessible on the Town's website. Discussed during meeting 2 (24:49-26:43)	Public Works Dept.	Yes	Staff time. (operating funds)	Annually	**Yes**	**51**
20*	Continue the Town's maintenance program to clear debris from the stormwater drainage areas.	✓ Already do	Discussed during meeting 2 (26:43-29:29) Meeting member requested that "Stormwater drainage areas" be changed to "stormwater drainage infrastructure". It was confirmed during the discussion that the Town already has a maintenance program and each component is inspected and maintained at least annually and more often if required. Should read: Continue the Town's maintenance program to clear debris and maintain the	Public Works Dept.				**No**	

Activity #	Recommended Activity	New/ Continued	Discussion Notes	Responsible Party:	Funding Secured?	Funding Source:	Time frame:	Determined Appropriate for Action Plan?	Priority ranking in the Action Plan
			unimpeded flow of water through the stormwater drainage infrastructure. Such maintenance is conducted routinely and as required. Too similar to Recommended Activity #5 or #21 (Ranked #33 on Action Plan)						
21	As part of the Town's NPDES program, continue sediment control to prevent clogged drainage systems such as street sweeping, curb and gutter cleaning and planting vegetation on bare ground.	✓ Already do	"All part of the NPEDS. Yes, yes and yes." Meeting 2 (29:29-29:44)	Public Works Dept.	Yes	Staff time. (operating funds)	ongoing	**Yes**	**20**
22*	Encourage the use of flood prone areas as open space.		Discussed during meeting 2 (29:44-30:25) Open space addressed by recommended Activities #14 and #15					**No**	
23	Continue to support the Town's efforts to improve its classification in the Community Rating System, thus enhancing the Town's flood mitigation efforts while securing insurance premium rewards for its residents and businesses.	✓ Already do	Discussed during meeting 2 (30:25-30:55) The Town has contracted consultants (CRS Max) to work with the CRS Coordinator in an effort to improve CRS classification.	CRS Coordinator	Yes	Staff time. (operating funds)	ongoing	**Yes**	**7**
24*	Following the model set by Monroe County, link rate of new construction permit insurance to conservation land acquisition rate.		"I'm not sure that is practical here.", "I'm sure it's a sophisticated engineering process required to do that. I'm sure it's costly." All agreed to strike from list- Not practical for such a small municipality with limited resources. Discussed during meeting 2 (30:55-31:48)					**No**	

Activity #	Recommended Activity	New/ Continued	Discussion Notes	Responsible Party:	Funding Secured?	Funding Source:	Time frame:	Determined Appropriate for Action Plan?	Priority ranking in the Action Plan
Not on original activity list, added later	Explore the practically of using the amply available environmentally sensitive areas to capture and manage excess stormwater from flood prone roadways, thus recharging the natural water supply. Proper stormwater filtering mechanisms must be researched and the required government agencies will be consulted and included in the process of developing and implementing such practices if they are deemed practical and possible.	New	This was brought up as a Town "Wish List" item, and after extensive discussion about the possible benefits of such a project, it was agreed to initiate an investigation into the feasibility of implementing it. Further research is needed and funding must be secured. Meeting 2 (32:30-35:40)	(not designated) Possible coordination w/ other Gov't. Agencies. Needs to be investigated.	No	Needs to be investigated		**Yes**	**14**
Property Protection: Property owners, on the building-by-building or parcel basis, usually undertake these items.									
25*	Research the benefits of including base flood finished floor elevations on Certificates of Occupancy, for implementation within one year if possible.		Planning and Zoning/ Code Enforcement Dept. members- "We require one [base flood/ finished floor elevation] upon issuance of Certificate of Completion or Certificate of Occupancy depending on the project itself, but I'm not clear on this item." "I don't understand the language on this one… Research including base flood finished floor elevations?..." "On the CO?, … No I wouldn't make that mandatory. It's having the accompanying paperwork [elevation certificate and survey] that's important." Discussed in meeting 2 (36:05-42:34)					**No**	
Not on original activity list, added later	Explore the possible effects of new Insurance Law provisions eliminating "Grand Fathered" property exemptions to existing homes and home owners where base flood and finished floor elevations are concerned. Develop actions to mitigate the financial burdens of the new law on homeowners if such action is deemed appropriate.	New	This action item was suggested in response to discussion about responding to the new laws and new maps. Discussed in meeting 2 (42:34-44:11)	CRS Coordinator	Yes	Staff time. (operating funds)		**Yes**	**6**

Activity #	Recommended Activity	New/ Continued	Discussion Notes	Responsible Party:	Funding Secured?	Funding Source:	Time frame:	Determined Appropriate for Action Plan?	Priority ranking in the Action Plan
	(Educate homeowners about conforming to these new laws?)								
26	Continue to prioritize the reduction of repetitive loss properties through various means of mitigation, update repetitive loss forms and remove properties from the Repetitive Loss List. This is an ongoing activity that will continue as a priority of the Town's CRS Coordinator, the results of which will be reported annually to the Flood Mitigation Task Force.	✓ Already do	Three properties in question had flooding for unknown reasons. Attempt has been made and needs to continue to be made to ascertain the cause of the flooding, so that prevention and mitigation efforts can be considered, thus eliminating the likelihood of additional losses. Discussed in meeting 2 (44:11-47:15)	CRS Coordinator	Yes	Staff time. (operating funds)	ongoing	**Yes**	**15**
27	Include notification of grants, loans and service availability in all Town media publications, seminars and websites that addressed flood mitigation.	✓ Already do	This would include publishing this information in the two local Newsletters and on the Town's website. Discussed in meeting 2 (47:15-52:47)	CRS Coordinator	Yes	Staff time. (operating funds)		**Yes**	**31**
28*	Collaborate with Florida Communities' Trust to assist with funds in acquiring properties in the SFHA.		There are currently no funds available for this activity but should funds become available acquisition would be pursued. Without funding such purchases were deemed too costly to be given any priority at this time. Discussed in meeting 2 (52:47-53:39)					**No**	

Activity #	Recommended Activity	New/ Continued	Discussion Notes	Responsible Party:	Funding Secured?	Funding Source:	Time frame:	Determined Appropriate for Action Plan?	Priority ranking in the Action Plan
29*	29. ~~Collaborate with~~ Review the Southeast Florida Regional Climate Change Compact recommendations for land development standards with respect to low-lying coastal areas.		**Town Staff Member** -"I can't see us [aligning] with a non-profit that is one way or another too radical..." … "As a practice the Town doesn't do that because we don't know what this non-profit will do in the future" "Can we change 'work with' to 'review'?" The group agreed that the recommendations put forth by the Southeast Florida Regional Climate Change Compact were worth reviewing independent of any agreement or endorsement of the group. If the recommendations were in fact applicable to Juno they could each be evaluated for feasibility. Discussed in meeting 2 (53:39-57:17). Then a minute later in the meeting (58:07-59:10), a group member who had gone to the SFRCCC website said "I can't agree with putting this in there. See that's what I mean. They have a political sign on there. It is showing a logo with an Allen West sign in the flood waters. And I'm sure they mean well but they don't realize that's too political." The group discussed the political polarity associated with the term "climate change" and voiced concerns over aligning with a group that may have political undertones. As a result, it was agreed to drop this action item from the list.					**No**	
30	Encourage all property owners to purchase flood insurance.	✓ Already do	One group member suggested that the term 'Encourage all property owners' could be replaced with 'Encourage property owners in affected areas' to which the Town CRS Coordinator responded with a statement about the importance of encouraging all property owners to purchase flood insurance because of the large number of flood claims that originate from properties outside of the designated flood zones "If it can rain, It can flood" Discussed in meeting 2 (57:17-58:07, 57:17-1:00:19)	CRS Coordinator	Yes	Staff time. (operating funds)	ongoing	**Yes**	**3**

Activity #	Recommended Activity	New/ Continued	Discussion Notes	Responsible Party:	Funding Secured?	Funding Source:	Time frame:	Determined Appropriate for Action Plan?	Priority ranking in the Action Plan
31	Consider the following forms of retrofitting for areas or buildings with major flooding issues: • Install backflow valves on sewer and drain systems • Elevation of structures by piers, posts and columns, and pilings • Create a secondary water barrier • Elevate the lowest floor above the 1% Chance of Flood Level • Wet flood proofing (allowing water to enter uninhabited areas of the structure) • Dry flood proofing (sealing the structure to prevent floodwaters from entering) • Levees and flood walls (constructing a barrier around the structure to keep out floodwaters) • Demolition (tearing down the structure and rebuilding with appropriate flood proof techniques or relocating the structure) • Elevate the main breaker or fuse box above the 1% Chance of Flood Level	✓ Already do	The Planning and Zoning Department confirmed that they do in fact recommend property owners and developers to adapt these forms of flood proofing. It was also recommended that "100 Year Flood" be replaced with "1% Chance of Flood" to discourage the public from becoming complacent immediately following a flood event with the mindset that it will not happen again for another 100 years. Discussed in meeting 2 (1:00:19-1:03:38)	Planning & Zoning / Building Dept.	Yes	Staff time. (operating funds)	ongoing	**Yes**	**8**
32	Encourage flood proofing techniques in order to preserve and revitalize neighborhoods.	✓ Already do	Agreed to continue. Discussed in meeting 2 (1:00:19-1:03:46)	Planning & Zoning Dept.	Yes	Staff time. (operating funds)	ongoing	**Yes**	**40**

Activity #	Recommended Activity	New/ Continued	Discussion Notes	Responsible Party:	Funding Secured?	Funding Source:	Time frame:	Determined Appropriate for Action Plan?	Priority ranking in the Action Plan
33	Encourage property owners to use qualified hazard mitigation professionals to inspect building foundations and assess damage after flood events. FEMA, Insurance agents, the State NFIP office and the local building department can provide contact information.	✓ Already do	"We do that" Agreed to continue. Discussed in meeting 2 (1:03:46-1:04:33)	Planning & Zoning Dept.	Yes	Staff time. (operating funds)	ongoing	**Yes**	**60**
Natural Resource Protection: These activities preserve or restore natural areas or the natural functions of floodplain and watershed areas. Parks, recreation, or conservation agencies or organizations usually implement them.									
34	Implement the following project ranked as #47 on the Palm Beach County Local Mitigation Strategy Prioritized Project List (January 2009) Not included in 2012 Priority List: • Purchase 18 vacant lots - restore wetlands ($430,000 unfunded) Potential funding sources Primary Funds (PDA, HMGP, FMA) and Flood Mitigation Funds.	New	Currently there are some privately owned lots that border a natural and beneficial area and that would be extremely difficult to develop due to existing regulations. The Town would consider purchasing them if funding were to become available. May be cost prohibitive. Requires more research into costs and funding sources. Discussed in meeting 3 (46:47-49:22)	???	No			**Yes**	**53**
35	~~Consider dune restoration programs.~~ Continue successful dune restoration and maintenance programs. Contact consultants and work to secure additional grants as needed/ available.	Very successful, will continue	The Town is currently undertaking a Dune restoration project with Grant funding. They [the dunes] are being restored to their natural state and are flourishing. In the past, the Town has employed environmental consultants to oversee these restorations. Would like to do more if additional funding can be secured. Town staff members reinforced the well-received success of the current restorations and the Town's Arbor Foundation distinction as an "Arbor City" several years in a row. Discussed in meeting 3 (49:22-54:50)	CRS Coordinator in coordination with PB County	No	Other governmental agencies	ongoing	**Yes**	**36**
36	There are no plans for changes to the Town's policy to encourage designation, protection and maintenance of wetlands, mangroves and environmental sensitive lands.	✓ Already do	No plans to change this. Previous discussions throughout meeting 3, emphasize the Town's exceptional and un-wavering commitment to protect environmentally sensitive areas. Discussed in meeting 3 (54:50-55:06)	Planning & Zoning Dept.	Yes	Staff time. (operating funds)	ongoing	**Yes**	**41**

Activity #	Recommended Activity	New/ Continued	Discussion Notes	Responsible Party:	Funding Secured?	Funding Source:	Time frame:	Determined Appropriate for Action Plan?	Priority ranking in the Action Plan
37	Identify, inform and encourage homeowners' associations to install littoral/upland buffer plantings around lakes.	New	Per Town codes, Juno Beach does encourage older developments/ and require new developments to allow native plant growth surrounding lakes. Most communities use lake maintenance consultants. Suggested that this [educate HOAs about the benefits] could possibly be done via article in newsletter. Discussed in meeting 3 (55:06-1:01:00)	Planning & Zoning Dept. and Public Works Dept.	Yes	Staff time. (operating funds)		**Yes**	**52**
38	Identify privately-owned and public natural and beneficial areas in the Town and consider expansion of the Town's properties that are designated natural and beneficial areas.	New	Currently 43% of Town lands are designated as such. Town employees will attempt to identify additional lands that can be designated, but are not sure that there is much more land available for this purpose. Discussed in meeting 3 (1:01:00-1:01:49)	Planning & Zoning Dept.				**Yes**	**57**
39*	Maintain and enforce designation of Coastal Barrier Resources Act (CBRA) property.		Meeting attendees were not sure this applies within the Town's jurisdiction. Will assign someone to look into it. Discussed in meeting 3 (1:01:49-1:03:40)					**No**	
40	Maintain strong enforcement of South Florida Water Management District regulations pertaining to floodplain management.	✓ Already do	Already do this. Deemed important to continue. No plans to change. Discussed in meeting 3 (1:03:40-1:03:52)	Code Enforcement	Yes	Staff time. (operating funds)	ongoing	**Yes**	**24**
41	Encourage individual property owners to pursue percolation-oriented drainage improvements using best management practices through outreach and education. Drainage that seeps into the soil, rather than being direct it out to the ocean, provides multiple benefits. Not only does it mitigate flooding, but it also recharges the aquifer, enhances water quality, and reduces erosion.	✓ Already do	This is one of things the Town is currently doing to improve drainage. It has so far proven effective and should be continued. Discussed in meeting 3 (1:03:52-1:04:21)	Town staff via Town Codes, Ordinances, and State Building Codes.	Yes	Staff time. (operating funds)	ongoing	**Yes**	**4**
42	Implement strict enforcement of best management practices for reducing erosion during development activity.	✓ Already do	Town Staff Member- "Yes! We are very pro-active on that." Agreed- the Town will continue this activity. Discussed in meeting 3 (1:04:21-1:04:33)	Planning & Zoning Dept. and Code Enforcement	Yes	Staff time. (operating funds)	ongoing	**Yes**	**23**

Activity #	Recommended Activity	New/ Continued	Discussion Notes	Responsible Party:	Funding Secured?	Funding Source:	Time frame:	Determined Appropriate for Action Plan?	Priority ranking in the Action Plan
43	Examine water control structures to ensure that they can provide for inland or upstream migration of riparian species as freshwater habitats become more saline.	✓ Already do	Discussion arose to define applicable "control structures" within Town jurisdiction: Weir at end of lake and any catch basins qualify as water control structures. [Wells?] are tested quarterly for salt water intrusion. None detected yet. Discussed in meeting 3 (1:04:33-1:07:44)	Public Works Dept.	Yes	Staff time. (operating funds)		**Yes**	**50**
Not on original activity list, added later*	Continue outstanding job of applying land use deed restrictions w/ catches intended to designate the restrictions for perpetuity. Currently 43% of the land area in the Town's jurisdiction is governed by such restrictions.		Summary of discussion: We do so much [to protect environmentally sensitive open lands] already. Can we highlight and continue our outstanding job of applying land use deed restrictions w/ catches intended to designate the restrictions for perpetuity? Currently 43% of the land area in the Town's jurisdiction is governed by such restrictions. More public education about the merits and benefits of these efforts could be undertaken. Discussed in Meeting 3 (42:41-46-32) Ultimately, this item was just a call for accolades, and a request that the Town be recognized for their efforts. No definite action item arose from the discussion.					**No**	
Emergency Services: These measures are taken during an emergency to minimize its impact. These measures are the responsibility of city or County emergency management staff and owners or operators of major or critical facilities.									
44	Assign an individual to continually update information pertaining to hurricane and flood warnings. This update responsibility will include, but not limited to, the following media: • Town website • Door to door, and bullhorn (notification of evacuation orders) • Television Government Access Channel (conducted by Palm Beach County) • Reverse 911 telephone system • Public Service Announcements through local media (radio, newspapers, etc.)	✓ Already do	Done on a Town and County level. Currently performed as noted. Will amend Town policy to begin posting county-wide evacuations on Town website. Ada (Town Employee) updates Town website and Palm Beach County Emergency Management initiates a reverse 911 telephone message. Bullhorn notification (by police) of required evacuations are conducted per current Town policy. Discussed in Meeting 3 (4:20-8:00)	?? With PB County Emergency Management Division	Yes	Staff time. (operating funds)	ongoing	**Yes**	**16**

Activity #	Recommended Activity	New/ Continued	Discussion Notes	Responsible Party:	Funding Secured?	Funding Source:	Time frame:	Determined Appropriate for Action Plan?	Priority ranking in the Action Plan
45	Ensure adherence to the Town's Emergency Procedures Manual, particularly in the event of evacuation orders. Key components of the procedures should be reviewed beginning June 1st of each year.	✓ Already do	At the meeting it was decided to begin the review on June 1st so the review aligns with the beginning of Hurricane Season and information is as up-to-date as possible. Discussed in Meeting 3 (8:00-10:08)	Town Senior Staff	Yes	Staff time. (operating funds)	Review June 1st of each year	**Yes**	**42**
46	~~In May of each year,~~ At the start of each Hurricane Season, Juno Beach Police Department will confirm and update *Hurricane Evacuation Assistance; Juno Beach Residents Evacuation Assistance Forms* submitted by residents and review evacuation procedures.	✓ Already do	Was formerly done in May. All at meeting agreed that beginning of Hurricane Season is best time to perform these updates. Discussed in Meeting 3 (10:08-10:58)	Juno Beach Police Dept.	Yes	Staff time. (operating funds)	ongoing	**Yes**	**43**
47	Immediately prior to, during and after a hurricane or flood event, post pertinent information concerning major points of interest, such as bridge and road closures, evacuation orders, emergency shelter locations and electrical outages, utilizing the following media: • Town website • Television Government Access Channel • Electronic message boards • Reverse 911 telephone system • Public Service Announcements through local media (conducted by Palm Beach County)	✓ Already do	Mentioned at the meeting that the Town does have email addresses of local condo/ home owners associations but is often unable to get email addresses of individual citizens who are dissuaded from providing them due to current Public Information laws. Otherwise this is the current policy of the police department. Deemed effective. No reason to change policy. Discussed in Meeting 3 (10:58-15:03) Additionally: Providing health inoculations to first responders was mentioned, but struck from activity list due to Town's inability to provide them. They may be provided by the County Health Department but that was not confirmed during the meeting.	Police Dept.	Yes	Staff time. (operating funds)	ongoing	**Yes**	**18**
48	Ensure optimal staffing of emergency management personnel to receive and respond to emergency events. This practice will continue as in	✓ Already do	SOPs currently in place to govern emergency staffing needs. Agreed to continue utilizing current SOPs. Discussed in Meeting 3 (15:03-15:25)	Juno Beach Police Dept.	Yes	Staff time. (operating funds)	ongoing	**Yes**	**45**

Activity #	Recommended Activity	New/ Continued	Discussion Notes	Responsible Party:	Funding Secured?	Funding Source:	Time frame:	Determined Appropriate for Action Plan?	Priority ranking in the Action Plan
	the past, in accordance with Incident Command System (ICS) standards.								
49	Integrate response to flooded homes with appropriate response organizations (Read Cross, faith-based organizations, other non-profit entities ~~CERT~~ etc.)	✓ Already do	Desire to develop a CERT team was discussed but no one was able to commit the time or resources to it at this time. However, all staff are trained and encouraged to provide citizens with necessary information about available emergency response resources. Discussed in Meeting 3 (15:25-16:28)	Police Dept. in collaboration with PB County Emergency Management	Yes	Staff time. (operating funds)	ongoing	**Yes**	**29**
50	Advertise evacuation routes.	New	Will begin to advertise evacuation routes which are very limited due to barrier island geography. Discussed in Meeting 3 (16:28-18:17)	PB County Emergency Management	Yes	Staff time. (operating funds)		**Yes**	**35**
51	Identify all critical facilities located ~~within SFHAs~~ in the Town and make contingency plans for each, in the event of flooding.	✓ Already do	Town does have contingency plans for all critical facilities but no facilities are located within SFHAs. Mainly the focus of such plans has been to assure access and relocation of critical vehicles and equipment. Discussed in Meeting 3 (18:17-19:55)	Town Manager	Yes	Staff time. (operating funds)	Already Completed	**Yes**	**54**
52*	Ensure that all public buildings that serve first response and critical emergency/public needs, include record/data collection and communication centers/infrastructure, are located outside of flood zones or flood prone areas and are equipped with back-up emergency generators.	✓ Already done	All critical facilities are outside flood prone areas and also already have back-up generators. No further action to be taken at this time. **Van Stone-** "They are?" **Town Employee-**"Yes" **Another Town Employee-**"And they have back-up generators too." **Van Stone-** "Would you like to have generators someplace where they aren't? We could put that on here?" Response from Group-"No" Discussed in Meeting 3 (19:55-20:50)					**No**	
53*	Training and evaluation of the CERT program.	New	Desire to develop a CERT team was discussed but no one was able to commit the time or resources to it at this time, However, all staff are trained and encouraged to provide citizens with necessary information about available emergency response resources. Discussed in Meeting 3 (15:25-16:28) Further discussion again struck development of a CERT team from activities list due to lack of available human resources. (20:50-20:58)					**No**	
54*	Explore funding opportunities to retrofit critical facilities to be more flood and wind resistant.	✓ Already done	Already done. No further action required. Van Stone-"Are you hardened here?" **Dobbins-** "We are…. We are doubly hardened" **Town Employee-** "We have impact glass plus... roll up shutters" Discussed in Meeting 3					**No**	

Activity #	Recommended Activity	New/ Continued	Discussion Notes	Responsible Party:	Funding Secured?	Funding Source:	Time frame:	Determined Appropriate for Action Plan?	Priority ranking in the Action Plan
			(20:58-21:30)						
55*	Annually update the list of nursing home(s) and smaller home center(s) (Type 1 group home(s)) in the Town.	✓ Already do	Only 1 nursing home. No need to prioritize, only need to confirm its emergency plan. **Group-** "Yes we do that." **Dobbins-**"We don't do a priority list, though?" **Group-** "There is only one.", "There is only one" **Dobbins-** "Oh. Okay. So it is numero UNO then" Discussed in Meeting 3 (21:30-21:56)					**No**	
56	Confirm that all nursing homes have an emergency plan.	✓ Already do	Town does this now and will continue to/ follow-up as necessary. **King-**"Confirm that all nursing homes have an emergency plan?" **Town Employee-** "I've done that" Discussed in Meeting 3 (21:56-22:03)	Juno Beach Police Dept.	Yes	Staff time. (operating funds)		**Yes**	**55**
57*	Implement The Following Unranked Project on the Palm Beach County LMS space Prioritized Project List (January 2009): · Communication Console System, microprocessor-based ($50,000)	No longer needed	Dispatch is now a regional service. No longer the Town's responsibility. Discussed briefly in Meeting 3 (22:03-23:29)					**No**	
Structural Projects: These activities keep floodwaters away from an area with a levy, reservoir, or other flood control measure. They are usually designed by engineers and managed or maintained by public works staff.									
58*	Implement the following Capital Improvement Program projects: • Sidewalk Projects: Concrete and paver sidewalks throughout the Town (not funded) • Capital Improvement-Street/Drainage (not funded) • Major Repairs and Equipment: Various major repairs and equipment		Sidewalk projects have been completed. The Town has replaced some sidewalks with pervious walkways in areas that previously had ponding. As a result, the problem was resolved in those areas. A recent project to double the Town's sidewalks is also underway and will completed within the next two months. Additionally, the Town has expanded the swales. Discussed in Meeting 4 (1:00-5:00) Further discussion defined specific capital improvement projects (outlined below) that were ranked highest priority (#1) on the final Action Plan. The Town's need to purchase a new sump pump (which ultimately ranked #22 on the Final Action Plan) was also introduced in response to discussions of this item.					**No**	
Ext. of activity #58	Implement the following Capital Improvement Program projects:		These projects were discussed in detail during Meeting 4 (5:00-21:08)					**Yes**	**1**

Activity #	Recommended Activity	New/ Continued	Discussion Notes	Responsible Party:	Funding Secured?	Funding Source:	Time frame:	Determined Appropriate for Action Plan?	Priority ranking in the Action Plan
58	a) Two unfunded Capital Improvement Projects are on an ongoing improvement list. ▪ Juno Ocean Walk- Design and build exfiltration trench and French drains needed to capture and slow storm water drainage from the roadway to minimize localized flooding. ▪ Zenith Lane – Design and construct storm drainage structures and exfiltration trenches to facilitate the drainage of storm water. ($23,000)	New		Director of Public Works	No	None yet	5 Years		
58	b) A $50,000 unfunded Capital Improvement Project was recently completed. ▪ Universe Boulevard Project - Large diameter drainage pipes that discharge into the Intracoastal required maintenance and repairs. FP&L lead the study of the existing pipes' condition, researched viable repair options and costs.	✓ Already underway		Director of Public Works with FP&L	No	FP&L up fronted much of the cost. Town needs to assess other affected properties for their share of the cost	Currently underway, mostly complete		
Ext. of activity #58	Purchase new equipment (sump pump) and maintain existing equipment	New	The Town is in need of a new sump pump that can be used to remove water during emergencies. The current one is old and no longer reliable. Discussed during meeting 4 (26:15-29:29)		Yes	Town allocated funds		**Yes**	**22**

Activity #	Recommended Activity	New/ Continued	Discussion Notes	Responsible Party:	Funding Secured?	Funding Source:	Time frame:	Determined Appropriate for Action Plan?	Priority ranking in the Action Plan
59*	Implement the following project ranked #16 on the Palm Beach County LMS Prioritized Project List (January 2009) Not included in 2012 Priority List: • Drainage System Development on US 1 ($700,000 unfunded). Potential funding sources: Primary Funds (PDA, HMGP, FMA) and Flood Mitigation Funds	✓ Already done	This project has been completed. Discussed during meeting 4 (29:29-30:44)					**No**	
60	Prioritize addressing of flooding issues ~~in repetitive loss areas~~ and implement capital projects to mitigate flooding. Drainage issues should continue to be given top priority in the capital improvement program, particularly in areas containing repetitive loss properties ~~in repetitive loss areas~~. To supplement funding, the Town must continue to be proactive in obtaining funding for this program. The following sources are recommended: • Community Development Block Program • Community Redevelopment Agency • Flood Mitigation Assistance Grant • Hazard Mitigation Grant Program • Repetitive Flood Claims • Severe Repetitive Loss		There are not repetitive loss areas within the Town's jurisdiction. There are repetitive loss properties but they are not located in any designated area. There are general flooding issues and the Town does wish to identify them and seek funding in order to mitigate the issues. The addresses of repetitive loss properties are being withheld from public record in our to protect the owner's privacy, but contact has been made with the owners, investigation of the cause of flooding are being made, and the owners are aware of the Town's willingness to assist them with implementing solutions and securing funding. Discussed during meeting 4 (30:44-35:15)	Director of Public Works in conjunction with Project Coordinator and Flood Mitigation Task Force	No	Staff time. Matching funds, if needed, to be budgeted or assumed by homeowner, if agreed.		**Yes**	**2**
61	Contact FDOT about drainage problems on US 1, especially if their projects do not work to alleviate flooding.	New	There is at least one area where the storm water drainage responsibilities of the Town intersect with the responsibilities of FDOT. Further study should be made to determine the best solution and all responsible parties	Public Works Director with FDOT	Yes	Staff time. (operating funds)		**Yes**	**5**

Activity #	Recommended Activity	New/ Continued	Discussion Notes	Responsible Party:	Funding Secured?	Funding Source:	Time frame:	Determined Appropriate for Action Plan?	Priority ranking in the Action Plan
			should be collaboratively engaged to participate in solving the issue. The Town is willing to act on this issue, but needs to contact FDOT. Discussed in Meeting 4 (21:08-26:15)						
62	Maintain overgrown swales. The catchment areas, swales have grown out and the water can't come off the road into the swales because the grass has overgrown.	Continue	Discussed during meeting 4	Public Works Dept.	Yes	Staff time. (operating funds)	ongoing	**Yes**	**28**
63*	Coordinate with the South Florida Water Management District, Drainage/ Water Control Districts, and public works officials to identify flood control and stormwater management infrastructure already operating below the design capacity.		Discussion (during meeting 4) not captured by recorder.					**No**	
Public Information: These activities advise property owners, potential property owners, and visitors about the hazards, ways to protect people and property from the hazards, and the natural and beneficial functions of local floodplains. A public information office usually implements them.									
64	Ensure that citizens know how to contact FEMA post-flood.	✓ Already do	Already list contact numbers on Town website, plan to also insert a link to the FEMA website. Will try to find FEMA brochures to have available for residents. Talked about the services provided at recovery stations during an emergency and the availability of a FEMA smartphone App. Discussed in Meeting 3 (23:29-27:42)	CRS Coordinator	Yes	Staff time. (operating funds)	ongoing	**Yes**	**47**
65	Based on availability and prioritized needs, provide knowledgeable staff to assist citizens before, during and after a flood event to help them understand their repair/rebuilding/flooding/mitigation options.	✓ Already do	All staff briefed before, during and after weather advisories are issued to facilitate accurate dissemination of information should citizens call for updates. Discussed in Meeting 3 (27:42-28:47)	Planning & Zoning Dept.	Yes	Staff time. (operating funds)	ongoing	**Yes**	**44**

Activity #	Recommended Activity	New/ Continued	Discussion Notes	Responsible Party:	Funding Secured?	Funding Source:	Time frame:	Determined Appropriate for Action Plan?	Priority ranking in the Action Plan
66*	Assure annual distribution of Palm Beach County Hurricane Survival Guide in multiple languages.		The Town does not currently supply these materials in any language other than English, however, they are available in multiple languages directly from Palm Beach County. They are also available online. Agreed in meeting that there is no particular need for the Town to provide these materials when they are so readily available from other sources. Discussed in Meeting 3 (28:47-29:39)					**No**	
67*	Post the *Palm Beach County Hurricane Survival Guide* on that Town website in a location that is easily accessed by the community.	✓ Already done	Already Done. No additional action is required. Discussed in Meeting 3 (29:39-29:47)					**No**	
68*	Advertise the availability of evacuation assistance provided by the Juno Beach Police Department. The *Hurricane Evacuation Assistance, Juno Beach Residents Evacuation Assistance Form* is available on the Town's website.	✓ Already do	The form is available on the website under Hurricane and Flood information. Already do advertise this information in newsletter and Emergency Preparedness Display. Achieving results as expected. Discussed in Meeting 3 (29:47-31:00)					**No**	
69	Implement the Town's Public Information Outreach Strategy, a copy of which can be found in Appendix ____.	✓ Already do	Agreement confirmed, very briefly discussed during Meeting 3 (31:00-31:30). PPI planning and discussion reserved for PPI planning meetings.	CRS Coordinator	Yes	Staff time. (operating funds)	ongoing	**Yes**	**58**
70	The Town should continue its current policy of conducting a public outreach campaign.	✓ Already do	Already do this. Agreement but no discussion. Public outreach details to be handled during PPI planning meetings. Discussed in Meeting 3 (31:30-31:56)	CRS Coordinator	Yes	Staff time. (operating funds)	ongoing	**Yes**	**10**
71	Work with County Housing Program to provide education to home buyers regarding flood information.	✓ Already do	We provide information directly to home buyers. Town demographic doesn't provide much interaction with County Housing Program, but the Town is willing to collaborate if needed. Discussed in Meeting 3 (31:30-32:35)	CRS Coordinator	Yes	Staff time. (operating funds)	ongoing	**Yes**	**59**
72	Recruit local business owners, and leaders of civic organizations to assist with the distribution of flood and disaster outreach projects.	New	The Town doesn't do this yet, but staff members are willing to. Need to identify and contact stakeholders. Discussed in Meeting 3 (32:35-36:52)	Joint effort of All Town Departments	Yes	Staff time. (operating funds)		**Yes**	**56**

Activity #	Recommended Activity	New/ Continued	Discussion Notes	Responsible Party:	Funding Secured?	Funding Source:	Time frame:	Determined Appropriate for Action Plan?	Priority ranking in the Action Plan
73*	Provide flood property protection, safety information on the Town's website.	✓ Already done	Already done. No additional action required. Discussed in Meeting 3 (36:52-37:03)					**No**	
74*	Educate residents on the care and proper use of swales.	✓ Already done	Already do this regularly through articles in the Town Newsletter. No additional action required. Discussed in Meeting 3 (37:03-38:09)					**No**	
75*	Develop early warning systems and social media applications to both inform residents and visitors of extreme high-tied events and raise overall awareness on sea level rise and climate change issues. Also consider roadway signage for tidal flooding zones.		The Town does not currently have any social media accounts. No other methods of disseminating this information were identified during a discussion of this activity. Additionally, no coastal flooding zones were identified within Town jurisdiction. Side discussion about the political polarity associated with the term "climate change" ended with an agreement to strike this activity from the list. Discussed in Meeting 3 (38:09-42:41)					**No**	
76	Initiate a regional public education campaign to educate residents, business owners, policymakers on the merits of preserving open land as an "insurance policy" for adaptation to sea level rise in South Florida.	New	Mentioned during meeting: We do so much [to protect environmentally sensitive open lands] already. Can we highlight and continue our outstanding job of applying land use deed restrictions w/ catches intended to designate the restrictions for perpetuity? Currently 43% of the land area in the Town's jurisdiction is governed by such restrictions. More public education about the merits and benefits of these efforts could be undertaken. Discussed in Meeting 3 (42:41-46-32)	Planning & Zoning Dept.	Yes	Staff time. (operating funds)		**Yes**	**37**
Not on original activity list, added later	Continue hosting the annual National Preparedness Month display and event every September in the Town center lobby in order to provide the public with pertinent flood and emergency preparedness information.	✓ Already do	This is an annual event hosted by the Town, which has been deemed effective and is showing positive results. It was repeatedly mentioned throughout the third meeting as a means by which important information can be made available to the public. It is agreed that the Town should continue hosting this event. Discussed in Meeting 2 (51:08-52:47) and also throughout Meeting 3.	CRS Coordinator	Yes	Staff time. (operating funds)	ongoing	**Yes**	**26**

Activity #	Recommended Activity	New/ Continued	Discussion Notes	Responsible Party:	Funding Secured?	Funding Source:	Time frame:	Determined Appropriate for Action Plan?	Priority ranking in the Action Plan
Not on original activity list, added later	Use the website to inform residents about all the information publically available (and the locations for obtaining that information) about permit applications, permit issuance and other proposed land use projects so that they may actively participate in public discussion, consider and voice any concerns they may have about possible water management impacts caused by changes in adjacent properties. Encourage residents to become aware of and engaged in the process.	✓ Already do but need to improve and emphasize	In the first meeting it was brought up that when there are property owners seeking permits the Town may want to notify the property owners of adjoining properties. This may make residents feel more empowered and engage them in the permitting process as well as provide the body reviewing the permits with real world knowledge about locally specific issues. After discussion, it was determined that the Town does notify all owners of properties within 300ft and does post required public notices, but it was also agreed that encouraging the public to participate in and learn more about the permitting process would be beneficial to the community. Discussed in the first meeting: (56:40-1:07:01)	Planning & Zoning Dept.	Yes	Staff time. (operating funds)	ongoing	**Yes**	**27**

* Items highlighted in yellow were not included in the final Action Plan. Further discussion of why they were not included in the Action Plan can be found in Exhibit #6, Activities not Pursued

**Discussion of Action Item #2; First meeting recording (16:35):

Cruz- "We will seek code enforcement action on these. If we have a project where their exfiltration system is dirty and they need to clean it out we can go in there and take a look... We can send them a notice of violation saying your storm drain is dirty and needs to be cleaned out" **VanStone-** "What would prompt you to even go look at it though?" **Cruz-** "A complaint or if we notice that there's flooding there or storm basins that are not working properly..." **Town Employee-** "Well, It's pretty tough for us to be the private storm drain police you know because frankly in many cases we have no right to be on their private property to begin with." **VanStone-** "But to go on private property you will have to make a new regulation or law or something? You don't have that right now?" **Cruz-** "It depends on the project. Typically we can see things from public view which is the right-of-way so we can drive along the street and take a look and say okay that's not working and we just give them a call and say your storm drain is flooding a lot and we want to make sure: Are you cleaning out your system and your pipes?..." **Town Employee-** "By and large most of the ...[owners of private systems]... They maintain them because they know it creates problems on their own properties so they want to do something proactive. As a matter of fact, more often than not, they come to the Town asking if there is anything we can do to assist and we can provide them with some guidance and some direction even if physically we can't put a shovel in the ground…."

(21:26) **Dobbins-** "There's an important distinction… If the development is in compliance with their permit and all of their discharge pipes have been permitted and authorized and are still causing a problem there's nothing the Town can do. But, if they are not in compliance with the permit and they're illegally discharging into a lower development and causing problems, there should be some recourse. Not just civil action but the Town needs to be part of that I think." **Cruz-** "That's for taking code enforcement action" **King-** "That's what we're talking about here …reviewing the town code of ordinances to make sure that if a private storm water management facility is not maintained that you have codes in place" **Town Employee-** "We do. And we've recently revised one that was in regards to being able to asses for the repairs."

It was agreed that no further strengthening of requirements was needed and this issue could be handled satisfactorily with the codes and regulations already in place.

		Goal 1: Protect the public's safety and health				**Goal 2:** Protect public and private property									**Goal #3:** Optimize the natural environment's capacity to deal with flooding.				
Action Plan Item #	**Action Item**	**Objective 1.1:** Distribution of information.	**Objective 1.2:** Notification and warning of floods	**Objective 1.3:** Provide appropriate assistance	**Objective 1.4:** Provide continuous education and information	**Objective 2.1:** Procedures and processes that ease the accomplishment of mitigation activities	**Objective 2.2:** Reduce or eliminate the impact of flooding hazards to identified at-risk locations through mitigation or acquisition	**Objective 2.3:** Ensure development follows best practices	**Objective 2.4:** Reduce flooding hazard through strategic planning	**Objective 2.5:** Reduce the impact of flooding through stormwater management	**Objective 2.6:** Provide information & assistance for stakeholders seeking mitigation grants, loans and services	**Objective 2.7:** Long-range planning of the natural and man-made environment.	**Objective 2.8:** Reduce the number of properties that are listed as "Repetitive Loss Properties."	**Objective 2.9:** Compete for disaster mitigation funding assistance.	**Objective 3.1:** Protect existing natural areas by regulation, acquisition and/or restoration	**Objective 3.2:** Ensure preservation of open space.	**Objective 3.3:** Seek expansion or addition of open space.	**Objective 3.4:** Minimize destructive erosion.	**Objective 3.5:** Use flood mitigation methodologies that enhance stormwater quality.
Preventative:																			
7	Maintain/ improve CRS Classification	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
9	Require designation of open space property for all major development					x		x	x			x				x			
11	Review/ follow-up on permits issued by South Florida Water Management District					x		x											
12	Identify Town parks that could be reserved for permanent open space														x	x	x		
13	Correct localized drainage problems						x			x									
14	Explore the practically of using the ESL areas to capture and manage excess stormwater						x			x		x							x
17	Add an assessment of the appropriateness of public capital improvements within CHHA to Town review process					x													
19	Maintain the Town's strong regulatory flood mitigation standards					x		x											
20	Per NPDES program, continue sediment control									x								x	x
21	Consider the relocation, mitigation or replacement of infrastructure currently present within the CHHA						x		x			x							
25	Encourage FEMA to update FIRMs					x													
30	Deny development permits for projects that do not meet the design criteria							x											
32	Identify areas that can be used for storage of floodwaters														x	x	x		x
33	Semi-annual inspection of Town owned stormwater control structures									x									
34	Require developers to install stormwater management facilities made necessary by new development							x		x									
38	Encourage drainage solutions such as the use of pervious concrete and pavement							x											
39	Identify areas where water drainage and ground permeation can be improved through soil replacement						x			x									
46	Encourage developers to incorporate historical drainage patterns into stormwater management designs							x											
48	Evaluate the *Flood Mitigation Plan* , particularly the Action Plan, annually					x			x			x		x					
49	Update the *Flood Mitigation Plan* every five years					x			x			x		x					
51	Complete an inventory of the Town's drainage structures					x				x	x								
Property Protection:																			
3	Encourage flood insurance purchase					x													
6	Explore the possible effects of new Insurance Law										x								
8	Consider retrofitting options for areas or buildings with major flooding issues						x				x								
15	Prioritize the reduction of repetitive loss properties						x						x						
31	Include notification of grants, loans and service availability in Town communications	x			x						x								
40	Encourage flood proofing techniques in order to preserve and revitalize neighborhoods						x				x		x						
60	Encourage property owners to use qualified hazard mitigation professionals						x												

Action Plan Item #	Action Item	**Goal 1:** Protect the public's safety and health				**Goal 2:** Protect public and private property									**Goal #3:** Optimize the natural environment's capacity to deal with flooding.				
		Objective 1.1	Objective 1.2	Objective 1.3	Objective 1.4	Objective 2.1	Objective 2.2	Objective 2.3	Objective 2.4	Objective 2.5	Objective 2.6	Objective 2.7	Objective 2.8	Objective 2.9	Objective 3.1	Objective 3.2	Objective 3.3	Objective 3.4	Objective 3.5
Natural Resource Protection:																			
4	Encourage individual property owners to pursue percolation-oriented drainage improvements						x	x											x
23	Implement strict enforcement of best management practices for reducing erosion during development							x										x	
24	Maintain strong enforcement of South Florida Water Management District regulations							x											x
36	Continue successful dune restoration and maintenance programs																	x	
41	Maintain policy to encourage designation, protection and maintenance of wetlands, mangroves and ESLs					x									x	x	x		x
50	Examine water control structures to ensure that they can provide for inland or upstream migration																		x
52	Encourage HOAs to install littoral/upland buffer plantings around lakes							x		x								x	x
53	Purchase 18 vacant lots - restore wetlands ($430,000 unfunded)						x								x	x	x		
57	Expansion of the Town's properties that are designated N & B						x		x			x			x	x	x		
Emergency Services:																			
16	Assign an individual to continually update information pertaining to hurricane and flood warnings	x	x		x														
18	Prior to, during and after a hurricane or flood event, provide pertinent information to the public	x	x		x														
29	Integrate response to flooded homes with appropriate response organizations			x							x								
35	Advertise evacuation routes	x			x														
42	Ensure adherence to the Town's Emergency Procedures Manual	x	x	x															
43	Confirm and update *Hurricane Evacuation Assistance* and review evacuation procedures	x		x															
45	Ensure optimal staffing of personnel to receive and respond to emergency events	x	x	x															
54	Identify all critical facilities and make contingency plans for each			x															
55	Confirm that all nursing homes have an emergency plan			x															
Structural Projects:																			
1	Implement the Juno Ocean Walk and Zenith Lane Improvement Projects						x			x		x							
2	Address flooding issue and implement capital projects to mitigate flooding						x			x		x		x					
5	Contact FDOT about drainage problems on US 1									x									
22	Purchase new equipment (sump pump) and maintain existing equipment									x									
28	Maintain overgrown swales									x									x
Public Information:																			
10	Conduct a public outreach campaign	x	x	x	x	x					x								
26	Annual National Preparedness Month display and event	x	x	x	x						x								
27	Inform public about permit applications, permit issuance and other proposed land use projects to encourage participation					x					x								
37	Initiate a regional public education campaign on the merits of preserving open land				x										x	x	x	x	x
44	Provide staff to assist citizens before, during and after a flood event	x	x	x															
47	Ensure that citizens know how to contact FEMA			x	x						x								
56	Recruit stakeholders to distribute flood and disaster outreach	x			x						x								
58	Implement the Town's Public Information Outreach Strategy	x	x	x	x	x					x								
59	Work with County Housing Program to provide education to home buyers				x						x								

Exhibit 7

Resolution to Adopt