City of Satellite Beach

Community Based Planning for Coastal Resiliency

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City Manager
City of Satellite Beach
Where we have been…

Satellite Beach Climate Ready Estuaries Pilot Project 2009-2010

Florida Department of Economic Opportunity – Community Resiliency Initiative Begins Jan. 2011

City of Satellite Beach adopts Adaptation Action Area and Sea Level Rise Policy 2013

Satellite Beach Sea Level Rise Subcommittee to CPAB 2010

State Adopts Community Planning Act with Adaptation Action Area Language May 2011

FDEP Coastal Partnership Community Resiliency Grant 2014/2015
Creating a Resilient Community Project

Overview

- Florida Department of Protection Grant Program – Coastal Partnership Initiative

Project Goals

- Identify "other areas of the City" and/or criteria for Adaptation Action Areas 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

Creating a Resilient Community

Welcome Creating a Resilient Community

As a coastal city, Satellite Beach is vulnerable to various natural hazards. Residents, business owners, and the City need to work together to turn challenges into opportunities for a thriving and resilient future for our City.

Creating a Resilient Community

Resiliency is the ability of a community to adapt and prepare to withstand and recover from damaging events (e.g., hurricanes) and processes (e.g., coastal erosion), and preserve desirable natural, social and economic features of the community.

The City of Satellite Beach strives to ensure all its services and activities are accessible to individuals with disabilities. If you need assistance in navigating and/or completing the City's 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
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)
Intermediate USACE Projection Rate Curve 2040

- 2040:
  - 38 inch inundation using MHHW (Atlantic),
  - 11 inch inundation 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)
High USACE Projection Rate Curve 2040

• 2040:
  • 46 inch inundation using MHHW (Atlantic),
  • 19 inch inundation using MAHW (Lagoon)

• 2070:
  • 66 inch inundation using MHHW (Atlantic),
  • 39 inch inundation using MAHW (Lagoon)

• 2100:
  • 93 inch inundation using MHHW (Atlantic),
  • 66 inch inundation using MAHW (Lagoon)
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
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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