

DRAFT FOR PUBLIC COMMENT, email comments to [resilience@broward.org](mailto:resilience@broward.org) by May 31, 2019

## ARTICLE XXV. - RESILIENCY STANDARDS FOR TIDAL FLOOD PROTECTION

### Sec. 39-404 – Purpose and intent.

The purpose of this article is to establish a consistent minimum elevation for seawalls, banks, berms, and other tidal flood barriers that will:

- (a) Provide a standard for flood mitigation infrastructure that serves as a barrier to tidal flooding over the reasonable life expectancy of the project by accounting for water levels predicted under combined conditions of sea level rise, high tides, and high frequency storm surge, through the year 2070: and
- (b) Ensure new investments and major improvements to tidal flood barriers are designed with application of consistent standards that account for future flood conditions and coastal water levels predicted with sea level rise in accordance with current regional sea level rise projections, as updated and adopted by the Broward County Board of County Commissioners.

Section 39-405 – Applicability. This article applies to all new tidal flood barriers, substantial improvements to tidal flood barriers, the installation of any fixed infrastructure attached to tidal flood barriers (such as mooring structures). Substantial improvements shall apply to the entire length of the property.

Sec. 39-406 - Definitions. For the purposes of this article, the following terms, phrases, words, and their derivation shall have the meanings given herein, except when the context clearly indicates a different meaning. In the interpretation and application of this article, the definitions provided for herein shall control over definitions which that may be included in other documents or manuals, including, but not limited to, the Florida Building Code. Words used in the present tense include the future tense, words in the plural number include the singular number, and words in the singular number include the plural number. The word "shall" is mandatory and the word "may" is permissive.

*Berm* means an earthen mound designed to resist tidal waters to flow unimpeded through to an adjacent property or public rights-of-way.

*Canal bank or berm* is the level space separating a waterway from an inland area, often elevated and constructed of compacted soil.

*Tidal flood barrier* means any structure, including but not limited to, berms, canal banks, green-grey infrastructure, mooring structures, seawalls, seawall caps, or other infrastructure that functions in the same capacity, located within or along a tidally-influenced area. This definition is not meant to include rip rap or other earthen mounds that do not provide an impermeable water barrier to tidal flooding.

*Green-grey infrastructure or materials* is a combination of engineered and natural features that provide environmental qualities and ecosystem value.

*Marine and intertidal waters* mean water subject to tidal influence.

*Mooring structure* means a boat dock, skip, boat davit, hoist, boat lift, mooring pile or a similar structure attached to land or a seawall, to which a vessel can be moored.

*NAVD88* or the North American Vertical Datum means the vertical control for datum of orthometric height established for vertical control surveying in the United States of America based upon the General Adjustment of the North American Datum of 1988.

*Rip-rap* means a foundation of unconsolidated boulders, stone, rubble, concrete or similar materials placed on or near a shoreline to mitigate wave impacts and prevent erosion.

*Seawall* means the vertical or near vertical (often interlocking) structures placed between an upland area and a waterway or waterbody.

*Seawall cap* means the concrete box structure (usually reinforced) which ties the seawall together at the top.

*Substantial repair or rehabilitation* means:

- a. Any improvement to tidal flood barrier of more than fifty percent (50%) of the length of the structure, which for the purposes of this section shall include both the seawall and seawall cap.
- b. Any improvement to tidal flood barriers which results in an elevation change along more than fifty percent (50%) of the length of the structure.
- c. Any modifications, alterations or installation of appurtenant structures (such as mooring structures) which exceed 50% of the replacement cost of the tidal flood barrier.

*Tidally-influenced areas* means a waterway with water level changes in response to the daily tide.

Sec. 39-407 - Minimum Elevations for Coastal Infrastructure within Tidally-Influence Areas.

- (a) All new or substantially rehabilitated seawalls, seawall caps, canal banks or berms shall have a minimum elevation of 5.0 feet NAVD88. Applications for new or substantially rehabilitated seawalls, seawall caps submitted prior to January 1<sup>st</sup> 2035 may be permitted a minimum elevation of 4.0 feet NAVD88 if designed and constructed to accommodate a minimum elevation of 5.0 feet NAVD88 by January 1, 2050.
- (b) All property owners must maintain their seawalls and other tidal flood barriers in good repair. A tidal flood barrier is presumed to be in disrepair if it allows for upland erosion, transfer of material through the barrier, or allows tidal waters to flow unimpeded through or over the barrier and on to adjacent property or public rights-of-way. Failure to maintain flood mitigation infrastructure shall be a citable offense. The owner of the seawall shall demonstrate progress towards repairing the cited defect within sixty (60) days of receiving notification and complete repairs within three hundred sixty-five days of receipt of the citation. If the required repair meets the substantial repair threshold, the property owner shall design, obtain permits, and cause to be constructed, seawall improvements that meet the minimum elevation and design requirements within three hundred sixty-five (365) days of receipt of the citation.
- (c) Tidal flood barriers below a minimum 5 feet NAVD88 elevation shall be improved, designed and constructed so as to prevent tidal waters from impacting adjacent properties or public rights-of-way. Causing, suffering or allowing the trespass of tidal waters onto adjacent property (public or private) shall be a citable offense. The owner shall demonstrate progress

- toward addressing the cited concern within sixty (60) days of receipt of notification and complete the construction of an approved remedy within three hundred sixty-five (365) days of citation.
- (d) Tidal flood barriers shall be designed and constructed so as to prevent tidal waters from flowing through the barrier while still allowing for the release of upland hydrostatic pressure.
  - (e) To the extent practicable, tidal flood barriers shall be designed and constructed to tieback to immediately proximate tidal flood barriers to close gaps with that would otherwise allow the trespass of tidal water.
  - (f) All vertical bulkheads or seawalls constructed in marine and intertidal waters where no previous seawall existed shall be provided with natural limerock rip-rap, or other approved habitat enhancement, at the waterward face of the bulkhead or seawall.
  - (g) Property owners are encouraged to consider approaches and materials that enhance the biological value of traditional (flat surface) seawalls and flood barriers with the incorporation of living shoreline features and the use of hybrid green-grey materials, and the use of biological forms, where practicable.
  - (h) This section shall not be construed to require the installation of a seawall where other tidal flood protection devices serve as an equally effective flood barrier.