



## **AGENDA ITEM COVER PAGE**

**File ID: #7338**

**Ordinance**

**Second Reading**

**Sponsored by: Ken Russell, Commissioner, Manolo Reyes, Commissioner**

AN ORDINANCE OF THE MIAMI CITY COMMISSION AMENDING CHAPTER 20 OF THE CODE OF THE CITY OF MIAMI, FLORIDA, AS AMENDED ("CITY CODE"), TITLED "FLOOD DAMAGE PREVENTION;" MORE PARTICULARLY, BY AMENDING SECTIONS 20-1, TITLED "DEFINITIONS," SECTION 20-3, TITLED "DEVELOPMENT IN EITHER SPECIAL FLOOD HAZARD AREAS, OR NONSPECIAL FLOOD HAZARD AREAS," AND SECTION 20-4, TITLED "DEVELOPMENT WITHIN SPECIAL FLOOD HAZARD AREAS", TO CODIFY THE NORTH AMERICAN VERTICAL DATUM OF 1988 ("NAVD 88") AS THE APPLICABLE VERTICAL DATUM FOR THE PURPOSE OF ADMINISTERING THE CITY OF MIAMI'S ("CITY") FLOOD DAMAGE PREVENTION REGULATIONS; FURTHER AMENDING CHAPTER 29 OF THE CITY CODE, TITLED "LANDFILLS AND WATERFRONT IMPROVEMENTS;" MORE PARTICULARLY, BY AMENDING SECTION 29-81, TITLED "DEFINITIONS," SECTION 29-82, TITLED "PURPOSE OF ARTICLE," SECTION 29-83, TITLED "PERMITS FOR WATERFRONT IMPROVEMENTS—REQUIRED," SECTION 29-84, TITLED "SAME—APPLICATION", SECTION 29-89, TITLED "DESIGN," SECTION 29-91, TITLED "CONSTRUCTION," SECTION 29-92, TITLED "MATERIALS," SECTION 29-93, TITLED "REVIEW OF PLANS; DUTY TO INSPECT," SECTION 29-94, TITLED "PROCEDURE FOR INSPECTIONS," AND SECTION 29-95, TITLED "MAINTENANCE," TO ESTABLISH NEW STANDARDS FOR THE CONSTRUCTION, RECONSTRUCTION, AND REPAIR OF SEAWALLS AND BULKHEADS; ESTABLISHING A NEW MINIMUM HEIGHT OF SIX FEET (6') NAVD 88 FOR NEW AND RECONSTRUCTED SEAWALLS AND BULKHEADS CITYWIDE; PROVIDING FOR A VARIANCE PROCEDURE FOR SUCH ELEVATION REQUIREMENT; PROVIDING FOR A DEFINITION AND PERMITTING CONSTRUCTION OF LIVING SHORELINES; IMPOSING A DUTY ON PRIVATE PROPERTY OWNERS TO MAINTAIN SEAWALLS AND BULKHEADS IN GOOD REPAIR AND TO PREVENT TIDAL WATERS FROM FLOWING OVER OR THROUGH SUBSTANDARD OR DAMAGED SEAWALLS OR BULKHEADS TO ADJACENT PROPERTIES AND PUBLIC RIGHTS-OF-WAY; PROVIDING FOR ENHANCED PENALTIES FOR PROPERTY OWNERS THAT FAIL TO DO THE SAME; PROVIDING FOR A WAIVER OF FEES FOR RECONSTRUCTION OF SUBSTANDARD OR DAMAGED SEAWALLS UPON FURNISHING OF PROOF OF FINANCIAL HARDSHIP; PROVIDING FOR COMPLETE MITIGATION OF CODE COMPLIANCE FINES FOR PROPERTY OWNERS WITH SUBSTANDARD OR DAMAGED SEAWALLS OR BULKHEADS FOUND TO BE IN VIOLATION THAT UNDERTAKE STEPS TO CORRECT THOSE VIOLATIONS WITHIN THE TIMEFRAME FOUND HEREIN; CREATING A NEW SUBSTANTIAL REPAIR THRESHOLD THAT PROVIDES FOR SEAWALLS AND BULKHEADS TO BE RECONSTRUCTED TO PRESENT SPECIFICATIONS PROMULGATED BY THE DEPARTMENT OF RESILIENCE AND PUBLIC WORKS UNDER CERTAIN QUALIFYING CIRCUMSTANCES; MODIFYING THE MINIMUM REQUIREMENTS AND INFORMATION REQUIRED FOR PERMITS IN

CONNECTION WITH THE CONSTRUCTION, REPAIR, AND RECONSTRUCTION OF SEAWALLS AND BULKHEADS; AND PROVIDING FOR THE COMPLETE MITIGATION OF FINES FOR VIOLATIONS RELATED TO THE DISREPAIR OF SUCH IMPROVEMENTS UPON ADHERENCE TO CERTAIN PRESCRIBED TIMEFRAMES; FURTHER AMENDING CHAPTER 54/SECTION 54-46 OF THE CITY CODE, TITLED "STREETS AND SIDEWALKS/AGREEMENT AND BOND AS TO PAVING AND OTHER IMPROVEMENTS BY PERSONS SUBMITTING PLATS, REPLATS, ETC., TO COMMISSION," TO ESTABLISH A NEW MINIMUM HEIGHT OF SIX FEET (6') NAVD 88 FOR NEW AND RECONSTRUCTED SEAWALLS AND BULKHEADS FOR APPLICABLE PROPERTIES SUBMITTED TO THE CITY'S EXISTING PLATTING PROCESS; CONTAINING A SEVERABILITY CLAUSE; AND PROVIDING FOR AN IMMEDIATE EFFECTIVE DATE.



# City of Miami

## Legislation

### Ordinance

**File Number: 7338**

**Final Action Date:**

AN ORDINANCE OF THE MIAMI CITY COMMISSION AMENDING CHAPTER 20 OF THE CODE OF THE CITY OF MIAMI, FLORIDA, AS AMENDED ("CITY CODE"), TITLED "FLOOD DAMAGE PREVENTION;" MORE PARTICULARLY, BY AMENDING SECTIONS 20-1, TITLED "DEFINITIONS," SECTION 20-3, TITLED "DEVELOPMENT IN EITHER SPECIAL FLOOD HAZARD AREAS, OR NONSPECIAL FLOOD HAZARD AREAS," AND SECTION 20-4, TITLED "DEVELOPMENT WITHIN SPECIAL FLOOD HAZARD AREAS", TO CODIFY THE NORTH AMERICAN VERTICAL DATUM OF 1988 ("NAVD 88") AS THE APPLICABLE VERTICAL DATUM FOR THE PURPOSE OF ADMINISTERING THE CITY OF MIAMI'S ("CITY") FLOOD DAMAGE PREVENTION REGULATIONS; FURTHER AMENDING CHAPTER 29 OF THE CITY CODE, TITLED "LANDFILLS AND WATERFRONT IMPROVEMENTS;" MORE PARTICULARLY, BY AMENDING SECTION 29-81, TITLED "DEFINITIONS," SECTION 29-82, TITLED "PURPOSE OF ARTICLE," SECTION 29-83, TITLED "PERMITS FOR WATERFRONT IMPROVEMENTS—REQUIRED," SECTION 29-84, TITLED "SAME—APPLICATION", SECTION 29-89, TITLED "DESIGN," SECTION 29-91, TITLED "CONSTRUCTION," SECTION 29-92, TITLED "MATERIALS," SECTION 29-93, TITLED "REVIEW OF PLANS; DUTY TO INSPECT," SECTION 29-94, TITLED "PROCEDURE FOR INSPECTIONS," AND SECTION 29-95, TITLED "MAINTENANCE," TO ESTABLISH NEW STANDARDS FOR THE CONSTRUCTION, RECONSTRUCTION, AND REPAIR OF SEAWALLS AND BULKHEADS; ESTABLISHING A NEW MINIMUM HEIGHT OF SIX FEET (6') NAVD 88 FOR NEW AND RECONSTRUCTED SEAWALLS AND BULKHEADS CITYWIDE; PROVIDING FOR A VARIANCE PROCEDURE FOR SUCH ELEVATION REQUIREMENT; PROVIDING FOR A DEFINITION AND PERMITTING CONSTRUCTION OF LIVING SHORELINES; IMPOSING A DUTY ON PRIVATE PROPERTY OWNERS TO MAINTAIN SEAWALLS AND BULKHEADS IN GOOD REPAIR AND TO PREVENT TIDAL WATERS FROM FLOWING OVER OR THROUGH SUBSTANDARD OR DAMAGED SEAWALLS OR BULKHEADS TO ADJACENT PROPERTIES AND PUBLIC RIGHTS-OF-WAY; PROVIDING FOR ENHANCED PENALTIES FOR PROPERTY OWNERS THAT FAIL TO DO THE SAME; PROVIDING FOR A WAIVER OF FEES FOR RECONSTRUCTION OF SUBSTANDARD OR DAMAGED SEAWALLS UPON FURNISHING OF PROOF OF FINANCIAL HARDSHIP; PROVIDING FOR COMPLETE MITIGATION OF CODE COMPLIANCE FINES FOR PROPERTY OWNERS WITH SUBSTANDARD OR DAMAGED SEAWALLS OR BULKHEADS FOUND TO BE IN VIOLATION THAT UNDERTAKE STEPS TO CORRECT THOSE VIOLATIONS WITHIN THE TIMEFRAME FOUND HEREIN; CREATING A NEW SUBSTANTIAL REPAIR THRESHOLD THAT PROVIDES FOR SEAWALLS AND BULKHEADS TO BE RECONSTRUCTED TO PRESENT SPECIFICATIONS PROMULGATED BY THE DEPARTMENT OF RESILIENCE AND PUBLIC WORKS UNDER CERTAIN QUALIFYING CIRCUMSTANCES; MODIFYING THE MINIMUM REQUIREMENTS AND INFORMATION REQUIRED FOR PERMITS IN CONNECTION WITH THE CONSTRUCTION, REPAIR, AND RECONSTRUCTION OF SEAWALLS AND BULKHEADS; AND PROVIDING FOR THE COMPLETE MITIGATION OF FINES FOR VIOLATIONS RELATED

TO THE DISREPAIR OF SUCH IMPROVEMENTS UPON ADHERENCE TO CERTAIN PRESCRIBED TIMEFRAMES; FURTHER AMENDING CHAPTER 54/SECTION 54-46 OF THE CITY CODE, TITLED "STREETS AND SIDEWALKS/AGREEMENT AND BOND AS TO PAVING AND OTHER IMPROVEMENTS BY PERSONS SUBMITTING PLATS, REPLATS, ETC., TO COMMISSION," TO ESTABLISH A NEW MINIMUM HEIGHT OF SIX FEET (6') NAVD 88 FOR NEW AND RECONSTRUCTED SEAWALLS AND BULKHEADS FOR APPLICABLE PROPERTIES SUBMITTED TO THE CITY'S EXISTING PLATTING PROCESS; CONTAINING A SEVERABILITY CLAUSE; AND PROVIDING FOR AN IMMEDIATE EFFECTIVE DATE.

WHEREAS, the proposed changes in this Ordinance clarify the requirements for the existing process for the implementation, construction, and maintenance of bulkheads, seawalls, and other shoreline improvements; and

WHEREAS, the proposed changes in this Ordinance provide for effective natural measures to protect and stabilize the City of Miami's ("City") waterfronts by permitting living shorelines; and

WHEREAS, it has been determined that changes to the standards for bulkheads and seawalls are required to mitigate high tide flooding associated with sea level rise; and

WHEREAS, the City Commission wishes to provide for enhanced minimum requirements for bulkheads and seawalls in a manner that assists in combatting the effects of sea level rise and to enhance flood damage protection; and

WHEREAS, living shorelines can provide a natural alternative to "hard" shoreline stabilization methods like riprap or bulkheads and provide numerous benefits including nutrient pollution remediation, essential fish habitat structure, and buffering of shorelines from waves and storms; and

WHEREAS, the City Commission wishes to provide relief to those property owners with seawalls and bulkheads in disrepair that are found to be in violation of the Code of the City of Miami, Florida, as amended ("City Code"), provided that diligent progress is made towards repair and reconstruction of the same in accordance with the standards found herein; and

WHEREAS, the proposed changes in this Ordinance will result in a more resilient waterfront;

NOW, THEREFORE, BE IT ORDAINED BY THE COMMISSION OF THE CITY OF MIAMI, FLORIDA:

Section 1. The recitals and finding contained in the Preamble to this Ordinance are hereby adopted by reference thereto and incorporated herein as if fully set forth in this Section.

Section 2. Chapter 20 of the City Code, titled "Flood Damage Prevention," is amended in the following particulars:<sup>1</sup>

"CHAPTER 20.

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<sup>1</sup> Words and/or figures stricken through shall be deleted. Underscored words and/or figures shall be added. The remaining provisions are now in effect and remain unchanged. Asterisks indicate omitted and unchanged material.

## FLOOD DAMAGE PREVENTION

### Sec. 20-1. Definitions.

For the purpose of this chapter, the following words and phrases shall have the meanings respectively ascribed to them by this section:

\* \* \*

NAVD 88: The North American Vertical Datum of 1988 ("NAVD 88") is the vertical control datum established in 1991 by the minimum-constraint adjustment of the Canadian-Mexican-United States leveling observations which was affirmed in 1993 as the official vertical datum in the National Spatial Reference System ("NSRS") for the Conterminous United States and Alaska.

\* \* \*

### Sec. 20-3. Development in either special flood hazard areas, or nonspecial flood hazard areas.

For all development within special flood hazard areas and nonspecial flood hazard areas, the building official or his/her designee shall:

\* \* \*

(6) Require a lowest floor elevation certificate or floodproofing certification, after the lowest floor is completed or in instances where the structure is subject to the regulations applicable to coastal high hazard areas, after placement of the horizontal structural members of the lowest floor. Upon placement of the lowest floor, or floodproofing by whatever construction means, or upon placement of the horizontal structural members of the lowest floor, whichever is applicable, it shall be the duty of the permit holder to submit to the city a certification of the lowest floor, floodproofed elevation, or the elevation of the lowest portion of the horizontal structural members of the lowest floor, whichever is applicable, as built, in relation to mean sea level and as measured in reference to NAVD 88. Said certification shall be prepared by or under the direct supervision of a registered land surveyor or professional engineer and certified by same. When floodproofing is utilized for a particular building, said certification shall be prepared by or under the direct supervision of a professional engineer or architect and certified by same. Any work undertaken prior to submission of the certification shall be at the permit holder's risk. The city shall review the floor elevation survey data submitted. Deficiencies detected by such review shall be corrected by the permit holder immediately and prior to further progressive work being permitted to proceed. Failure to submit the survey or failure to make said corrections required hereby, shall be cause to issue a stop work order for the project.

### Sec. 20-4. Development within special flood hazard areas.

\* \* \*

(b) No new construction or substantial improvement of any nonresidential structure shall be permitted in special flood hazard areas, and no building permit referred to in section 20-3 of this chapter shall be issued therefor, unless said new construction or substantial

improvement has the lowest floor (including basement) elevated to or above the level of the base flood (100-year flood), or if the lowest permitted floor level of such nonresidential structure (including basement) is below the base flood level then such nonresidential structure together with attendant utility and sanitary facilities shall be floodproofed up to one foot above the level of the base flood; provided that the lowest flood level of such nonresidential structure (including basement) shall be not more than ten feet below the base flood level. Where floodproofing is utilized for a particular structure, a registered professional engineer or architect shall certify that the floodproofing methods are adequate to withstand the flood depth, pressures, velocities, impact and uplift forces associated with the base flood, and a record of such certificates indicating the specific elevation (in relation to mean sea level and as measured in reference to NAVD 88) to which such structure is floodproofed shall be maintained with the building official or his/her designee.

\* \* \*

Section 3. Chapter 29 of the City Code, titled "Landfills and Waterfront Improvements," is amended in the following particulars:<sup>1</sup>

"CHAPTER 29.

LANDFILLS AND WATERFRONT IMPROVEMENTS

\* \* \*

ARTICLE III. - BULKHEADS, SEAWALLS, LIVING SHORELINES, PIERS, DOCKS, GROINS, MARINE RAILWAYS, AND OTHER SIMILAR STRUCTURES

Sec. 29-81. - Definitions.

For the purposes of this article, the following words and phrases shall have the meanings respectively ascribed to them by this section. Definitions other than those given herein shall be as set forth in the ~~South~~ Florida Building Code.

*Building code:* The most current adopted version of the Florida Building Code at the time of permit application.

*Building department:* The building department of the city, or the director of such department, used interchangeably.

*Bulkhead:* A vertical or near-vertical, substantially impermeable structure erected along water or a waterway, designed and constructed in such manner as to be substantially impermeable and safely sustain any loads, both vertical and lateral, that may come upon it, such as earth fill, water, moving traffic, storage of materials alongside, and the like. Coastal Bulkheads are most often referred to as Seawalls; however, by definition, they are intended to act as a shoreline stabilization structure that primarily retains soil and provides minimal protection from waves.

*Bulkhead line:* An official line established by a governmental agency along or near the shore for the purpose of controlling the waterfront alignment of structures.

*Department of Resilience and Public Works:* The Resilience and Public Works Department of the City, or the Director of such Department, used interchangeably.

*Engineer:* A professional engineer certified competent and licensed by the state of Florida.

*Gravity-type wall:* A structure whose resultant of acting forces falls within the middle third of the base. Rock-type or Riprap walls shall be included in this category when the base width equals or exceeds the height of the wall.

*Living Shoreline:* A green infrastructure technique using native vegetation alone or in combination with low sills (such as low elevation Seawalls or Bulkheads) to stabilize the shoreline as a natural alternative to “hard” shoreline stabilization methods like Riprap or Bulkheads. Living Shorelines may be more resilient than Bulkheads in protecting against the effects of hurricanes. A Living Shoreline may have its waterside face consist of plants and other natural elements that improve water quality, provide additional fish habitat, and fosters increased biodiversity provided that the landside interface of a Living Shoreline be Substantially Impermeable and constructed to a finished elevation that meets current requirements as set by the Department of Resilience and Public Works. The landside interface may be located anywhere on an existing property fronting the Living Shoreline, as long as it is constructed in a manner and location that ensures any habitable structures on that property are protected from flooding from Tidal Waters and it prevents flooding of adjacent properties and the public right-of-way.

*NAD 83 (2011):* A geometric datum/coordinate system for collection of positions relative to an ellipsoid model of the Earth. The current horizontal datum for the United States and its territories is effectively part of a geometric datum, and it is called the North American Datum of 1983 (“NAD 83”). The current realizations of NAD 83 were adopted in 2012 following the completion of the National Adjustment of 2011 (i.e. “NAD 83 (2011”).

*NAVD 88:* The North American Vertical Datum of 1988 (“NAVD 88”) is the vertical control datum established in 1991 by the minimum-constraint adjustment of the Canadian-Mexican-United States leveling observations which was affirmed in 1993 as the official vertical datum in the National Spatial Reference System (“NSRS”) for the Conterminous United States and Alaska.

*Riprap:* A foundation of unconsolidated boulders, stone, concrete, or similar materials placed on or near a shoreline to mitigate wave impacts and prevent erosion.

*Seawall:* ~~Essentially the same as a bulkhead.~~ A vertical or near-vertical, substantially impermeable structure that provides shoreline protection from waves while retaining upland soils. Seawalls are typically located on the coast fronting beaches or other Tidally-Influenced waterways and are subject to storm surges with pounding surf, eroding shorelines, and wave overtopping from coastal storm or extreme high tide events. The elevation of the top of a Seawall must comply with the current minimum finished elevation requirements as set by the Department of Resilience and Public Works to ensure protection of the surrounding properties and the public right-of-way from flooding associated with currently realized and expected future sea level rise.

*Substantially Impermeable:* Any shoreline protection constructed, repaired, or reconstructed pursuant to this Section, in a manner that prevents groundwater on the landward side of the structure from being affected by Tidal Waters passing through the wall. As Tidal Waters rise, the groundwater elevation behind the wall shall remain relatively static in order to be considered Substantially Impermeable.

*Tidal Waters:* Any water that alternately rises and falls in a predictable and measurable rhythm or cycle due to the gravitational attraction of the moon and sun, including seasonal tide events such as King Tides. Extreme tidal elevation changes caused by a storm event (i.e. storm surge) is not to be used as a determining factor of whether or not an existing shoreline protection structure is in violation of the City’s maintenance requirements.

Tidally-Influenced or Tidally-Influenced Areas: Any water-fronting land area where water levels change in response to daily changes in Tidal Waters or the change in the water levels itself in response to daily changes in Tidal Waters.

Sec. 29-82. - Purpose of article.

The purpose of this article is to protect the public's health, welfare and safety by setting minimum standards to be used in the design, construction and maintenance of waterfront structures; further, to accomplish this purpose by requiring such design, construction and maintenance to be acceptable in all respects and particulars to the building and Resilience and Public Works Departments; and lastly, to ascertain that all physical improvements included herein are subject to and admit of rational analysis in accordance with established principles of mechanics and accepted engineering practices. This article shall be deemed to supplement the provisions of the ~~South~~-Florida Building Code.

Sec. 29-83. - Permits for waterfront improvements—Required.

No waterfront improvement or structure shall be constructed, reconstructed or repaired until a permit authorizing such construction, reconstruction or repair has been obtained from the building department. No such permit shall be issued for any new construction or improvement or repair to an existing improvement or structure which is deemed substandard by the director of the building department to be substandard or not in compliance with the Department of Resilience and Public Works' design and construction standards. If a property owner, who is required to repair or replace a Seawall, Bulkhead, Living Shoreline, or other shoreline protection structure/element due to the existing structure being in disrepair or allowing Tidal Waters to flood the public right-of-way and/or neighboring properties can demonstrate an extreme financial hardship related to the costs associated with such work, then the City Manager or his/her designee may consider such hardship on a case-by-case basis and elect to waive a portion of or all fees associated with the permitting required by the City for such construction taking into account the following criteria:

- (a) The property owner's income as evidenced by prior years' income tax returns for as many years as requested by the City Manager or his/her designee; and
- (b) The property owner's general ability to pay or finance the required improvements without causing an undue economic hardship.

Sec. 29-84. - Same—Application.

(a) *Generally*. Permits required by this article shall be applied for either by the owner-builder or by a licensed contractor certified in a proper category and having a bona fide contract with the owner to perform such work. ~~Application shall be made upon a suitable form provided by the Building Department.~~

(b) *For improvements of \$5,000.00 or more*. For new construction or repairs amounting to \$5,000.00 or more in value, ~~three copies of the~~ certified/signed and sealed plans shall be submitted with the application, which plans shall include the following information, at a minimum, except as to any item which may be waived in writing by the Building department:

- (1) A current (less than one (1) year old) certified/signed and sealed survey sketch drawing of the property upon which the improvement is to be made, generated based on NAD 83 (2011) and NAVD 88 horizontal and vertical datums and showing sufficient topographic information to determine the impacts of the proposed improvements to the adjacent private and public lands.

\* \* \*

- (5) Soundings and pertinent elevations and horizontal locations of the proposed structures shall be shown and referred to using NAVD 88 for vertical and NAD 83



~~(2011) for the horizontal datums, mean low water, National Geodetic Vertical Datum, as defined in section 20-1 of the City Code ("NGVD").~~

(6) Seawalls, Bulkheads, and Living Shorelines must be provided with specific purpose surveys certifying the alignment and elevation of the top of wall or Bulkhead line with elevations spaced at a maximum of 10-ft intervals showing the highest and lowest elevations of the barrier and clearly identifying the location and elevation of the structure/barrier at each property corner. Elevations of adjacent properties and public rights-of-way must also be provided to ensure proper harmonization is provided between the proposed barrier with the surrounding lands.

~~(7)~~ The name and address of the owner and property tax folio(s) of the property(ies) upon which the improvement(s) is(are) to be made or constructed.

~~(7)~~ A construction cost estimate of the proposed improvement substantiated by a fully executed construction contract or validated and attested to by a licensed professional engineer.

~~(8)~~ The signature and seal of the engineer designing the improvements.

~~(9)~~ The engineer's design computations, when required by the Building Department.

(c) *For improvements less than \$5,000.00.* For construction or repairs less than \$5,000.00 in value, ~~three copies of the~~ certified/signed and sealed plans shall be submitted with the application, which plans shall include the following information, at a minimum, except as to any item which may be waived in writing by the Building department:

(1) A current (less than 1 year old) certified/signed and sealed survey ~~sketch~~ drawing of the property upon which the improvement is to be made, generated based on NAD 83 (2011) and NAVD 88 horizontal and vertical datums and showing sufficient topographic information to determine the impacts of the proposed improvements to the adjacent private and public lands.

\* \* \*

(4) Arrangement and structural details in the plan, section, and elevation views sufficiently expanded to serve as construction drawings.

~~(4)~~(5) A cost estimate of the proposed improvement substantiated by a fully executed construction contract or validated and attested to by a licensed professional engineer.

~~(5)~~ The signature and seal of the engineer designing the improvement(s), ~~when required by the Building Department.~~

~~(6)~~ The engineer's design computations, when required by the building department.

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## Sec. 29-89. - Design.

(a) *Design analysis.* Responsibility for proper design rests with the engineer who prepares the plans. Each improvement shall be designed to support all loads that may come upon it, to withstand the forces of water, wind and usage; and to meet the specific requirements of the building department and/or Department of Resilience and Public Works for location, elevation, and construction.

(1) *General.* Any improvement, bulkhead, seawall, pier, wharf, dock, groin, cut, marine, railway or other related structure included in this article shall admit of rational analysis in accordance with well-established principles of mechanics and sound engineering practices, and without exceeding the allowed stresses for the various materials as specified in the Florida Building Code.

(2) *Bulkheads and Seawalls.* Bulkheads and Seawalls and all parts thereof must be designed to support the estimated or actual imposed load, either dead, live or any other, both during construction and after the completion of such bulkhead or Seawall. Seawalls, Bulkheads, and any other shoreline protection structures or elements shall be designed and built in a Substantially Impermeable manner pursuant to the current Department of Resilience and Public Works' design and construction standards to prevent water from flowing through or over the Seawall/shoreline protection while still allowing for the release of hydrostatic pressure from the upland direction. The elevation of the top of a Bulkhead must comply with the current minimum finished elevation requirements as set by the Department of Resilience and Public Works. In cases where the proximity of an existing structure/building or functional requirement prevents the ability of an existing Bulkhead or Seawall to be raised to current minimum finished elevation requirements, an alternate method of constructing a wall or other Substantially Impermeable protection structure/element may be proposed to and considered for acceptance by the Director of the Department of Resilience and Public Works. Any alternative to constructing a Bulkhead or Seawall at the current property/shoreline interface must be designed for and constructed on the same property fronting the shoreline in a manner and location that prevents flooding from Tidal Waters to adjacent properties and the public right-of-way.

(3) *Terrace-type wall.* Subject to certain types of conditions of the site or location of the improvement, step-type bulkheads or terrace-type walls will be permitted.

(4) *Waterfront properties.* For all Tidally-Influenced Areas and waterfront properties, east of US-1, ~~except those fronting the Miami River, the top elevation of new seawalls, Bulkheads, Living Shorelines, or other shoreline protection structures or elements shall be constructed to a minimum elevation of set at +5.00 NGVD six feet (6') NAVD 88, if located north of the Rickenbacker Causeway, and set at +6.00 NGVD if located south of the Rickenbacker Causeway. The top elevation of new seawalls for those waterfront properties fronting the Miami River shall be set in accordance with section 54-46 of the City Code. All such structures or elements must be designed and constructed in accordance with the Department of Resilience and Public Works' Design and Construction Standards.~~ This criteria applies ~~for~~ to new construction or when substantial improvements to a property are performed. This subsection is not to be interpreted to impair the obligation of contracts, including without limitation, restrictive covenants or deed restrictions, under the Constitution of the state.

(5) *Substantial repairs/improvements of Seawalls and Bulkheads.* Seawall and Bulkhead improvements meeting the substantial repair threshold at the time of permit application must meet the requirements of Section 29-89(4) of the City Code and the Department of Resilience and Public Works' current design and construction standards and minimum finished elevation requirements for the length of the property. For the purposes of this Section, the substantial repair threshold shall be defined as any Seawall or Bulkhead repair consisting of 50% or more of the current length of the existing barrier, any repairs that are 50% or more of the cost of a new Seawall or Bulkhead along the length of the existing barrier or property shoreline, or any

improvement to the Seawall or Bulkhead which results in an elevation change along 50% or more of the length of the structure.

(6) Requests for finished elevation variance. Property owners may request a variance to the requirement that Seawalls, Bulkheads, Living Shorelines, and other shoreline protection structures are designed to be capable of being raised to a final minimum elevation of at least eight feet (8') NAVD 88 due to undue financial burden or other extenuating conditions or circumstances peculiar to their property provided the property owner can demonstrate that a proposed new or reconstructed Seawall, Bulkhead, Living Shoreline, or other shoreline protection structure/element is capable of preventing flooding of the public right-of-way or the neighboring public or private properties while being constructed at an elevation less than the current City standard. The City Manager or his/her designee may consider such a request for variance and elect to waive the current elevation requirements and impose such conditions as needed to prevent any potential present or future adverse effects from the granting of the same. The variance, if approved, does not absolve a property owner from responsibility to prevent Tidal Waters from flowing overland or through the above-mentioned improvements to adjacent properties or the public right-of-way pursuant to Section 29-95 of the City Code.

\* \* \*

Sec. 29-91. - Construction.

\* \* \*

(b) Alignment. The alignment of a bulkhead or Seawall shall be closely controlled. The bulkhead or Seawall shall be constructed entirely on privately owned property unless otherwise approved by the entity or agency controlling the property upon which the bulkhead or Seawall is to be constructed, and the alignment shall not deviate more than two inches from the designated alignment. The face of the bulkhead or Seawall shall not in any case protrude beyond the established bulkhead line or the line shown on the plan approved by the Building Department.

\* \* \*

(h) Caps. Bulkheads and Seawalls shall be capped. The cap shall be reinforced concrete. The use of the cap as a street curb shall be avoided, but if such function is permitted by the building department, the cap shall be designed for a live load of 500 pounds (minimum) per lineal foot of cap, applied laterally, in addition to any other loads, dead or live, that may come upon it, and shall have a guardrail where required by the building department.

\* \* \*

Sec. 29-92. - Materials.

Permanent materials shall include concrete, steel, stone masonry construction, fiber reinforced or high-performance plastics, or any combination of the same. Other materials not specifically covered herein may be permitted, subject to the approval of the building department. Reinforced concrete shall be of the materials, proportions, strength and consistency set forth in the Florida Building Code, as also shall the materials, design and fabrication in the erection of steel.

\* \* \*

Sec. 29-94. - Procedure for inspections.

(a) Inspection of work in progress on waterfront improvements shall be carried out as set forth in the building code, according to the following sequence:

\* \* \*

(6) Sheet pile or pre-cast wall panel installation for Bulkheads or Seawalls after placement of sheet piling/wall panels, joint water proofing materials, and weep hole one-way valves (where applicable) but before the voids behind the wall are filled and concealed from view.

\* \* \*

Sec. 29-95. - Maintenance.

All property owners must maintain their Seawalls, Bulkheads, Living Shorelines, or other shoreline protection structures or elements in good repair. A shoreline protection structure is presumed to be in disrepair if it allows for upland erosion, transfer of material through the barrier/wall, or allows Tidal Waters to flow unimpeded over or through the barrier/wall to adjacent properties or the public right-of-way. Property owners with Seawalls, Bulkheads, Living Shorelines, or other shoreline protection structures or elements below the minimum required finished elevation, with permeable erosion barriers such as Riprap, or a land/water interface of another nature are prohibited from allowing Tidal Waters entering their property to flow to adjacent properties or public rights-of-way. Privately owned waterfront improvements shall be privately maintained, even though a portion of the improvement may extend into publicly owned land. Failure by the owner to keep the above-mentioned improvements in a state of repair acceptable to the building department or failure to prevent Tidal Waters from flowing overland or through the above-mentioned improvements to adjacent properties or the public right-of-way shall be subject to enforcement as set forth in chapter 2, article X of the City Code, entitled "Code enforcement," and may be brought for further proceedings before the code enforcement board. Repairs or construction of improvements to correct any violation of this Article must meet the requirements of Section 29-89(4) of the City Code and the Department of Resilience and Public Works' current design and construction standards and minimum finished elevation requirements for the length of the property. Upon citation for noncompliance of this Section, the owner of the property on which the improvements that are in disrepair or are allowing the flow of Tidal Waters over or through it to adjacent properties or public rights-of-way is required to begin abating such condition within 180 days by retaining a licensed contractor applying for a building permit and diligently pursuing issuance of the same to begin repairs within 365 days and to complete repairs with all applicable permits finalized within 18 months from the date of the citation. The Department of Resilience and Public Works is permitted to extend these timelines upon good cause shown and reasonable progress towards compliance being diligently pursued by the property owner. Reasonable progress towards compliance may include, but is not limited to, hiring a licensed contractor, submitting a building permit application, diligently pursuing the issuance of a building permit with the applicable departmental disciplines charged with review of the same, and any acts evidencing progress towards the actual construction of the repaired or new improvements. Should the property owner adhere to the timeframes set forth in this Section (including any extensions granted by the Department of Resilience and Public Works), then notwithstanding the provisions of Section 2-817(d) of the City Code, the property owner shall be entitled to a complete abatement of any fines accrued pursuant to this Section. The foregoing shall not be an exclusive remedy and the city may at its option additionally institute a civil action to enforce the provisions in this chapter.

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Section 4. Chapter 54 of the City Code, titled “Streets and Sidewalks,” is amended in the following particulars:<sup>1</sup>

“CHAPTER 54

STREETS AND SIDEWALKS

\* \* \*

ARTICLE II. CONSTRUCTION, EXCAVATION, AND REPAIR

\* \* \*

Sec. 54-46. - Agreement and bond as to paving and other improvements by persons submitting plats, replats, etc., to commission.

All persons submitting any proposed plat, replat, revised plat, amended plat, or resubdivision of any previous record plat or portion thereof of real estate in the city, to the city commission for its acceptance and conformation, are hereby required to accompany any such proposed plat with a suitable agreement entered into by such person with the director of the Department of resilience and public works on behalf of the city, providing for the construction of any or all of the following improvements, as shall be specified by the Department of resilience and public works department in its engineering report on the proposed plat:

(1) The construction within the platted area of permanent-type street pavement, including grading and fill as required, sidewalk, curb and gutter, parkways, storm drainage structures, sanitary sewers, water mains and services in connection therewith, and other improvements where the proposed use and location make such improvements necessary.

(2) The construction of permanent-type bulkheads, Seawalls, Living Shorelines, banks, berms, or any other appurtenant coastal infrastructure being constructed to protect the upland areas from Tidal Waters, storm surges, or any other sort of Tidally-Influenced water intrusion along the shoreline, canal, river embankment, or harbor line of any watercourse contiguous to the area platted, as follows:

a. Permanent-type bulkheads, Seawalls, Living Shorelines, or other shoreline protection structures or elements as defined in Section 29-81 of the City Code shall be constructed to a minimum elevation of +5.00 feet, NGVD six feet (6') NAVD 88 along all Tidally-Influenced Areas as the same is defined in Section 29-81 of the City Code. rivers and canals and along the shoreline or harbor line of Biscayne Bay. All such protective structures/elements must be designed and built in a substantially impermeable manner, certified/signed and sealed by a civil/structural engineer registered in the State of Florida, and provided with the appropriate modification details to be capable of being raised to a final minimum elevation of at least eight feet (8') NAVD 88 to mitigate high tide flooding associated with realized and additional sea level rise through the year 2070. All such structures must be designed and constructed in accordance with the Department of Resilience and Public Works' Design and Construction Standards. north of the Rickenbacker Causeway. Permanent-type bulkheads fronting the Miami River shall be governed by subsection 54-46(2)c.

~~b. The filling of land within any platted area contiguous to Biscayne Bay and all new or future islands or enlarged existing islands in Biscayne Bay must be constructed to a minimum, settled elevation of six feet (6') NAVD 88. Permanent type bulkheads shall be constructed to a minimum elevation of +6.00 feet, NGVD, along the shoreline or harbor line of Biscayne Bay south of the Rickenbacker Causeway, and around all new or future islands or enlarged existing islands in Biscayne Bay.~~

~~c. Permanent type bulkheads for those waterfront properties fronting the Miami River shall be constructed to an elevation of +5.50 feet NGVD.~~

~~(3)~~

~~a.~~

~~The filling of land within any platted area contiguous to Biscayne Bay lying north of the Rickenbacker Causeway to a minimum settled elevation of +5.00 feet, NGVD.~~

~~b.~~

~~The filling of land within any platted area contiguous to Biscayne Bay lying south of the Rickenbacker Causeway, and all new or future islands or enlarged existing islands in Biscayne Bay, to a minimum settled of elevation of +6.00 feet, NGVD.~~

~~(3)(4)~~ Adequate drainage by grading or filling of the land within the platted area to the level of the street grades established by the Department of resilience and public works department or the flood grade established and recorded on maps of Miami-Dade County, whichever is higher; provided that swale areas shall be used at the rear of lots when the nature of drainage conditions make them necessary for proper seepage of water in the substrata. Where fill is required, the fill material shall not contain any rubbish, tree stumps, debris, muck or other objectionable material. In development projects, where ~~septic tanks and~~ drainfields may be required, the fill material must also be sufficiently permeable to meet standard percolation test requirements.

Areas which will become public rights-of-way shall contain fill material which conforms to the standard specifications of the city for the construction of streets.

Upon completion of the improvements, the performance bond, irrevocable letter of credit, or cashier's check hereinafter provided for shall not be released unless the permanent reference monuments indicated on the plat have been placed on the ground at the expense of the owner of the platted land and verified by the Department of resilience and public works department.

\* \* \*

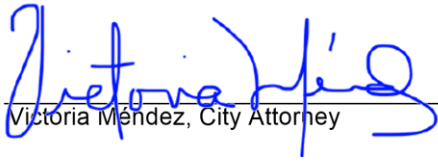
Section 5. If any section, part of a section, paragraph, clause, phrase, or word of this Ordinance is declared invalid, the remaining provisions of this Ordinance shall not be affected.

Section 6. This Ordinance shall become effective immediately upon its adoption and signature of the Mayor.<sup>2</sup>

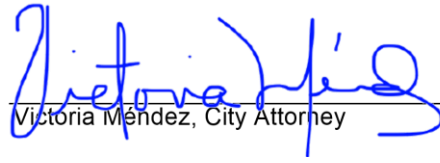
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<sup>2</sup> This Ordinance shall become effective as specified herein unless vetoed by the Mayor within ten (10) days from the date it was passed and adopted. If the Mayor vetoes this Ordinance, it shall become effective immediately upon override of the veto by the City Commission or upon the effective date stated herein, whichever is later.

APPROVED AS TO FORM AND CORRECTNESS:

  
Victoria Méndez, City Attorney

4/14/2020

  
Victoria Méndez, City Attorney

5/18/2020