Summary Points for

"Proposed Florida Building Code Appendix for Optional Enhanced Construction Techniques" for the Wind, Flood, and Storm Surge Provisions

Submitted for Consideration to the Florida Building Commission

by

DEM Bureau of Mitigation/State Floodplain Management Office

Description and Products of Proposed Research:
The Bureau of Mitigation proposes to analyze, adapt and translate enhanced building design and construction concepts to mitigate for greater resiliency against wind, flood and storm surge. The source of design and construction concepts are from the University of Florida, Engineering School of Sustainable Infrastructure and Environment's (ESSIE) study funded and accepted by the Department of Business and Professional Development on behalf of the Florida Building Commission.

The proposed research project will translate the ESSIE study findings into optional ordinance, optional Florida Building Code (FBC) appendix language, and design narrative language for construction documents that establish higher standards than the minimum NFIP flood and FBC wind building requirements. This will enable communities to consider adopting more resilient standards, and for design professionals to meet customer needs for more flood and wind resilient residences and commercial properties. To participate in the NFIP, communities must adopt the minimum NFIP requirements, but FEMA strongly advises communities to adopt higher standards which when credited under the Community Rating System (CRS) results in premium discounts for NFIP policy holders in CRS participating communities.

Application to the optional Appendices in the Codes, if approved, must first be subject to code adoption hearings in some future code cycle. Such language may most appropriately be a "Resiliency Outreach Bulletin Project". The project is intended to contain two parts. Part 1 concerns CRS higher standards for communities who wish to adopt more stringent provisions that may return significant premium discounts for properties where owners purchase NFIP flood insurance. Part 2 of the outreach document will provide additional construction higher standards for use by contractors or design professionals for owners who desire to have greater flood and wind resiliency on new homes or during substantial improvements which may constitute the most significant investment in the lives for many people.

In both parts, language will describe the purpose which is to achieve greater flood and wind resiliency that will be optional for owners and not imposed by the authority having jurisdiction (AHJ) unless those options are adopted locally. Following the opening paragraphs, the higher

resiliency standards will be accompanied with advisory language that explains in laymen terms, the advantage of each proposed higher standard to include approximate cost information.

Legislative Authority for Development of Higher Standards:
Specific legislative authorities and requirements for measures to enhance flood and wind resiliency are found in at least three major State laws. These laws include Section 252.44, Emergency mitigation F.S., 163.3178(2)(f), F.S. concerning required Local comprehensive plans coastal construction element and SB 178 that authorizes Florida DEP to develop rules requiring public entities to adopt "sea level impact plans" for any new construction funded with State funds. More specifically these laws provide the following:

Section 252.44, F.S. Emergency mitigation.—
(1) In addition to prevention measures included in the state and local comprehensive emergency management plans, the Governor shall consider on a continuing basis steps that could be taken to mitigate the harmful consequences of emergencies. **At the Governor's direction and pursuant to any other authority and competence they have, state agencies, including, but not limited to, those charged with responsibilities in connection with flood plain management, stream encroachment and flow regulation, weather modification, fire prevention and control, air quality, public works, land use and land use planning, and construction standards, shall make studies of emergency-mitigation-related matters.** The Governor, from time to time, shall make such recommendations to the Legislature, local governments, and other appropriate public and private entities as may facilitate measures for mitigation of the harmful consequences of emergencies.

(2) The appropriate state agencies, in conjunction with the division, shall keep land uses and **construction of structures and other facilities under continuing study and identify areas which are particularly susceptible to severe land shifting, subsidence, flood, or other catastrophic occurrence, manmade or natural.** The studies under this subsection shall concentrate on means of reducing or avoiding the dangers caused by these occurrences or the consequences thereof.

Section 163.3178, F.S. Coastal Management --
(2) Each coastal management element required by s. 163.3177(6)(g) shall be based on studies, surveys, and data; be consistent with coastal resource plans prepared and adopted pursuant to general or special law; and contain:

(f) A redevelopment component that outlines the principles that must be used to eliminate inappropriate and unsafe development in the coastal areas when opportunities arise. The component must:
1. Include development and redevelopment principles, strategies, and engineering solutions that reduce the flood risk in coastal areas which results from high-tide events, storm surge, flash floods, stormwater runoff, and the related impacts of sea-level rise.

2. Encourage the use of best practices development and redevelopment principles, strategies, and engineering solutions that will result in the removal of coastal real property from flood zone designations established by the Federal Emergency Management Agency.

3. Identify site development techniques and best practices that may reduce losses due to flooding and claims made under flood insurance policies issued in this state.

4. Be consistent with, or more stringent than, the flood-resistant construction requirements in the Florida Building Code and applicable flood plain management regulations set forth in 44 C.F.R. part 60.

5. Require that any construction activities seaward of the coastal construction control lines established pursuant to s. 161.053 be consistent with chapter 161.

6. Encourage local governments to participate in the National Flood Insurance Program Community Rating System administered by the Federal Emergency Management Agency to achieve flood insurance premium discounts for their residents.

Florida Legislative Session 2020 Senate Bill 178 Relating to public financing of construction projects in coastal areas.

Amendment to Section 161.55:

(3) The department (DEP) shall develop by rule a standard by which a state-financed constructor must conduct a SLIP (sea level impact projection) study and may require that a professional engineer sign off on the study. The rule must be effective 1 year after the date it is finalized and applies only to projects not yet commenced as of the date the rule is finalized. The rule may not apply retroactively to projects that commenced before the date the rule is finalized. **At a minimum, the standard must require that a state-financed constructor do all of the following:**

(a) Use a systematic, interdisciplinary, and scientifically accepted approach in the natural sciences and **construction design** in conducting the study.

(b) Assess the flooding, inundation, and wave action damage risks relating to the coastal structure over its expected life 70 or 50 years, whichever is less.

1. The assessment must take into account potential relative local sea-level rise and increased storm risk during the expected life of the coastal structure or 50 years, whichever is less, and, to the extent possible, account for the contribution of sea-level rise versus land subsidence to the relative local sea-level rise.

2. The assessment must provide scientific and engineering evidence of the risk to the coastal structure and methods used to mitigate, adapt to, or reduce this risk.

3. The assessment must use and consider available scientific research and generally accepted industry practices.

4. The assessment must provide the mean average annual chance of substantial flood damage over the expected life of the coastal structure or 50 years, whichever is less.

5. The assessment must 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.**

(c) **Provide alternatives for the coastal structure's design** and siting, and how such alternatives would impact the risks specified in subparagraph (b)5. as well as the risk and cost associated with maintaining, repairing, and constructing the coastal structure.

Research Proposal Offers Options for Code Consideration without being Required:

While the Building Code is considered a "minimum code", optional higher standards when not required may represent "cost-effective standards" that are consistent with the intent of the codes.

While an owner may choose how he wants his structure conducted beyond the minimum codes, owners may not know about more resilient standards unless they are embodied as optional elements in the Codes. The consensus Codes adoption process has shown to reduce or protect against unadvisable requirements, and any optional standards, incorporated in appendices, would also be subject to the same consensus review process. The project clearly provides "Technical Enrichment" for the benefit of Florida's property owners.

One concern expressed, is that if the Code is insufficient, then the higher standards should be amended into the minimum, cost-effective standards of the Codes. This perspective is a false argument since the Codes are well recognized for their effectiveness at reducing damage and loss. The optional higher standards enable owners and their design professionals understand the benefits of the Code review process and help ensure that owner investments are worthy of the costs for additional work and materials to construct more resilient structures.

The intent of research projects funded by the Commission is intended to explore and understand how to make the Codes better. To not incorporate the findings of research projects in the Codes is inconsistent with Commission responsibilities to ensure that the Codes help ensure cost effective, resilient, safe and enduring structures in Florida communities.