

Building Consensus, Building a Shoreline

A Stakeholder-driven Process to Address Erosion along Cedar Key's Daughtry Bayou

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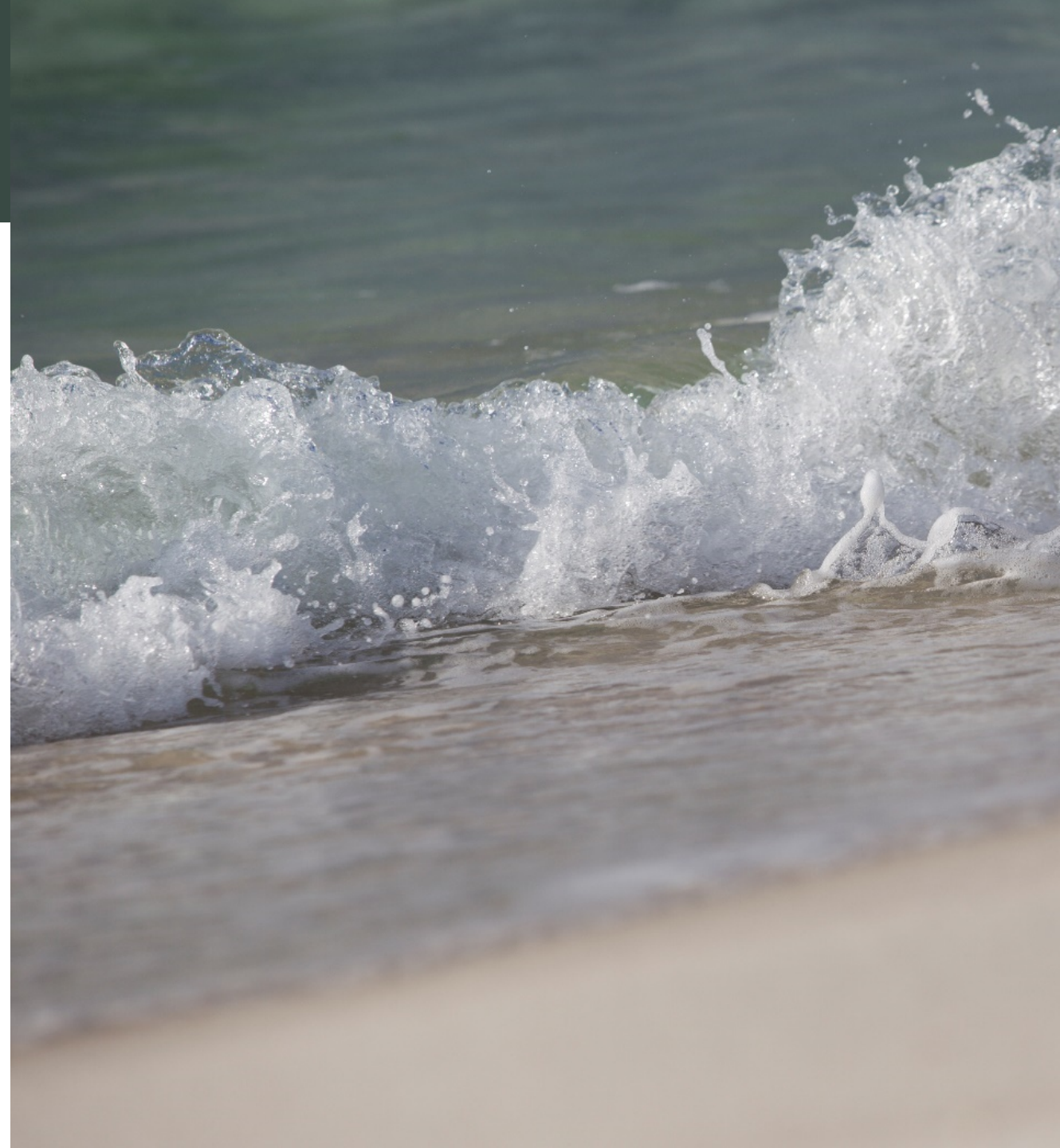
Cedar Key, FL

- Old Florida working waterfront
- Exposed coastal “city”
- Population: 800-1,200
- 5 full-time employees
 - Fire Chief
 - Police Chief
 - City Clerk
 - City Attorney
 - Public Works Director



Coastal Erosion

- Rapid increase in rate of erosion since 1990s
- Previous project attempt in 2008
- Infrastructure & recreational uses threatened, degraded



1961



1974



1994



2016



1930s-1950s




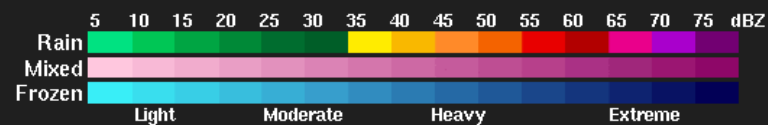
2016



Hurricane Hermine



 U.S. Regional Radar
06:35 PM EDT Thu Sep 01, 2016 (GMT -0400)
Source: NEXRAD



 WEATHER UNDERGROUND

Coastal Impacts Catalyzed Discussion



Addressing Coastal Erosion



- UF approached by City of Cedar Key
- Preliminary meeting → FCMP proposal → FCMP grant awarded → Hired Facilitators and Built Project Team

- Stakeholder Visioning Workshop
- Stakeholder Design Workshops



Stakeholder Process

Mix of stakeholders – mix of recreational uses, mix of property vs. non-property owners, City vs. County property/needs

Visioning Workshop Objectives

1. Discuss erosion history in the area and preferences for shoreline uses
2. Learn more about and compared various options for erosion control
3. Narrow down a range of acceptable project types that promise to preserve the shoreline at G Street and Airport Road locations according to preferred uses

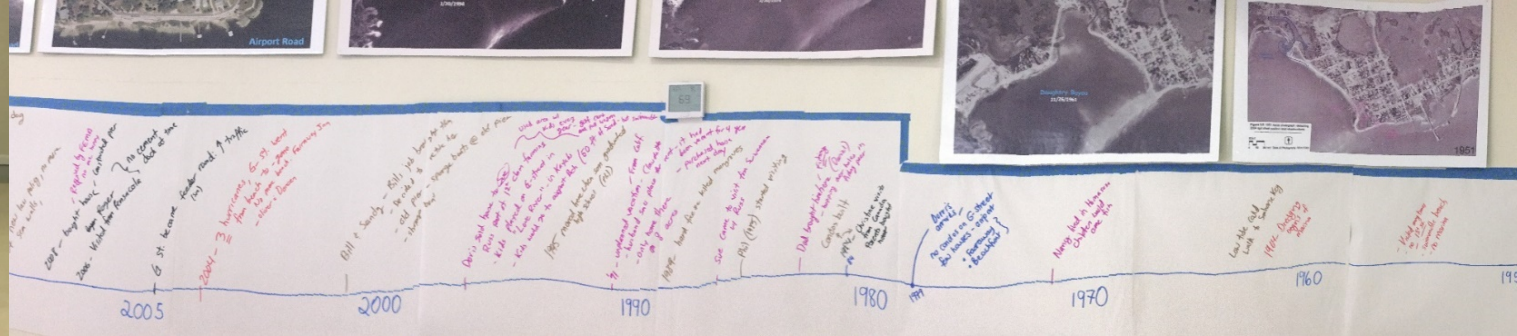
Design Workshop Objective

4. Discuss and evaluate specific project designs and build consensus around one preferred option



1: Discuss Erosion History

- **Technique: Icebreaker – Go-around & Sticky Arrows on Map**
- **Technique: Participatory Timeline with Aerial Imagery**
 - WHY?
 - Give standing to long-time residents & property owners
 - Give context to newer residents



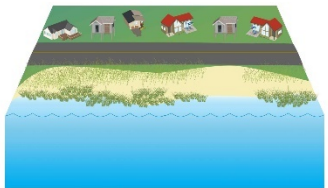
2: Understand Erosion Control Options

- **Technique: Golf Cart Field Trip with Informational Handouts**
 - WHY?
 - Make options tangible and relatable
 - Q&A with expert in informal setting



VEGETATION PLANTINGS

- Planting native marsh grass species on all or part of the shoreline to halt and reverse erosion
- Erosional processes are slowed or reversed



VEGETATION + EDGE/SILL

- Planting native marsh grass with an edge or sill (small wavebreak) of oyster or rock to halt and reverse erosion
- Erosional processes are slowed or reversed



VEGETATION + BREAKWATER

- Planting native marsh grass and adding a larger offshore structure of oyster/rock to halt/reverse erosion
- Erosional processes are slowed or reversed



BEACH NOURISHMENT

- Adding sand from an outside source to an eroded shoreline to restore dry beach
- No change in coastal erosional processes



BEACH NOURISHMENT with STABILIZATION

- Stabilizing sand with one or more control structures perpendicular to shoreline
- Reduction in coastal erosion downstream from structure



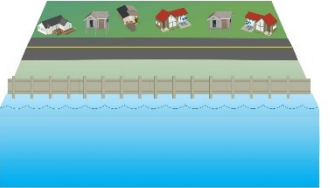
RIPRAP REVETMENT

- Placement of large boulders along shoreline
- Erosion is halted, no accretion possible



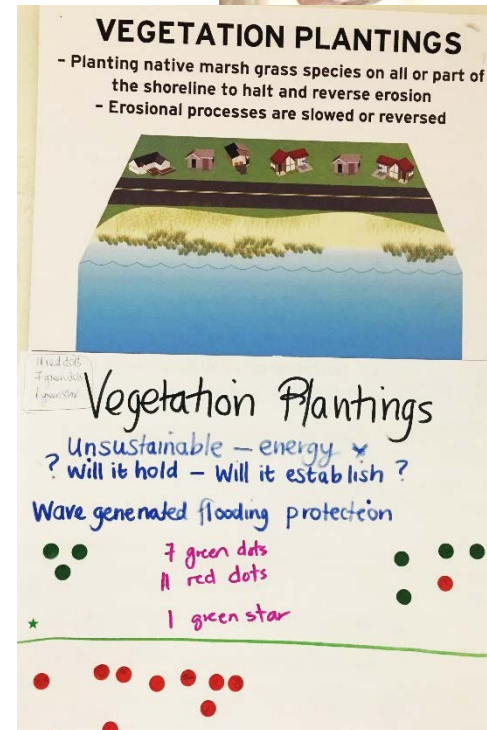
SEAWALL OR BULKHEAD

- Construction of wall at interface of water and land
- Erosion is accelerated downstream and at toe of wall, erosion is halted landward of wall



3: Narrow Down List of Project Types

- **Technique: Field Trip Debrief – Plenary and in Pairs**
 - WHY?
 - Collect narrative information about why certain projects preferred/disliked
- **Technique: Sticky Dot Voting - 2 top and 2 bottom choices**
 - WHY?
 - Failsafe method to gather quantitative information about preferences



Design Workshops

- **Technique:** Looking Back, Looking Forward
 - Remind participants what we did last time, get new ones up to speed
 - Give lay of the land for where we want to end up
- **Technique:** Present realistic project design ideas, discussion, scorecard/ranking
 - WHY?
 - Integrate narrative and quantitative feedback
 - Give “expert” information (hopefully) without biasing

	opt. 1	opt. 2	opt. 3	opt. 4	Do Nothing
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1) Environmental Service (C- = negative, B = no change, A+ = most improved)

a) Carbon Sequestration	A-	A+	A-	B	↓
b) Wave dissipation	B+	A	A-	A+	↓
c) Water quality	A-	A+	A-	B	↓
d) Habitat/Biodiversity	A-	A+	A	B+	↓
category average	A-	A+	A-	B+	↓

2) Cost (C- = high, A+ = low)

a) Construction cost	A+	A-	B	C-	-
b) Maintenance cost	A-	A-	B	C+	-
category average	A	A-	B	C	-

3) Project longevity (C- = shortest time, A+ = longest time)

	B	A	A-	A+	↓
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4) Likelihood of obtaining external funding (A+ = high, C- = low)

	A+	A	B	C+	-
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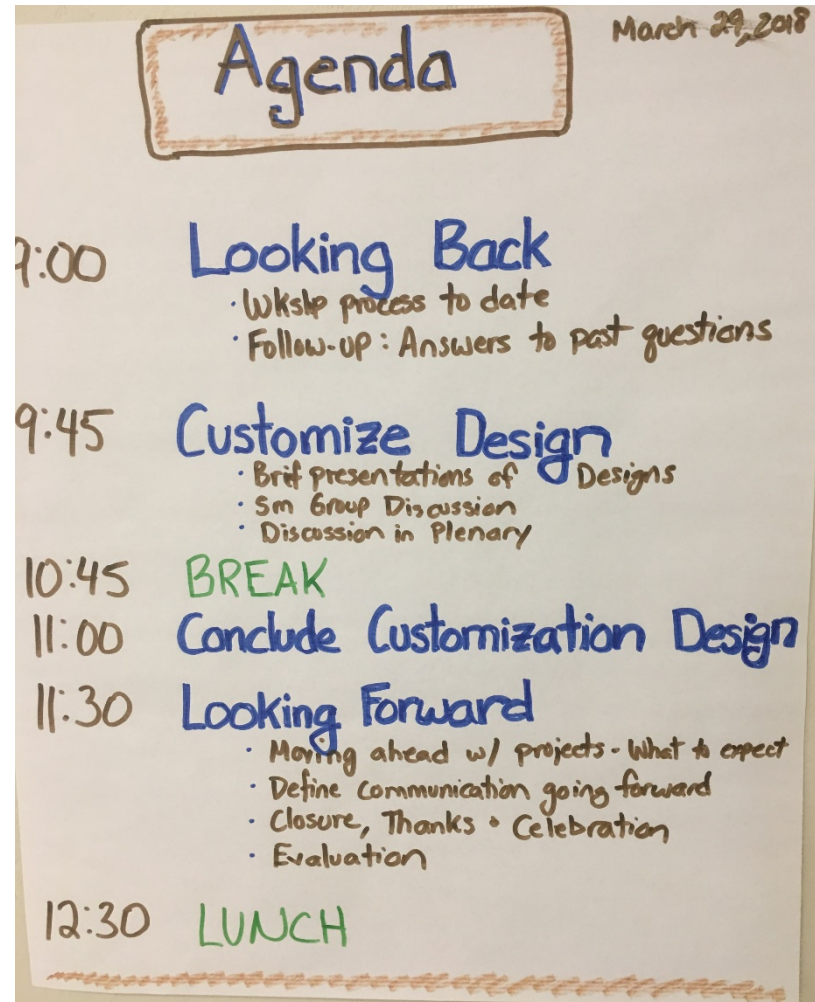
Enter: Mangroves!

- Northward creep of mangroves into Cedar Key
- Installation of a living shoreline would increase recruitment of mangroves
- Make or break moment in the workshop process
- Pragmatism vs. purism



Wrap-Up Workshop

- **Technique: Workshop Pre-Work – Online Customization Survey**
 - Give participants a chance to look ahead at what we will talk about
 - Give people who could not attend a channel to provide input
- **Technique: Looking Back**
 - Summary of process and survey results
- **Technique: Present design with highest votes from last workshop, group round-table discussions for customizing/tweaking design**
- **Technique: Looking Forward**
 - Define how we want to communicate going forward
 - Set realistic expectations for timeline



DAUGHTRY BAYOU COASTAL EROSION PROJECT TIMELINE



Sep 2016: Signs of CHRONIC EROSION combined with severe erosion during Hurricane Hermine stakeholder triggers discussion.

Nov 2016 - Mar 2017: Stakeholder meetings begin. The goal was to explore the options and BRAINSTORM ideas



Oct 2017 - Jan 2018: Benefits and drawbacks of 4 design options for each road DISCUSSED. Design options narrowed down and feedback captured.



Mar 2018: Final formal workshop to CUSTOMIZE design for each road and GAIN SUPPORT for grant proposals and permitting.



Mar 2018 and thereafter: Obtain PERMITS and GRANT FUNDING to implement projects designed with stakeholders.



After procuring funding and permits, IMPLEMENT projects and monitor success. Demonstrate living shorelines to others.



for more see: <http://bit.ly/2o1iXKA>



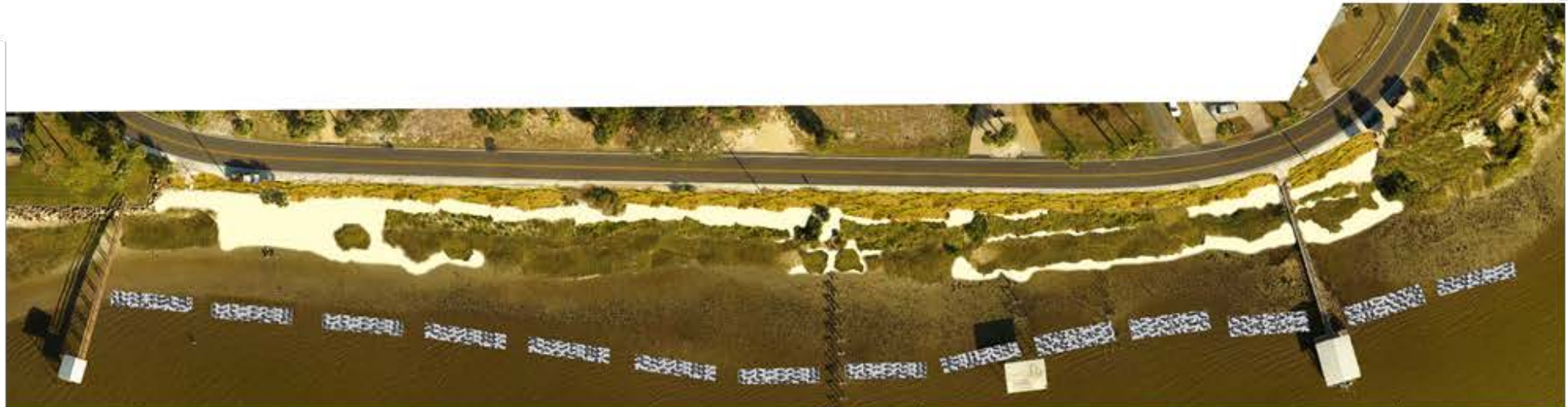
A. G Street – Present Condition



B. G Street – Proposed Project



C. Airport Rd. – Present Condition



D. Airport Rd. – Proposed Project

If you have roughly \$385,000 you want to use to fund TWO awesome local projects...

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Special thanks to:

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