

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 514

INTRODUCER: Senators Rodrigues and Garcia

SUBJECT: Resiliency

DATE: February 15, 2021

REVISED: _____

ANALYST	STAFF DIRECTOR	REFERENCE	ACTION
1. Schreiber	Rogers	EN	Favorable
2. _____	_____	AEG	_____
3. _____	_____	AP	_____

I. Summary:

SB 514 establishes the Statewide Office of Resiliency within the Executive Office of the Governor. The office must be headed by a Chief Resilience Officer, appointed by and serving at the pleasure of the Governor. The bill creates the Statewide Sea-Level Rise Task Force, adjunct to the Statewide Office of Resiliency, to recommend consensus projections of the anticipated sea level rise and flooding impacts along Florida's coastline. The bill provides for task force membership and requires that all appointments be made by August 1, 2021. The Chief Resilience Officer must chair the task force and convene it no later than October 1, 2021, after which it must meet upon the call of the chair.

The task force must develop and recommend consensus baseline projections of the expected sea level rise for planning horizons designated by the task force. The task force is authorized to designate technical advisory groups to inform its decision-making and to request the Department of Environmental Protection (DEP) to contract for services to assist in developing the recommended baseline projections. The DEP must serve as contract administrator for such contracts and must provide administrative support to the task force.

By January 1, 2022, the task force must submit its recommended projections to the Environmental Regulation Commission for adoption or rejection. If adopted, the task force's projections must serve as the state's official estimate of sea level rise and flooding impacts along Florida's coastline for the purpose of developing future state projects, plans, and programs. The task force must review the adopted projections as it deems appropriate and submit any recommended revisions to the Commission. The bill repeals the provisions relating to the task force on July 1, 2024.

For Fiscal Year 2021-2022, the bill appropriates \$500,000 in nonrecurring funds from the General Revenue Fund to DEP for the authorized contracting and for task force administrative expenses.

II. Present Situation:

Sea Level Rise and Coastal Flooding

With 1,350 miles of coastline, relatively low elevations, and a porous geology, Florida is particularly vulnerable to coastal flooding.¹ Climate change² is influencing three drivers of coastal flooding in Florida: sea level rise, storm surge intensity, and rainfall intensity and frequency.³

Sea level rise is an observed increase in the average local sea level or global sea level trend.⁴ Climate change is causing global sea level rise through two primary factors: the loss of land-based ice (ice sheets and glaciers) due to melting and thermal expansion caused by the warming of the oceans (water expands as it warms).⁵ Global mean sea level has risen about 8–9 inches since 1880, and the rate of rise is accelerating: 0.06 inches per year throughout most of the twentieth century, 0.14 inches per year from 2006–2015, and 0.24 inches per year from 2018–2019.⁶

Sea level rise data is obtained through various scientific equipment: tide gauge stations record the local height of the surrounding water level relative to a reference point on land, and satellite laser altimeters measure the average height of the entire ocean.⁷ Data is incorporated into numerous online tools for visualizing sea level rise.⁸ Scientific projections of future sea level rise vary based on modeling different scenarios of future greenhouse gas emissions and atmospheric

¹ Florida Division of Emergency Management, *Enhanced State Hazard Mitigation Plan*, 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 Feb 6, 2021). Florida has over 8,000 miles of coastline when considering intricacies such as bays, inlets, and waterways; McKinsey Global Institute, *Will Mortgages and Markets Stay Afloat in Florida?*, 10, 12, 27 (2020) [hereinafter *MGI Mortgages and Markets*], available at https://www.mckinsey.com/~media/McKinsey/Business%20Functions/Sustainability/Our%20Insights/Will%20mortgages%20and%20markets%20stay%20afloat%20in%20Florida/MGI_Climate%20Risk_Case%20Studies_Florida_May2020.pdf (last visited Jan. 31, 2020). Florida's porous limestone foundation causes saltwater intrusion and seepage from underground.

² See NASA, *Global Climate Change, Effects*, <https://climate.nasa.gov/effects/> (last visited Feb. 6, 2021).

³ See *SHMP*, at 107.

⁴ DEP, *Florida Adaptation Planning Guidebook*, Glossary (2018) [hereinafter *DEP Guidebook*], available at <https://floridadep.gov/sites/default/files/AdaptationPlanningGuidebook.pdf> (last visited Jan. 31, 2021).

⁵ *Id.*; NOAA, *Climate Change: Ocean Heat Content*, <https://www.climate.gov/news-features/understanding-climate/climate-change-ocean-heat-content> (last visited Jan. 31, 2021). More than 90 percent of the warming that has happened on Earth over the past 50 years has occurred in the ocean.

⁶ NOAA, *Climate Change: Global Sea Level*, <https://www.climate.gov/news-features/understanding-climate/climate-change-global-sea-level> (last visited Jan. 31, 2021). The melting of glaciers and ice sheets (such as the Greenland and Antarctic Ice Sheets) is accelerating, and from 2005–2013 melting caused nearly twice as much sea level rise as thermal expansion.

⁷ NOAA, *Tides and Currents, Sea Level Trends*, <https://tidesandcurrents.noaa.gov/sltrends/> (last visited Jan. 31, 2021). Showing trends in data from tide gauge stations around Florida; NOAA, *Is Sea Level Rising?*, <https://oceanservice.noaa.gov/facts/sealevel.html> (last visited Jan. 31, 2021); see *SHMP*, at 107. “Relative sea level” is measured locally using tide gauges. “Eustatic sea level” is measured globally based on the volume of water in earth’s oceans.

⁸ DEP, *Presentation to the Florida House of Representatives Environment, Agriculture, & Flooding Subcommittee* (Feb. 4, 2021), available at <https://www.myfloridahouse.gov/VideoPlayer.aspx?eventID=6697> (last visited Feb 10, 2021).

concentrations.⁹ After 2050, sea level rise projections diverge significantly based on different scenarios of emissions trajectories.¹⁰

Rising sea levels result in gradual coastal inundation.¹¹ Sea level rise raises the height of high tide.¹² Since 2000, the frequency of “high tide flooding” in the U.S. has more than doubled, with data showing large increases at tide gauge locations in Florida.¹³ For example, research shows that in Miami Beach, between 1998 and 2013, the frequency of recurrent tidal flooding events quadrupled.¹⁴ The frequency of such flooding is expected to continue to increase.¹⁵

Impacts of flooding from sea level rise in Florida include disruptions in transportation, damage to buildings, and impairment of infrastructure such as roads, stormwater systems, and wastewater systems.¹⁶ Sea level rise causes saltwater intrusion of both surface water and groundwater, threatening fresh water resources including coastal aquifers.¹⁷ It causes coastal erosion and threatens coastal ecosystems which, when healthy and allowed space for landward migration, are critical for resilience.¹⁸ Sea level rise also raises coastal groundwater tables and pushes salt water further inland.¹⁹ Many of these processes are exacerbated by Florida’s porous limestone geology.²⁰

Sea level rise is expected to increase the damage from storm surges as they will build on top of a higher base of water, travel farther inland, and impact more areas and properties than in the past.²¹ Furthermore, future storms are generally expected to have increased average intensity and precipitation rates.²² Extreme rainfall events can stress or overwhelm stormwater infrastructure,

⁹ U.S. Global Change Research Program, *Fourth National Climate Assessment*, 6, 40-43, 85-86, 338, 758 (2018)[hereinafter *NCA4*], available at https://nca2018.globalchange.gov/downloads/NCA4_2018_FullReport.pdf (last visited Feb. 6, 2021).

¹⁰ *Id.* at 40-43, 85, 109; IPCC, *The Ocean and Cryosphere in a Changing Climate*, 4-9-4-10 (Sept. 2019), available at https://report.ipcc.ch/srocc/pdf/SROCC_FinalDraft_FullReport.pdf (last visited Jan. 31, 2021); SFRCCC, *Unified Sea Level Rise Projection Southeast Florida - 2019 Update*, 7, 25, 29 (2019)[hereinafter *SFRCCC Update*], available at https://southeastfloridacclimatecompact.org/wp-content/uploads/2020/04/Sea-Level-Rise-Projection-Guidance-Report_FINAL_02212020.pdf (last visited Jan. 31, 2021).

¹¹ *SHMP*, at 108; *SFRCCC Update*, at 17. Rapid pulses are possible.

¹² *SHMP*, at 101, 108.

¹³ NOAA, *2019 State of U.S. High Tide Flooding with a 2020 Outlook*, v-3, 15-16 (2020), available at https://tidesandcurrents.noaa.gov/publications/Techrpt_092_2019_State_of_US_High_Tide_Flooding_with_a_2020_Outlook_30June2020.pdf (last visited Jan. 31, 2021). High tide flooding (also called “nuisance” or “sunny-day” flooding) begins to occur when coastal water levels reach heights between .5-.65 meters above the daily average highest tide.

¹⁴ *SFRCCC Update*, at 31.

¹⁵ NOAA, *2019 State of U.S. High Tide Flooding with a 2020 Outlook*, v, 11-12 (2020); *SFRCCC Update*, at 31-32.

¹⁶ See *SFRCCC Update*, at 5.

¹⁷ *SHMP*, at 106; *SFRCCC Update*, at 33-35.

¹⁸ *SFRCCC Update*, at 35; *SHMP*, at 106, 221; *NCA4*, at 340-341, 690, 775, 833.

¹⁹ *SHMP*, at 108.

²⁰ See Urban Land Institute, *The Business Case for Resilience - Regional Economic Benefits of Climate Adaptation*, 20 (2020) [hereinafter *Business Case for Resilience*], available at https://knowledge.uli.org/-/media/files/research-reports/2020/the-business-case-for-resilience-in-southeast-florida_final.pdf?rev=81609c7f6b72479d89c49aff72fea446&hash=FB2E953B8A456CFE781169A0CAA82333 (last visited Jan. 31, 2021).

²¹ *SHMP*, at 100, 106-108, available at https://www.floridadisaster.org/globalassets/dem/mitigation/mitigate-fl--shmp/shmp-2018-full_final_approved.6.11.2018.pdf (last visited Jan. 31, 2021); *NCA4*, at 758, available at https://nca2018.globalchange.gov/downloads/NCA4_2018_FullReport.pdf (last visited Jan. 31, 2021).

²² *NCA4*, at 97, 116-117, 1482; see Knutson et al., *Tropical Cyclones and Climate Change Assessment, Part II: Projected Response to Anthropogenic Warming*, American Meteorological Society, E317-E318 (2020), available at

while sea level rise impairs gravity-driven systems and reduces the discharge capacity of coastal water control structures.²³ By raising groundwater levels, sea level rise reduces the ability of rainfall to infiltrate the soil, and the reduced soil storage capacity causes flooding.²⁴

Florida's 35 coastal counties contain 76% of its population, and 79% of its total economy as of 2012.²⁵ One study found that 20.5% of properties in Florida are at substantial risk of flooding as of 2020 and 24.3% are at such risk by 2050.²⁶ Another study on Florida's residential property found tidal flooding could result in a property devaluation of \$10–\$30 billion by 2030 and \$30–\$80 billion by 2050, and that real estate losses during 100-year storm surge events could reach \$50–\$75 billion by 2050.²⁷ Another analysis found that in Southeast Florida alone, by 2040, \$4.2 billion in property value could be lost to daily tidal inundation and one 10-year storm tide event could cause \$3.2 billion in property damage.²⁸ People and capital continue to flow into exposed coastal areas in Florida.²⁹

As sea level rise continues, financial impacts may include increases in flood insurance costs, decreases in property sales or property values, and increased risk for lenders.³⁰ Coastal flooding disrupts local economies leading to lost revenues for the private and public sectors, and over time risks include loss or impairment of employment opportunities and public services and infrastructure.³¹ Coastal flooding can cause displacement in frontline communities, and the burdens of adaptation are likely to disproportionately impact vulnerable populations.³²

Studies show significant positive returns on investment calculated for resilience measures, including the following benefit-cost ratios: \$6 for every \$1 spent through federal grants on

<https://journals.ametsoc.org/bams/article/101/3/E303/345043/Tropical-Cyclones-and-Climate-Change-Assessment> (last visited Jan. 31, 2021).

²³ *NCA4*, at 763; *SFRCCC Update*, at 5, 34.

²⁴ *SFRCCC Update*, at 33; *SHMP*, at 106, 181.

²⁵ *DEP Guidebook*, at III, available at <https://floridadep.gov/sites/default/files/AdaptationPlanningGuidebook.pdf> (last visited Oct. 16, 2019); see *MGI Mortgages and Markets*, at 13. Almost 10% of the state's population is less than 4.9 feet (1.5 meters) above sea level.

²⁶ First Street Foundation, *The First National Flood Risk Assessment: Defining America's Growing Risk*, 39 (2020), available at https://assets.firststreet.org/uploads/2020/06/first_street_foundation_first_national_flood_risk_assessment.pdf (last visited Oct. 8, 2020). The study calculates substantial risk as a 1% annual risk of 1 cm of inundation or more.

²⁷ *MGI Mortgages and Markets*, at 15–19, available at https://www.mckinsey.com/~media/McKinsey/Business%20Functions/Sustainability/Our%20Insights/Will%20mortgages%20and%20markets%20stay%20afloat%20in%20Florida/MGI_Climate%20Risk_Case%20Studies_Florida_May2020.pdf (last visited Jan. 31, 2020).

²⁸ *Business Case for Resilience*, at 6. In 2070, the estimated potential harm in Southeast Florida increases to \$53.6 billion of lost property value from daily tidal inundation and \$16.5 billion of property damage from one 10-year storm.

²⁹ *MGI Mortgages and Markets*, at 13.

³⁰ *MGI Mortgages and Markets*, at 22–27 (lending risks include not only banks investing in private homes and businesses, but also potential downgrades to bond ratings for local governments that fail to adapt); *SFRCCC Update*, at 5, available at https://southeastfloridacclimatecompact.org/wp-content/uploads/2020/04/Sea-Level-Rise-Projection-Guidance-Report_FINAL_02212020.pdf (last visited Jan. 31, 2021).

³¹ *Business Case for Resilience*, at 14, 19, 20, available at https://knowledge.uli.org/-/media/files/research-reports/2020/the-business-case-for-resilience-in-southeast-florida_final.pdf?rev=81609c7f6b72479d89c49aff72fea446&hash=FB2E953B8A456CFE781169A0CAA82333 (last visited Jan. 31, 2021).

³² *Id.*; *NCA4* at 333–335; U.S. Government Accountability Office, *A Climate Migration Pilot Program Could Enhance the Nation's Resilience and Reduce Federal Fiscal Exposure*, 29 (2020), <https://www.gao.gov/assets/710/707961.pdf> (last visited Feb. 2, 2021).

natural hazard mitigation, and, for future resilience investments in Southeast Florida, \$4 for every \$1 on building-level adaptations and \$2 for every \$1 on community-wide adaptations.³³

Sea Level Rise Projections

Entities from the international to the local level use scientific data and modeling to create projections of future sea level rise for planning and decision-making. The Intergovernmental Panel on Climate Change (IPCC) includes 195 member countries compiling climate change science reviewed by thousands of experts around the globe and intended to reflect the full range of scientific views.³⁴ The National Oceanic and Atmospheric Administration (NOAA) operates tide gauges along the nation's coasts and satellites measuring changes in sea level. In 2012 and 2017, NOAA published sea level rise projections for the U.S.³⁵ NOAA's projections include six scenarios ranging from "low" to "extreme."³⁶ NOAA's projections were used in the fourth national climate assessment by the U.S. Global Change Research Program, a program of thirteen federal agencies studying the changing global environment.³⁷ The U.S. Army Corps of Engineers (USACE) has developed guidance requiring consideration of three scenarios of "low," "intermediate," and "high" sea level change over a project's life cycle.³⁸

The State of Florida has recently begun to examine sea level rise projections on a statewide level. In 2020, the Legislature required that public entities commissioning or managing a construction project within the coastal building zone,³⁹ using funds appropriated from the state, must conduct a sea level impact projection (SLIP) study prior to commencing construction.⁴⁰ The study must assess the risks from potential sea level rise and storms over the expected life of the structure up to 50 years, and it must provide design and siting alternatives and assess costs for the structure.⁴¹ DEP must perform rulemaking to establish the specific standards for conducting the SLIP

³³ *Business case for Resilience*, at 26; National Institute of Building Sciences, *Natural Hazard Mitigation Saves*, 1-2 (Dec. 2019), available at https://cdn.ymaws.com/www.nibs.org/resource/resmgr/reports/mitigation_saves_2019/mitigationsaves2019report.pdf (last visited Feb. 10, 2021).

³⁴ IPCC, *About the IPCC*, <https://www.ipcc.ch/about/> (last visited Feb. 2, 2021).

³⁵ NOAA, *Climate Change: Global Sea Level*, available at <https://www.climate.gov/news-features/understanding-climate/climate-change-global-sea-level> (last visited Feb. 2, 2021).

³⁶ Sweet et al., NOAA, *Global and Regional Sea Level Rise Scenarios for the United States*, 21–23 (2017), available at https://tidesandcurrents.noaa.gov/publications/techrpt83_Global_and_Regional_SLR_Scenarios_for_the_US_final.pdf (last visited Feb. 2, 2021).

³⁷ U.S. Global Change Research Program, *About USGCRP*, <https://www.globalchange.gov/about> (last visited Feb. 2, 2021).

³⁸ USACE, *Incorporating Sea Level Change in Civil Works Programs*, 2–3, B-1–B-8 (Dec. 31, 2013), available at https://www.publications.usace.army.mil/Portals/76/Publications/EngineerRegulations/ER_1100-2-8162.pdf?ver=2014-02-12-131510-113 (last visited Feb. 2, 2021); USACE, *Procedures to Evaluate Sea Level Change: Impacts, Responses, and Adaptation*, 13 (June 30, 2019) available at <https://www.publications.usace.army.mil/Portals/76/Users/182/86/2486/EP-1100-2-1.pdf?ver=2019-09-13-141310-707> (last visited Feb. 2, 2021).

³⁹ Section 161.54(1), F.S. "Coastal Building Zone" is defined as "the land area from the seasonal high-water line landward to a line 1,500 feet landward from the coastal construction control line as established pursuant to s. 161.053, and, for those coastal areas fronting on the Gulf of Mexico, Atlantic Ocean, Florida Bay, or Straits of Florida and not included under s. 161.053, the land area seaward of the most landward velocity zone (V-zone) line as established by the Federal Emergency Management Agency and shown on flood insurance rate maps"; s. 161.55(4), F.S. Coastal barrier island requirements differ.

⁴⁰ Section 161.551, F.S.; see ch. 2020-119, Laws of Fla.

⁴¹ Section 161.551(3), F.S.

studies.⁴² DEP is currently holding workshops and developing draft rule language accordingly.⁴³ DEP is developing a web-based tool to enable constructors to create and submit SLIP study reports pursuant to the legislation, and also to provide resources to educate the public such as an interactive map for visualizing future scenarios of sea level rise and coastal hazards.⁴⁴

Sea level rise is experienced differently in different areas, depending on many factors including ocean currents, changing land elevations, land use, and erosion.⁴⁵ The Southeast Florida Regional Climate Change Compact, a collaboration including Broward, Miami-Dade, Monroe, and Palm Beach counties, periodically assembles a technical work group of experts to produce sea level rise projections to assist planning and decision-making in Southeast Florida.⁴⁶ In 2019, the Tampa Bay Climate Science Advisory Panel recommended a common set of sea level rise projections for use throughout the Tampa Bay region.⁴⁷

Below is a table showing examples of sea level rise projections, including ranges of low and high estimates, both globally and in regions of Florida.

⁴² *Id.*

⁴³ DEP, *Resilience and Coastal Protection Rules in Development*, <https://floridadep.gov/rcp/beaches-funding-program/content/resilience-and-coastal-protection-rules-development> (last visited Feb. 2, 2021).

⁴⁴ DEP, *Presentation to the Florida House of Representatives Environment, Agriculture, & Flooding Subcommittee* (Feb. 4, 2021), available at <https://www.myfloridahouse.gov/VideoPlayer.aspx?eventID=6697> (last visited Feb 10, 2021).

⁴⁵ *NCA4*, at 757, 855, 1495 available at https://nca2018.globalchange.gov/downloads/NCA4_2018_FullReport.pdf (last visited Feb. 6, 2021).

⁴⁶ *SFRCCC Update*, at 8, available at https://southeastfloridaclimatecompact.org/wp-content/uploads/2020/04/Sea-Level-Rise-Projection-Guidance-Report_FINAL_02212020.pdf (last visited Feb. 2, 2021).

⁴⁷ Tampa Bay Climate Science Advisory Panel, *Recommended Projections of Sea Level Rise in the Tampa Bay Region*, 7 (Apr. 2019), available at http://www.tbrpc.org/wp-content/uploads/2019/05/CSAP_SLR_Recommendation_2019.pdf (last visited Feb. 2, 2021).

Sea Level Rise Projections				
Source	Scale	Years	Low (feet)	High (feet)
IPCC Assessment Report 5 ⁴⁸	Global	2046-2065	0.72	1.25
		2081-2100	1.48	2.69
		2100	1.71	3.22
NOAA (Sweet et al., 2017), Low–Extreme ⁴⁹	Global	2040	0.43	1.35
		2070	0.72	3.94
		2100	.98	8.20
SFRCCC Unified Sea Level Rise Projection, 2019 Update ⁵⁰	Southeast Florida	2040	.83	1.42
		2070	1.75	3.33
		2120	3.33	7.67
Tampa Bay Climate Science Advisory Panel ⁵¹	Tampa Bay Region	2050	1	2.5
		2100	2	8.5

Resilience

In January of 2019, Governor DeSantis issued Executive Order 19-12, creating 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.⁵² This office oversees a broad range of state programs.⁵³ In August of 2019, the Governor appointed Florida’s first Chief Resilience Officer (CRO), which reports to the Executive Officer of the Governor with the direction to coordinate a statewide response to better prepare for the impacts of climate change.⁵⁴ Florida’s first CRO was Dr. Julia Nesheiwat. Dr. Nesheiwat’s efforts produced a 2019 report discussing her activities as CRO,

⁴⁸ IPCC, *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, 23, 79-81, 1180, 1461 (2013), available at https://www.ipcc.ch/site/assets/uploads/2018/02/WG1AR5_all_final.pdf (last visited Feb. 2, 2021). These changes in global mean sea level rise are relative to the reference period of 1986-2005. The range shown in the table represents the projections for the Representative Concentration Pathway 8.5 scenario.

⁴⁹ Sweet et al., NOAA, *Global and Regional Sea Level Rise Scenarios for the United States*, 21, 23 (2017), available at https://tidesandcurrents.noaa.gov/publications/techrpt83_Global_and_Regional_SLR_Scenarios_for_the_US_final.pdf (last visited Feb. 2, 2021). These global mean sea level rise scenarios are based on the year 2000 (i.e., a 1991-2009 epoch).

⁵⁰ SFRCCC Update, 9-10, available at https://southeastfloridaclimatecompact.org/wp-content/uploads/2020/04/Sea-Level-Rise-Projection-Guidance-Report_FINAL_02212020.pdf (last visited Feb. 2, 2021). These projections start from zero in year 2000 and are referenced to mean sea level at the Key West tide gauge. The range in the table shows regional applications of the IPCC Representative Concentration Pathway 8.5 Median curve and the NOAA Intermediate High curve.

⁵¹ Tampa Bay Climate Science Advisory Panel, *Recommended Projections of Sea Level Rise in the Tampa Bay Region*, 7 (Apr. 2019), available at http://www.tbrpc.org/wp-content/uploads/2019/05/CSAP_SLR_Recommendation_2019.pdf (last visited Feb. 2, 2021).

⁵² 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 Feb. 2, 2021).

⁵³ DEP, *Office of Resilience and Coastal Protection*, <https://floridadep.gov/rcp> (last visited Feb. 2, 2021).

⁵⁴ See 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 Feb. 2, 2021).

impacts to Florida's coastline, and assessments she made during her time as CRO.⁵⁵ In February of 2020, Dr. Nesheiwat stepped down as CRO. Secretary of DEP, Noah Valenstein, currently serves as the interim CRO, appointed to coordinate and advocate for resilience planning by Florida's local, regional, and state entities.⁵⁶

DEP's Florida Resilient Coastlines Program helps prepare coastal communities and habitats for the effects of climate change, especially rising sea levels, by offering technical assistance and funding to communities dealing with increasingly complex flooding, erosion, and habitat shifts.⁵⁷ The program provides resilience grants to local governments of the 35 coastal counties and all municipalities within their boundaries required to include a coastal element in the local comprehensive plan.⁵⁸ Currently, there are two types of grants provided under the program: Resilience Planning Grants and Resilience Implementation Grants.

In 2018, DEP published the Florida Adaptation Planning Guidebook to be used by local governments to develop and update adaptation plans for sea level rise.⁵⁹ The comprehensive guidebook breaks down the adaptation planning process into four steps: Context, Vulnerability Assessments, Adaptation Strategies, and Implementation.⁶⁰

DEP's Coastal Construction Control Line (CCCL) program regulates coastal construction and related activities to prevent imprudent construction that can cause beach erosion, destabilize dunes, damage upland properties, or interfere with public access, and the program also protects sea turtles and dune plants.⁶¹ A 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 predictable weather conditions.⁶² DEP has established CCCLs in 25 of Florida's coastal counties.⁶³ Generally, a permit is required for construction and excavation activities seaward of the CCCL, and criteria for such permitting may be more stringent than in other areas due to the special hazards and potential for environmental impacts in those areas.⁶⁴ DEP makes 30-year erosion projections of the location of the seasonal high-water line on a site-specific basis.⁶⁵ With

⁵⁵ Florida Executive Office of the Governor, Chief Resilience Officer, *2019 Annual Report* (2019), <https://www.documentcloud.org/documents/6867224-Florida-Chief-Resilience-Officer-2019-Annual.html> (last visited Feb. 2, 2021).

⁵⁶ DEP, *Office of the Secretary*, <https://floridadep.gov/sec> (last visited Feb. 2, 2021); DEP, *DEP Secretary Noah Valenstein Highlights Governor DeSantis' Continued Historic Environmental Achievements in 2020*, <https://content.govdelivery.com/accounts/FLDEP/bulletins/2ad2c3a> (last visited Feb. 2, 2021).

⁵⁷ DEP, *Florida Resilient Coastlines Program*, <https://floridadep.gov/rcp/florida-resilient-coastlines-program> (last visited Feb. 2, 2021).

⁵⁸ DEP, *FRCP Resilience Grants*, <https://floridadep.gov/rcp/florida-resilient-coastlines-program/content/frcp-resilience-grants> (last visited Feb. 2, 2021).

⁵⁹ *DEP Guidebook*, at I, available at <https://floridadep.gov/sites/default/files/AdaptationPlanningGuidebook.pdf> (last visited Feb. 2, 2021).

⁶⁰ *Id.* at 1-61.

⁶¹ DEP, *Coastal Construction Control Line Program*, <https://floridadep.gov/rcp/coastal-construction-control-line> (last visited Feb. 3, 2021); s. 161.053, F.S.; Fla. Admin. Code Chapters 62B-33, 62B-34, and 62B-56.

⁶² Section 161.053, F.S.; see DEP, *Frequently Asked Questions About the Coastal Construction Control Line* (2020), available at <https://floridadep.gov/sites/default/files/CCCL-FrequentlyAskedQuestions-2020.pdf> (last visited Feb. 3, 2021). Historical weather data are evaluated to establish a control line.

⁶³ Section 161.053, F.S.; DEP, *LOCATE the Coastal Construction Control Line (CCCL)*, <https://floridadep.gov/rcp/coastal-construction-control-line/content/locate-coastal-construction-control-line-cccl> (last visited Feb. 12, 2021).

⁶⁴ See s. 161.053, F.S. and Fla. Admin. Code R. 62B-33.004. Several exemptions exist.

⁶⁵ Fla. Admin. Code R. 62B-33.024. The projections are based on historical measurements; see s. 161.053(5)(a)2., F.S.

certain exceptions, DEP or local governments may not issue CCCL permits for major structures that are seaward of the 30-year erosion projection.⁶⁶

The following list includes examples of resilience efforts by government entities in Florida:

- Florida’s coastal local governments must have a coastal management element in their comprehensive plans,⁶⁷ and this element may include an “adaptation action area” designation⁶⁸ and must contain a redevelopment component in compliance with the 2015 “Peril of Flood” law.⁶⁹
- The Department of Transportation plans for resilience to prepare Florida’s transportation system for potential hazards.⁷⁰ Florida’s Metropolitan Planning Organizations consider resilience as a planning factor in the Long Range Transportation Plans.⁷¹
- The Department of Economic Opportunity assists communities with adaptation planning, and its Office of Disaster Recovery supports communities following disasters which includes administering federal funds that support resiliency efforts.⁷²
- The Fish and Wildlife Conservation Commission is Florida’s lead agency on addressing the impacts of climate change on fish and wildlife.⁷³ In 2016, the Commission published a guide of adaptation strategies for the predicted impacts of climate changes.⁷⁴
- The Department of Agriculture and Consumer Services’ Office of Energy develops Florida’s energy policy and works on climate change issues.⁷⁵
- The Division of Emergency Management in the Executive Office of the Governor maintains a statewide 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.⁷⁶
- The Department of Business and Professional Regulation’s Florida Building Commission adopts floodplain management and resilience standards into the Florida Building Code.⁷⁷

⁶⁶ Section 161.053(5), F.S.

⁶⁷ Sections 380.24, 163.3177(6)(g), and 163.3178(2), F.S.

⁶⁸ Chapter 2011-139, Laws of Fla.; ss. 163.3164(1) and 163.3177(6)(g)10., F.S.

⁶⁹ Chapter 2015-69, Laws of Fla.; s. 163.3178(2)(f), F.S.

⁷⁰ DOT, *Florida Transportation Plan (FTP): Resilience*, <http://www.floridatransportationplan.com/resilience.htm> (last visited Feb. 3, 2021).

⁷¹ DOT, *Resilience Quick Guide: Incorporating Resilience in the MPO Long Range Transportation Plan*, 2 (2020), available at [http://www.floridatransportationplan.com/pdf/2020-01-](http://www.floridatransportationplan.com/pdf/2020-01-29_FDOT%20Resilience%20Quick%20Start%20Guide_FINAL.pdf)

[29_FDOT%20Resilience%20Quick%20Start%20Guide_FINAL.pdf](http://www.floridatransportationplan.com/pdf/2020-01-29_FDOT%20Resilience%20Quick%20Start%20Guide_FINAL.pdf) (last visited Feb. 3, 2021).

⁷² DEO, *Adaptation Planning*, <http://www.floridajobs.org/community-planning-and-development/programs/community-planning-table-of-contents/adaptation-planning> (last visited Feb. 3, 2021); DEO, *Office of Disaster Recovery*, <http://www.floridajobs.org/community-planning-and-development/assistance-for-governments-and-organizations/disaster-recovery-initiative> (last visited Feb. 3, 2021).

⁷³ FWC, *What FWC is Doing*, <https://myfwc.com/conservation/special-initiatives/climate-change/fwc/> (last visited Feb. 3, 2021).

⁷⁴ FWC, *A Guide to Climate Change Adaptation for Conservation*, 1-1 (2016), available at <https://myfwc.com/media/5864/adaptation-guide.pdf> (last visited Feb. 3, 2021).

⁷⁵ DACS, *Office of Energy*, <https://www.fdacs.gov/Divisions-Offices/Energy> (last visited Feb. 21, 2021).

⁷⁶ DEM, *Mitigation*, <https://www.floridadisaster.org/dem/mitigation/> (last visited Feb. 3, 2021); DEM, *State Floodplain Management Program*, <https://www.floridadisaster.org/dem/mitigation/floodplain/> (last visited Feb. 3, 2021).

⁷⁷ Chapter 553, pt. IV, F.S.; Fla. Admin. Code R. 61g20-1.001; see Building a Safer Florida, Inc., *Flood Resistant Construction and the 6th Edition Florida Building Code*, 1 (2017), available at https://floridabuilding.org/fbc/thecode/2017-6edition/BASF_2017_flood_061217.pdf (last visited Feb. 4, 2021).

- The water management districts implement a range of resilience and flood control programs.⁷⁸
- Florida is divided into ten Regional Planning Councils, and some do resilience planning.⁷⁹
 - The Northeast Florida Regional Council's efforts include grant funding, technical support, and resources including an online mapping tool for determining risk.⁸⁰
 - The East Central Florida Regional Planning Council has formed the East Central Florida Regional Resilience Collaborative, which includes 25 member counties and cities and six member organizations and agencies.⁸¹
 - The Tampa Bay Regional Planning Council is active on resiliency planning.⁸²
- The USACE is planning and implementing many projects in Florida related to resilience.
 - The Miami-Dade Back Bay Coastal Storm Risk Management Feasibility Study is a three-year study, ending in September of 2021, that has tentatively recommended a plan that may include storm surge barriers, floodproofing of critical infrastructure countywide, and nonstructural measures (including home elevations or floodproofing) in seven refined focus areas determined to be the most socially vulnerable economic damage centers in Miami-Dade County.⁸³
 - The Central and Southern Florida Flood Resiliency Study was proposed by USACE, with the support of the South Florida Water Management District, to reevaluate the Central and Southern Florida Project to address climate change, sea level rise, and more.⁸⁴
- The Federal Emergency Management Agency (FEMA) administers hazard mitigation programs that increase resilience and facilitate hazard mitigation planning and grant

⁷⁸ St. John's River Water Management District, *Sea-Level Rise and Resiliency*, <https://www.sjrwmd.com/localgovernments/sea-level-rise/> (last visited Feb. 4, 2021); Akintunde Owosina, Chief, Hydrology and Hydraulics Bureau, South Florida Water Management District, Governing Board Meeting, June 13, 2019, *Impact of Sea Level Rise on the SFWMD Mission, Focus on Flood Protection*, 2, 6-10 (June 13, 2019), available at <https://apps.sfwmd.gov/webapps/publicMeetings/viewFile/21964> (last visited Feb. 4, 2021); Dr. Carolina Maran, District Resiliency Officer, South Florida Water Management District, Governing Board Meeting, March 12, 2020, *Central and Southern Florida Flood Resiliency Study*, 1 (Mar. 12, 2020), available at <https://apps.sfwmd.gov/ci/publicmeetings/viewFile/25445> (last visited Nov. 4, 2021). In 2020, the South Florida Water Management District appointed a District Resiliency Officer.

⁷⁹ Sections 186.501-186.513, F.S.

⁸⁰ Northeast Florida Regional Council, *Resiliency Services*, <https://www.nefrc.org/resiliency> (last visited Feb. 4, 2021).

⁸¹ East Central Florida Regional Planning Council, *East Central Florida Regional Resilience Collaborative*, <https://www.ecfrpc.org/resiliencycollaborative> (last visited Feb. 4, 2021).

⁸² Tampa Bay Regional Planning Council, *Resiliency Planning*, <https://www.tbrpc.org/resiliency-2/> (last visited Feb. 4, 2021).

⁸³ USACE, *Miami-Dade Back Bay Coastal Storm Risk Management Feasibility Study*, <https://www.saj.usace.army.mil/MiamiDadeBackBayCSRMFeasibilityStudy/> (last visited Feb. 4, 2021); USACE, *Miami-Dade Back Bay Coastal Storm Risk management Draft Integrated Feasibility Report and Programmatic Environmental Impact Statement*, 177-178, 181, 222-238 (May 2020), available at <https://usace.contentdm.oclc.org/utis/getfile/collection/p16021coll7/id/14453> (last visited Feb. 4, 2021).

⁸⁴ Dr. Carolina Maran, District Resiliency Officer, South Florida Water Management District, Governing Board Meeting March 12, 2020, *Central and Southern Florida Flood Resiliency Study*, video begins at 4:50:30 (Mar. 12, 2020), available at <http://sfwmd.igmp2.com/Citizens/SplitView.aspx?Mode=Video&MeetingID=2008&Format=Agenda> (last visited Feb. 4, 2021).

funding.⁸⁵ FEMA also administers the National Flood Insurance Program (NFIP), which includes insurance, floodplain mapping, and federal, state, and local regulations.⁸⁶

The Environmental Regulation Commission

The Environmental Regulation Commission (Commission) is an unpaid seven-member board within DEP.⁸⁷ Under specified statutory provisions and with certain exceptions, the Commission must exercise the standard-setting authority of DEP - approving, modifying, or disapproving proposed rules that contain standards.⁸⁸ In exercising its authority to set standards, the Commission must consider scientific and technical validity, economic impacts, and relative risks and benefits to the public and the environment.⁸⁹

The Commission is composed of seven state residents appointed by the Governor for four-year terms, subject to confirmation by the Senate.⁹⁰ The appointees must provide reasonable representation from all sections of the state, and be representative of agriculture, the development industry, local government, the environmental community, lay citizens, and members of the scientific and technical community who have substantial expertise related to water pollutants, toxicology, epidemiology, geology, biology, environmental sciences, or engineering.⁹¹ Most issues that go before the Commission relate to air pollution, water quality, or waste management.⁹² The Commission has not met since 2019.⁹³ According to DEP's website, two of the memberships to the Commission are vacant and the terms of the five listed members have lapsed.⁹⁴

III. Effect of Proposed Changes:

Section 1 creates s. 14.2031, F.S., entitled "Statewide Office of Resiliency." The bill establishes the Statewide Office of Resiliency within the Executive Office of the Governor. The office must be headed by a Chief Resilience Officer. The Chief Resilience Officer is appointed by and serves at the pleasure of the Governor, and must perform duties and responsibilities assigned by the Governor.

⁸⁵ FEMA, *Hazard Mitigation Assistance Guidance - Hazard Mitigation Grant Program, Pre-Disaster Mitigation Program, and Flood Mitigation Assistance Program*, 1–5 (2015), available at https://www.fema.gov/sites/default/files/2020-07/fy15_HMA_Guidance.pdf (last visited Feb. 4, 2021).

⁸⁶ FEMA, *National Flood Insurance Program (NFIP), Floodplain Management Requirements*, FEMA 480, 2-6-2-8 (2005), available at https://www.fema.gov/sites/default/files/documents/fema-480_floodplain-management-study-guide_local-officials.pdf (last visited Feb. 4, 2021); see 44 C.F.R. parts 59 and 60.

⁸⁷ Section 20.255(6), F.S.; DEP, *Environmental Regulation Commission*, <https://floridadep.gov/ogc/ogc/content/environmental-regulation-commission> (last visited Jan. 31, 2021).

⁸⁸ Sections 403.803(13), 403.804, and 403.805(1), F.S. "Standard" is defined as any DEP rule relating to air and water quality, noise, solid-waste management, and electric and magnetic fields associated with electrical transmission and distribution lines and substations. The term does not include rules relating to internal management or procedural matters.

⁸⁹ Section 403.804, F.S.

⁹⁰ Section 20.255(6), F.S.

⁹¹ *Id.*

⁹² DEP, *Environmental Regulation Commission*, <https://floridadep.gov/ogc/ogc/content/environmental-regulation-commission> (last visited Jan. 31, 2021).

⁹³ *Id.*

⁹⁴ DEP, *ERC Members*, <https://floridadep.gov/ogc/ogc/content/erc-members> (last visited Feb. 8, 2021).

Adjunct to the Statewide Office of Resiliency, the bill creates the Statewide Sea-Level Rise Task Force.⁹⁵ The purpose of the task force is to recommend consensus projections of the anticipated sea-level rise and flooding impacts along Florida's coastline.

The task force is composed of the following nine members:

- The Chief Resilience Officer, serving as the chair of the task force;
- The Department of Environmental Protection's (DEP's) Chief Science Officer, serving as vice-chair of the task force;
- One member appointed by the President of the Senate;
- One member appointed by the Speaker of the House of Representatives; and
- One representative from each of the following agencies, appointed by his or her respective agency head, division director, executive director, or commission chair:
 - The Department of Transportation;
 - The Division of Emergency Management;
 - The Department of Agriculture and Consumer Services;
 - The Fish and Wildlife Conservation Commission; and
 - The Department of Economic Opportunity.

All appointments to the task force must be made no later than August 1, 2021. The bill requires that any vacancy on the task force be filled in the same manner as the original appointment.

The bill requires the Chief Resilience Officer to convene the task force by no later than October 1, 2021, and the task force must meet thereafter upon the call of the chair. The task force must develop official scientific information, from appropriate sources as determined by the task force, necessary to recommend consensus baseline projections, or a range of projections, of the expected rise in sea level along the state's coastline for planning horizons designated by the task force. The projections may address various geographic areas of the state, as determined by the task force.

DEP is required to provide administrative support to the task force. The bill authorizes the task force to request DEP to contract for services to assist in developing the recommended official baseline projections. DEP must serve as the contract administrator for any such contracts. The task force is also authorized to designate technical advisory groups, as it deems necessary, to assist in the gathering of scientific data to inform the task force's decision-making.

The bill requires the task force to submit its recommended consensus baseline projections to the Environmental Regulation Commission (Commission) by January 1, 2022. The task force must include in its report supporting data and assumptions the task force used in developing the recommended projections. The Commission must adopt or reject the task force's recommended projections. Following adoption by the Commission, the projections must serve as the state's official estimate of sea-level rise and flooding impacts along the state's coastline and must be

⁹⁵ Section 20.03(8), F.S. The bill defines the task force using the following definition: "an advisory body...created by specific statutory enactment for a time not to exceed 3 years and appointed to study a specific problem and recommend a solution or policy alternative with respect to that problem. Its existence terminates upon the completion of its assignment"; s. 20.052, F.S. Except as otherwise provided in the bill, the bill requires the task force to operate in a manner consistent with s. 20.052, F.S., which specifies requirements for the establishment, evaluation, and maintenance of certain bodies created by specific statutory enactment as an adjunct to an executive agency.

used for developing future state projects, plans, and programs. The task force must review the adopted consensus baseline projections as it deems appropriate, and submit any recommended revisions to the projections to the Commission.

The bill repeals all of the provisions regarding the task force on July 1, 2024. However, the provisions establishing the Statewide Office of Resiliency and the Chief Resilience Officer will remain in effect after that date.

Section 2 contains an appropriation. For Fiscal Year 2021-2022, the bill appropriates \$500,000 in nonrecurring funds from the General Revenue Fund to DEP to fund any contracts for services that DEP enters into to assist the task force in developing its recommended official baseline projections and for the administrative expenses of the task force.

Section 3 provides an effective date of July 1, 2021.

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:

None.

C. Government Sector Impact:

For Fiscal Year 2021-2022, the bill contains an appropriation for \$500,000 in nonrecurring funds from the General Revenue Fund to DEP for the expenses associated with contracting for services to develop the projections and for task force administrative expenses.

VI. Technical Deficiencies:

None.

VII. Related Issues:

None.

VIII. Statutes Affected:

This bill creates section 14.2031 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.