The Florida Senate

BILL ANALYSIS AND FISCAL IMPACT STATEMENT

(This document is based on the provisions contained in the legislation as of the latest date listed below.)

Prepared By: The Professional Staff of the Committee on Environment and Natural Resources

BILL:	SB 178
INTRODUCER:	Senator Rodriguez
SUBJECT:	Public Financing of Construction Projects
DATE:	November 1, 2019
REVISED:	

	ANALYST	STAFF DIRECTOR	REFERENCE	ACTION
1.	Schreiber	Rogers	EN	**Favorable**
2.			IS	
3.			AEG	
4.			AP	

I. Summary:

SB 178 requires a public entity that commissions or manages a construction project within the coastal building zone using funds appropriated from the state to conduct a sea level impact projection (SLIP) study prior to commencing construction. The study must be conducted, submitted to the Department of Environmental Protection (DEP), and published on DEP's website before construction can commence.

The bill requires DEP to adopt rules establishing standards for the SLIP studies, and the standards must include certain requirements for how the studies will be conducted and the information they must contain. DEP must publish and maintain a copy of all SLIP studies on its website for ten years after receipt. The bill requires DEP to adopt rules as necessary to administer the section and authorizes DEP to enforce the requirements of the section.

The bill authorizes DEP to bring a civil action to seek injunctive relief to cease construction, enforce the section or rules adopted pursuant thereto, or seek recovery of state funds expended on a coastal structure, if construction commences without complying with the section. The bill states that the section may not be construed to create a cause of action for damages.

II. Present Situation:

Sea Level Rise and Coastal Flooding

With 1,350 miles of coastline and relatively low elevations, Florida is particularly vulnerable to coastal flooding.[1] There are three primary ways that climate change influences coastal flooding: sea level rise, storm surge intensity, and rainfall intensity and frequency.[2]

Sea level rise is an observed increase in the average local sea level or global sea level trend.[3] The two major causes of global sea level rise are thermal expansion caused by the warming of the oceans (water expands as it warms) and the loss of land-based ice (ice sheets and glaciers) due to melting.[4] Since 1880, the average global sea level has risen about 8 to 9 inches, and the rate of global sea level rise has been accelerating.[5] The National Oceanic and Atmospheric Administration (NOAA) utilizes tide gauges to measure changes in sea level, and provides data on local sea level rise trends.[6] Analysis of this data shows some low-lying areas in the southeastern U.S. experience higher local rates of sea level rise than the global average.[7]

[1] Florida Division of Emergency Management, *Enhanced State Hazard Mitigation Plan*, *State of Florida*, 107-108, 162 (2018) [hereinafter *SHMP*], *available at* https://www.floridadisaster.org/globalassets/dem/mitigation/mitigate-fl--shmp/shmp-2018-full_final_approved.6.11.2018.pdf (last visited Oct. 16, 2019).
[2] *Id.* at 107.
[3] DEP, *Florida Adaptation Planning Guidebook*, Glossary (2018) [hereinafter *DEP Guidebook*], *available at* https://floridadep.gov/sites/default/files/AdaptationPlanningGuidebook.pdf (last visited Oct. 16, 2019); NASA, *Facts: Sea Level*, https://climate.nasa.gov/vital-signs/sea-level/ (last visited Oct. 16, 2019).
[4] *DEP Guidebook*, at Glossary; NOAA, *Climate Change: Ocean Heat Content*, https://www.climate.gov/news-features/understanding-climate/climate-change-ocean-heat-content (last visited Oct. 16, 2019). More than 90 percent of the warming that has happened on Earth over the past 50 years has occurred in the ocean; IPCC, *The Ocean and Cryosphere in a Changing Climate*, SPM-8, SPM-10, SPM-19, SPM -21, SPM-23, 1-14, 4-3, 4-4, 4-14 (Sept. 2019) [hereinafter *IPCC Ocean and Cryosphere*], *available at* https://report.ipcc.ch/srocc/pdf/SROCC_FinalDraft_FullReport.pdf (last visited Oct. 16, 2019). Uncertainty regarding projected sea level rise by 2100 is mainly determined by ice sheets, especially in Antarctica and Greenland, which are losing ice at increasing rates.
[5] U.S. Global Change Research Program, *Fourth National Climate Assessment*, 757 (2018)[hereinafter *NCA4*], *available at* https://nca2018.globalchange.gov/downloads/NCA4_2018_FullReport.pdf (last visited Oct. 31, 2019); *IPCC Ocean and Cryosphere*, at 4-3.
[6] NOAA, *What is a Tide Gauge?*, https://oceanservice.noaa.gov/facts/tide-gauge.html (last visited Oct. 17, 2019); NOAA, Tides and Currents, *Sea Level Trends*, https://tidesandcurrents.noaa.gov/sltrends/ (last visited Oct. 16, 2019); *see DEP Guidebook*, at 8, 16.
[7] *NCA4*, at 757.

Below is a table of projections for future sea level rise, globally and in regions of Florida, by the year 2100:

Sea Level Rise Projections for the Year 2100			
Source	**Scale**	**Low (feet)**	**High (feet)**
Intergovernmental Panel on Climate Change[8]	Global	1.4	2.75
U.S. Global Change Research Program[9]	Global	1	4.3
Southeast Florida Regional Climate Change Compact Sea Level Rise Work Group[10]	Southeast Florida	2.59	6.75
The Tampa Bay Climate Science Advisory Panel[11]	Tampa Bay Region	2	8.5

Florida's coastal communities are experiencing high-tide flooding events, sometimes referred to as "sunny day" or "nuisance" flooding, with increasing frequency because sea level rise increases the height of high tides.[12] In Florida, the area at risk from one foot of projected sea level rise contains more than 65,000 homes and 121,909 people, and Florida's 35 coastal counties contain 76% of its population.[13] In the U.S., sea level rise and flooding threaten approximately $1 trillion in national wealth held in coastal real estate, and analyses estimate that there is a chance Florida could lose more than $300 billion in property value by 2100.[14] Sea level rise affects the salinity of both surface water and groundwater through saltwater intrusion, posing

[8] *IPCC Ocean and Cryosphere*, at 1-15, 4-4, CCB9-21. These projections are relative to a period of 1986-2005, and the projected range is based on different "representative concentration pathways," which are scenarios of future concentrations of greenhouse gases and aerosols and chemically active gases, and land use changes.
[9] *NCA4*, at 406, 758, *available at* https://nca2018.globalchange.gov/downloads/NCA4_2018_FullReport.pdf (last visited Oct. 31, 2019).
[10] Southeast Florida Regional Climate Change Compact Sea Level Rise Work Group, *Unified Sea Level Rise Projection, Southeast Florida*, 4-5 (2015), *available at* https://southeastfloridaclimatecompact.org/wp-content/uploads/2015/10/2015-Compact-Unified-Sea-Level-Rise-Projection.pdf (last visited Oct. 21, 2019). These projections are compared to the sea level in 1992.
[11] Tampa Bay Climate Science Advisory Panel, *Recommended Projections of Sea Level Rise in the Tampa Bay Region*, 1, 7 (Apr. 2019), *available at* http://www.tbrpc.org/wp-content/uploads/2019/05/CSAP_SLR_Recommendation_2019.pdf (last visited Oct. 16, 2019).
[12] *SHMP*, at 108, *available at* https://www.floridadisaster.org/globalassets/dem/mitigation/mitigate-fl--shmp/shmp-2018-full_final_approved.6.11.2018.pdf (last visited Oct. 15, 2019); NOAA, *High-Tide Flooding*, https://toolkit.climate.gov/topics/coastal-flood-risk/shallow-coastal-flooding-nuisance-flooding (last visited Oct. 16, 2019).
[13] *DEP Guidebook*, at III, *available at* https://floridadep.gov/sites/default/files/AdaptationPlanningGuidebook.pdf (last visited Oct. 16, 2019).
[14] *NCA4*, at 324, 758; Zillow, *Climate Change and Housing: Will a Rising Tide Sink All Homes?* (2017), https://www.zillow.com/research/climate-change-underwater-homes-12890/ (last visited Oct. 31, 2019) (stating that by 2100 $883 billion in U.S. homes are at risk of being underwater with the total value of potentially underwater properties in Florida at $413 billion); Union of Concerned Scientists, *New Study Finds 1 Million Florida Homes Worth $351 Billion Will Be At Risk From Tidal Flooding* (2018), https://www.ucsusa.org/about/news/1-million-florida-homes-risk-tidal-flooding (last visited Oct. 31, 2019).

a risk particularly for shallow coastal aquifers.[15] Sea level rise also pushes saltwater further upstream in tidal rivers and streams, raises coastal groundwater tables, and pushes saltwater further inland at the margins of coastal wetlands.[16]

Storm surge intensity and the intensity and precipitation rates of hurricanes are generally projected to increase.[17] Higher sea levels will cause storm surges to travel farther inland and impact more properties than in the past.[18] Storms and sea level rise are likely to lead to increased coastal erosion.[19]

Increases in evaporation rates and water vapor in the atmosphere increase rainfall intensity and precipitation extremes, and the sudden onset of water can overwhelm stormwater infrastructure.[20] As sea levels and groundwater levels rise, low areas drain more slowly, and the combined effects of rising sea levels and extreme rainfall events are increasing the frequency and magnitude of coastal and lowland flood events.[21]

Coastal Construction

Coastal Construction Control Line

Under Florida law, coastal construction is regulated by the Department of Environmental Protection (DEP).[22] The state's purpose is to protect Florida's beaches and dunes from imprudent construction that can jeopardize the stability of the beach-dune system, accelerate erosion, provide inadequate protection to upland structures, endanger adjacent properties, or interfere with public beach access.[23] "Coastal construction" is defined as any work or activity likely to have a material physical effect on existing coastal conditions or natural shore and inlet processes.[24] Florida's coastal local governments may establish coastal construction zoning and building codes in lieu of the statutory requirements as long as they are approved by DEP.[25]

The coastal construction control line (CCCL) defines the portion of the beach-dune system that is subject to severe fluctuations caused by a 100-year storm surge, storm waves, or other forces

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[15] *SHMP*, at 106, *available at* https://www.floridadisaster.org/globalassets/dem/mitigation/mitigate-fl--shmp/shmp-2018-full_final_approved.6.11.2018.pdf (last visited Oct. 31, 2019).
[16] *Id.* at 108.
[17] *Id.* at 106, 141; *IPCC Ocean and Cryosphere*, at 6-21, *available at* https://report.ipcc.ch/srocc/pdf/SROCC_FinalDraft_FullReport.pdf (last visited Oct. 16, 2019); *NCA4*, at 95, 97, 116-117, 1482, *available at* https://nca2018.globalchange.gov/downloads/NCA4_2018_FullReport.pdf (last visited Oct. 31, 2019).
[18] *NCA4*, at 758; *SHMP*, at 107, 112-113, 158-160; *see also* NOAA, *Florida Marine Debris Emergency Response Guide: Comprehensive Guidance Document* (Jan. 2019), *available at* https://marinedebris.noaa.gov/sites/default/files/publications-files/FL_Marine_Debris_Emergency_Response_Guide_2019.pdf (last visited Oct. 16, 2019).
[19] *NCA4*, 331, 340-341, 833, 1054, 1495; *SHMP*, at 108; IPCC, *Climate Change and Land*, 4-44–4-45 (Aug. 2019), *available at* https://www.ipcc.ch/site/assets/uploads/2019/08/Fullreport-1.pdf (last visited Oct. 17, 2019).
[20] *SHMP*, at 99, 106, 116, 141, 181; *NCA4*, at 88, 763.
[21] *SHMP*, at 106; *NCA4*, at 763.
[22] Chapter 161, F.S.
[23] Section 161.053(1)(a), F.S.
[24] Section 161.021(6), F.S.
[25] Section 161.053(3), F.S.

such as wind, wave, or water level changes.[26] A 100-year storm is a shore-incident hurricane or any other storm with accompanying wind, wave, and storm surge intensity having a one percent chance of being equaled or exceeded in any given year.[27] Seaward of the CCCL, new construction and improvements to existing structures generally require a CCCL permit from DEP.[28] Due to the potential environmental impacts and greater risk of hazards from wind and flood, the standards for construction seaward of the CCCL are often more stringent than those applied in the rest of the coastal building zone.[29] Applicants must show that the proposed project will not result in a significant adverse impact.[30] CCCLs are established by DEP on a county-wide basis, and they currently exist for large portions of Florida's coast.[31]

The "mean high-water line" is the point on the shore marking the average height of the high waters over a 19-year period.[32] The mean high-water line is generally the boundary between the publically-owned foreshore (the land alternately covered and uncovered by the tide) and the dry sand above the line which may be privately owned.[33] Generally, construction is prohibited within 50 feet of the mean high-water line, and this is known as the 50-foot setback.[34] Any structures below the mean high-water line which DEP determines serve no public purpose, endanger human life, health, or welfare, or prove to be undesirable or unnecessary must be adjusted, altered, or removed.[35]

Above the mean high-water line is the "seasonal high-water line," which accounts for variations in the local mean high water, such as spring tides that occur twice per month.[36] The seasonal high-water line is used to create 30-year erosion projections of long-term shoreline recession based on historical measurements.[37] DEP makes 30-year erosion projections of the location of the seasonal high-water line on a site-specific basis upon receipt of an application.[38] With certain

[26] Section 161.053, F.S.; Fla. Admin. Code R. 62B-33.005(1); DEP, *The Homeowner's Guide to the Coastal Construction Control Line Program*, 3 (2017), *available at* https://floridadep.gov/water/coastal-construction-control-line/documents/homeowners-guide-coastal-construction-control-line (last visited Oct. 18, 2019).
[27] Fla. Admin. Code R. 62B-33.002(41).
[28] Section 161.053, F.S.; Fla. Admin. Code Chapters 62B-33 and 62B-34; DEP, *The Homeowner's Guide to the Coastal Construction Control Line Program*, 2 (2017); DEP, *ASK - Have Questions about the Coastal Construction Control Line (CCCL)?*, https://floridadep.gov/water/coastal-construction-control-line/content/ask-have-questions-about-coastal-construction (last visited Oct. 18, 2019).
[29] Fla. Admin. Code Ch. 62B-33.
[30] Fla. Admin. Code R. 62B-33.005.
[31] Section 161.053(2), F.S.; DEP Geospatial Open Data, *Coastal Construction Control Lines (CCCL)*, http://geodata.dep.state.fl.us/datasets/4674ee6d93894168933e99aa2f14b923_2?geometry=-102.41%2C25.011%2C-60.596%2C31.77 (last visited Oct. 18, 2019).
[32] Section 177.27(14), (15), F.S.
[33] Section 177.28, F.S.; **ss**. 161.052(1), 161.151(3), 161.161(3)-(5), and 161.191, F.S. Where an "erosion control line" is established, it serves as the mean high-water line when landward of the existing mean high-water line, and all lands seaward of a recorded erosion control line are deemed to be vested in the state.
[34] Fla. Admin. Code R. 62B-33.002(17).
[35] Section 161.061, F.S.
[36] Section 161.053(5)(a)2., F.S. "Seasonal high-water line" is defined as "the line formed by the intersection of the rising shore and the elevation of 150 percent of the local mean tidal range above local mean high water"; NOAA, *What Are Spring and Neap Tides?*, https://oceanservice.noaa.gov/facts/springtide.html (last visited Oct. 17, 2019).
[37] Fla. Admin. Code R. 62B-33.024.
[38] *Id.* Applicants may submit projections by licensed engineers.

exceptions, DEP or local governments may not issue CCCL permits for major structures that are seaward of the 30-year erosion projection.[39]

The Coastal Zone Protection Act

The Coastal Zone Protection Act of 1985 (Act) was created to minimize the impacts that activities or construction near the coast have on Florida's coastal areas.[40] The Legislature intended the Act to impose strict construction standards in Florida's coastal areas to protect the natural environment, private property, and life.[41] The Act covers activities and construction within the "coastal building zone:" an area stretching landward from the seasonal high-water line to a line 1,500 feet landward from the CCCL.[42] The Act uses the term "construction" to mean either the act of construction or the result of construction, and defines construction as "the carrying out of any building, clearing, filling, excavation, or substantial improvement in the size or use of any structure or the appearance of any land."[43]

The Act defines certain types of structures regulated within the coastal building zone.[44] "Major structure[s]" are residential, commercial, or public buildings, and other construction having the potential for substantial impact on coastal zones.[45] "Nonhabitable major structure[s]" are structures that people would generally not dwell in, such as parking garages, drainage structures, electrical power plants, transmission lines, and underground storage tanks.[46] "Minor structure[s]"

[39] Section 161.053(5), F.S.; DEP, *The Homeowner's Guide to the Coastal Construction Control Line Program*, 6 (2017), *available at* https://floridadep.gov/water/coastal-construction-control-line/documents/homeowners-guide-coastal-construction-control-line (last visited Oct. 18, 2019).
[40] Sections 161.52-161.58, F.S.
[41] Section 161.53(1),(4), and (5), F.S.
[42] Section 161.54(1), F.S.; s. 161.55(4), F.S. On coastal barrier islands, the coastal building zone stretches 5,000 feet landward from the CCCL.
[43] Section 161.54(5), (12) F.S. "Substantial improvement" means "any repair, reconstruction, rehabilitation, or improvement of a structure when the actual cost of the improvement or repair of the structure to its pre-damage condition equals or exceeds 50 percent of the market value of the structure either: (a) Before the improvement or repair is started; or (b) If the structure has been damaged and is being restored, before the damage occurred."
[44] Section 161.54(6), F.S.
[45] Section 161.54(6)(a), F.S.
[46] Section 161.54(6)(c), F.S.

are structures that are considered to be expendable under wind, wave, or storm forces, and examples include walkways, bathhouses, fences, and uncovered paved areas.[47]

The Act generally requires construction to be located a sufficient distance landward of the beach to permit natural shoreline fluctuations and preserve dune stability.[48] Nonhabitable major structures and minor structures must be designed to produce the minimum adverse impact on the beach and dune system.[49] Minor structures must be designed to produce the minimum adverse impact to adjacent properties and reduce the potential for water or wind-blown material.[50] The Act states that both DEP and local governments have the authority to adopt or enforce standards for construction seaward of the CCCL that are as restrictive or more restrictive than the Act.[51]

At or before the sale of real property located partially or totally seaward of the CCCL, the seller must give prospective purchasers a certain written disclosure statement, which states that the property may be subject to coastal erosion and to federal, state, and local regulations that govern coastal property.[52] The disclosure statement indicates that DEP can provide additional information on whether significant erosion conditions are associated with the shoreline of the property being purchased. The Legislature found it necessary to ensure that purchasers of interests in real property located in coastal areas are fully aware that such lands are subject to frequent and severe fluctuations.[53]

Florida Building Code

The Department of Business and Professional Regulation's Florida Building Commission (the Commission) develops, amends, and adopts by rule the Florida Building Code.[54] The Florida Building Code provides the minimum standard building code which must be applied and enforced by each local government in Florida.[55] The code contains or incorporates by reference all laws and rules governing the design, construction, and repair of public and private structures in the state. In compliance with statutory requirements, local governments may pass ordinances creating local requirements that are more stringent than the statewide code.[56]

The code contains structural design requirements for the design, construction, improvement, and repair of certain structures seaward of the CCCL or the 50-foot setback line.[57] Special standards in the code apply in areas such as High-Velocity Hurricane Zones and flood hazard areas.[58] In

[47] Section 161.54(6)(b), F.S.
[48] Section 161.55(3), F.S. The Act makes exceptions for certain structures such as piers, beach access ramps, or shore protection structures.
[49] Section 161.55(1), (2), F.S. Special requirements for flood proofing nonhabitable major structures exist for sewage treatment plants, public water supply systems, and underground utilities. These are intended to prevent infiltration of surface water from a 100-year storm event, or else loss of function during submersion.
[50] Section 161.55(1), F.S.
[51] Section 161.56(1), F.S.
[52] Section 161.57(2), F.S.
[53] Section 161.57(1), F.S.
[54] DBPR, *Building Code Information System*, https://floridabuilding.org/c/default.aspx (last visited Oct. 18, 2019).
[55] Section 553.73, F.S.; Fla. Admin. Code R. 61g20-1.001(1).
[56] Section 553.73 (4)-(5), F.S. Special exemptions apply to ordinances relating to flooding.
[57] Section 3109, Florida Building Code, Building, 6th Edition (2017), https://codes.iccsafe.org/content/FBC2017/chapter-31-special-construction#FBC2017_Ch31_Sec3109 (last visited Oct. 18, 2019).
[58] Section 202, Florida Building Code, Building, 6th Edition (2017).

flood hazard areas, if repairing "substantial damage," meaning the cost of restoring the structure to its before-damaged condition would equal or exceed 50 percent of the before-damaged market value, all aspects of the structure must comply with the requirements for new construction for flood design.[59] "Substantial structural damage" means certain damage to the load-carrying structures of a building, and the code has separate requirements for repairing such damage.[60]

The Commission updates the code every three years, and the 7th edition will be adopted in 2020.[61] The proposed modifications include changes related to hurricane protection, such as new roofing requirements to mitigate water intrusion, more stringent wind resistance for vinyl siding, additional inspections for exterior wall coverings, and revised wind speed requirements for essential facilities.[62]

Coastal Resilience

State Programs

Governor DeSantis' Executive Order 19-12 created the Office of Resilience and Coastal Protection to help prepare Florida's coastal communities and habitats for impacts from sea level rise by providing funding, technical assistance, and coordination among state, regional, and local entities.[63] In August of 2019, the Governor appointed Florida's first Chief Resilience Officer, which will report to the Executive Officer of the Governor and collaborate with state agencies, local communities, and stakeholders to prepare for sea level rise and climate change.[64]

DEP's Florida Resilient Coastlines Program helps prepare coastal communities and habitats for the effects of climate change and sea level rise by offering technical assistance and funding to communities dealing with coastal flooding, erosion, and ecosystem changes.[65] In 2019, DEP awarded funding for numerous projects providing assistance for coastal Florida communities.[66] Priority areas include implementing statutory requirements and objectives, vulnerability assessments, adaptation plans, regional efforts, and environmental justice.[67]

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[59] Section 404.5, Florida Building Code, Existing Building, 6th Edition (2017), https://codes.iccsafe.org/content/FEBC2017/chapter-4-prescriptive-compliance-method#FEBC2017_Ch04_Sec404.5 (last visited Oct. 21, 2019).
[60] Section 404, Florida Building Code, Existing Building, 6th Edition (2017).
[61] Section 553.73(7), F.S.; DBPR, *Materials Related to the 2020 Update, Supplements - Post Commission August 13, 2019*, http://www.floridabuilding.org/fbc/thecode/2020_Code_Development/2020_Code_Development_Process.htm (last visited Oct. 19, 2019). In the top table, under Florida Supplement, the links show modifications approved by the Commission.
[62] Florida Senate, Committee on Community Affairs, *Video of Committee Meeting on 10/14/2019*, 32:00:00 http://www.flsenate.gov/Media/VideoPlayer?EventId=2443575804_2019101070 (last visited Oct. 19, 2019).
[63] State of Florida, Office of the Governor, *Executive Order Number 19-12*, 5 (2019), *available at* https://www.flgov.com/wp-content/uploads/2019/01/EO-19-12-.pdf (last visited Oct. 20, 2019).
[64] Governor Ron DeSantis, News Releases, *Governor Ron DeSantis Announces Dr. Julia Nesheiwat as Florida's First Chief Resilience Officer* (Aug. 1, 2019), https://flgov.com/2019/08/01/governor-ron-desantis-announces-dr-julia-nesheiwat-as-floridas-first-chief-resilience-officer/ (last visited Oct. 20, 2019).
[65] DEP, *Florida Resilient Coastlines Program*, https://floridadep.gov/ResilientCoastlines (last visited Oct. 19, 2019).
[66] DEP, *Funded Projects*, https://floridadep.gov/rcp/florida-resilient-coastlines-program/content/funded-projects (last visited Oct 19, 2019).
[67] DEP, Resiliency Planning Grants, Fiscal Year 2020-2021, *Grant Goals and Priorities*, https://floridadep.gov/sites/default/files/RPG-FY-20-21-Goals-and-Priorities.pdf (last visited Oct. 19, 2019).

The program has published the Florida Adaptation Planning Guidebook to be used by local governments to develop and update adaptation plans for sea level rise.[68] The guidebook breaks down the adaptation planning process into four steps, and below is a summary:

- Context: organizing and engaging stakeholders, and delineating the geographic boundaries of the planning area, including the assets and structures contained therein.
- Vulnerability Assessment: an exposure analysis to determine how much sea level rise will occur and where, a sensitivity analysis to provide an inventory of community assets and features located in areas at risk, and assigning focus areas that will receive attention in adaptation strategies.
- Adaptation Strategies: assess adaptive capacities such as planning capabilities and fiscal capacity, prioritize adaptation needs, and identify adaptation strategies, which may include strategies in the following categories:
  - "Protection" strategies that are structurally defensive measures;
  - "Accommodation" strategies that alter the design of vulnerable structures so structures or land use can stay in place with modification;
  - "Retreat" strategies; and
  - "Avoidance" strategies that guide development away from areas subject to coastal hazards, by implementing policies or offering incentives.
- Implementation: survey funding options, create a schedule of activities, actions and actors, and monitor and evaluate adaptation strategies.[69]

DEP's Florida Coastal Management Program implements the Coastal Partnership Initiative, which makes funding from NOAA available to Florida's 35 coastal counties, and municipalities therein, that are required to include a coastal zone protection element in their comprehensive plan.[70] Grant applications must benefit the management of coastal resources, and meet the purpose of at least one of the initiative's priority areas: resilient communities, coastal resource stewardship, access to coastal resources, and working waterfronts.[71]

DEP issues permits for coastal armoring, defined as manmade structures, such as seawalls or bulkheads, that protect upland properties and structures from erosion, wave action, or currents.[72] While hardened structures may be necessary in areas of high wave energy, armoring can create problems such as costly construction and maintenance, erosion, and loss of biodiversity and ecosystem services.[73] Living shorelines are a nature-based approach to coastal protection, using natural elements such as ecosystems, vegetation, stone, or organic materials to increase coastal

[68] *DEP Guidebook, available at* https://floridadep.gov/sites/default/files/AdaptationPlanningGuidebook.pdf (last visited Oct. 19, 2019).
[69] *Id.* at 1-61.
[70] DEP, *Florida Coastal Management Program*, https://floridadep.gov/rcp/fcmp (last visited Oct. 19, 2019); DEP, *Coastal Partnership Initiative*, https://floridadep.gov/rcp/fcmp/content/coastal-partnership-initiative (last visited Oct. 19, 2019).
[71] Fla. Admin. Code R. Ch. 62S-4.
[72] Sections 161.053 and 161.085, F.S.; Fla. Admin. Code Rules 62B-33.0051, 62B-34.010(4), and 62B-41.002(4).
[73] DEP, *Living Shorelines*, https://floridadep.gov/rcp/rcp/content/living-shorelines (last visited Oct. 20, 2019).

resilience and adapt to sea level rise.[74] DEP provides exemptions from environmental resource permitting for small-scale shoreline stabilization projects including living shorelines projects.[75]

In addition to DEP, other state agencies are working on coastal resilience in Florida. The Department of Transportation plans for resilience to prepare Florida's transportation system for potential hazards.[76] The Department of Economic Opportunity works with DEP on the Community Resiliency Initiative, assisting communities with adaptation planning.[77] The Fish and Wildlife Conservation Commission is Florida's lead agency on addressing the impacts of climate change on fish and wildlife, including adaptation strategies for Florida's coastal ecosystems.[78] The Division of Emergency Management in the Executive Office of the Governor maintains a state-wide emergency management program, and its roles include administering federal mitigation grant programs and serving as Florida's state coordinating agency for the National Flood Insurance Program.[79]

Regional Programs

The water management districts address flood protection as a core part of their respective missions, and many of their activities are related to resilience efforts. For example, the St. John's River Water Management District provides resources and cost-sharing to increase community resilience.[80] The South Florida Water Management District is implementing comprehensive plans for addressing sea level rise, including a flood protection level of service program, incorporating sea level rise projections into planning, conducting vulnerability assessments, and assisting local governments.[81]

In 2010, through a proactive regional collaboration to address climate change, the four counties of Broward, Miami-Dade, Monroe, and Palm Beach signed on to the Southeast Florida Regional Climate Change Compact.[82] The Compact's innovative work has included developing a Regional

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[74] Bilkovic et. al., *Living Shorelines: The Science and Management of Nature-Based Coastal Protection*, Taylor & Francis Group, 11-25 (2017); Florida Living Shorelines, *Home*, http://floridalivingshorelines.com/ (last visited Oct. 20, 2019).
[75] Fla. Admin. Code R. 62-330.051(12)(e); *see* UF IFAS, *Streamlining Resiliency: Regulatory Considerations in Permitting Small-Scale Living Shorelines in Florida*, 1-3 (Apr. 2018), https://edis.ifas.ufl.edu/pdffiles/SG/SG15500.pdf (last visited Oct. 20, 2019).
[76] DOT, *Florida Transportation Plan (FTP): Resilience*, http://www.floridatransportationplan.com/resilience.htm (last visited Oct. 25, 2019); DOT, *Florida Transportation Plan (FTP): Resilience Subcommittee Members*, http://www.floridatransportationplan.com/resilience_committee.htm (last visited Oct. 31, 2019).
[77] DEO, *Adaptation Planning*, http://www.floridajobs.org/community-planning-and-development/programs/community-planning-table-of-contents/adaptation-planning (last visited Oct. 19, 2019).
[78] FWC, *What FWC is Doing*, https://myfwc.com/conservation/special-initiatives/climate-change/fwc/ (last visited Oct. 19, 2019); FWC, *A Guide to Climate Change Adaptation for Conservation*, 6-81–6-108, 9-35–9-51 (2016), *available at* https://myfwc.com/media/5864/adaptation-guide.pdf (last visited Oct. 20, 2019).
[79] DEM, *Mitigation*, https://www.floridadisaster.org/dem/mitigation/ (last visited Oct. 20, 2019); DEM, *State Flood Plain Management Program*, https://www.floridadisaster.org/dem/mitigation/floodplain/ (last visited Oct. 20, 2019).
[80] St. John's River Water Management District, *Sea-Level Rise*, https://www.sjrwmd.com/localgovernments/sea-level-rise/#projects (last visited Oct. 30, 2019).
[81] Akintunde Owosina, South Florida Water Management District, Governing Board Meeting, June 13, 2019, Chief, Hydrology and Hydraulics Bureau, *Impact of Sea Level Rise on the SFWMD Mission, Focus on Flood Protection*, 2, 6, 7-10 (June 13, 2019) *available at* https://apps.sfwmd.gov/webapps/publicMeetings/viewFile/21964 (last visited Oct. 20, 2019).
[82] Regional Climate Leadership Summit, *Southeast Florida Regional Climate Change Compact* (2010), *available at* http://southeastfloridaclimatecompact.org/wp-content/uploads/2014/09/compact.pdf (last visited Oct. 31,2019); SFRCCC, *What is the Compact?*, http://southeastfloridaclimatecompact.org/about-us/what-is-the-compact/ (last visited Oct. 31, 2019).

Climate Action Plan and developing a Unified Sea Level Rise Projection.[83] One of the many recommendations in the regional plan is for local governments in the region to incorporate the unified sea level rise projections into their comprehensive plans, and at least 45 municipalities have completed this recommendation.[84]

Florida's regional planning councils have many programs on resilience initiatives.[85] For example, the Tampa Bay Regional Planning Council formed the ONE BAY Resilient Communities program, which advances collaborative resilience in the Tampa Bay region.[86] The East Central Florida Regional Planning Council has produced a Regional Resiliency Action Plan and formed the East Central Florida Regional Resilience Collaborative.[87] The Northeast Florida Regional Council has provided a Regional Action Plan for sea level rise.[88]

Local Governments

Florida's local governments in coastal areas must have a coastal management element in their comprehensive plans.[89] These coastal management elements must use principles to eliminate inappropriate and unsafe development in coastal areas when opportunities arise, and they must:

- 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.
- 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 (FEMA).
- Identify site development techniques and best practices that may reduce losses due to flooding and claims made under flood insurance policies issued in Florida.
- Be consistent with, or more stringent than, the flood-resistant construction requirements in the Florida Building Code and applicable federal flood plain management regulations.
- Require that any construction activities seaward of the coastal construction control lines be consistent with Ch. 161, F.S., which regulates coastal construction.

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[83] SFRCCC, *Regional Climate Action Plan*, http://southeastfloridaclimatecompact.org/regional-climate-action-plan/ (last visited Oct. 31, 2019); SFRCCC, *Unified Sea Level Rise Projection, Southeast Florida*, 5, 11, 13, 33 (2015), *available at* http://www.southeastfloridaclimatecompact.org/wp-content/uploads/2015/10/2015-Compact-Unified-Sea-Level-Rise-Projection.pdf (last visited Oct. 31, 2019).

[84] SFRCCC, *ST-1: Incorporate Projections Into Plans*, http://southeastfloridaclimatecompact.org/recommendations/incorporate-projections-into-plans/ (last visited Oct. 31, 2019); *see also* SFRCCC, *Integrating the Unified Sea Level Rise Projection into Local Plans*, 17-21 (2017), *available at* https://southeastfloridaclimatecompact.org/wp-content/uploads/2017/01/SLRGuidance-Doc.pdf (last visited Oct. 16, 2019).

[85] *Peril of Flood - Florida's Coastal Resiliency Portal*, https://www.perilofflood.net/ (last visited Oct. 30, 2019).

[86] Tampa Bay Regional Planning Council, *One Bay Resilient Communities*, http://www.tbrpc.org/onebay/ (last visited Oct. 31, 2019).

[87] East Central Florida Regional Planning Council, *East Central Florida Regional Resiliency Action Plan* (2018), *available at* http://ftp.ecfrpc.org/Projects/East%20Central%20Florida%20Regional%20Resiliency%20Action%20Plan.pdf (last visited Oct. 31, 2019); East Central Florida Regional Planning Council, *East Central Florida Regional Resilience Collaborative*, https://metroplanorlando.org/wp-content/uploads/CFMPOA-MOU-presentation.pdf (last visited Oct. 31, 2019).

[88] Northeast Florida Regional Council, *Summary and Regional Action Plan: A Report of the Emergency Preparedness Committee on Sea Level Rise*, http://www.nefrc.org/WiP/PDFs/Resource-Library/Regional-Action-Plan.pdf (last visited Oct. 31, 2019).

[89] Sections 380.24 and 163.3177(6)(g), F.S.

- Encourage local governments to participate in the National Flood Insurance Program Community Rating System administered by the FEMA to achieve flood insurance premium discounts for their residents.[90]

Florida's Community Planning Act authorizes local governments to establish an "adaptation action area" designation in their comprehensive plan for low-lying coastal zones that are experiencing coastal flooding and are vulnerable to the impacts of sea level rise.[91] This enables local governments to develop policies and funding priorities that improve coastal resilience and plan for sea level rise.

Flood Insurance

The Federal Emergency Management Act (FEMA) administers the National Flood Insurance Program, created to offer federally subsidized flood insurance to property owners and to encourage land-use controls in floodplains.[92] The National Flood Insurance Program makes flood insurance available to communities that adopt and enforce a floodplain management ordinance to reduce future flood risk to new construction in floodplains.[93] Communities eligible to participate in the National Flood Insurance Program community rating system receive discounts on flood insurance premiums.[94]

An important aspect of the National Flood Insurance Program is the flood maps that FEMA creates to support the program.[95] A Flood Insurance Rate Map is an official map of a community on which FEMA has delineated both the special hazard areas and the risk premium zones applicable to the community.[96] These maps have many applications relevant to resilience planning, including communicating base flood elevations and flood risk, establishing special flood hazard areas where flood insurance is required, and setting local floodplain and building standards.[97]

III. Effect of Proposed Changes:

Section 1 creates s. 161.551, F.S., titled "Public financing of construction projects within the coastal building zone."

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[90] Section 163.3178(2)(f), F.S. (referencing 44 C.F.R. part 60, relating to insurance and hazard mitigation, criteria for land management and use); Ch. 2015-69, Laws of Fla. This is referred to as the "Peril of Flood" law.
[91] Sections 163.3177(6)(g) and (10) and 163.3164(1), F.S.; Ch. 2011-139, Laws of Fla.
[92] 42 U.S.C. § 4001 *et seq.*; 44 C.F.R. Ch. I, Subchap. B.; FEMA, *The National Flood Insurance Program*, https://www.fema.gov/national-flood-insurance-program (last visited Oct. 20, 2019).
[93] FEMA, *National Flood Insurance Program, Program Description* (Aug. 1, 2002), *available at* https://www.fema.gov/media-library-data/20130726-1447-20490-2156/nfipdescrip_1_.pdf (last visited Oct. 20, 2019).
[94] FEMA, *Fact Sheet: Community Rating System* (2017), *available at* https://www.fema.gov/media-library-data/1507029324530-082938e6607d4d9eba4004890dbad39c/NFIP_CRS_Fact_Sheet_2017_508OK.pdf (last visited Oct. 20, 2019).
[95] FEMA, *FEMA Flood Map Service Center: Welcome!*, https://msc.fema.gov/portal/home (last visited Oct. 20, 2019).
[96] 44 C.F.R. § 59.1.
[97] FEMA, *Flood Maps: Know Your Risk and Take Action Against Flooding*, 2, *available at* https://www.fema.gov/media-library-data/1516468489259-8eb4bfef27ab35159b2f140a2926e809/What_Goes_Into_a_Flood_Map.pdf (last visited Oct. 20, 2019); *SHMP*, at 102-103, *available at* https://www.floridadisaster.org/globalassets/dem/mitigation/mitigate-fl--shmp/shmp-2018-full_final_approved.6.11.2018.pdf (last visited Oct. 16, 2019); *DEP Guidebook*, at 40-41, *available at* https://floridadep.gov/sites/default/files/AdaptationPlanningGuidebook.pdf (last visited Oct. 16, 2019).

The bill creates definitions for five terms, defining them as they are used in the section:

- "Coastal structure" is defined as "a major structure or nonhabitable major structure within the coastal building zone." As used within the section, the term "coastal structure" would generally include residential, commercial, and public buildings that could substantially impact coastal zones, as well as major uninhabited structures such as parking garages or drainage structures, that are located landward of the seasonal high-water line to a line 1,500 feet landward from the coastal construction control line.
- "Public entity" is defined as "the state or any of its political subdivisions, or any municipality, county, agency, special district, authority, or other public body corporate of the state which is demonstrated to perform a public function or to serve a governmental purpose that could properly be performed or served by an appropriate governmental unit."
- "SLIP study" is defined as "a sea level impact projection study" as established by the Department of Environmental Protection (DEP) pursuant to requirements specified in the bill.
- "State-financed constructor" is defined as "a public entity that commissions or manages a construction project using funds appropriated from the state."
- "Substantial flood damage" is defined to mean "flood, inundation, or wave action damage resulting from a single event, such as a flood or tropical weather system, where such damage exceeds 25 percent of the market value of the coastal structure at the time of the event."

The bill requires DEP to develop by rule the standards for a SLIP study. The standards may require that a professional engineer sign off on the study. The standards must require that state-financed constructors, at a minimum, do all of the following for conducting a SLIP study:

- Use a systematic, interdisciplinary, and scientifically accepted approach in the natural sciences and construction design in conducting the study.
- Assess the flooding, inundation, and wave action damage risks relating to the coastal structure over its expected life or 50 years, whichever is less. This assessment must:
    - Take into account potential sea level rise and increased storm risk during the expected life of the coastal structure or 50 years, whichever is less;
    - Provide scientific and engineering evidence of the risk to the coastal structure and methods used to mitigate, adapt to, or reduce this risk;
    - Use and consider available scientific research and generally accepted industry practices;
    - Provide the mean average annual chance of substantial flood damage over the expected life of the coastal structure or 50 years, whichever is less; and
    - Analyze potential public safety and environmental impacts resulting from damage to the coastal structure including, but not limited to, leakage of pollutants, electrocution and explosion hazards, and hazards resulting from floating or flying structural debris.
- Provide alternatives for the coastal structure's design and siting, including discussion of how such alternatives would affect the potential public safety and environmental impacts assessed in the study, as well as the risks and costs associated with maintaining, repairing, and constructing the coastal structure.

The bill requires DEP to publish and maintain on its website a copy of all SLIP studies it receives pursuant to the bill for a period of at least 10 years following receipt. However, the bill requires DEP to redact, prior to publication, any portion of a SLIP study containing information

that is exempt from Art. I, s. 24(a) of the State Constitution and s. 119.07(1), F.S., which provide for access to public records.

The bill requires state-financed constructors to conduct SLIP studies pursuant to DEP's standards. The bill prohibits a state-financed constructor from commencing construction of a coastal structure without first doing all of the following:

- Conducting a SLIP study meeting the standards established by DEP.
- Submitting the SLIP study to DEP. If multiple coastal structures are to be built concurrently within one project, a state-financed constructor may conduct and submit one SLIP study for the entire project.
- Receiving notification from DEP that the study was received and published on DEP's website for at least 30 days. The bill states that the state-financed constructor is solely responsible for ensuring that the study submitted to DEP meets the established standards.

If a state-financed constructor begins construction of a coastal structure without first submitting a SLIP study as required under the section, then DEP is authorized to institute a civil action. Such civil action may be brought to:

- Seek injunctive relief to cease further construction of the coastal structure;
- Enforce compliance with s. 161.551, F.S., or rules adopted by DEP pursuant to it; or,
- If the coastal structure has been completed or substantially completed, seek recovery of all or a portion of state funds expended on the coastal structure.

DEP is required to adopt rules as necessary to administer the section. DEP is authorized to enforce the requirements of the section. The section may not be construed to create a cause of action for damages.

Section 2 states that the act shall take effect on July 1, 2020.

IV. Constitutional Issues:

A. Municipality/County Mandates Restrictions:

None.

B. Public Records/Open Meetings Issues:

None.

C. Trust Funds Restrictions:

None.

D. State Tax or Fee Increases:

None.

E. Other Constitutional Issues:

None.

V. Fiscal Impact Statement:

A. Tax/Fee Issues:

None.

B. Private Sector Impact:

The bill requires procedures that identify long-term risks to coastal structures, and potentially avoid some of the large costs of mitigating and dealing with future damage to, or even loss of, coastal structures. These coastal structures may be used or owned by residents or private businesses. Therefore, the bill may have a positive, indeterminate impact on the private sector.

C. Government Sector Impact:

The bill requires DEP to promulgate and administer new regulations which may cause DEP to incur additional costs.

Requiring government entities to conduct a sea level impact study prior to construction may result in an indeterminate, negative fiscal impact on the government sector in the short-term. However, the bill requires procedures that identify risks and potentially avoid damage and loss of coastal structures that are constructed, at least in part, using funds appropriated from the state. This may result in state funds, or potentially federal grant money that is appropriated from the state, being used for coastal structures that have less risk of damage or loss over time, or coastal structures that may remain undamaged or intact for a longer period of time. Therefore, the bill may result in an indeterminate, positive impact on the government sector in the long-term.

VI. Technical Deficiencies:

None.

VII. Related Issues:

None.

VIII. Statutes Affected:

This bill creates section 161.551 of the Florida Statutes.

IX. Additional Information:

A. Committee Substitute – Statement of Changes:
(Summarizing differences between the Committee Substitute and the prior version of the bill.)

None.

B. Amendments:

None.