

City of Satellite Beach *Community Based Planning for Coastal Resiliency*



Florida Coastal Management Program Annual Meeting
May 16, 2017
St. Augustine, FL

Jason M. Evans, Ph.D.
Assistant Professor of Environmental Science
Stetson University

Tara McCue, AICP
East Central Florida Regional Planning Council

Crystal Goodison
University of Florida GeoPlan Center

Courtney Barker, AICP
City Manager, City of Satellite Beach



Florida Institute
of Technology
High Tech with a Human Touch™



Where Satellite Beach has 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

Florida Sea Grant
with Stetson
University, UF
GeoPlan, and
East Central
Florida Regional
Planning Council
2016-2018

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.

Public Input Survey



MetroQuest
Engagement Made Easy



Creating a Resilient Community



WELCOME **Welcome** Creating a Resilient Community

WELCOME

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.

[Click here to begin](#)

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.



- 2 VULNERABILITIES
- 3 STRATEGIES
- 4 CITY OPPORTUNITIES
- 5 STAY INVOLVED



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.



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

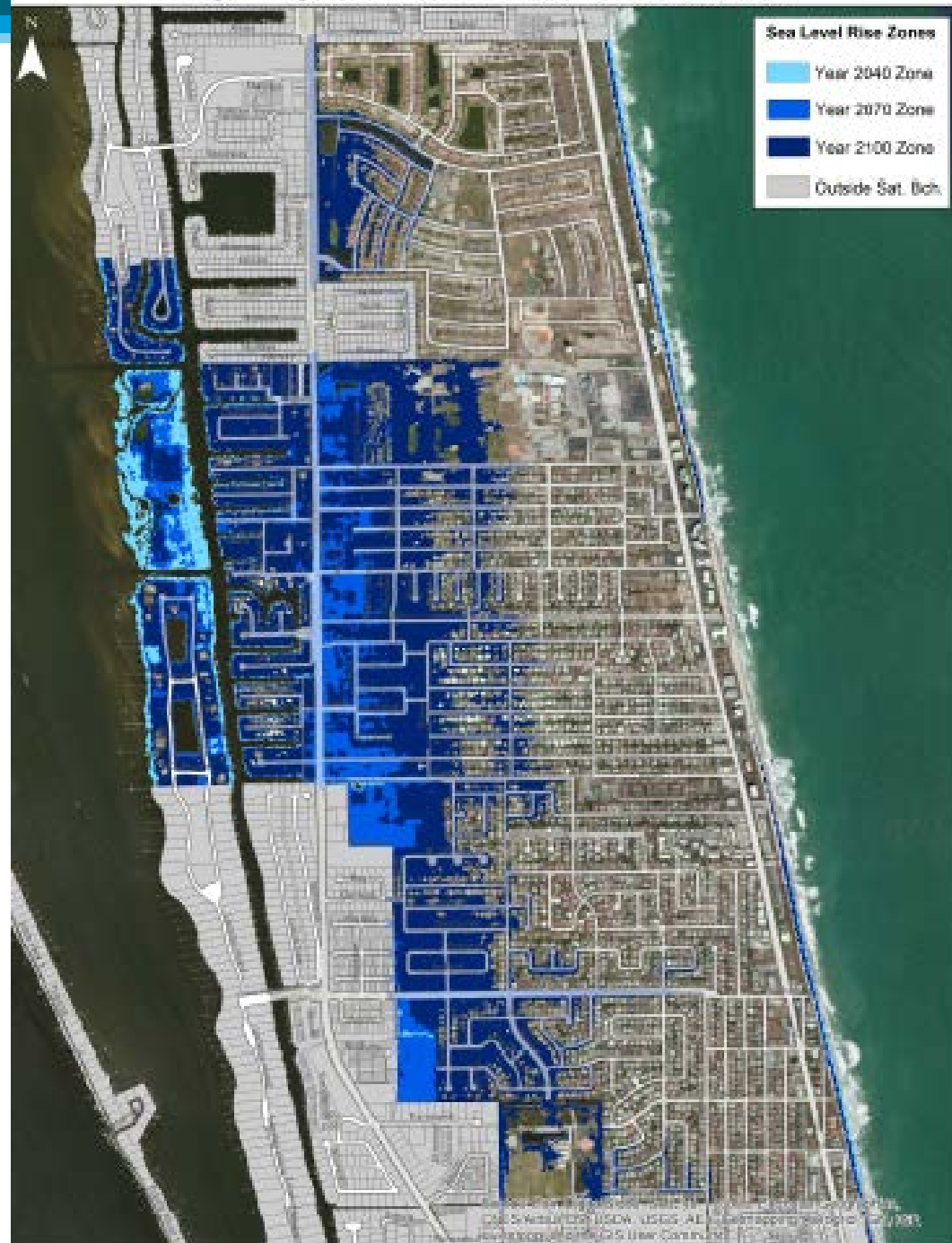
Mean Annual High Water (NAVD88)

USACE Low, Intermediate and High Projection Rate Curves

Planning Horizon: 2040, 2070, 2100

High USACE SLR Projection Curve 2040,2070,2100

- 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

- City adopted AAA Policies
- 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





- Established City "Green Committee" to address sustainability issues
- 2016: Received a grant from Sea Grant (Stetson University, ECFRPC, UF GeoPlan and Deady Law) to conduct detailed flood risk modeling of infrastructure, develop additional policies and strategies, and do public outreach/ education.

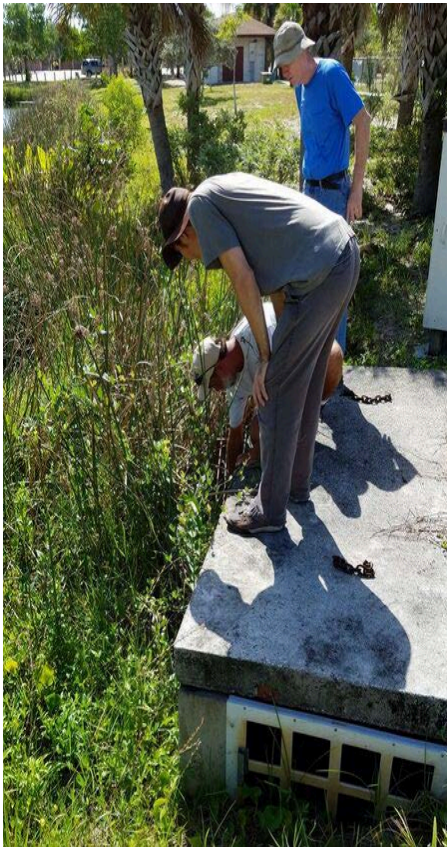
ERIN L. DEADY, P.A. 

UF | GEOPLAN
CENTER


*Florida Institute
of Technology*
High Tech with a Human Touch™

Florida Sea Grant (2016-2018)

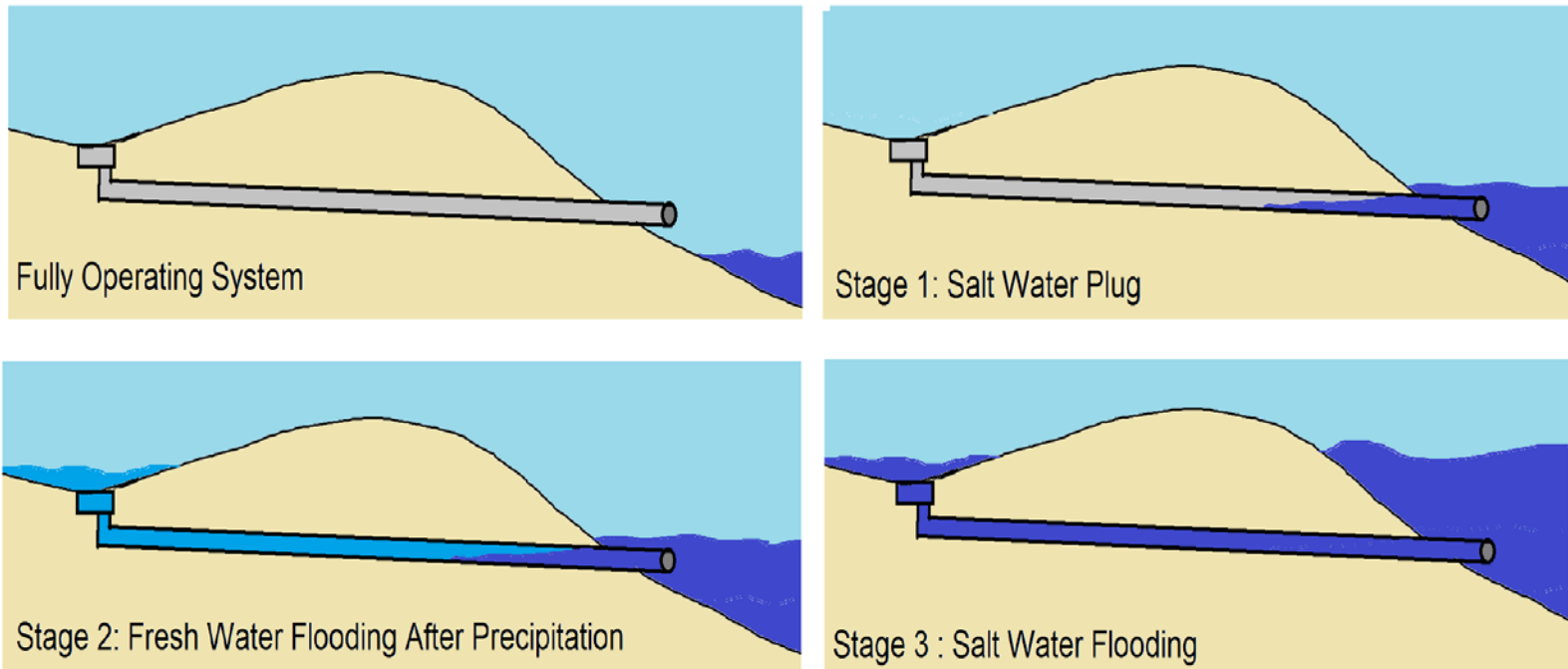
Objective 1: Work with the City to develop and update geographic information system (GIS) files to include high precision elevation data for stormwater, critical facilities, and vulnerable buildings.



July 2016 field work

Why Stormwater?

Figure 1: Stages of Stormwater Infrastructure Failure due to Sea Level Rise



Legend

Ground Sky Fresh Water Salt Water Stormwater Drainage Infrastructure

Figure by Emily Niederman

Stormwater Data

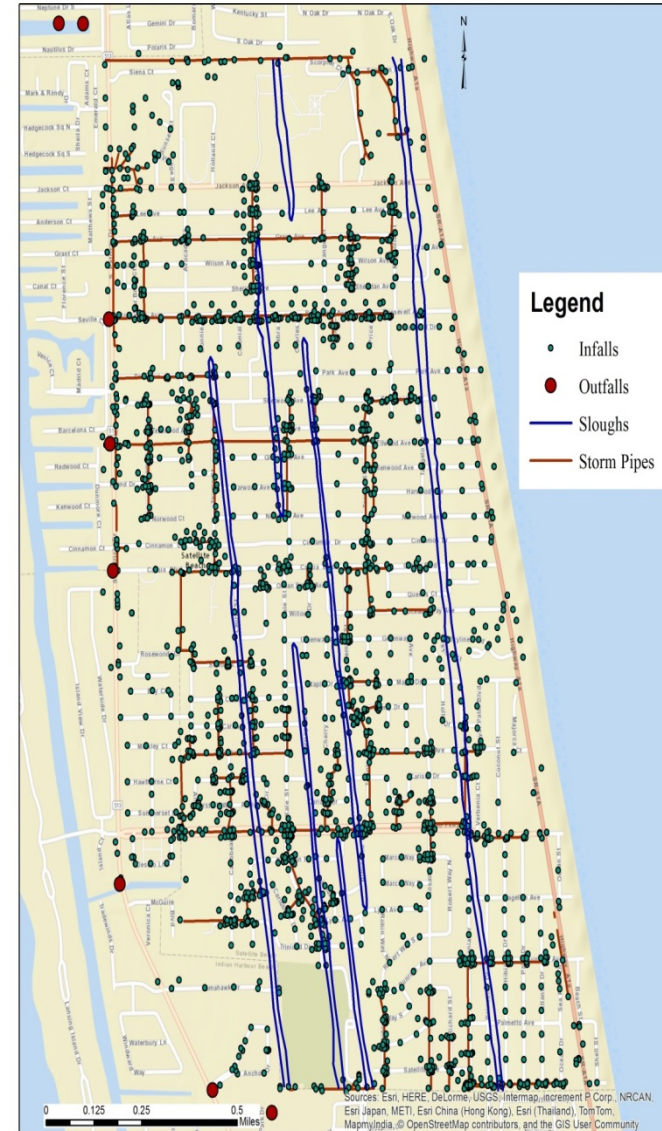
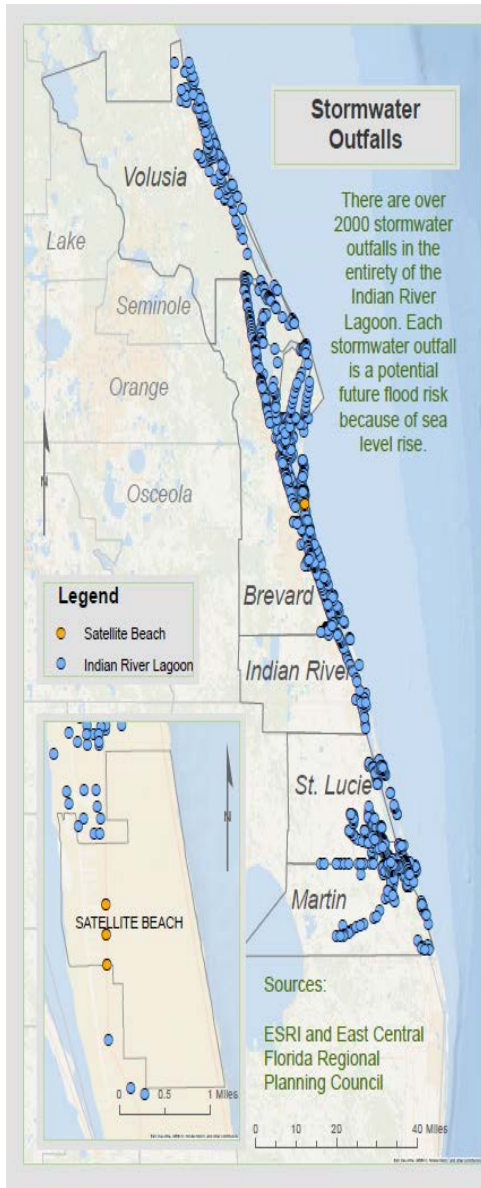


Figure by Emily Niederman

Current Project Goals

Objective 2: Use improved infrastructure datasets with other refined data to develop enhanced storm surge flood assessments using FEMA's HAZUS Multi-Hazard Assessment Tool



STETSON
UNIVERSITY

UF | GEOPLAN
CENTER

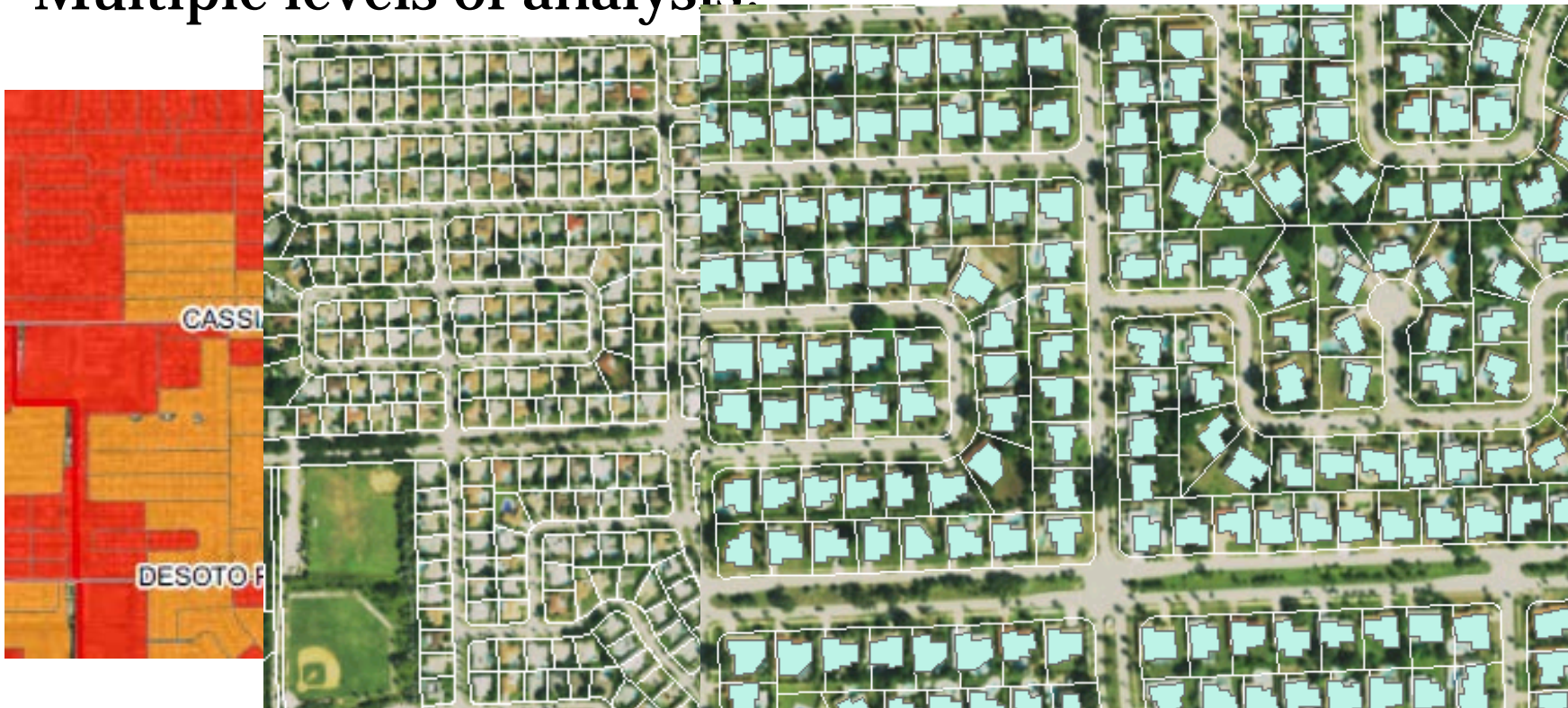
Hazus-MH Benefits

HAZUS-MH allows the user to:

- **IDENTIFY** vulnerable areas that may require planning considerations
- **ASSESS** level of readiness and preparedness to deal with a disaster before it occurs
- **ESTIMATE** potential losses from specific hazard events (before or after a disaster hits)
- **DECIDE** how to allocate resources for most effective and efficient response and recovery
- **PRIORITIZE** mitigation measures that need to be implemented to reduce future losses

Hazus-MH Damage Assessments

- Building Stock damage by building type (residential/ commercial, etc)
- Income/ wage losses, relocation
- Multiple levels of analysis:



Current Project Goals

Objective 3: Integrate the HAZUS results with previous vulnerability assessments and policy frameworks to develop specific recommendations for increasing Satellite Beach's resilience to sea-level rise and future flood risks



ERIN L. DEADY, P.A. 



Stakeholder Workshop - October 2016

- Technical group (infrastructure, emergency management, utilities, WMD)
- Policy group (municipal & organizational policy)
- Financial group (realtors, chamber)
- Outreach group (public, advocacy groups)

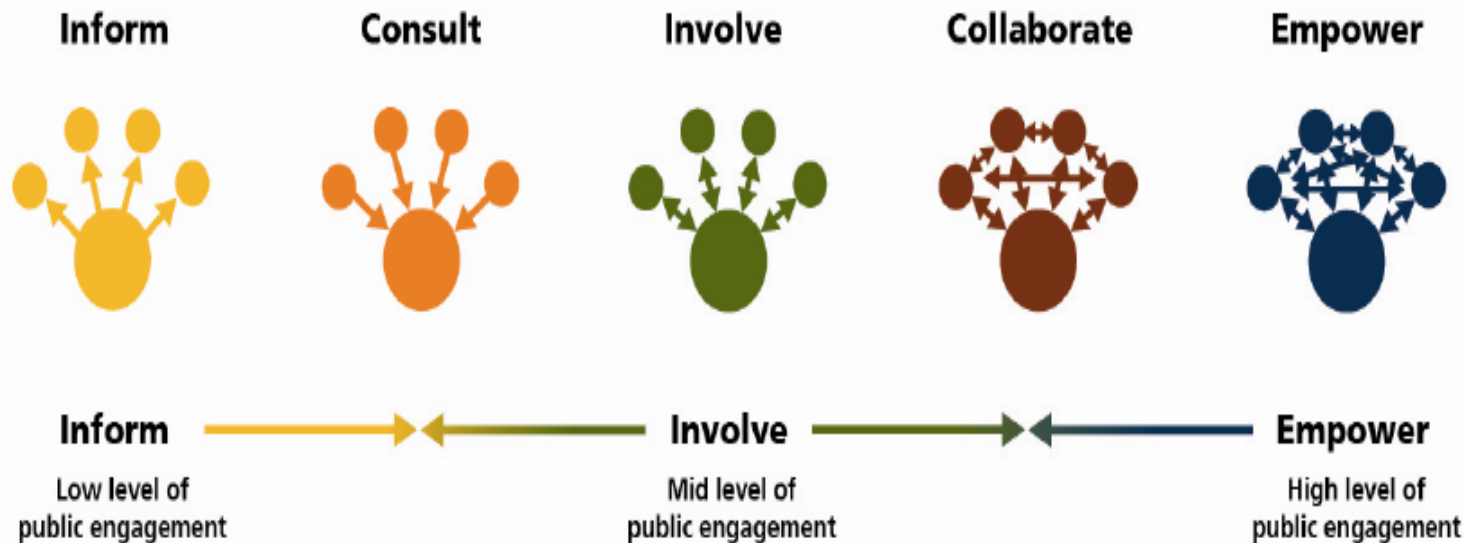


Public Outreach

- Ocean Reef Beach Festival (Dec 2016)
- Facebook Page (project specific)
- Regional Resiliency Portal (more broad repository for resiliency information, in development)
- Fall 2017 – Public workshop

Current Project Goals

Objective 4: Work with – and learn from – key local stakeholders throughout all stages of the project period, with student researchers playing a central role in community engagement



Tara McCue, AICP
Director of Planning and Community Development
East Central Florida Regional Planning Council

tara@ecfrpc.org

www.ecfrpc.org

Crystal Goodison
Associate Director + Associate Scholar
University of Florida GeoPlan Center

goody@geoplan.ufl.edu

www.geoplan.ufl.edu

