City of Satellite Beach Community Based Planning for Coastal Resiliency



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Where we have been...





Creating a Resilient Community Project **Overview** OEMUNICIAL PROPERTIES AND A STATEMENTAL PROPE

 Florida Department of Protection Grant Program – **Coastal Partnership Initiative**



- Identify "other areas of the City" and/or criteria for Adaptation Action Áreas as per Comprehensive Plan.
- Set the foundation to bring in Adaptation Action Areas to the community and the City Council as a tool for improving community resilience.
- Engage the public to help develop strategies and priorities for the City to implement and address.



- PROJECT LEAD TEAM
- City of Satellite Beach
- East Central Florida Regional Planning Council
- Brevard County
- Florida Institute of Technology
- Florida Department of Economic Opportunity
- UF Florida Sea Grant

- TECHNICAL ADVISORY TEAM
- City of Satellite Beach
- East Central Florida Regional Planning Council
- Brevard County
- Volusia County
- Florida Institute of Technology
- Florida Department of Economic Opportunity
- UF Florida Sea Grant and GeoPlan
- Space Coast TPO
- River to Sea TPO
- FDOT
- NOAA Melbourne Office
- Environmental Remediation
- USACE
- Coastal Tech

First Public Workshop

- September 23, 2014
- Over 60 attendees



- Speakers from Florida Sea Grant, City of Ft. Lauderdale, City Emergency Management Director
- Public Engagement Activities and Discussion



- Public input on vulnerability concerns, strategies and opportunities
 - "When you think about the environmental, social and economic aspects of the City, what are the biggest **Opportunities** over the next 50 years?"
 - "When you think about the environmental, social and economic aspects of the City, what are the biggest **challenges** over the next 50 years?"
 - "What approaches would you like the City to take to address the opportunities and challenges identified in the previous questions?"
 - Map exercise:
 - Vulnerable Areas Vs Valued Areas





Results of Public Workshop

- Opportunities:
 - Do Nothing at all
 - Clean up the Lagoon
 - Move utilities underground/lighting
 - Grow tax base away from high hazard areas
 - Better Beach Restoration Plan
 - Go green

• Challenges:

- Implementing efficient zoning ordinances
 - Cost of living in the City
- Revenue generation
- Belief in Scientific Hoaxes

• Strategies:

- Underground utilities
- Address needs of seniors
- Maintain healthy beach and dune system
- Solar energy

- Get tax base into lower risk areas
- Create more access to the river
- Encourage renewable energy
- Wider pipes

Public Input Survey



MetroQuest

Engagement Made Easy

help





Creating a Resilient Community survey, please contact City Hall at (321) 773-4407.







- 479 validated City respondents
- 3 months of input
- Events/Community Center





Top 2 strategies with the most support for each Vulnerability

1 - Loss of Power/Utilities:

1) Work with utility companies to determine the feasibility of moving pole-mounted utilities underground.

2) Move critical utilities (electric trunk line and substation, sewer force main, etc.) to higher ground west of A1A

2 - Coastal Erosion:

1) Plant native coastal vegetation such as sea oats

2) Implement policies to direct development away from high-risk areas

3 - Storm Surge:

1) Increase construction setbacks from the shoreline

2) Implement policies to direct development away from high-risk areas.

4 - Flooding:

1) Install larger drainage pipes and structures as the system undergoes maintenance and repair.

2) This strategy would recognize periodic flood may block access to the roadway, but the roadway would be built to withstand the prolonged exposure to water.

5 - Sea Level Rise:

1) Identify areas subject to hazards of sea level rise that would benefit from long term strategies

2) Consider sea level rise projections in policies regarding infrastructure, zoning and construction standards

6 - None:

1) Plan for only storms (rainfall and hurricanes) and coastal erosion without considering climate change or sea level rise

2) None of this is necessary and we should stop all efforts towards planning for a climate resilient community

Vulnerability Assessment

- Impacts of
 - Sea Level Rise
 - Storm Surge
 - Flood (FEMA Flood Plain)
 - Coastal Erosion

• On:

- Financial Exposure
- Land Use and Building Exposure
- Critical Facility Exposure
- Environmental/Ecological Exposure

Source: Critical Erosion Report; FDEP http://www.dep.state.fl.us/beaches/publications/pdf/CriticalErosionReport.p

UF FLORIDA

SEA LEVEL SCENARIO SKETCH PLANNING TOOL

Atlantic Coast

Mean High High Water (NAVD88) USACE Low, Intermediate and High Projection Rate Curves Planning Horizon: 2040, 2070, 2100

Lagoon Side

Mean Annual High Water (NAVD88) USACE Low, Intermediate and High Projection Rate Curves Planning Horizon: 2040, 2070, 2100

Low USACE Projection Rate Curve

• 2040:

- 36 inch inundation using MHHW (Atlantic),
- 9 inch` inundation using MAHW (Lagoon)

• 2070:

- 39 inch inundation using MHHW (Atlantic),
- 12 inch inundation using MAHW (Lagoon)

• 2100:

- 41 inch inundation using MHHW (Atlantic),
- 14 inch inundation using MAHW (Lagoon

Low Projection Rate Curve - Sea Level Rise

Sourcets): ECFRPC, Brevard County GIS, FDOT, UF GeoPlan Center

Intermediate USACE Projection Rate Curve 2040

- 2040:
 - 38 inch inundation using MHHW (Atlantic),
 - 11 inch inundatión using MAHW (Lagoon)
- 2070:
 - 45 inch inundation using MHHW (Atlantic),
 - 18 inch inundation using MAHW (Lagoon)
- 2100:
 - 54 inch inundation using MHHW (Atlantic),
 - 27 inch inundation using MAHW (Lagoon)

Intermediate Projection Rate Curve - Sea Level Rise

High USACE Projection Rate Curve 2040

- 46 inch inundation using MHHW (Atlantic),
- 19 inch inundation using MAHW (Lagoon)

• 2070:

- 66 inch inundation using MHHW (Atlantic),
 39 inch inundation using
- 39 inch inundation using MAHW (Lagoon)

2100:

- 93 inch inundation using MHHW (Atlantic),
- 66 inch inundation using MAHW (Lagoon)

High Projection Rate Curve - Sea Level Rise

Adaptation Action Area Policies

- Proposed AAA Policies for consideration by the City to move through the public vetting and adoption process
- Policies proposed 2 AAA areas
 - Inland Flooding
 - Erosion
- Areas of Focus
 - Location description
 - How it functions and what its purpose is
 - Review of new data/updates
 - Way out
 - Works to establish process of determining extent of benefits

Resiliency Strategies Based upon public input and comments

- Continuation of public input
- Implementation

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1. Plan of action

designed to achieve a particular goal.

Open House

- June 9, 2015
- Over 40 attendees

- Breakout Areas for each vulnerability
- Islamorada Team, Brevard County Coastal Initiatives

- Begin process of adopting new AAA policies into Comprehensive Plan and implement the policies in LDRs.
 November 23rd 7pm – CPAB
- Received a Sea Grant with Stetson University, ECFRPC, and Florida Sea Grant (2016-2017).
 - GIS exercise to develop infrastructure plan to include Sea Level Rise and public education
- Established a City "Green Committee" to address sustainability issues

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