

## CHAPTER 62S-7

### PUBLIC FINANCING OF COASTAL CONSTRUCTION IN AREAS AT RISK DUE TO SEA LEVEL RISE “SLIP STUDY RULE”

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#### **62S-7.010 Definitions.**

(1) “Area at risk due to sea level rise” is as defined in Section 380.0937(1)(a), F.S.

(1) “Coastal building zone” means

(a) 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 Section 161.053, F.S., and, for those coastal areas fronting on the Gulf of Mexico, Atlantic Ocean, Florida Bay, or Straits of Florida and not included under Section 161.053, F.S., the land area seaward of the most landward velocity zone (V zone) line as established by the Federal Emergency Management Agency (FEMA) and shown on flood insurance rate maps;

(b) On coastal barrier islands, it shall be the land area from the seasonal high water line to a line 5,000 feet landward from the coastal construction control line established pursuant to Section 161.053, F.S. or the entire island, whichever is less; and

(c) All land area in the Florida Keys located within Monroe County shall be included in the coastal building zone.

(2) “Department” means the Department of Environmental Protection.

(3)(2) “Expected life” means the time when an element is supposed to function within its specified parameters; in other words, the life expectancy of the potentially at-risk structure or infrastructure structure or project.

(4)(3) “Flood depth” is the water level measured in feet above the ground at the project location.

(4) “Horizontal construction” means new construction of surface parking lots, highways, roads, streets, bridges, utilities, water supply projects, water plants, wastewater plants, water and wastewater distribution or conveyance facilities, wharves, docks, airport runways and taxiways, drainage projects, or related types of projects associated with civil engineering construction.

(5) “New coastal structure” means a major or nonhabitable major structure for which construction has not yet commenced beginning July 1, 2022 (one year after effective date of this rule). Projects that are rehabilitation or maintenance of existing structures, including related minor improvements shall not be considered new.

(a) “Major Structures” are defined in Section 161.54(6)(a), F.S.

(b) “Nonhabitable Major Structures” are defined in Section 161.54(6)(c), F.S.

(5) “Level of service” means an indicator of the extent or degree of service provided by, or proposed to be provided by, a potentially at-risk structure or infrastructure based on and related to the operational characteristics of the asset such as the functional capacity per unit of demand.

(6) “Potentially at-risk structure or infrastructure” is as defined in Section 380.0937(1)(c), F.S.

(7) “Public entity” is as defined in Section 380.0937(1)(d), F.S.

(8) “Significant flood damage is as defined in Section 380.0937(1)(e), F.S., or, for potentially at-risk structures or infrastructure for which replacement cost is not an appropriate metric, a reduction in the level of service provided to the affected community that results in:

(a) The degradation of the level of service of one letter rating or more, or the reduction in free-flow speed of ten percent or more to the traffic-impacted area for potentially at-risk structure or infrastructure regulated by the Florida Department of Transportation. If a traffic study is unavailable, the average free-flow speed of the two nearest, comparable, roads may be used; or

(b) A reduction in the level of service below the minimum level of service identified in a local government’s concurrency standards required by Section 163.3180(1), F.S.

(9) “SLIP study” is as defined in Section 380.0937(1)(f), F.S.

(10) “State-financed constructor” is as defined in Section 380.0937(1)(g), F.S.

(11)(6) “Vertical construction” means the new construction of any building, structure or other improvement that is predominantly vertical, including, without limitation, a building, structure or improvement for the support, shelter and enclosure of persons, animals, chattels or movable property of any kind, and any improvement appurtenant thereto.

### 62S-7.011 Requirements of The State-Financed Constructor.

(1) ~~Beginning July 1, 2022 (one year after effective date of this rule)~~ A a state-financed constructor, as defined in Section 161.551, F.S., must conduct a SLIP study that meets the standards and criteria in Rule 62S-7.012, F.A.C., prior to construction of a potentially at-risk structure or infrastructure ~~new coastal structure~~. A state-financed constructor may comply with this requirement by using the Department's web-based tool, which was designed to meet the criteria in Rule 62S-7.012, F.A.C., for performing and submitting a SLIP study or conduct and submit a SLIP study by their own method that otherwise meets the standards and criteria established in Rule 62S-7.012, F.A.C.

(2) The state-financed constructor may not commence construction of a potentially at-risk structure or infrastructure ~~new coastal structure~~ until a SLIP study meeting the criteria in Rule 62S-7.012, F.A.C., has been submitted to the Department and has received notification from the Department via the web-based tool or email that the SLIP study has been published on the Department's website for 30 days. The ~~D~~Department encourages submission of the SLIP study during planning and design phases of the project.

(3) All SLIP studies will be maintained on the Department's website for a minimum of 10 years.

### 62S-7.012 SLIP Study Standards.

A SLIP study required under Section 380.0937 ~~461.551~~, F.S., shall meet the following standards and criteria, and the Department's web-based tool has been designed to meet these standards and criteria:

(1) Show the amount of sea level rise expected over 50 years or the expected life of the potentially at-risk structure or infrastructure ~~structure~~, whichever is less. When there are multiple project features that function as one combined project, as contemplated by Section 380.0937(3) ~~461.551(3)~~, F.S., one SLIP study may be submitted, but the expected life shall be that of the highest Risk Category for all project features contemplated. The amount of sea level rise expected must be calculated using the following criteria:

(a) The sea level rise scenarios used for analysis must, at a minimum, include the highest of the sea level rise projections required by Section 380.093(3)(d)3.b., F.S. NOAA Intermediate High sea level rise scenario from the National Oceanic and Atmospheric Administration (NOAA) report, "2017 NOAA Technical Report National Ocean Service Center for Operational Oceanographic Products and Services (NOS CO OPS) 083, Global and Regional Sea Level Rise Scenarios for the United States," hereby incorporated by reference [http://www.flrules.org/Gateway/reference.asp?No\\_Ref=13153](http://www.flrules.org/Gateway/reference.asp?No_Ref=13153). Copies of these documents may be obtained by writing to the National Oceanic and Atmospheric Administration, National Ocean Service, Center for Operational Oceanographic Products and Services, Silver Spring, Maryland 20910.

(b) The local sea level rise at the project's location must be interpolated (using the project's distance away from the gauges as the independent variable) between the two closest coastal tide gauges that do not have data warnings associated with them with NOAA sea level rise projections listed below.

1. 8670870 Fort Pulaski, Georgia GA
2. 8720030 Fernandina Beach, Florida
3. 8720218 Mayport, Florida
4. 8721604 Trident Pier, Florida
5. 8722670 Lake Worth Pier, Florida
6. ~~5.~~ 8723214 Virginia Key, Florida
7. ~~6.~~ 8723970 Vaca Key, Florida
8. ~~7.~~ 8724580 Key West, Florida
9. ~~8.~~ 8725110 Naples, Florida
10. ~~9.~~ 8725520 Fort Myers, Florida
11. 8726384 Port Manatee, Florida
12. 8726674 East Bay, Florida
13. ~~10.~~ 8726520 St. Petersburg, Florida
14. ~~11.~~ 8726724 Clearwater Beach, Florida
15. ~~12.~~ 8727520 Cedar Key, Florida
16. ~~13.~~ 8728690 Apalachicola, Florida

17. 44. 8729108 Panama City, Florida

18. 8729210 Panama City Beach, Florida

19. 45. 8729840 Pensacola, Florida

20. 46. 8735180 Dauphin Island, ~~Alabama~~ AL

(c) Flood depth must be calculated in North American Vertical Datum of 1988 (NAVD88) over the entirety of the project location out 50 years or the potentially at-risk structure or infrastructure's structure's expected life, whichever is less, for the highest of the sea level rise projections required by Section 380.093(3)(d)3.b., F.S. NOAA Intermediate high sea level rise scenario, at a minimum.

(d) The contribution of land subsidence to relative local sea level rise must be included. The land subsidence contribution is calculated by NOAA for each local tide gauge and is included in each of the NOAA sea level projections. This data (labeled VLM for Vertical Land Movement) is presented in the U.S. Army Corps of Engineers (USACE) sea level change calculator (Version 2022.72 2019.21) found at [https://cwbi-app.sec.usace.army.mil/rccslc/slcc\\_calc.html](https://cwbi-app.sec.usace.army.mil/rccslc/slcc_calc.html), hereby incorporated by reference <http://www.flrules.org/Gateway/reference.asp?No=Ref-13154>.

(2) Show the estimated probability amount of significant flood damage flooding, inundation, and wave action damage risk expected over 50 years or the expected life of the potentially at-risk structure or infrastructure structure, whichever is less. Use the following metrics to calculate the amount of flooding and wave damage for use in determining the probability of significant flood damage. The amount of flooding and wave damage expected must be calculated using the following criteria:

(a) FEMA storm surge water surface elevation for the 1% annual chance (100 year) flood event must be approximated in NAVD88 for the entire project location. Location-specific water surface elevations can be found within the SLIP tool or at the FEMA Flood Map Service Center <https://msc.fema.gov/portal/home>, hereby incorporated by reference <http://www.flrules.org/Gateway/reference.asp?No=Ref-13156>. Copies of these documents may be obtained by writing to the Office of Resilience and Coastal Protection, Mail Station 235, Department of Environmental Protection, Douglas Building, 3900 Commonwealth Blvd., Tallahassee, Florida 32399-3000.

(b) The FEMA 1% annual chance water surface elevation must be added to the highest of the sea level rise projections required by Section 380.093(3)(d)3.b., F.S. NOAA 2017 Intermediate High and any other chosen sea level rise scenario, and then compared to the project's critical elevations to assess flood risk. Critical elevations must be Finished First Floor Elevation (FFE), the Lowest Adjacent Grade (LAG) of the potentially at-risk structure or infrastructure structure, or another critical design element which may be substantially damaged if flooded. Refer to the 2020 Florida Building Code, Section 1603.1.7, Flood Design Data, for assistance in defining the critical elevation at [https://codes.iccsafe.org/content/FLBC2020P1/chapter-16-structural-design#FLBC2020P1\\_Ch16\\_Sec1603.1.7](https://codes.iccsafe.org/content/FLBC2020P1/chapter-16-structural-design#FLBC2020P1_Ch16_Sec1603.1.7), hereby incorporated by reference <http://www.flrules.org/Gateway/reference.asp?No=Ref-13157>. Copies of these documents may be obtained by writing to the Office of Resilience and Coastal Protection, Mail Station 235, Department of Environmental Protection, Douglas Building, 3900 Commonwealth Blvd., Tallahassee, Florida 32399-3000.

(c) ~~Depth-Damage Curves from the 2015 North Atlantic Coast Comprehensive Study, titled "Resilient Adaptation to Increasing Risk: Physical Depth Damage Function Summary Report", hereby incorporated by reference <http://www.flrules.org/Gateway/reference.asp?No=Ref-13158>. Copies of these documents may be obtained by writing to the Office of Resilience and Coastal Protection, Mail Station 235, Department of Environmental Protection, Douglas Building, 3900 Commonwealth Blvd., Tallahassee, Florida 32399-3000, must be used to estimate the cost of future flood damage, for vertical construction only, by assessing the approximate flood depth within the structure, using the comparison of the critical elevations to the previously calculated 1% annual chance water surface elevation added to the highest of the sea level rise projections required by Section 380.093(3)(d)3.b., F.S. The estimated damage cost based on flood depth relative to critical elevations varies based on building characteristics and can be found in the 2015 North Atlantic Coast Comprehensive Study, titled "Resilient Adaptation to Increased Risk: Physical Depth Damage Function Summary Report", hereby incorporated by reference <http://www.flrules.org/Gateway/reference.asp?No=Ref-13158>. Copies of these documents may be obtained by writing to the Office of Resilience and Coastal Protection, Mail Station 235, Department of Environmental Protection, Douglas Building, 3900 Commonwealth Blvd., Tallahassee, Florida 32399-3000 NOAA 2017 Intermediate High and any other chosen local sea level rise scenarios.~~

(d) Level of service impacts must be calculated for any potentially at-risk structure or infrastructure for which replacement cost is not an appropriate metric to determine flood damage severity.

1. The percent reduction in free-flow speed must be calculated by dividing the difference between standard operating conditions and flood-impacted conditions by the standard operating condition and multiplying by one hundred. The method for calculating free-

flow speed can be found at <https://www.fhwa.dot.gov/ohim/hpmsmanl/appn2.cfm>, hereby incorporated by reference [insert link]. Copies of these documents may be obtained by writing to the Office of Resilience and Coastal Protection, Mail Station 235, Department of Environmental Protection, Douglas Building, 3900 Commonwealth Blvd., Tallahassee, Florida 32399-3000.

(3) The state-financed constructor must show the risk to public safety and environmental impacts expected over 50 years or the expected life of the potentially at-risk structure or infrastructure structure, whichever is less using the following criteria.

(a) Each potentially at-risk structure or infrastructure structure must be assigned a Risk Category using the 2020 Florida Building Code Table 1604.5, Risk Category of Buildings and Other Structures. The table can be found at [https://codes.iccsafe.org/content/FLBC2020P1/chapter-16-structural-design#FLBC2020P1\\_Ch16\\_Sec1604.5](https://codes.iccsafe.org/content/FLBC2020P1/chapter-16-structural-design#FLBC2020P1_Ch16_Sec1604.5), hereby incorporated by reference <http://www.flrules.org/Gateway/reference.asp?No=Ref-13159>. Copies of these documents may be obtained by writing to the Office of Resilience and Coastal Protection, Mail Station 235, Department of Environmental Protection, Douglas Building, 3900 Commonwealth Blvd., Tallahassee, Florida 32399-3000.

(b) The ultimate design windspeed for the project location must be provided to define the risk of flying debris. This windspeed varies based on the Risk Category of the building and can be found in Figures 1609.3(1), 1609.3(2), 1609.3(3), and 1609.3(4) in the 2020 Florida Building Code at: [https://codes.iccsafe.org/content/FLBC2020P1/chapter-16-structural-design#FLBC2020P1\\_Ch16\\_Sec1609.3](https://codes.iccsafe.org/content/FLBC2020P1/chapter-16-structural-design#FLBC2020P1_Ch16_Sec1609.3), hereby incorporated by reference <http://www.flrules.org/Gateway/reference.asp?No=Ref-13160>. Copies of these documents may be obtained by writing to the Office of Resilience and Coastal Protection, Mail Station 235, Department of Environmental Protection, Douglas Building, 3900 Commonwealth Blvd., Tallahassee, Florida 32399-3000.

(4) Alternatives must be provided for the project's design and siting and the SLIP study must state how such alternatives would address public safety and environmental impacts resulting from damage to the potentially at-risk structure or infrastructure, including but not limited to, leakage of pollutants, electrocution and explosion hazards, and hazards resulting from floating or flying structural debris as well as the risks and costs associated with construction, maintenance and repair of the potentially at-risk structure or infrastructure structure.

(5) The state-financed constructor must provide a list of flood mitigation strategies evaluated as part of the design of the potentially at-risk structure or infrastructure and identify appropriate flood mitigation strategies for consideration as part of the potentially at-risk structure or infrastructure design.

~~(6)~~(5) If a state-financed constructor chooses to conduct its own SLIP study and not use the Department's web-based tool, the SLIP study shall be submitted to the Department for publication via secure sign-in on the DEP-provided website. The study report shall be in an Americans with Disabilities Act (ADA) Section 508 compliant portable document format. The report contents shall include, but not be limited to, a description of the approach used in conducting the study, numbered references to the information used in the study, a narrative with graphic illustrations to demonstrate the application of the study approach to the information used, and a discussion of the assessments and alternatives.

*Rulemaking Authority ~~380.0937(6) 461.551(6)~~ FS. Law Implemented ~~380.0937 461.551~~ FS. History— New 7-1-21, Amended 7-1-24.*

#### **62S-7.014 Implementation of SLIP Study findings.**

The Department's intent in this rule is to inform and raise awareness with the state-financed constructor of the potential impacts of sea level rise and increased storm risk on potentially at-risk structures or infrastructure ~~coastal infrastructure~~. Implementation of the findings of the SLIP studies is at the discretion of the state-financed constructor.

*Rulemaking Authority ~~380.0937(6) 461.551(6)~~ FS. Law Implemented ~~380.0937 461.551~~ FS. History— New 7-1-21, Amended 7-1-24.*

#### **62S-7.020 Effective Date.**

The rule chapter applies only to projects not yet commenced as of the date the rule takes effect. The rule may not apply retroactively to projects that commence prior to the date the rule is effective. Any enforcement shall not proceed until 1 year after the rule takes effect.

*Rulemaking Authority ~~380.0937(6) 461.551(6)~~ FS. Law Implemented ~~380.0937 461.551~~ FS. History— New 7-1-21, Amended 7-1-24.*