Satellite Beach Climate Ready Estuaries Pilot Project

- 2009 – 2010
- $25,000 grant by U.S. Environmental Protection Agency 2009 Climate Ready Estuaries Program

- Enhance local efforts to develop a climate change adaptation plan
Purpose

• Investigate and assess of the potential effects of sea level rise on the City of Satellite Beach’s infrastructure and resources;

• Draft Adaptation Management Plan;

• Education and Outreach
Investigators

- Randall Parkinson, PhD, PG
- Peter Harlem, PhD
City of Satellite Beach, Brevard County
Assessment

• Geographic Information System;

• Light Detecting and Ranging (LIDAR);

• Develop submergence models;

• Identify vulnerable infrastructure, government facilities and natural resources
Mean Water Level

• LiDAR vertical datum NAVD88

• Local adjustment based on Banana River data and SLR

• Final Adjusted MWL(2010)
  -0.189m (-0.062 ft)

• Results
  2 foot sea level rise extracted at 1.938 feet
  (2 feet – 0.062 ft)
Mean Water Level Plus 1 foot Sea Level Rise

Satellite Beach Sea Level Rise Assessment

- Elevation at or below MWL +1ft SLR
- Satellite Beach Boundary
- Interstate
- Toll Road
- Highway
- Major Road
- Local Street

3%
Mean Water Level Plus 3 foot
Sea Level Rise

Satellite Beach Sea Level Rise Assessment

- Elevation at or below MWL +3ft SLR
- Satellite Beach Boundary
- Interstate
- Toll Road
- Highway
- Major Road
- Local Street

12%
Mean Water Level Plus 6 foot Sea Level Rise

Satellite Beach Sea Level Rise Assessment

52%
Stages of Submergence by Sea Level Rise with Aerial Overlay

Satellite Beach Sea Level Rise Assessment

Legend:
- Elevation at or below MWL +1ft SLR
- Elevation at or below MWL +2ft SLR
- Elevation at or below MWL +3ft SLR
- Elevation at or below MWL +4ft SLR
- Elevation at or below MWL +5ft SLR
- Elevation at or below MWL +6ft SLR

- Satellite Beach Boundary
- Interstate
- Toll Road
- Highway
- Major Road
- Local Street

Source: City of Satellite Beach

Central Florida GIS - CPGIS
www.cflpc.org

A Digital Atlas for Central Florida
Critical Assets

- City Services, Security, Social
- Public Schools and libraries
- Parks and Recreation
- Gas production, transportation and distribution
- Potable/Waste/Storm Water, Sewage Facilities
- Electrical facilities
Critical Asset Definition

- **Buildings and facilities essential to a municipality’s economy and the quality of life of its residents**
Street Segments Affected by Sea Level Rise

Satellite Beach Sea Level Rise Assessment

- Elevation at or below MWL +2ft SLR
- Elevation at or below MWL +3ft SLR
- Elevation at or below MWL +4ft SLR
- Elevation at or below MWL +5ft SLR
- Elevation at or below MWL +6ft SLR
- Interstate
- Toll Road
- Highway
- Major Road
- Local Street
- Satellite Beach Boundary

Source:

The identification of parcels and facilities affected by sea level rise categories is based on the centroid point of the parcel. Parcels were identified as affected only if the centroid was within the sea level rise category.
1% @ 3 ft
24% @ 4 ft
42% @ 5 ft
55% @ 6 ft
Mapping Limitations

- Money and Duration
- Static Shorelines
  - Erosion
  - Armoring
    - 1/3 Atlantic Shoreline
    - 2/3 Canal Shoreline
- Effect of Sea Level Rise on Storm Surge not considered

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• Develop strategies and policies for the Community.

• Randall Parkinson and John Fergus

(Session 2)
Thank you

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East Central Florida
Regional Planning Council

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