

Resilience Boot Camp

Climate Resilience & Infrastructure Strategy Development

Penni Redford

WPB Climate Change & Resilience Manager

08/12/22



WEST PALM BEACH

Leadership! Think BIG! Get Organized!

- *Transformational*
- *Resilience*
- *Equity*





*This is me and my Team: **"Cat Herders"***

Develop A Strategy

Create City Wide Task Force

- Take Stock
- Create Charter
- Find Champions

Develop Comprehensive Project Database

- Determine Project Types and Main Focus Areas
- CIP & Matching Funds

Review Grant Processes/ Resources

- Existing staff/contractors
- Grant Services Needs
- Grant Policy Review



Expectations of Members at Large

- Point of contact for departments (relaying messages to and from Taskforce) – Eyes & Ears
- “Responsible” party for relevant recommendations
- Department “Champion”
- Progress reports to Mayor and Administration



Working Groups

- Working groups will be formed based on initiative(s) identified with members, size, and frequency determined by task.
- Infrastructure, EV, Climate & Energy Working Groups





Task Force Objectives

- Identify Any Large Overriding Development/Infrastructure Needs/Projects
- Project Collection & Potential Funding Opportunities
- Infrastructure Funding Strategy
- Integrate Climate/Resilience Goals
- Tools: GRITS, AccelAdapt, SmartSheet
- Identify Existing Master Plans/Resources



Establish centralized document management System/Location



Importance

Infrastructure Bill : \$550 Billion in New Spending over 5 Years

Roads, Bridges, & major projects

Safety

Broadband

Airports

Power and Grid

Clean School Buses & Ferries

Reconnecting Communities

Western Water Infrastructure

Passenger & Freight Rail

Public Transit

Ports & Waterways

Water Infrastructure

Resiliency

Electric Vehicle Charging

Addressing Legacy Pollution



To position the City to maximize funding dollars by developing and expanding project descriptions and scopes thus allowing the City to have an active list of projects available to match with various funding opportunities.

Objectives

1. Develop an annual funding strategy that includes a list of project descriptions and funding opportunities
2. Develop a methodology to match projects to funding opportunities

Working Group Members		
Primary	Engineering	Public Utilities/Sustainability
	Fire/Emergency Management	Development Services
Secondary	CRA	Finance
	IT	HCD
	Parks & Rec	Parking Administration



Purpose

Centralized location of projects for prioritization/coordination and to identify grants¹

Form Content (SmartSheet)

Short description, estimated cost, funding status, categories, location, priority

Priorities

Immediate, Short-Term, Long-Term, Wish List (need administrative directive)

THINK BIG, BE CREATIVE



Miami Beach – New
Fire Station \$17M²



Gulf County – Relocate
Wastewater Treatment
Plant \$28.5M³



Miami Dade – Public
Housing Resiliency
Upgrades \$30M⁴



Form to gather pertinent information related to various projects throughout the City

- **Categories:** Climate/Resilient Infrastructure, General Infrastructure, Non-Infrastructure
- **Funding Status:** Unfunded, Partially Funded, Fully Funded -NOT to include projects that have already commenced
- **Purpose:** Continuous database of projects to easily match with grants/funding opportunities
 - Infrastructure Bill, 'Build Back Better' Bill, Rescue Act Money Round 2, LMS, etc.

SmartSheets – Project Database



Departments providing **list of projects with departmental priorities**

- CIP Projects, “Master Plan” Projects, Wish Lists
- Committee will review and combine projects (based on location and other parameters) to build out **Comprehensive Projects: Transformational, Resilience, Equity**
 - Will identify where plans, assessments, and studies are needed
 - Synergy for departmental projects & partners
 - What are Administration’s priorities?
- Consultant – **Grant Funding Matrix**
 - Will match grants with prioritized projects
 - Matrix will provide funding options, match requirements, deadlines, and other metrics to help City strategically pursue funding



Importance

Local Mitigation Strategy (LMS)

- **Purpose:** develop and execute an ongoing strategy for reducing the community's vulnerability to identified natural, technological, and human caused hazards.
- **Benefits:** on the funding side of things, adoption of LMS provides access to FEMA's Federal grant program.
- **Submissions: PBC:** Fall (Sept/Oct); Spring (Feb/Mar)
 - Fall 2021 – submission window was 10 days

Future Funding Opportunities

- Provide a centralized location to find projects when additional funding opportunities become available.



LMS – Prioritized Project List Explanation

Ongoing strategy for reducing the community's vulnerability to identified natural, technological, and human caused hazards.

2020 Palm Beach County Hazard Categories

Natural	Technological	Human
Water-Flood	Hazardous/Radioactive Accidents	Civil Disturbance
Wind Events	Communication Failures	Domestic Security
Severe/Extreme Weather	Transportation Accident	Mass Migration
Erosion/Subsidence	Wellfield Contamination	Workplace/School Violence
Fire	Power Failure	
Agricultural Pests & Disease		
Sea Level Rise		
Pandemic		

Submission Periods

Spring (Mar/Apr); Fall (Sept/Oct)

Importance

access to FEMA's Federal grant program



Questionnaire Key Findings – Reinforces Prior Discussions

Grant Policy

Barriers

- Time to complete/follow Policy vs. grant deadline
- Intent to Apply
- Process is cumbersome

Recommended Changes

- Remove Intent to Apply
- Increase Threshold
- Fast Track ACM Process
- Create Grant Coordinator Position

Grant Management

Barriers

- Commission Approval Time
- Insufficient Time (Managing Grants)
- No Dedicated Staff

Recommended Changes

- Dedicated Staff/Consultants to Oversee Grants
- Streamline Approval Process

Additional Findings

- Project Reporting/Management Assistance
- Consultants
- Training



Limitations

Grant Application Approval Time

- Time to Follow Policy vs. Grant Deadline
- “Intent to Apply” Delays

Staff Capacity

- Departmental Level (Current & Future)
 - Project Managers
 - Grant Management/Compliance
 - Procurement Capacity
 - Legal Capacity
- City-Wide Oversight

Capacity Building

- Grant Writing
- ACM Process
- Grant Management
- Compliance Knowledge

Grant Coordination

- Grant Identification & Strategy
- Match Grant to Project, not Project to Grant¹



Grant Strategy - Suggestions

Grants Program Strategist: **New Position**

Grant Services Master Contract

Grant Policy Modifications

Matching Funds Set Aside Program



Responsibilities

Coordination

- Understand the City's strategic priorities for grant funding projects
- Identify matching funds available and creative funding strategies for future match¹
- Liaison with the City's lobbyists
- Department support for grant development and reporting
- Maximize grant funds for administrative support
- Coordinate with Finance on compliance
- LMS project submission coordination
- Collaborate with Emergency Management
- Coordinate with Enterprise Fund Departments

Databases

- Maintain Project Database
- Maintain Grant Databases²

Policy & Procedures

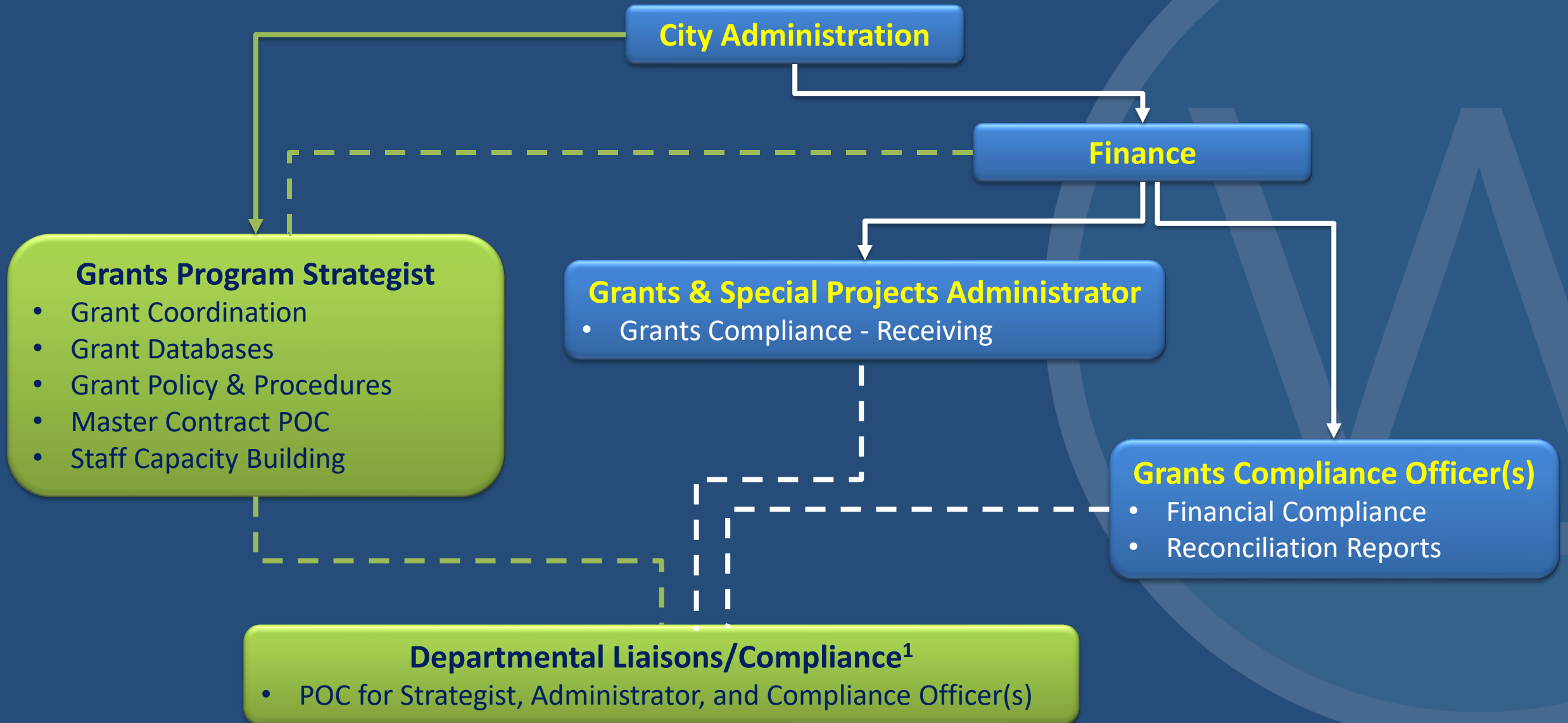
- Grant Policy and Procedures compliance³

Other Services

- POC for Grant Services Master Contracts
- Expand Staff Capacity⁴



Grant Strategy - Organizational Chart





Grants Strategy – Master Contracts

Pool of qualified individuals/firms from different disciplines with experience researching and identifying grants resources including, but not limited to: Federal, State, foundation, agencies, and other organizations.

Scope of Services

- Grant Funding Research & Match Requirements
- Grant Proposal Development
- Grant Management/**Procurement**/Monitoring/Compliance
- Staff Capacity Building/Training
- Community Engagement/Outreach Support

Departments will need to start budgeting for services and/or establish a new city-wide funding source.

Areas of Expertise – Consultants Can Have Multiple Areas of Expertise

Resiliency (Social, Infrastructure, Environmental)	Sustainability & Energy Efficiency
Infrastructure Development & Maintenance	Multimodal Transportation
Human/Social Services/Equity/Poverty Eradication	The Arts and Education
Technology (Wi-Fi, Broadband, Cyber Security)	Parks & Recreation Programs
Public Safety (Police, Fire, Emergency Management)	FEMA, Palm Beach County LMS
Economic Development/Workforce Development/Housing (HUD)	



Current Grant Services Available

Engineering Services Master Contract

- Scope of Work: Grant Services

Current Grant Consultant

- 📋 Identify Projects
- 🔍 Evaluate Funding Sources for Implementation
- 📅 Prioritize Projects & Develop Grant Schedule
- ✍️ Apply for Grants
- 🏠 Implement Awarded Grants & Manage Compliance

Sample Grant Evaluation Summary by Project

Project Name	Grant Name	Grant Summary	Min/Max Funding	Match	Application Opens	Application Deadline	Website
[Name of the Project]	[Grant Program]	[2-5 sentences, high-level summary of grant funding priorities + eligible activities]	[The minimum or maximum amount of funding, if applicable]	[Details on match requirements – 75/25, 50/50, etc.]	[Date applications cycle opens]	[Due date to have application completed]	[Grant website for more information]



Modification Suggestions for Grants Policy 1-21 (2014)

- Increase small grant threshold to \$250,000 **match**¹
 - If no match is required, or already budgeted/appropriated, implement at tier system of approval
 - Grant Strategist would play a key role on prioritization and process

Tier System Approvals (at minimum) ²		
Tier 1 (\$0 - \$25,000)	Tier 2 (\$25,001 - \$75,000)	Tier 3 (\$75,001 - \$250,000)
Department Director	Department Director	Department Director
Finance Director	Finance Director	Finance Director
	Assistant City Administrator	Assistant City Administrator
		City Administrator

Only modifying grant application portion, grant acceptance would remain unchanged

WHERE ARE THE NEEDED FUNDS COMING FROM???

- **Establish:**
 - Funding Sources for Grant Services
 - Funding Sources for Grant Match
 - Special budget accounts or integrated into Departmental budgets or both?
- **Possibilities:**
 - Green Bonds or other Bonds
 - CIP funds
 - Special Assessments
 - Reserves?
- **Build in Admin Costs into Grants**



Success: Resilient Florida Grants

Planning Grants

Vulnerability Assessment (**\$192,475**)

Implementation Project Grants

1. Flagler Drive Area Underground Utilities Hardening (Resilient Florida **\$750,000**)
2. Flagler Drive Drainage Improvements (2022-23 Statewide Flooding and Sea Level Rise Resilience Plan **\$1,000,000**)
3. City of West Palm Beach Pilot Seawall Elevation Project (2022-23 Statewide Flooding and Sea Level Rise Resilience Plan **\$3,625,000**)
4. Flagler Drive Lift Station Retrofits-Design & Construction (2022-23 Statewide Flooding and Sea Level Rise Resilience Plan **\$405,000**)
5. Currie Park (2022-23 Statewide Flooding and Sea Level Rise Resilience Plan **\$1,875,000**)

Thank you!!

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Florida League of Cities Annual Conference



Erin L. Deady, Esq., AICP, LEED AP

August 11, 2022

FLORIDA POLICY ON GHG REDUCTIONS AND CLIMATE

- ▶ EO 07-127: Reduction of emissions to 2000 levels by 2017, to 1990 levels by 2025, and by 80% of 1990 levels by 2050 & California vehicle emission standards reductions (22% by 2012 and 30% by 2016).
- ▶ Building Efficiencies/Energy Code, Chapter 553, F.S. increasing standards
- ▶ HB 7123: Model Green Building Code (2007)
- ▶ HB 697 (GHG reduction strategies in local government's Comprehensive Plan). Some requirements later eliminated.
- ▶ HB 7135 (State and Local Government Buildings “greener” and FF landscaping) (Section 255.2575 & 255.259, F.S.)
 - *many don't realize this is law*
- ▶ HB 7179 (PACE)- financing wind resistance/energy efficiency initiatives
- ▶ Adaptation Action Areas (2011)
- ▶ HB 7117 (Energy Bill- 2012)- increase solar output
- ▶ 2015- 5 Bills Passing Related to flood insurance, wind insurance, construction standards/building codes, Citizen's insurance, Peril of Flood (Section 163.3178, F.S.)
- ▶ 2016- Solar Constitutional Amendments
- ▶ 2017- SB 90 on solar disclosures and Amendment 4 Implementation & Natural Hazards coordination
- ▶ 2020- Section 161.551, F.S. Sea Level Impact Projection Studies for state-funded projects (Rule 62S-7, F.A.C.)
- ▶ 2021 & 2022- Section 380.093, F.S. Resilient Florida program (Rule 62S-8, F.A.C. rule effective 8/22/22)

SECTION 380.093, F.S.: RESILIENT FLORIDA

Section of the Law	Significance
Intent and definitions	<ul style="list-style-type: none"> Coastal and inland communities can participate Critical assets defined
Resilient Florida Grant Program	<ul style="list-style-type: none"> Items that can be funded (planning and projects) Standards for vulnerability assessments
Comprehensive Statewide Flood Vulnerability and Sea Level Rise Dataset and Assessment	Dataset to support a comprehensive statewide flood vulnerability and sea level rise assessment (inland and coastal infrastructure, geographic areas and vulnerable communities and their risk).
Statewide Flooding and Sea Level Rise Resilience Plan (local governments, flood control districts, regional resilience entities or WMDs).	Due to Legislature 12/1, 3-year planning horizon & ranked projects that address risks of flooding and sea level rise to coastal and inland communities. First one submitted for this year, December 1, 2021, will be a "preliminary plan" to address risks already identified in existing local government vulnerability assessment. 50% cost share unless disadvantaged community. Includes ranking criteria.
Regional Resilience Entities	Providing technical assistance to counties and municipalities, (b) coordinating multijurisdictional vulnerability assessments and (c) developing project proposals to be submitted for inclusion in the Statewide Flooding and Sea Level Rise Resilience Plan.
Florida Hub for Applied Research and Innovation (USF)	Lead institution and engage other academic and research institutions, private partners, and financial sponsors to coordinate efforts to support applied research and innovation to address the flooding and sea level rise challenges of the state
Annual assessment of Florida's water resources and conservation lands	Expand the requirements of the existing annual assessment of Florida's water resources and conservation lands (conducted by the Office of Economic and Demographic Research) to now include flooding information

Critical and Regionally Significant Assets

Definition: "Critical asset" includes:

1. **Transportation assets** and evacuation routes, including airports, bridges, bus terminals, ports, major roadways, marinas, rail facilities, and railroad bridges.
2. **Critical infrastructure**, including wastewater treatment facilities and lift stations, stormwater treatment facilities and pump stations, drinking water facilities, water utility conveyance systems, electric production and supply facilities, solid and hazardous waste facilities, military installations, communications facilities, and disaster debris management sites.
3. **Critical community and emergency facilities**, including schools, colleges, universities, community centers, correctional facilities, disaster recovery centers, emergency medical service facilities, emergency operation centers, fire stations, health care facilities, hospitals, law enforcement facilities, local government facilities, logistical staging areas, affordable public housing, risk shelter inventory, and state government facilities.
4. **Natural, cultural, and historical resources**, including conservation lands, parks, shorelines, surface waters, wetlands, and historical and cultural assets.

Definition: "Regionally significant assets" means critical assets that support the needs of communities spanning multiple geopolitical jurisdictions, including, but not limited to, water resource facilities, regional medical centers, emergency operations centers, regional utilities, major transportation hubs and corridors, airports, and seaports. *(new this year)*

SECTION 380.093, F.S.: RESILIENT FLORIDA

Requirements of subsection (3):

- ✓ Assets covered (critical and regionally significant)
- ✓ Types of mapping
- ✓ Metadata
- ✓ Tidal, storm surge and rainfall (and compound to the extent practicable)
- ✓ Datum
- ✓ Sea level rise scenarios
- ✓ 2040 and 2070
- ✓ Two closest tide gauges (or one if using the highest of two)

This is indeed going to impact how projects are ranked and what does it mean? It means local governments are going to have to work cross-departmentally to identify “critical assets” and “regionally significant assets” in vulnerability assessments
IF YOU WANT TO BE COMPETITIVE FOR FUNDING.

HB 7053 Changes to Section 380.093, F.S. This Year

State Chief Resilience Officer Duties

1. Promote and coordinate flood resilience efforts in the state / provide strategic direction for interagency and cross-disciplinary initiatives and ID gaps in state activities
2. Work with federal, state, regional, and local entities and NGOs to align flood resilience and mitigation activity
3. Collaborate with the Florida Flood Hub for Applied Research and Innovation to incorporate future standards and projections regarding flooding and sea level rise into state projects and programs and improve utility of data products
4. Work with water management districts to innovate processes to bolster flood mitigation activities
5. Report to Governor and Legislature (with DEP)
 - a. Local governments that must comply with Peril of Flood provisions
 - b. Local governments that have completed vulnerability assessments
 - c. Geographic distribution of funded projects
 - d. Statewide inventory of basin-level planning efforts by water management districts or special districts

FDOT- Produce a Resilience Action Plan by June 30, 2023 (first agency required to do this)

Section 380.093, F.S. Changes-

1. Expansion to inland communities
2. Funding for preconstruction activity for city less < 10,000 or county < 50,000
3. Rainfall induced flooding must include 100 year and 500 year storm events
4. Change date of comprehensive statewide flood vulnerability and sea level rise assessment to 2023
5. Disclosure of methodology for ranking projects in the Statewide Flooding and Sea Level Rise Plan
6. Eligible grant entities to now include special districts responsible for the management and maintenance of inlets and intracoastal waterways or for the operation and maintenance of a potable water facility, a wastewater facility, an airport, or a seaport facility.
7. Allows "grace period" for VA compliance supporting project submittals until 2023
8. Allows water management districts, drainage districts, erosion control districts, flood control districts and regional water supply authorities to submit projects for inclusion in the Statewide Flooding and Sea Level Rise Plan.

New Section 380.0933, F.S.- Why is the Flood Hub Important?

Data- By July 1, 2023, the department shall complete the development of a comprehensive statewide flood vulnerability and sea level rise data set sufficient to conduct a comprehensive statewide flood vulnerability and sea level rise assessment.

1. (a) Organize existing data needs for a comprehensive statewide flood vulnerability and sea level rise analysis and perform a gap analysis to determine data needs.
2. (b) Develop statewide open source hydrologic models for physically based flood frequency estimation and real-time forecasting of floods, including hydraulic models of floodplain inundation mapping, real-time compound and tidal flooding forecasts, future groundwater elevation conditions, and economic damage and loss estimates.
3. (c) Coordinate research funds from the state, the federal government, or other funding sources for related hub activities across all participating entities.
4. (d) Establish community-based programs to improve flood monitoring and prediction along major waterways, including intracoastal waterways and coastlines, of the state and to support ongoing flood research.
5. (e) Coordinate with agencies, including, but not limited to, the Department of Environmental Protection and water management districts.
6. (f) Share its resources and expertise.
7. (g) Assist in the development of training and in the development of a workforce in the state that is knowledgeable about flood and sea level rise research, prediction, and adaptation and mitigation strategies.
8. (h) Develop opportunities to partner with other flood and sea level rise research and innovation leaders for sharing technology or research.
9. (i) Conduct the activities under this subsection in cooperation with various local, state, and federal government entities as well as other flood and sea level rise research centers.
10. (3) The hub shall provide tidal and storm surge flooding data to counties and municipalities for vulnerability assessments conducted pursuant to s. 380.093(3). The hub shall provide rainfall-induced and compound flooding datasets; however, more localized data or modeling may be used.

* Important because these may provide data sources you need. Not immediate though. There are questions surrounding the efficacy of state v. local efforts on this issue growing.

RELATIONSHIP BETWEEN PERIL OF FLOOD, SLIP AND RESILIENT FLORIDA

- ▶ Approximately **50% of local governments** have completed Peril of Flood amendments (for those that have a Coastal Element)
- ▶ Previous DEP grant program (RPGs) prioritized Peril of Flood compliance as a funding area. New Section 380.093, F.S.: (3) Subject to appropriation, the department may provide grants to a county or municipality to fund the costs of community resilience planning ... **including comprehensive plan amendments and necessary corresponding analyses that address the requirements of s. 163.3178(2)(f)...**
- ▶ (3)(d) A vulnerability assessment conducted pursuant to paragraph (b) must include all of the following, **if applicable: 1. Peril of flood comprehensive plan amendments** that address the requirements of s. 163.3178(2)(f), if the county or municipality is subject to such requirements and has not complied with such requirements as determined by the Department of Economic Opportunity. ***** DEO recently sent POF “compliance letters” to local governments. Webinar on this 8/17/22).
- ▶ **Bottom line:** The policy and technical environments are aligning driven by **funding \$\$\$** opportunities to adapt and maintain infrastructure in the face of increasing flooding-related threats.
- ▶ SLIP studies required under Section 161.551, F.S. & Rule 62S-7, F.A.C. if project receives state funding. Use of SLIP tool formulated by DEP recommended.

Statewide Flooding and Sea Level Rise Resilience: New Legislation and Opportunities to Implement and Fund Resiliency

By Erin Deady, AICP, Esq.¹ & Kendall Aumick²

1. Introduction

On May 12, 2021, Governor DeSantis signed Senate Bill (SB) 1954³ into law, “An act relating to statewide flooding and sea level rise resilience” which included new program elements for resiliency planning at the State and local levels creating § 380.093, Fla. Stat.⁴ This new legislation is enhancing resilience planning activities and funding at the regional and local levels.

Local governments around the state have traditionally led in the resiliency planning space, but those efforts are now being further benefitted by both planning and capital project funding that § 380.093, Fla. Stat., provides. Already, many local governments (primarily coastal communities) have also undertaken vulnerability assessments or started adaptation planning for capital improvements previously facilitated by the award of Resilience Planning Grants (RPGs) from the Department of Environmental Protection (DEP), the precursor to the “Always Ready” legislation as the § 380.093, Fla. Stat., has come to be known.

One year now into the implementation of § 380.093, Fla. Stat., Florida has taken further action to improve resilience against sea level rise and flooding through the passage of House Bill (HB) 7053 amending certain provisions in § 380.093, Fla. Stat. during the 2022 legislative session.⁵ Overall,

the original and new legislation aim to strengthen Florida’s response to increased future flood risk by expanding grant funding, establishing the duties of the State’s Chief Resilience Officer and requiring the creation of a resilience action plan for the State Highway system by the Department of Transportation. Rulemaking has also commenced on Rule 62S-8, F.A.C., related to the ranking for projects within the Statewide Flooding and Sea Level Rise Resilience Plan, the capital projects funded under the program. The rulemaking also addresses the underlying vulnerability assessments themselves, required after 2024 to pursue future capital projects, by including compliance with the statutory criteria in its scoring system.

Resiliency planning efforts, and projects to adapt to future flood risk, are expanding within the state with the infusion of funding. This article provides an overview of the resilience planning efforts within the State and recent updates to § 380.093, Fla. Stat.. This article will also explore some of the opportunities and challenges with implementation of these new program elements.

2. Summary of Section 380.093, F.S.

Section 380.093, Fla. Stat. creates the new Resilient Florida Grant Program area among other obligations and initiatives related to resiliency

and flooding. Each will be discussed in this section.

a. Intent and Definitions. The subsection states, “...that the state is particularly vulnerable to adverse impacts from flooding resulting from increases in frequency and duration of rainfall events, storm surge from more frequent and severe weather systems, and sea level rise.”⁶ Another key aspect of the intent section is the recognition, “...that the adverse impacts of flooding and sea level rise affect coastal and inland communities all across the state. Consequently, a coordinated approach is necessary to maximize the benefit of efforts to address such impacts and to improve the state’s resilience to flooding and sea level rise.”⁷

See “Statewide Flooding” page 13

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www.eluls.org

Environmental and Land Use Law Section
of the Florida Bar

NEW FEDERAL OPPORTUNITIES \$\$\$

- ✓ Inflation Reduction Act Of 2022 (+ portions of Build Back Better)
- ✓ CDBG-DR
- ✓ BRIC- Building Resilient Infrastructure (FEMA)
- ✓ Clean Water State Revolving Funds
- ✓ US Housing and Urban Development
- ✓ National Oceanic and Atmospheric Administration
- ✓ EDA Public Works
- ✓ Bipartisan Infrastructure Law
 - ✓ Promoting Resilient Operations for Transformative, Efficient, and Cost-saving Transportation (PROTECT)
 - ✓ Climate Ready Coasts
 - ✓ Climate Data and Services
 - ✓ Transformational Habitat Restoration and Coastal Resilience Grants (\$85 million)
 - ✓ Coastal Habitat Restoration and Resilience Grants for Underserved Communities (\$10 million)
 - ✓ Coastal Zone Management Habitat Protection and Restoration Grants (\$35 million)
 - ✓ National Estuarine Research Reserve System Habitat Protection and Restoration Grants (\$12 million)
 - ✓ Marine Debris Removal (\$56 million)
 - ✓ Marine Debris Challenge Competition (\$16 million)[offsite link](#)
 - ✓ Marine Debris Community Action Coalitions (\$3 million)[offsite link](#)
 - ✓ The announcement today builds on a series of steps that the Admi



Photo: Robert Lawton

VULNERABILITY ASSESSMENTS AND CASE STUDIES



Photo: Erin Deady



Photo: Erin Deady

Town of Lantana, October 2021

SECTION 380.093, F.S.: RESILIENT FLORIDA

Requirements of subsection (3):

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- ✓ Types of mapping
- ✓ Metadata
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VULNERABILITY ASSESSMENTS & ASSETS

Best available data on assets is important:

- GIS locations
- Top of structure elevations
- Invert elevations
- Locations of controls and supporting components

Severity of impacts to system

- How many structures?
- How many impacted v. overall total?
- What is the projected year of impact?
- How many days of flooding anticipated under what scenario/condition?

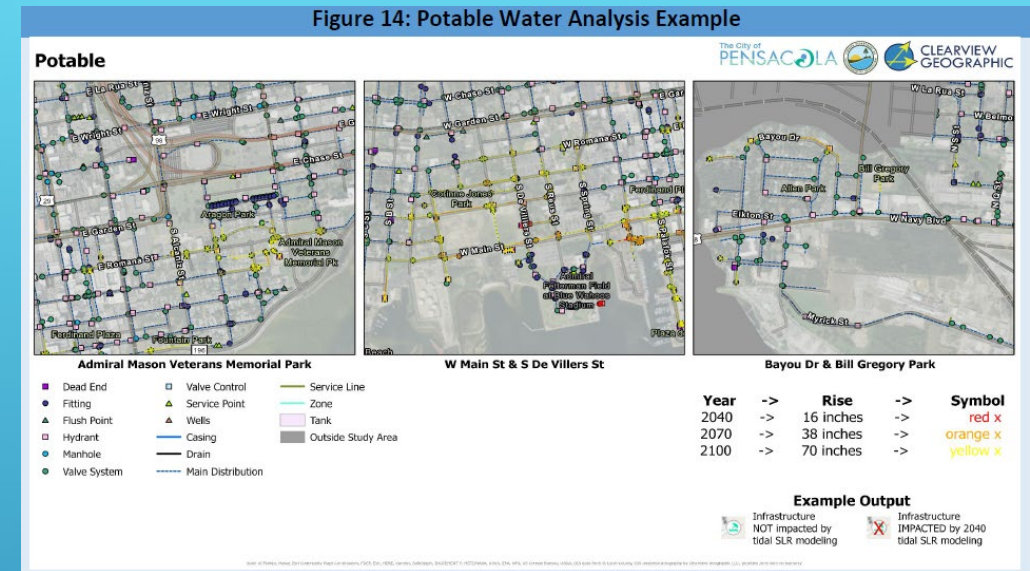


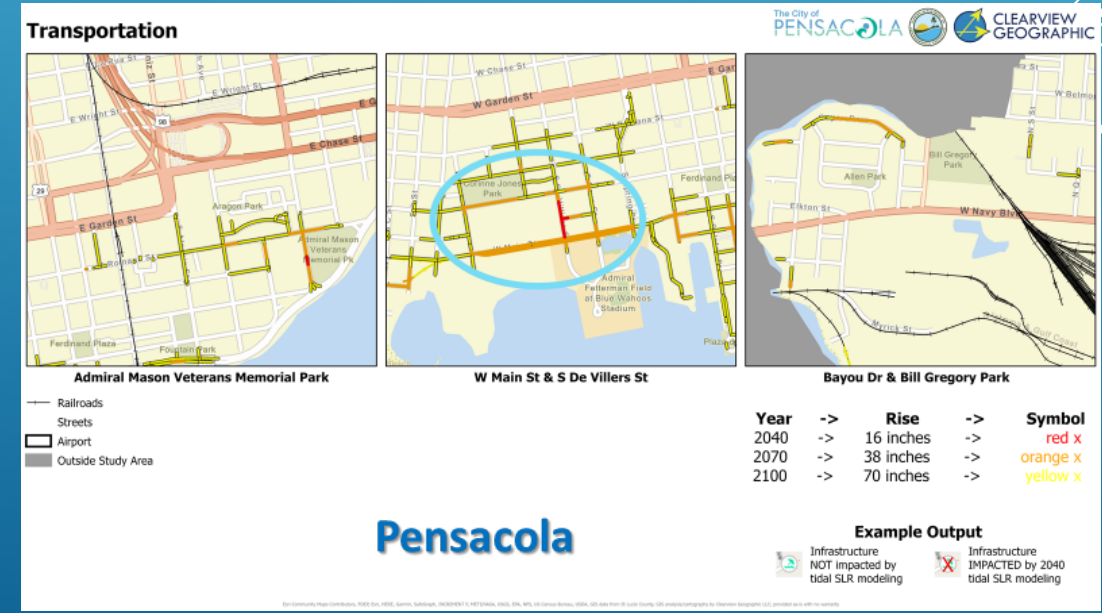
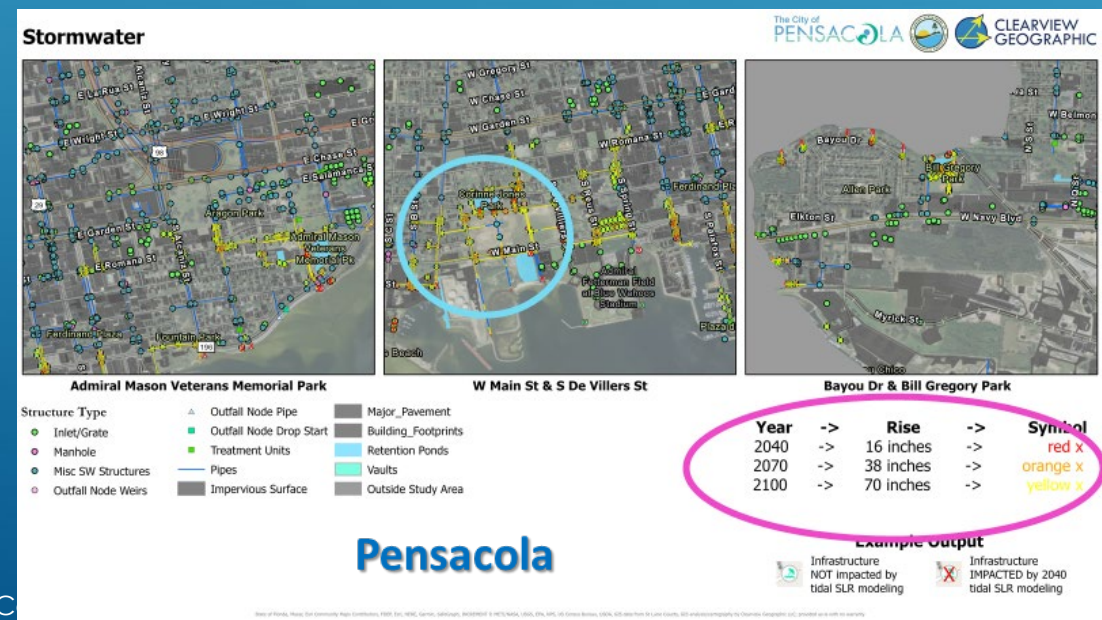
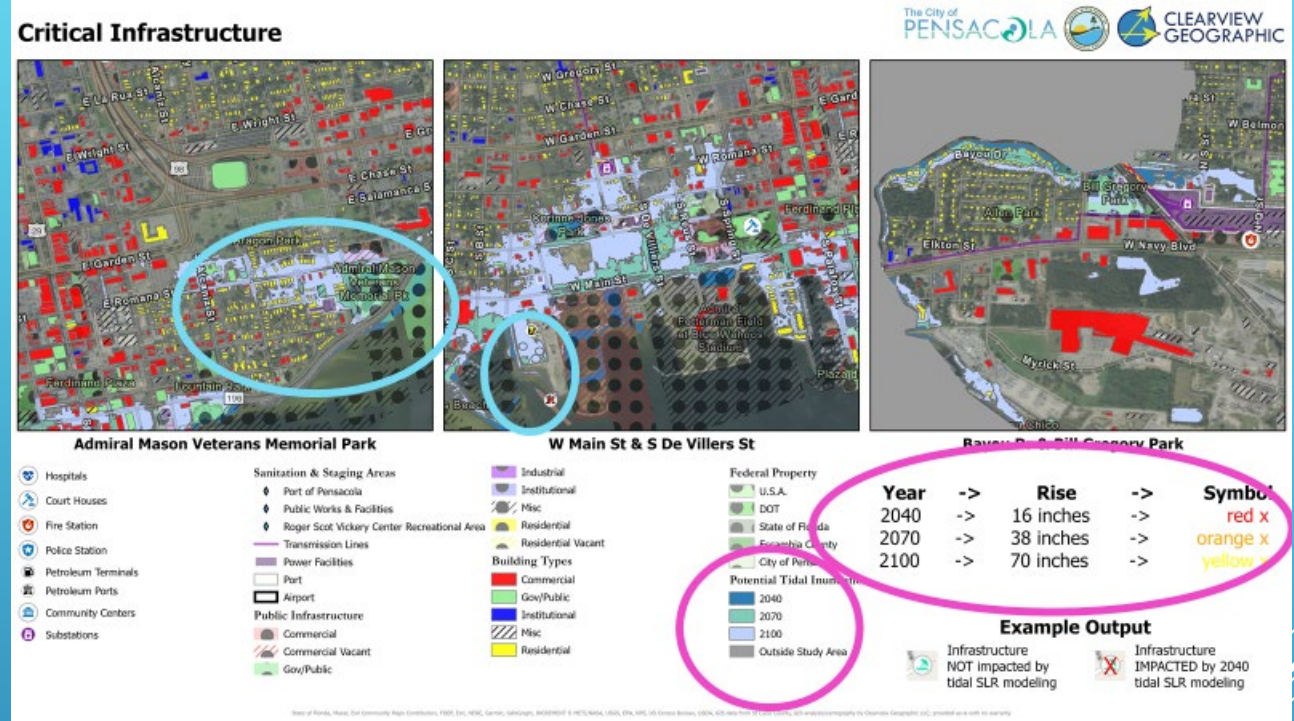
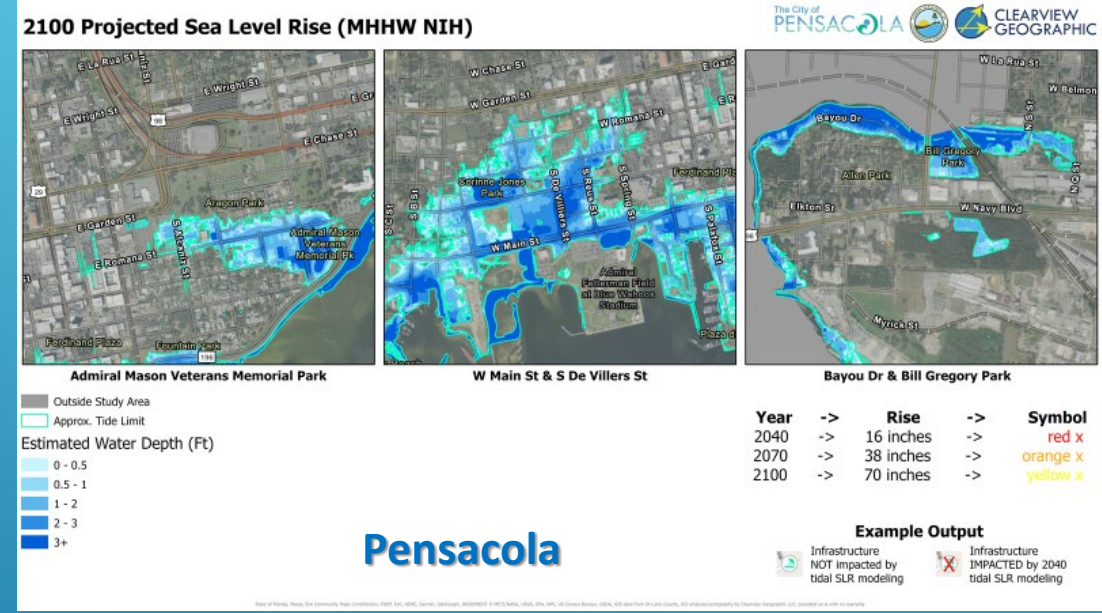
Table 18: Vulnerable Potable Water Infrastructure

Potable Water Infrastructure	Infrastructure Impacted by Year at MHHW			Total Features in Dataset
	2040 (16")	2070 (38")	2100 (70")	
Dead End	2 (1.65%)	4 (3.31%)	10 (8.26%)	121
Fitting	5 (0.35%)	18 (1.25%)	51 (3.53%)	1443
Flush Point	2 (0.47%)	4 (0.94%)	7 (1.64%)	427
Hydrant	2 (0.08)	10 (0.40%)	50 (2.01%)	2493
Manhole	0	0	6 (18.75%)	32
Service Point	0	0	22 (2.22%)	992
Valve System	8 (0.11%)	31 (0.44%)	159 (2.25%)	7073
Valve Control	0	0	1 (9.09%)	11
Wells	0	0	0	11

Table 19: Vulnerable Potable Water Infrastructure (Linear Miles)

Potable Water Infrastructure	Infrastructure Impacted by Year at MHHW			Total Length of Features in Dataset
	2040 (16")	2070 (38")	2100 (70")	
Casing	0	0	0.001 (0.04%)	2.32
Drain	0	0	0	0.47
Main Distribution	1.5 (0.27%)	6.3 (1.12%)	32.1 (5.70%)	562.72
Service Line	0	0.2 (1.82%)	1.2 (10.95%)	10.96
Zone	0.3 (3.26%)	0.3 (3.26%)	0.3 (3.26%)	9.21

CASE STUDIES



MONROE COUNTY EXAMPLE: VULNERABILITY AND CRITICALITY ASSESSMENT



Vulnerability Score
Step 1

Influenced by
Environmental Factors



Criticality Score
Step 2

Influenced by
Human Factors

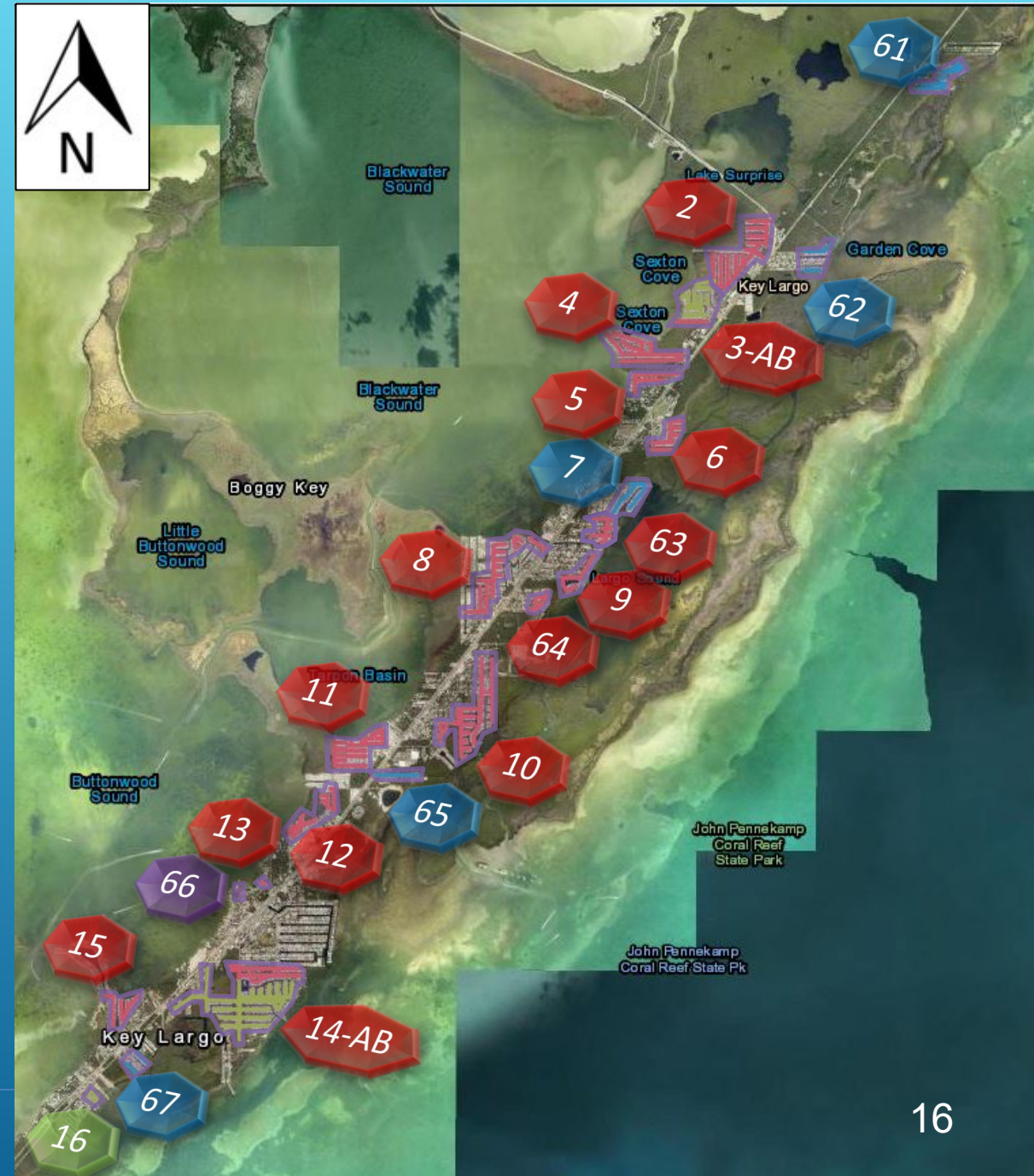
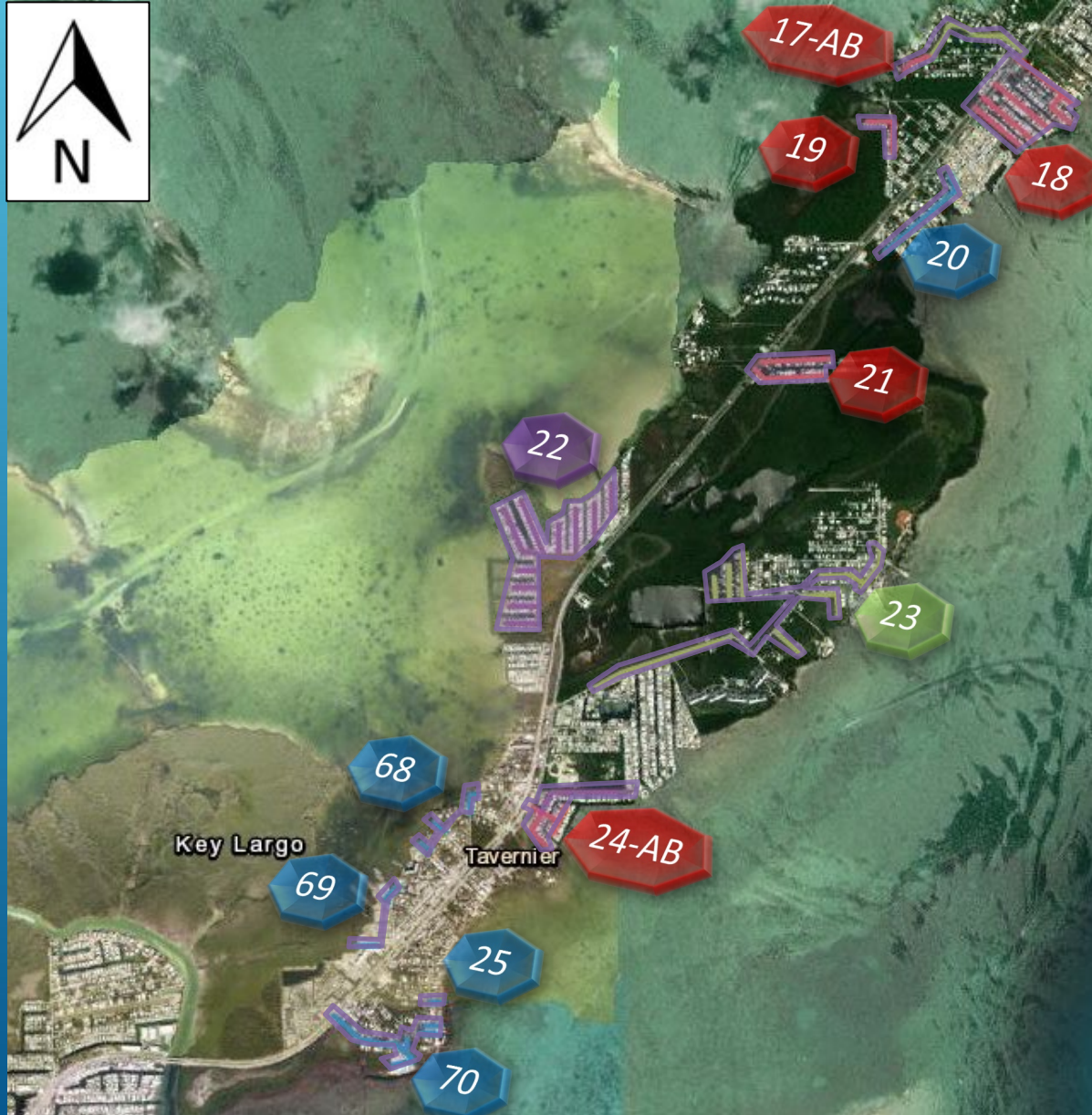


Vulnerability Evaluation Factors	Weighting Percentages
Roadway Surface Inundation Depth	60%
Roadway Groundwater Clearance	25%
Roadway Inundation Due to Storm Surge	5%
Roadway Surface Wave Impact Potential	5%
Roadway Existing Pavement Condition	5%

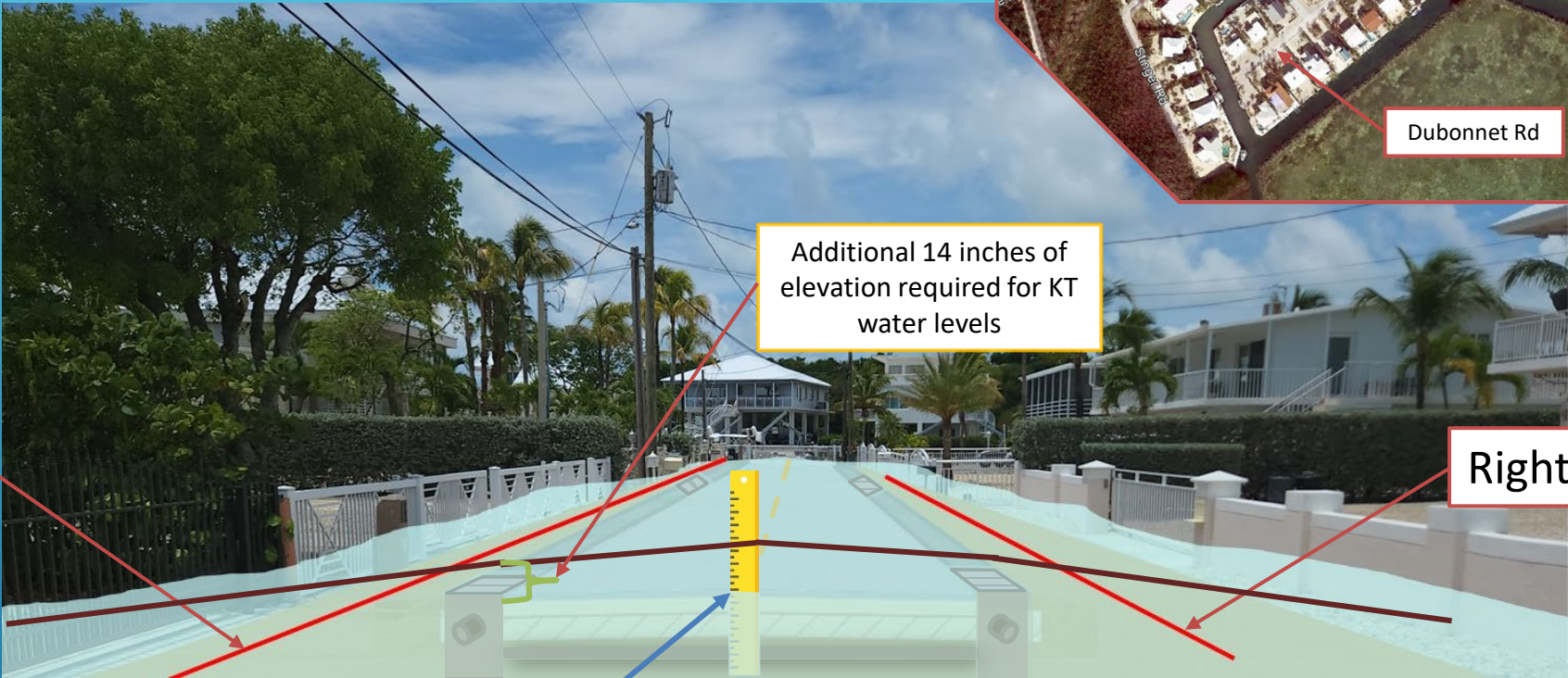


Criticality Evaluations Factors	Weighting Percentages
Vulnerability Score	50%
Number of Residential Units	25%
Roadways Associated with Critical Facilities (Police, Fire, etc.)	10%
Wetlands/Natural Habitats associated with Road Segment	5%
Roadway Functional Classification and Evacuations Routes	5%
Non-Residential Focus Species associated with Road Segment	3%
T&E and Focus Species Associated with Road Segment	2%

PROJECT LOCATIONS – UPPER KEYS

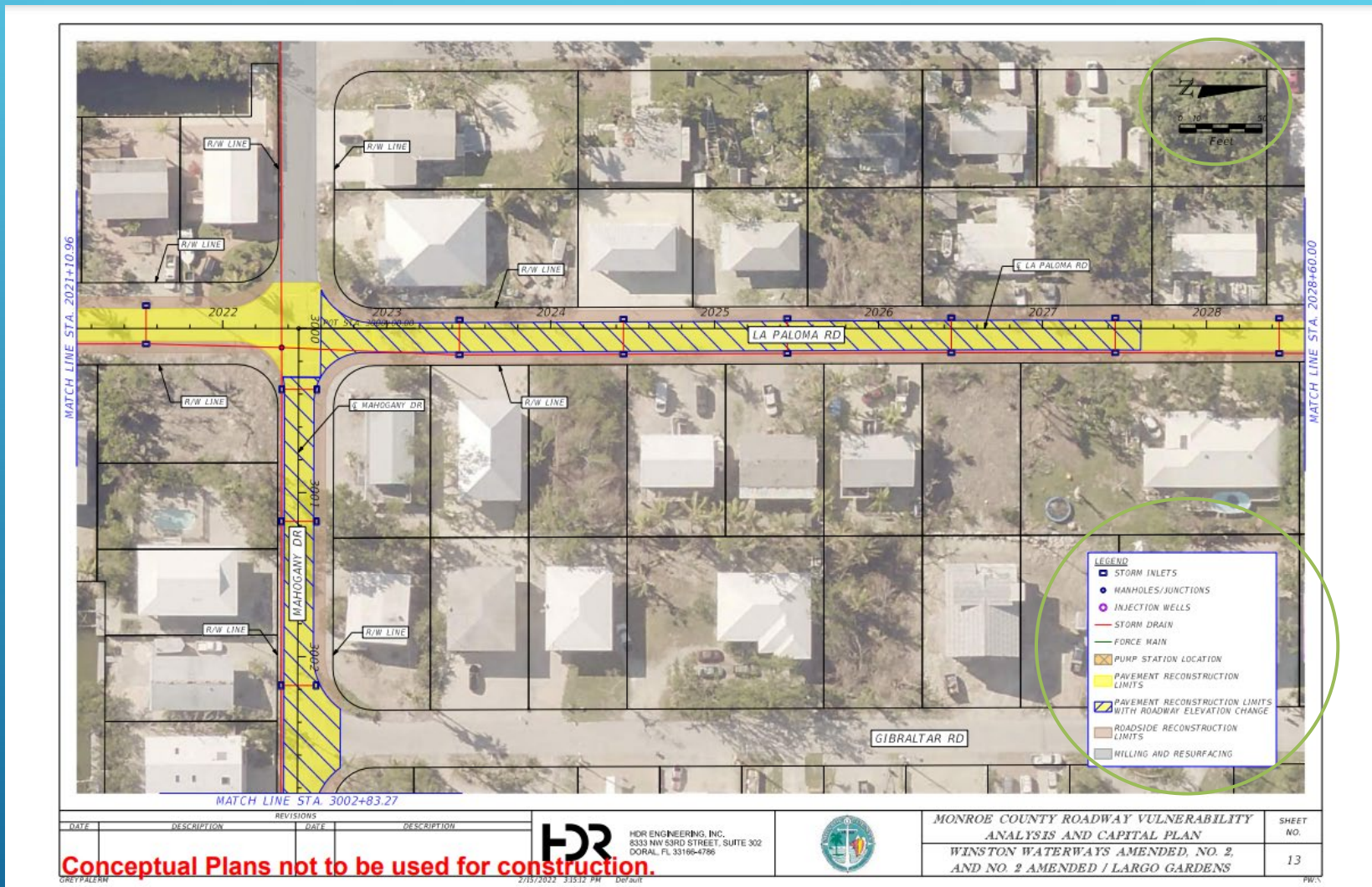


PROPOSED IMPROVEMENTS WITH 2045 SEA LEVEL RISE + KING TIDE WATER LEVELS

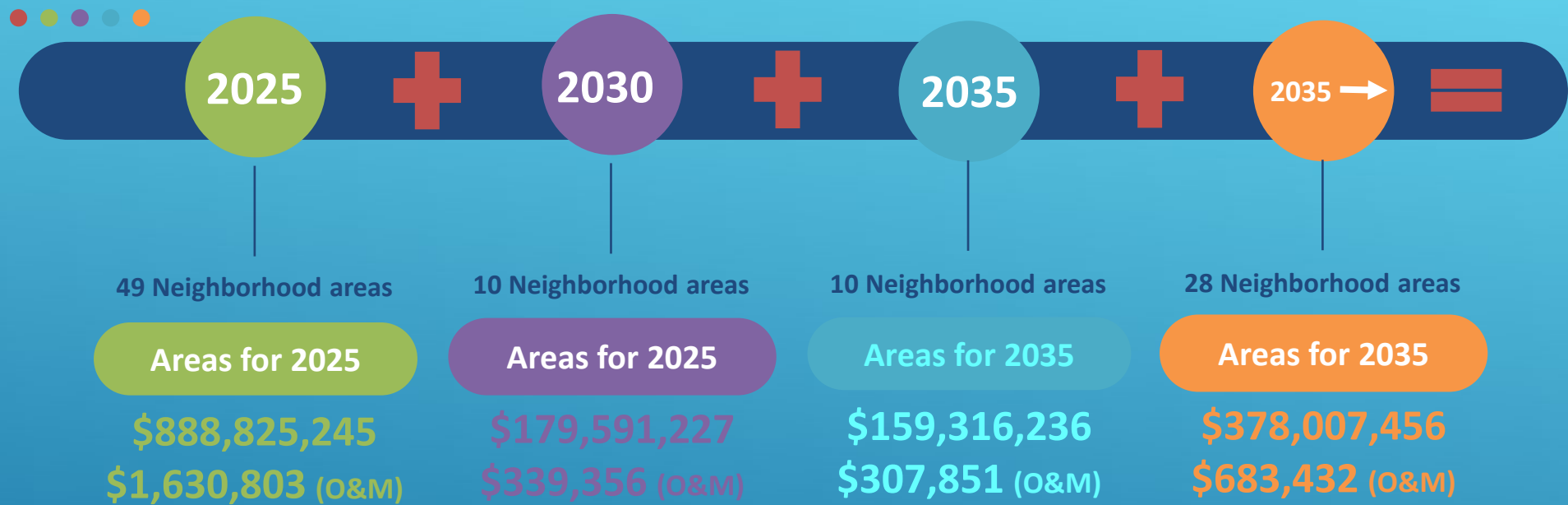


Dubonnet Road
Lowest existing roadway elevation 1.46 FT (NAVD88)

GETTING READY FOR GRANTS: CONCEPTUAL DRAWINGS



ADAPTATION PLAN AND PROGRAM COST



\$1.6 Billion*
(Avg \$9.6 Million / Mile)

\$3.0 Million
(Annual Operation & Maintenance)

Projected **SLR + King Tides** will affect the following:



2045

Unincorporated
Countywide %

(SLR Condition: NOAA 2017
Intermediate-High + King Tides)

Miles of Vulnerable and Critical County Maintained Roadways	166 MI	53%
# of Residential Units along County Maintained Roadways	13,399 Res. Units	76%

* Cost estimate is conceptual and does not include design, right-of-way acquisition, harmonization/cost to cure, and legal fees. Cost estimates are preliminary and subject to change. Cost Estimate is based on 2020 Dollars.



MONROE COUNTY PROACTIVE PLANNING APPROACH



County Wide Adaptation

- Roads
- Habitat/Resources
- Elevate or mitigate County buildings
- Infrastructure

Private Response

- Elevate or mitigate private structures
- Lot fill and driveways
- Shorelines

Achieving Resiliency

- County services and assets
- People
- Habitat
- Economy

OTHER REASONS PLANNING MIGHT BE HELPFUL: THE POLICY AND LEGAL IMPLICATIONS

- ▶ Taxpayers: I don't want to flood, fix my infrastructure, local government says, "do I have to"? Well, it depends.....
- ▶ Overview of some of the big takings issues:
 - ▶ Liability for takings for failure to maintain road with reasonable care (Jordan v. St. Johns County)... Liability for "inaction".....
 - ▶ Nuisance flooding caused by failing seawall (can be nuisance to private or public property owners or infrastructure)
 - ▶ Takings determinations factoring in benefits of "adaptation" (Borough of Havey Cedars v. Karan, 214 N.J. 384 (2013)).
- ▶ Levels of service/torts:
 - ▶ Duty to maintain v. upgrade infrastructure: what is "maintenance" with continued tidal inundation and flooding impacts?
 - ▶ Apportioning costs: who pays for what level of service when everyone is not receiving the same?

Lawsuit filed over 'critically unsafe' road to Alligator Point

Jeff Burlew, Tallahassee Democrat | Published 4:22 p.m. ET April 10, 2019 | Updated 10:35 p.m. ET April 11, 2019

LOCAL NEWS

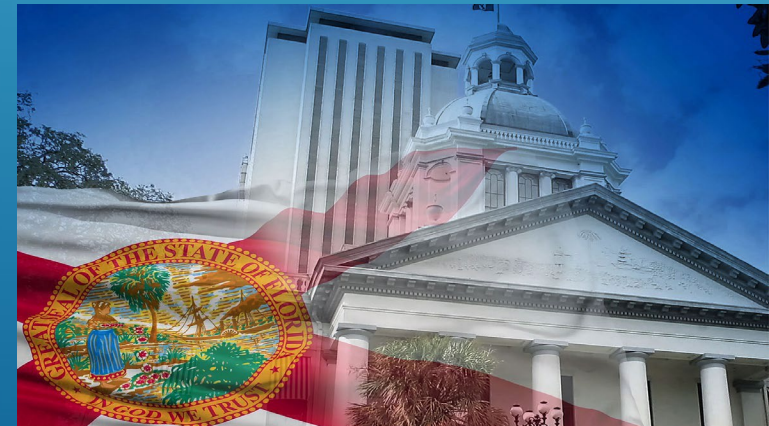
Seawall projects swallow up homeowners' docks as cities battle rising seas

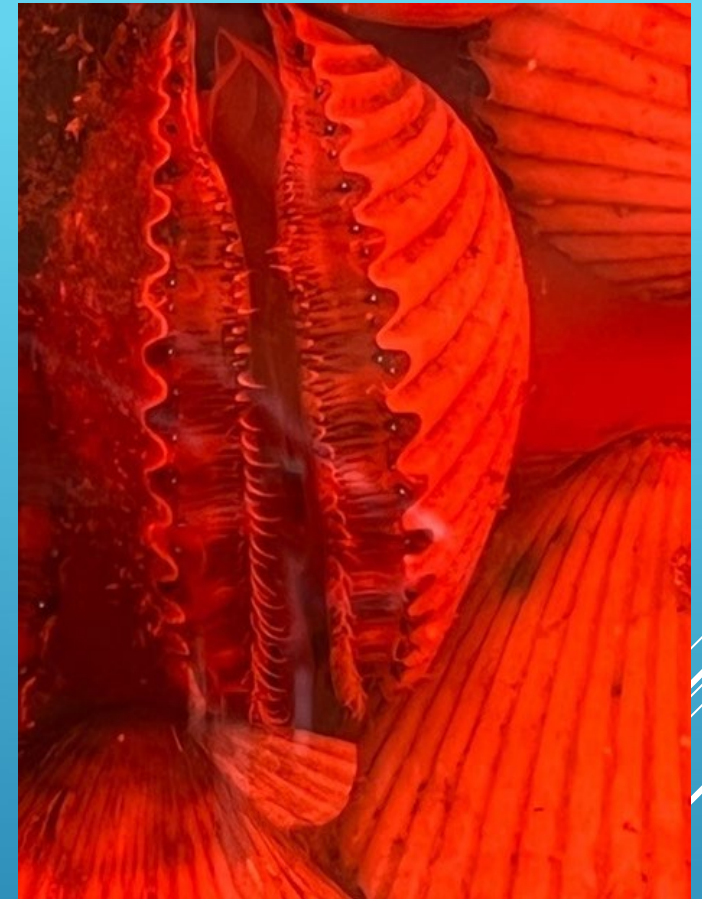
By SUSANNAH BRYAN and BROOKE BAITINGER
SOUTH FLORIDA SUN SENTINEL | OCT 04, 2019 | 1:10 PM



TAKEAWAYS....

- Know your underlying data and think about what you need to start (garbage in garbage out)
 - ✓ Investing now may make sense
 - ✓ GIS, elevation data on existing structures, conditions, asset management
- Planning and transparency are good things, with a multiple benefits:
 - ✓ No legal liability for “planning” activities
 - ✓ Manages community and elected decision maker expectations
 - ✓ Sets up actual projects to pursue grant priorities proactively for State and Federal programs
- Use a strong consultant team with a track record.
 - ✓ Talk to references (people embellish their work or roles in projects)
 - ✓ Look at the work products
- Time your work to coincide with budget discussions (for match) and capital project planning
- Partner where it makes sense, don't partner where it doesn't
- Get help in writing the grants and scoping them out with good details, picking a number out of the sky and backing into it is not helpful, in fact, its harder to deal with later
- Figure out what you need to do now to become compliant, and what will set you up for the greatest benefit the soonest





THANK YOU

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