



Smart Resiliency Planning for Florida Stormwater Programs

May 21, 2020

10:30 a.m. – 11:30 a.m. (Eastern)

www.florida-stormwater.org



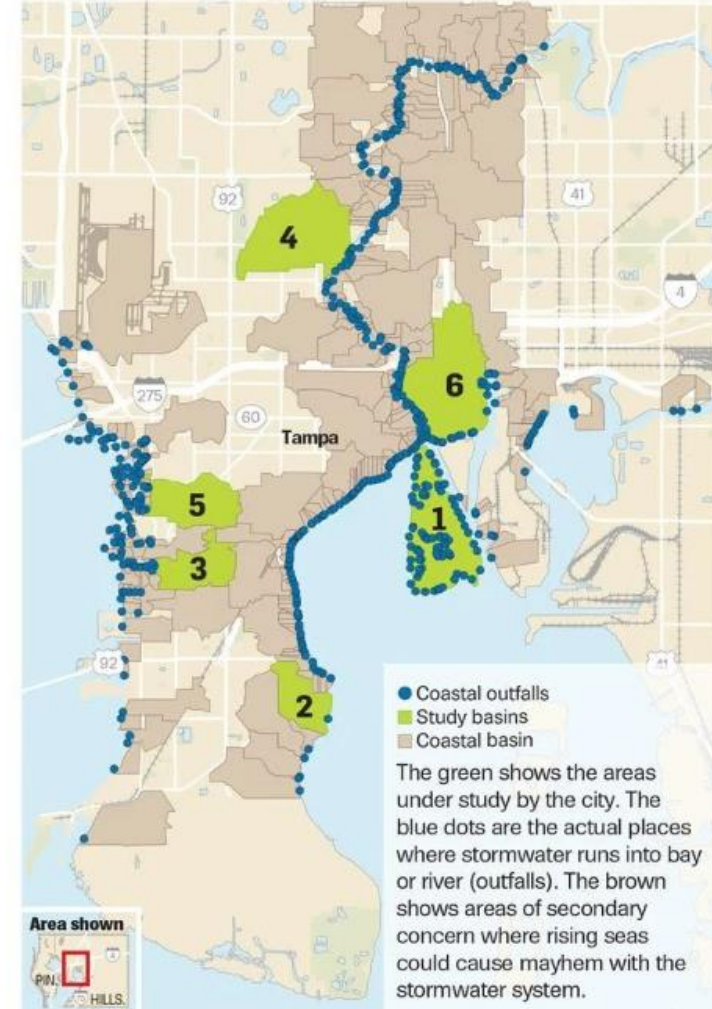
APPLIED SCIENCES

Florida Based. Regionally Skilled.

Tampa Bay Times

A stormwater system and rising seas

A study, conducted by the consulting firm AppliedSciences, looked at six areas of high risk in Tampa to figure out how to mitigate sea and river water flowing into the city's stormwater system. The study will be presented to the public on Wednesday.



Sources: City of Tampa, AppliedSciences

NEWS / TAMPA

Tampa studies how to make its stormwater system handle rising seas

A pilot study showing potential flooding caused by sea level rise is underway.





Public Service Focus

City of Tampa Sea Level Rise
Vulnerability Analysis



City of St. Petersburg Downtown
Green Alleyways Project



Peace Creek Watershed
ICPR4 Conversion



Pinellas County Green
Infrastructure Templates





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Today's Presenter



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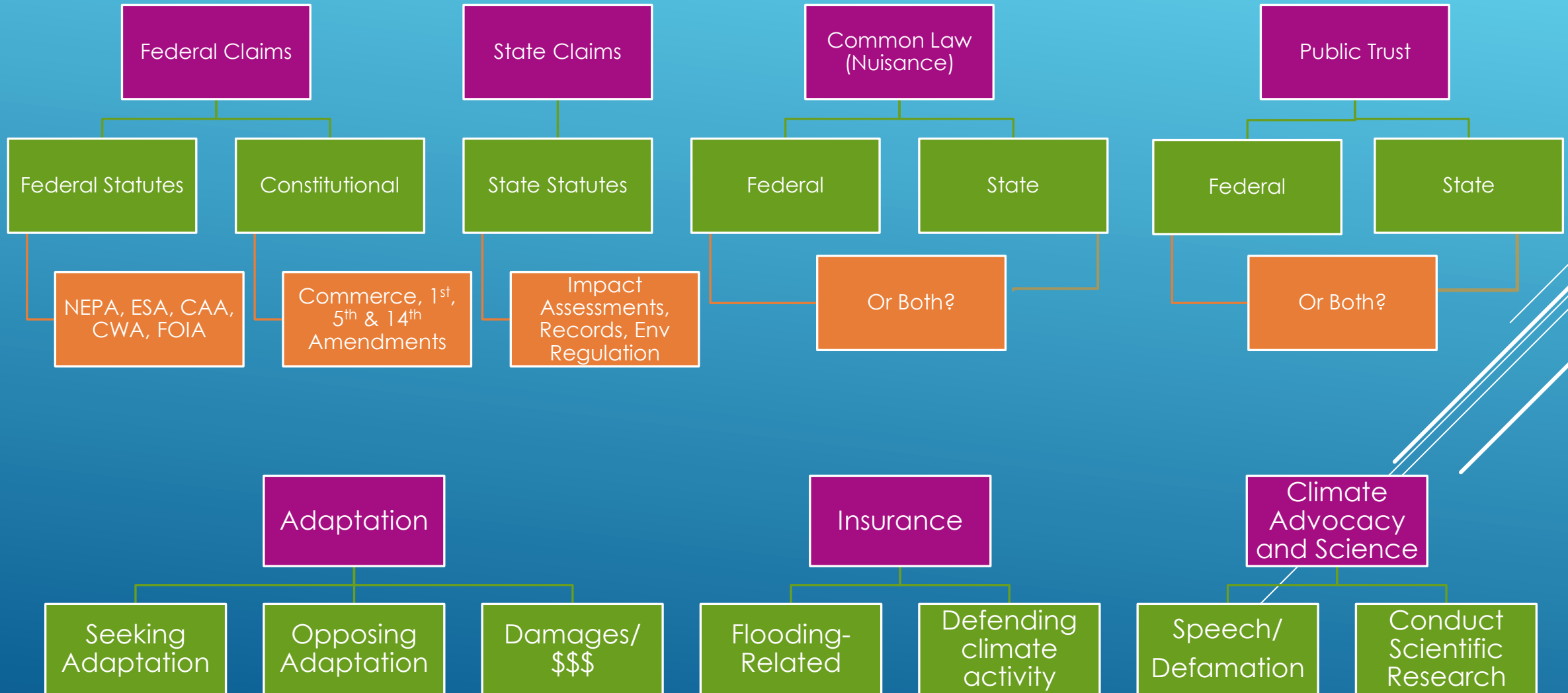
Climate Change from the Legal and Policy Front

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

May 21, 2020

The Law: Where Does Climate Change Show Up?

1200 Cases as of 5/2020- Columbia Law School Tracking Database



Other Evolving Federal Legal Aspects

NFIP Reform

- NFIP Authorization extended to 9/30/20 through Continuing Resolution
- Risk Rating 2.0 will incorporate a broader range of flood frequencies (2021)
- Better reflect a property's unique flood risks

CRS

- Sea Level Rise Credits ~ 500 pts.
- Mapping
- Improvement of rating score
- Example- County x receives a CRS score of 5, but to improve to a 4, these points are pivotal.
- Watershed Management Plan linkages
- NOAA Intermediate High 2100 condition must be analyzed

Corps of Engineers

- Corps "(Engineer Technical Letter 1100-2-1) covering "Procedures to Evaluate Sea Level Change: Impacts, Responses and Adaptation" (July 2014)
- Previous Guidance 2009, 2011 and current 2013- "Incorporating Sea-Level Change Considerations in **Civil Works Programs**"- use of 3 scenarios
- 2019 Engineering Technical Letter on Procedures to Evaluate Sea level change: Impacts, Responses and Adaptation

NEPA

- Guidance from previous administration on application of NEPA with regarding to climate **AND** GHG analysis
- Withdrawn 2017
- New DRAFT Guidance summer 2019
- Biggest change: **OMITTED**- NEPA reviews should address impacts of climate change on the project; for example, sea level rise affecting a coastal project site

FFRMS

- In place since 1977
- 2015 EO - construction in floodplains: methods from climate science, 2' above the 100-year flood elevation, or the 500-year flood elevation
- Federal investments (federal funds used for new construction, substantial improvement, or to address substantial damage to structures and facilities)
- Revoked 2017
- CDBG MIT Grantees (8/30/19)- Resi BFE + 2', "critical actions" 500 yr or 100-year + 3' (hospitals, nursing homes, police, fire & utility)



Kivalina, Alaska, a barrier island, is accusing energy companies of accelerating shore erosion.
Northwest Arctic Borough, via The Anchorage Daily News/Associated Press

What to expect with the rise of climate litigation

Mark Clarke
Friday, February 22, 2019 - 1:29am



Legal Actions & Climate

SEEKING DAMAGES, COMPELLING RESPONSE & GOVERNMENT EXPOSURE:
TORTS, NUISANCE, TAKINGS & INACTION

Torts & Takings

- ▶ Duty, breach, causation and injury
- ▶ Tort claims brought on grounds such as public and private nuisance, negligence, failure to warn, trespass and unjust enrichment
- ▶ **Early Examples:**
 - ▶ Kivalina- Nuisance claim for \$ from the energy industry for flooding damage caused by climate change. *Dismissed on political question and specific emissions causation.*
 - ▶ Comer v. Murphy Oil- Mississippi Fed Court- property owners alleged oil company defendants released by-products that led to global warming, which produced the conditions that formed Hurricane Katrina, which damaged their property. *Dismissed because injury not traceable to defendant's conduct.*
- ▶ "Takings Clause" of the 5th Amendment = "[N]or shall private property be taken for public use, without just compensation."
- ▶ Inverse condemnation = a landowner may recover just compensation under the 5th Amendment for a physical taking of his property when condemnation proceedings have not been instituted.
- ▶ Are there exceptions takings? Yes, "public necessity" can be a defense to a takings claim when 1) there is an imminent danger and 2) an actual emergency giving rise to the actual necessity. Example: emergency adaptation measures.
- ▶ **Early and Current Examples:**
 - ▶ Flooding from infrastructure operations
 - ▶ Government implements an adaptation project that impacts property values
 - ▶ Government operates existing infrastructure and there are impacts

Why is this all important? 1) Some state and local governments are tying the impacts of climate change to industry actions; 2) As we plan and adapt, not everyone is not going to be happy with our decisions on infrastructure delivery.

Borough of Harvey Cedars v. Karan

- ▶ 3 story beach front home v. 22' barrier dune protection project
- ▶ Without project Karans had 56% chance of storm damage (over 30 years), with it, had 200 year “protection life”
 - ▶ Karans sought to exclude testimony on benefits of project
- ▶ Court determines “just compensation” when a portion of private property is taken for a public project – how do you calculate the “benefits”?
 - ▶ Benefits are general or special
- ▶ Trial jury awarded \$375k in just compensation (upheld at appellate level)
- ▶ NJ Supreme Court says erroneous valuation-- look at FMV before and after project (consider testimony on benefits)
- ▶ Reverse and remand- so what did they get???????



St. Bernard's Parish: Government Inaction

- ▶ Corps constructs Project #1- MRGO (channel) and Project #2- levees and floodwalls in St. Bernard Basin.
- ▶ On October 17, 2005, St. Bernard Parish, with private owners of real property, located in the Lower Ninth Ward of the City of New Orleans, filed a Complaint in the US Court of Federal Claims invoking **the Tucker Act which waives sovereign immunity for certain claims including the Takings Clause under the 5th Amendment** alleging that the Corps constructed, expanded, operated, and failed to maintain MRGO (and only MRGO) increasing storm surge and causing flooding to private property during Hurricane Katrina. Basically, did the government “take” a flowage easement without compensation? Did government action cause the injury (flooding)?
- ▶ The court initially found that the Corps’ **construction, expansions, operation, and failure to maintain MRGO caused** subsequent storm surge that was exacerbated by a “funnel effect” during Hurricane Katrina & other events, causing flooding that effected a temporary taking under the Fifth Amendment. Court found link between MRGO and flood impacts. Awards \$5.46 Million.
- ▶ No: Government cannot be liable on a takings theory **for inaction** and that the action in constructing and operating MRGO was not shown to have been the cause of the flooding. **Court reverses takings claim.**

More on Takings v. Torts at the Federal Level

- ▶ Traditionally at the Federal Level:
 - ▶ **Takings liability** can arise from an “authorized activity” (affirmative act). Takings liability does not turn on the level of care. Government must take a private property interest for public use by some specific action.
 - ▶ Did the specific action cause the injury?
 - ▶ Must show the damage that would have occurred without government action.
 - ▶ Example scenario #1: POs sue government for taking of property for **failure to maintain FEDERAL** roads or drainage structures inundated by tidal flooding. Not likely successful under a takings theory because there was no specific governmental act.
 - ▶ **Tort liability** can arise from “failure to act”. Tort liability can turn on the government not adhering to a level of care or the lawfulness of a government action or inaction.
 - ▶ The challenge in a tort claim is whether or not there is sovereign immunity attaching because an action or inaction is discretionary (planning) v. operational.
 - ▶ The other challenge is showing that action or inaction caused the injury.
 - ▶ Example scenario #2: POs sue government under negligence claim for **failing to elevate a FEDERAL** road or install drainage structures impacted by tidal inundation. Not likely successful under a tort theory because the decision to elevate and install structures is likely a planning decision not subject to tort liability under sovereign immunity.

Traditional State and Local Government Tort Actions/Liability for Capital Improvements

| Obligation/Duty/Action | Local Government Response/Authority |
|--|---|
| 1. What is Sovereign Immunity for local government infrastructure? Gov't liability waived(or not) for infrastructure decisions. | Section 768.28, F.S., <u>waives governmental immunity</u> from tort liability for injuries caused by the negligent actions of the state committed within the course and scope of carrying out official government acts. |
| 2. Is a local government required to upgrade infrastructure? No. | A governmental entity's decision to <u>upgrade or improve or not</u> to upgrade or improve is a <u>planning level function</u> for which there can be <u>no tort liability</u> . <i>Trianon Park Condo. Ass'n v. City of Hialeah</i> , 468 So. 2d 912, 920 (Fla. 1985); see also <i>Dep't of Transp. v. Konney</i> , 587 So. 2d 1292, 1295 (Fla. 1991) |
| 3. Does the local government decide the <u>level</u> of maintenance? Traditionally yes. | [A] county is <u>not obligated</u> , nor can it be compelled, to perform or provide for any <u>particular construction or maintenance</u> , except such as it <u>voluntarily</u> assumes to do. <i>Ecological Development, Inc. v. Walton County</i> , 558 So. 2d 1069 (Fla. 1st DCA 1990) The <u>County</u> , and not the courts, <u>dictates the level of maintenance and accessibility necessary</u> . <i>Id. & State ex. rel. White v. MacGibbon</i> , 84 So. 91 (Fla. 1920). |

Traditional State and Local Government Tort Actions/Liability for Capital Improvements

| Obligation/Duty/Action | Local Government Response/Authority |
|---|--|
| <p>5. What are planning versus operational decisions? Planning level functions are those requiring basic policy decisions, while operational level functions implement policy.</p> | <p>Examples of planning: constructing road medians, initial infrastructure planning decisions, road alignment, traffic control device installation, or the improvement of roads and intersections Examples of operational: failure to warn of known dangerous conditions at an intersection (ie; vegetation obscuring signs), failure to place signs at railroad crossing, failure to warn of improperly constructed manhole cover</p> |
| <p>6. Why is planning versus operation important? Sovereign immunity and liability.</p> | <p>Planning-level decisions are immune from a tort suit, but operational-level decisions are not. <i>Commercial Carrier Corp. v. Indian River Cnty.</i>, 371 So. 2d 1010, 1021 (Fla. 1979).</p> |
| <p>7. Are planning level decisions reviewable by courts? Generally no.</p> | <p>The decision to build or change a road and all determinations inherent in such a decision are of the judgmental planning level type. To hold otherwise would supplant the wisdom of the judicial branch for that of the governmental entities whose job it is to determine, fund and supervise necessary road construction and improvements, thereby violating the separation of powers doctrine. <i>Dep't of Transp. V. Neilson</i>, 419 So. 2d 1071 (Fla. 1982).</p> |

Jordan v. St. John's County: Government Inaction

- ▶ Property owners of Summer Haven Beach access homes by county-owned road "Old A1A". Portions of road became inaccessible from natural forces (ongoing condition since prior to 1979 when County acquired title). In 5 years prior, County spent more than 25 times average cost per mile on average annual maintenance
- ▶ 2005 residents sue County for **(1) declaration of duty to maintain (tort)**, (2) an injunction compelling County to maintain at a certain level, **(3) inverse condemnation for diminished access (taking)** and (4)/(5) inverse condemnation for temporary moratorium. County counterclaims seeking determination that it solely has authority to determine maintenance levels.
- ▶ Trial court finds in favor of County. 5th DCA finds summary judgment not appropriate for (1) and (3). Regarding the trial court's summary judgment for the County, 5th DCA finds:
 - ▶ "The County has a duty to reasonably maintain Old A1A as long as it is a public road dedicated to the public use."
 - ▶ "We do not hold that the County has the duty to maintain the road in a particular manner or at a particular level of accessibility." However, the County's discretion is not absolute."
 - ▶ The County "must provide a reasonable level of maintenance that affords meaningful access [to Respondents' properties] unless or until the County formally abandons the road".
 - ▶ "There is a right to be compensated through inverse condemnation when governmental action causes a substantial loss of access to one's property even though there is no physical appropriation of the property itself".
 - ▶ "The loss of the most convenient access is not compensable where other suitable access continues to exist."
 - ▶ "Governmental inaction – in the face of an affirmative duty to act – can support a claim for inverse condemnation." Florida Supreme Court declines to review.
 - ▶ Disputed issues of fact remain for trier of fact such as cause and degree of diminished access, reasonableness of County's maintenance and whether or not it equates to abandonment.
- ▶ County appeals to Florida Supreme Court, who declines
- ▶ Case settles- use good fair effort to maintain as is; use good faith efforts to keep access open; good faith efforts to acquire property with right of first refusal etc.
- ▶ Stelzenmuller v. Franklin County- still no action, case "hanging" out there

More on Takings v. Torts at the State Level

- ▶ Traditionally at the State and Local Levels:
 - ▶ **Takings liability** can arise from an “authorized activity” (affirmative act). Takings liability does not turn on the level of care. Government must take a private property interest for public use by some specific action. **Jordan says “Governmental inaction – in the face of an affirmative duty to act – can support a claim for inverse condemnation”**
 - ▶ Did the specific action cause the injury?
 - ▶ Must show the damage that would have occurred without government action.
 - ▶ Example scenario #1: POs sue government for taking of property for failure to maintain **LOCAL** roads or drainage structures inundated by tidal flooding. **Jordan says consider facts on “cause and degree of diminished access, reasonableness of County’s maintenance and whether or not it equates to abandonment.”**
 - ▶ **Tort liability** can arise from “failure to act”. Tort liability can turn on the government not adhering to a level of care or the lawfulness of a government action or inaction.
 - ▶ The challenge in a tort claim is whether or not there is sovereign immunity attaching because an action or inaction is discretionary (planning) v. operational.
 - ▶ The other challenge is showing that action or inaction caused the injury.
 - ▶ Example scenario #2: POs sue government under negligence claim for failing to elevate a **LOCAL** road or install drainage structures impacted by tidal inundation. **Prior to the Jordan decision it was clear that the decision to elevate and install structures was likely a planning decision not subject to tort liability. Jordan says that discretion is not absolute, but whether or not the County performed a reasonable level of maintenance that affords ‘meaningful access’ was left to the trier of fact and remains unclear.**

ARGOS (2018)

- ▶ Circuit Court in VA Beach
- ▶ Argos applies for rezoning (denied by VA Beach City Council) from AG to RES for 38 SFHs
- ▶ After app filed, City' Comp Plan amended to require **STW Analysis** (including "Ad Hoc" criteria) that required analysis of **1.5' rise in tailwater** to account for sea level rise (hence requiring more land for retention)
- ▶ Staff recommended approval of rezoning
- ▶ 7-3 of Planning Commission recommending denial:
 - ▶ "...that the single ingress/egress connection from the subdivision would be flooded from time-to-time because that section of Princess Anne Road floods from time-to-time" and that "[t]here were also concerns surrounding overall stormwater performance."
- ▶ Council denies rezoning
- ▶ Allegations (and \$1,000,000 in attorney's fees)
 - ▶ "...a locality may not undertake a legislative act arbitrarily, capriciously, unreasonably, or contrary to statute."
 - ▶ 14th Amendment Equal Protection
 - ▶ Dillon Rule = only those powers that are expressly granted, those necessarily or fairly implied from expressly granted powers, and those that are essential and indispensable (stormwater regulations preempted to state and certain procedures to adopt more stringent ones not followed)
- ▶ **Trial held 4/23/19- court upholds City's position, no appeal taken**



October 2016 the
Virginian Pilot, 2018

5-POINT PLAN TO MANAGE INFRASTRUCTURE LIABILITY

1. Make planning v. operational decisions for infrastructure: Planning analysis and policy decisions about maintenance and upgrades are a good thing and inherently do not incur liability. Operationally, once you build it, you have to maintain it at a “reasonable level”. And that’s an ongoing obligation and cost.
2. Be clear about the levels at which you will maintain your infrastructure: *Jordan*- “We hold that the County has a duty to reasonably maintain Old A1A as long as it is a public road dedicated to the public use. We do not hold that the County has the duty to maintain the road in a particular manner or at a particular level of accessibility”.
3. Maintain your infrastructure: Maintaining is a good idea.
4. Don’t terminate maintenance without a formal procedure: Although the *Jordan* ruling is an anomaly and traditionally an affirmative government action has been required for a taking to occur, it is currently a relevant DCA decision. It’s also likely “inaction” has to be “intentional” like a de facto abandonment.
5. Filling in the legal gaps: Develop local policy solutions that help manage expectations and fill in the gaps like, “reasonableness” of maintenance and levels of service.

OTHER STRATEGIES TO MANAGE EXPECTATIONS

Transparent Level of Service/Design Criteria

- **St. Johns County Ordinance 2012-35** uses Florida Greenbook design exceptions to establish criteria:
 - Allows for designation of “environmentally challenging locations”
 - Defines “meaningful access” as a “commercially available land vehicle on a road or portion of a road owned/maintained by County for access to private property”.
 - Adds a cost prohibitive component
- **Monroe County Interim Design Resolution 028-17** adopts annual flooding return period of not to exceed 7 days + sea level rise projection for the useful life of the road project (25 years)

Public Interest Evaluation

- WMDs evaluate factors to consider in regulatory processes that are “balanced”.
- **Examples of ERP factors:** PI Test: whether activity will adversely affect public health, safety, welfare or property of others, fish and wildlife, temporary or permanent in nature. **Examples of CUP factors:**
Reasonable/beneficial use: economic and efficient use of water, not cause harm to existing off-site land uses, not harm water resources and not cause water quality violations.
- **Factors to consider in development:** Apply similar public interest / reasonable beneficial analysis to permitting of local government projects and infrastructure that may include:
 - Future maintenance needs and costs
 - Number of residents or visitors served by project
 - If the project affects adjacent property owners
 - If the project is related to critical infrastructure or services

Policy Development and Notifications

- Use of Comprehensive Plan policies such as Peril of Flood and AAAs & Code to enhance flood disclosure notifications.
- Flood Disclosure Laws (FL): “...where the seller ...knows the facts materially affecting the value of the property which are not readily observable and are not known to the buyer, the seller is under a duty to disclose them to the buyer” . - *Johnson v. Davis*, 480 So.2d 625, 629 (Fla.1985).
- **Leon County Code of Laws, Section 12-8(b):** ... unlawful for a seller or landlord of residential property, with knowledge that such **property has experienced flooding or is otherwise floodprone**, to fail to disclose such facts in writing ... when such flood conditions are not readily observable and are not known ...the failure ... to provide such disclosure in advance of entering into either a purchase and sale ... or written lease agreement ... shall create a rebuttable presumption that the seller or landlord has failed to disclose facts that **materially affect** the value of such property ... and can recover from the seller...”

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")
- ▶ 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 \(SB 1094\)](#)
- ▶ 2016- Solar Constitutional Amendments
- ▶ 2017- SB 90 on solar disclosures and Amendment 4 Implementation & Natural Hazards coordination

PERIL OF FLOOD LEGISLATION

Section 163.3178(2)(f), F.S.: A redevelopment component that outlines the principles that must be used to eliminate inappropriate and unsafe development in the coastal areas when opportunities arise. The component must:

- ▶ 1. Include development and redevelopment principles, strategies, and engineering solutions that reduce the flood risk in coastal areas which results from high-tide events, storm surge, flash floods, stormwater runoff, and the related impacts of sea-level rise.
- ▶ 2. Encourage the use of best practices development and redevelopment principles, strategies, and engineering solutions that will result in the removal of coastal real property from flood zone designations established by the Federal Emergency Management Agency.
- ▶ 3. Identify site development techniques and best practices that may reduce losses due to flooding and claims made under flood insurance policies issued in this state.
- ▶ 4. Be consistent with, or more stringent than, the flood-resistant construction requirements in the Florida Building Code and applicable flood plain management regulations set forth in 44 C.F.R. part 60.
- ▶ 5. Require that any construction activities seaward of the coastal construction control lines established pursuant to s. 161.053 be consistent with chapter 161.
- ▶ 6. Encourage local governments to participate in the National Flood Insurance Program Community Rating System administered by the Federal Emergency Management Agency to achieve flood insurance premium discounts for their residents.

SECTION 161.551, F.S.- SLIP- SEA LEVEL IMPACT PROJECTION STUDIES

- ▶ Rule to develop a standard requiring a SLIP study and may require that a professional engineer sign off on the study, in effect 1 year after rule finalized and applies only to projects not yet commenced. The standard must require a scientifically accepted approach and assess the flooding, inundation, and wave action relating a coastal structure over its expected life or 50 years, whichever is less. Standard must include:
 - ▶ 1. Relative local sea-level rise and increased storms, and to the extent possible, land subsidence.
 - ▶ 2. Methods used to mitigate, adapt to, or reduce this risk.
 - ▶ 3. Consider scientific research and generally accepted industry practices.
 - ▶ 4. Mean average annual chance of substantial flood damage.
 - ▶ 5. Public safety and environmental impacts resulting from damage: pollutants, electrocution and explosion hazards, and hazards resulting from floating or flying structural debris.
- ▶ Alternatives for the coastal structure's design and siting, and those would impact the risks & costs associated with maintaining, repairing, and constructing the coastal structure. Beginning 1 year after the rule, a state-financed constructor may not commence construction without:
 - ▶ (a) Conducting a SLIP study;
 - ▶ (b) Submitting the study to the department; and
 - ▶ (c) Receiving notification from the department that the study has been published on the department's website for at least 30 days.
- ▶ If a state-financed constructor starts a coastal structure but has not complied with the SLIP study requirement, the department may institute a civil action to:
 - ▶ (a) Seek injunctive relief to cease further construction or enforce compliance.
 - ▶ (b) If the coastal structure has been completed (or substantially completed), seek recovery of all or a portion of state funds expended.



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ALIGNING REGULATORY PROGRAMS

EXAMPLE: STORMWATER DESIGN

► SFWMD (Applicant's Handbook Vol. II for ERPs, SFMWD):

Roads: In cases where criteria are not specified by the local government with jurisdiction, the following design criteria for drainage and flood protection shall be used: **frequency - 5 years duration - 1 day (road centerlines) 1 hour (parking lots served by exfiltration systems)**

No SLR Analysis for roadway ERP's

- Offsite land use analysis
- Pre v. Post project analysis

Potential vehicle for resolving conflicts? State legislative vehicle....

FDOT (Drainage Manual, 2017):

Standard design storm frequencies for the design of storm drain systems are as follows:

| TYPE STORM DRAIN | FREQUENCY |
|--|-----------|
| General design | 3-year |
| General design work that involves replacement of a roadside ditch with a pipe system by extending side drain pipes. | 10-year |
| General design on work to Interstate Facilities | 10-year |
| Interstate Facilities for sag vertical curves which have no outlet other than a storm drain system, and for the outlet of systems requiring pumping stations | 50-year |

Site-specific factors may warrant the use of an atypical design frequency

Topic No. 625-040-002
Drainage Manual

Effective: January 2017

3.4.1 Sea Level Rise

The design of coastal projects (including new construction, reconstruction, and projects rebuilding drainage systems) must incorporate sea level rise analysis to assess the vulnerability of flooding over the design life of the facility. The sea level rise data table in this section is from historical tidal records gathered by the National Water Level Observation Network (NWLON) and managed by NOAA: <https://tidesandcurrents.noaa.gov/sltrends/sltrends.html>

NOAA manages 15 tidal gage stations located around the state of Florida. Use the station nearest the site for analysis. Analysis must consist of straight line regression equation extrapolation based on the design service life of the **project. Consider existing** system criticality/vulnerability and project costs when implementing this best practice analysis.

SEAWALL REGULATIONS (ONLY TWO EXAMPLES)

| City of Miami | Broward County |
|---|--|
| 6' NAVD and 8' NAVD SLR by 2070 | Prior to 1/1/2035 = 4' but must accommodate 5' by 1/1/2050 |
| Substantial Repairs can trigger compliance; 50% length, repairs > 50% cost of new seawall or BH or elev. change > than 50% length | Substantial Repairs can trigger compliance; > 50% length or appurt. Structure > 50% value |
| Defines disrepair | Defines disrepair |
| Specifies materials; Promote living shorelines | Promote enhancing habitat |
| POs are prohibited from tidal water entering property to flow to adjacent properties or public ROW | POs are prohibited from tidal water entering property to flow to adjacent properties or public ROW (trespass of water = public nuisance) |
| Code enforcement + initiate abatement w/in 180 days and begin repairs w/in 265 days; complete in 18 months | Failure to maintain = violation; progress within 60 days and complete w/in 265 |
| | Allows automatically elevated structure not dependent on human intervention |
| | Disclosure on tidally influence area and meeting min. barrier elevation stds. |



ALI V. JP MORGAN CHASE BANK

- ▶ Homeowner received mortgage financing and insurance coverage advice from Chase. Allegation: **Negligent**, unlawful advice on the lack of need for flood insurance. Theory: Homeowner relied on Chase's wrongful advice leading to a "foreseeable injury".
- ▶ Filed 9/23/17 in U.S. District Court Southern District of Texas, Case settled before trial set for 2/18/19.
- ▶ Claims of Negligence, Negligent Misrepresentation, and Strict Liability in Tort.
- ▶ **Mortgage industry's ties to 100 year floodplain when 20% claims occur outside that area? Is this truly representative of risk? More frequent higher volume events.**

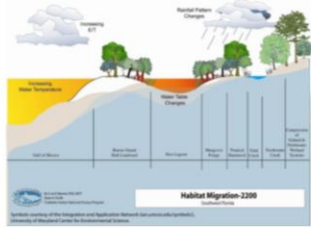
Flooded homeowner sues bank for recommending he reject flood insurance

By L.M. Sizel | October 2, 2017



Deola Ali bought a house in Kingwood six years ago and considered buying flood insurance. Instead, he says, he followed the advice of his mortgage lender, which said he didn't need flood insurance because the property wasn't in a flood plain.

Comprehensive Southwest Florida/Charlotte Harbor Climate Change Vulnerability Assessment



Southwest Florida Regional Planning Council
Charlotte Harbor National Estuary Program
Technical Report 09-3
September 15, 2009

James W. Beever III, Whitney Gray, Daniel Trescott,
Dan Cobb, Jason Utley: SWFRPC
And
Lisa B. Beever: CHNEP



1926 Victoria Avenue
Fort Myers FL 33901
(239) 338-2550

www.SWFRPC.org and www.CHNEP.org



Climate Action Recommendations

A Blueprint for Addressing
Climate Change
at the Municipal Level

City of Pensacola Climate Mitigation and Adaptation Task Force
2018

Case Studies in Resiliency Planning

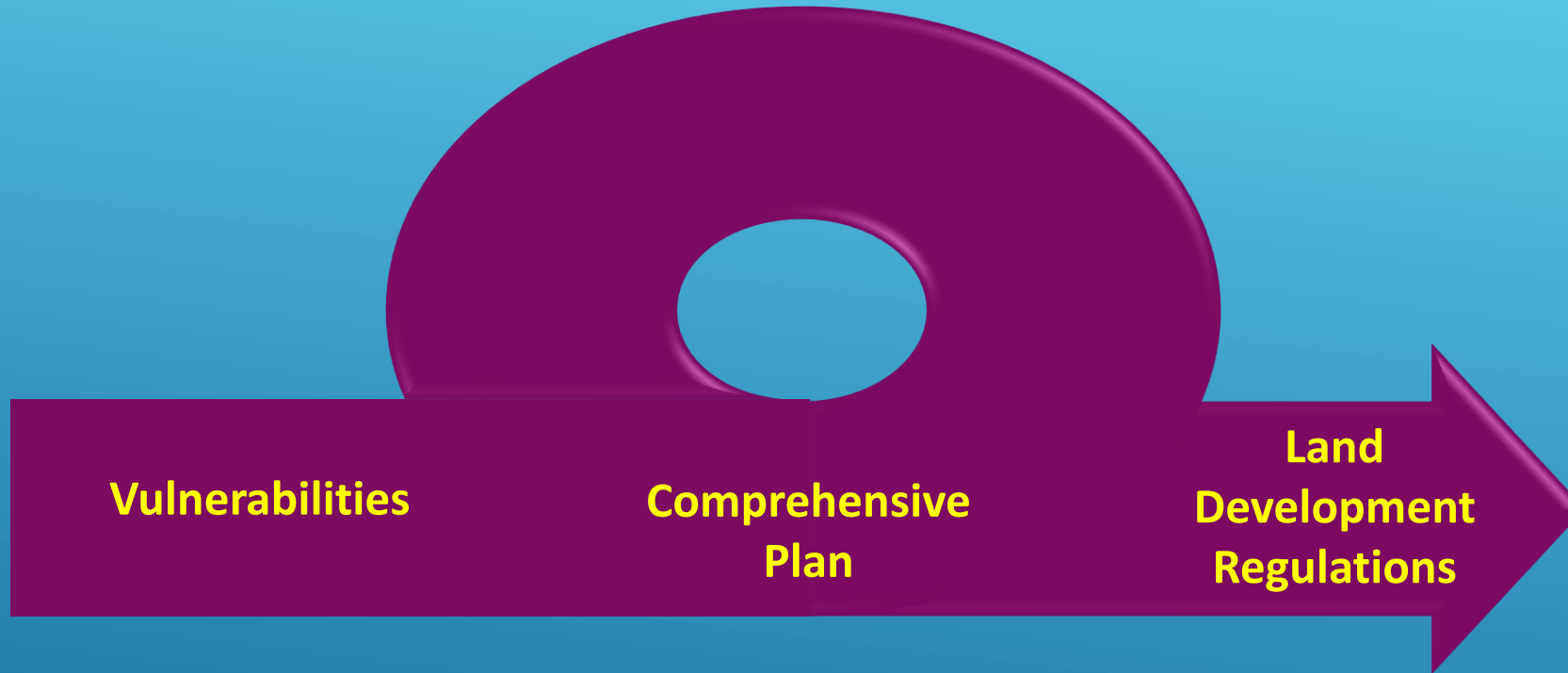
CLIMATE RESPONSE IS NOT ONE SIZE FITS ALL
EXAMPLES FROM AROUND THE STATE

EXAMPLE PLANNING EFFORTS AROUND THE STATE

| Jurisdiction | Activity |
|--|---|
| West Coast, Southeast & East Central Florida | Regional Collaboration and involvement of regional planning councils |
| Broward | Enhanced modeling: seawall heights and future conditions groundwater maps |
| Miami Beach | Stormwater pumps, road elevation and seawall policy |
| Ft. Lauderdale | Adaptation Action Areas (19), seawall ordinances for design criteria |
| Monroe County | Road elevation policy accounting for sea level rise and demonstration projects & SLR Modeling through CRS (to achieve "4" rating) |
| Satellite Beach | HAZUS modeling and plan development; AAAs |
| Multiple Cities/Counties | Sustainability/Climate/Vulnerability planning initiatives (Central FL, West Coast, South Florida) |
| DEO | Pilot / demonstration vulnerability analyses in 3 communities |

SAMPLE PLANNING STRATEGY

A Continuum of Planning



Short Term

- ID vulnerability (+ assess)
- Short term capital projects

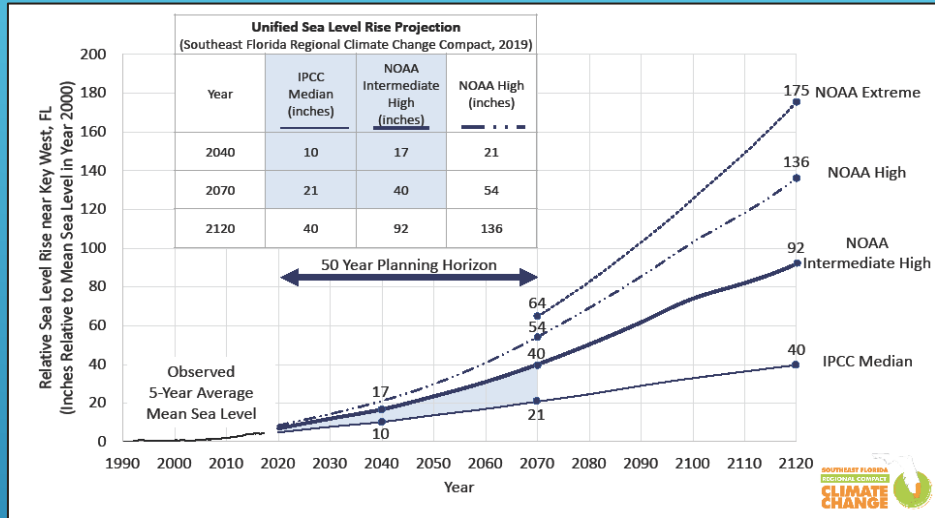
Mid Term

- Comp Plan Goals, Objectives and Policies
- Review land uses
- AAAs / Compliance (POF)
- Mid term capital projects

Long Term

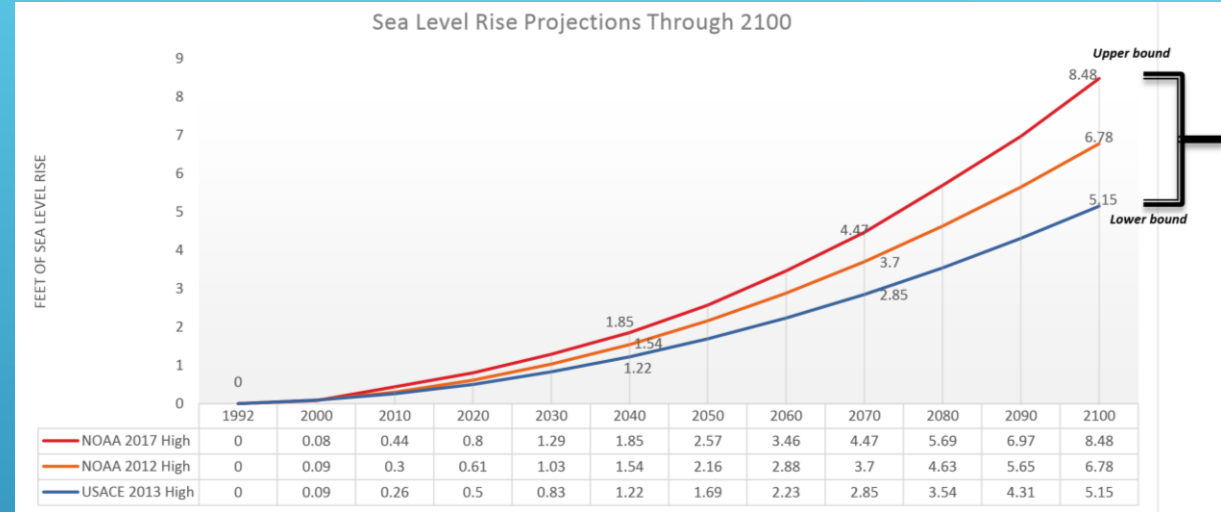
- LDRs: Development / design standards
- ESLs
- Infrastructure LOS
- Long term capital projects

REGIONAL SEA LEVEL RISE PROJECTIONS



SE Florida, 2019

Tampa Bay Region, 2019

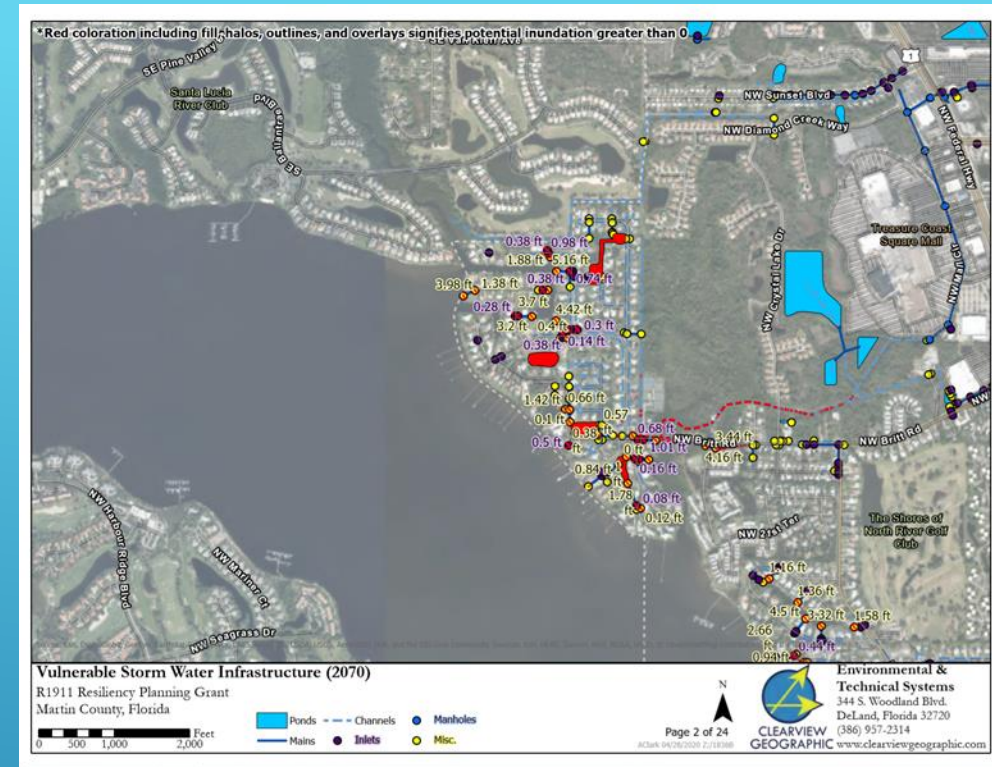
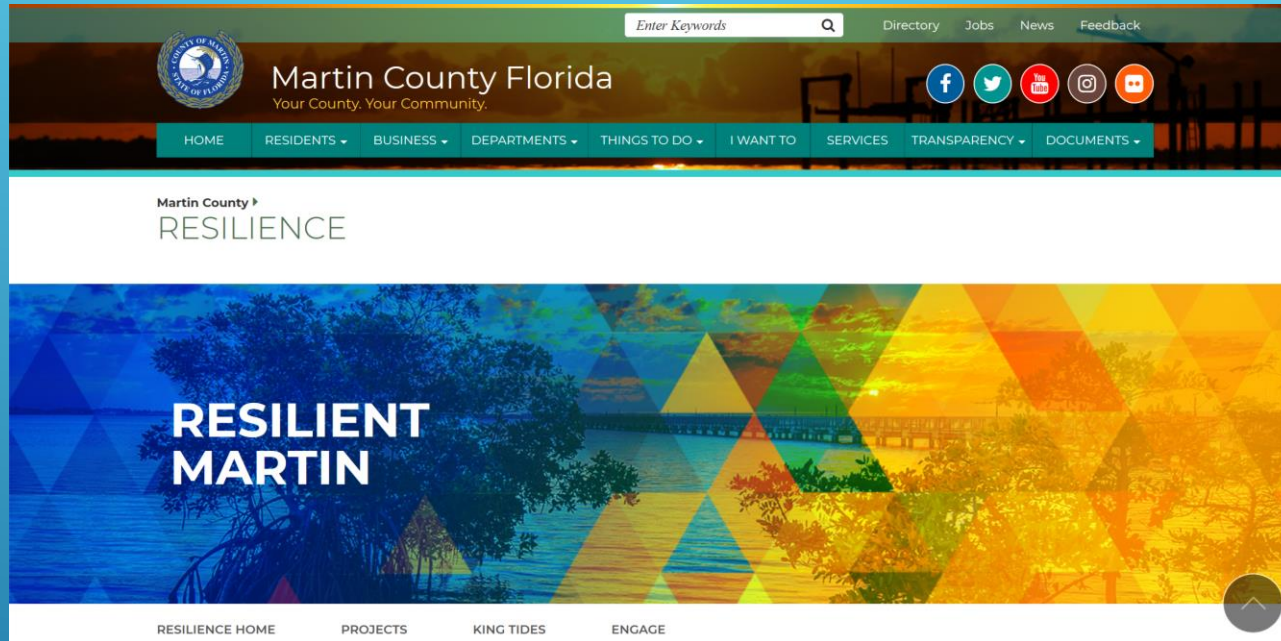


East Central Florida, 2019

| Year | NOAA Int-Low (feet) | NOAA Intermediate (feet) | NOAA High (feet) |
|-------------------|---------------------|--------------------------|------------------|
| 2000 ³ | 0 | 0 | 0 |
| 2030 | 0.56 | 0.79 | 1.25 |
| 2040 | 0.72 | 1.08 | 1.77 |
| 2050 | 0.95 | 1.44 | 2.56 |
| 2060 | 1.15 | 1.87 | 3.48 |
| 2070 | 1.35 | 2.33 | 4.56 |
| 2080 | 1.54 | 2.82 | 5.71 |
| 2090 | 1.71 | 3.38 | 7.05 |
| 2100 | 1.90 | 3.90 | 8.50 |

Table 1. Sea Level Change Relative to the Year 2000 for St. Petersburg, Florida in Feet above Local Mean Sea Level (LMSL)

MARTIN COUNTY



| Task | Work Products: |
|--|---|
| Methodology and Results Memorandum on Sea Level Rise Projections for Martin County | <ul style="list-style-type: none"> Memorandum supporting use of SE Florida Regional Climate Compact SLR projections (after review of relevant regional approaches) Note: 2019 Update Initial SLR Map Series (9", 14" and 31") Addressed map series comments |
| Coastal Risk Links to the National Flood Insurance Program's Community Rating System (CRS) | <ul style="list-style-type: none"> Data resources for: <ul style="list-style-type: none"> ✓ CRS Related Activities (last Class Rating file) ✓ Sea Level Rise planning and work in the region Community Rating System Overview with Martin County Analysis of Opportunities to improve Class Rating from 6 (465 points needed to move to Class 5) |
| Develop a Technical Basis to Plan for Future Sea Level Risk | <ul style="list-style-type: none"> Listing and Map Series of Infrastructure, Potable Water, Stormwater, Wastewater and Roads facilities Prioritized ranking of low, medium and high risk Recommendations for future data collection and management |

SOUTHEAST PBC MUNICIPALITIES: CLIMATE CHANGE VULNERABILITY ASSESSMENT

7 municipalities + Palm Beach County
Interlocal Agreement
Two Resiliency Planning Grants
Procurement
Contracted services
Timeline for completion: 3/31/21

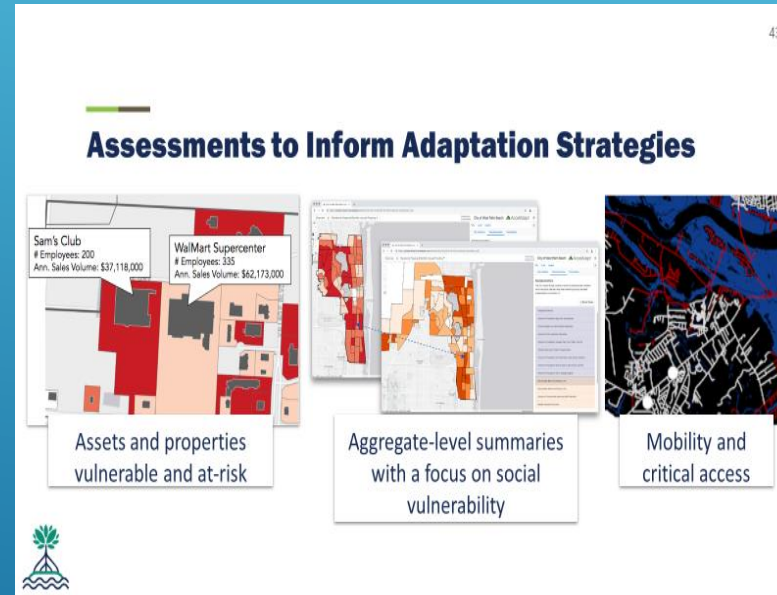
Explore Threats

Assess Vulnerability & Risks

Investigate Options

Prioritize & plan

Take Action



The purpose of the assessment is to inform adaptation strategies

“CCVA may be used to implement adaptation strategies that are cohesive and collaborative among participating entities in order to develop a region resilient to the impact of climate change.”

The assessment will also inform and integrate with the following:

- Adaptation Action Areas
- Identification and prioritization of adaptation strategies
- Communication and outreach
- AccelAdapt Tool



BACKGROUND: BRIDGING THE GAP BETWEEN PLANNING AND IMPLEMENTATION

Planning

- ▶ Greenhouse Gas work for baseline years: 2005, 2008, 2010 and 2013
- ▶ Energy and Climate Element of Comp Plan (2013)
- ▶ Finalized GreenKeys Plan in 2016
- ▶ 165 Recommendations organized in 5-year Plan
- ▶ Recommendations included:
 - ▶ Data development (LiDAR)
 - ▶ Pilot Road Elevation projects
 - ▶ Coordination on CRS
 - ▶ Enhanced modeling (for roads and stormwater)
 - ▶ Sustainability initiatives

Key Implementation Steps:

- ▶ Countywide Mobile LiDAR
- ▶ Pilot Roads Planning in design
- ▶ Integration of CRS, Resiliency and Comprehensive Plan
- ▶ Countywide Roads and Stormwater Planning process



IMPLEMENTATION EXAMPLES: 1ST STEP: MORE ACCURATE DATA AND TOOLS

1. Planning and implementation of projects for sea level rise has helped facilitate the award of 5 successful grants to date
 - ▶ (2) Resiliency planning grants
 - ▶ (2) Site specific resiliency/vulnerability planning projects on facilities (ALF/Park)
 - ▶ (1) NOAA Grant included:
 - ✓ Collaboration with FEMA and development of CRS Class 4 compliant **Watershed Management Plan** analyzing SLR
 - ✓ Real time assessment of stormwater structures countywide
 - ✓ 4- State Roads Analysis on Legal Liability

2. Linkages with CRS in pursuit of Class 4
 1. Repetitive Loss Analysis
 2. Stormwater Maintenance & Capital Plan
 3. Flood insurance outreach
 4. **Watershed Management Plan**



Roads to Nowhere in Four States:
State and Local Governments in the
Atlantic Southeast Facing Sea-Level Rise

Shana Jones, Thomas Ruppert, Erin L. Deady, Heather Payne,
J. Scott Pippin, Ling-Yee Huang, and Jason M. Evans*

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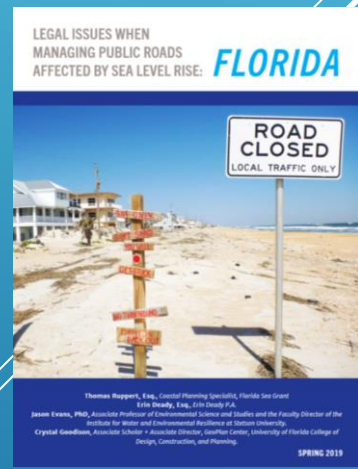
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FALL 2019 KING TIDES UPPER KEYS

WHY THE URGENCY?



82 Days Underwater: The Tide Is High, but They're Holding On

A brutal "king tides" season made worse by climate change has flooded the streets of a Florida Keys community for nearly three months.



Rose Marie Cromwell
for The New York
Times

Where the Rubber Meets the Road

Differences Across the Keys

- **Differing elevations and impacts across neighborhoods**
- There may be areas where we **cannot maintain** a certain level of service
- We are likely looking at a **“range” of conditions** for levels of service based on what may or may not be possible
- This will impact where people continue to live and how
- **Private property** owners may need to contribute
- What does that mean for **funding**?
 - Ongoing capital improvements
 - Special assessments for the differences
 - Disaster recovery funds
 - Bonding



Photo: Monroe County

Transparency in Science and Policy

- Where is our **future growth** and demand for infrastructure and services?
- Use updated vulnerability analysis to determine existing and **future conditions** impacted by sea level rise
- **Determine the technical opportunities and constraints with drainage to avoid impacting adjacent properties**
- We will need internal and external input



Photo: Monroe County

The New Vision of the Keys

- We may need to start looking at other methods of **construction** (“living with water”)
- Other modes of **transportation** (based on water)



Photo: Monroe County TDC

FUNDING STRATEGIES AND THE LAW

Taxes

Direct taxes (i.e., property taxes) and indirect taxes (i.e., sales taxes and use taxes) levied for lawful public purpose. Local discretionary sales surtaxes ie; **infrastructure + resiliency?**

Assessments/Special Districts

Charge against property receiving 1) special benefit and 2) fairly apportioned. Authorized by specific statutes or home rule authority. **"Resiliency assessment district"?**

Bonding

General Obligation (full faith and credit of an issuer with taxing power) and Revenue (payable with specific sources of revenue ie; utilities).

Impact Fees or TIF

Fees for the impact of new development (link between additional facilities and growth. "Tax increment": the difference between the assessed value of the property before and after the redevelopment project.

User Fees

Payments for voluntarily purchased services which benefit the specific individual to the exclusion of non-feepayers such as **stormwater utility**.

Grants

New trends include: **disaster recovery** funds for resiliency and infrastructure; traditional uses to address stormwater, septic and water quality; moving from planning to implementation.

REYNOLDS V. FL (18-CA-000819)

- ▶ State of Florida (Rick Scott), DEP, DACS, Board of TIIF and PSC
- ▶ Filed 4/16/18, 2d Circuit, 8 youth plaintiffs aged 10-19
- ▶ Claims: Constitution fundamental rights, 7(a), and 8; and
- ▶ Public trust resource
- ▶ Amended complaint
- ▶ State's energy plan
- ▶ Remedies sought
 - ▶ GHG Inventory
 - ▶ Prepare and implement system and
- ▶ Motion to Dismiss filed by all Defendants 7/6/18 (political question, etc.)
- ▶ 11/20 Case management conference
- ▶ 1st Amended Complaint filed 12/26 & Defendants filed Motions to Dismiss
- ▶ Arguments 6/1/20



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ERIN L. DEADY, P.A.



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