

**FREEBOARD**

**ORDINANCE NO. 2016-4009**

**AN ORDINANCE OF THE MAYOR AND CITY COMMISSION OF THE CITY OF MIAMI BEACH, FLORIDA, AMENDING SUBPART A – GENERAL ORDINANCES, OF THE CITY CODE, BY AMENDING CHAPTER 54 “FLOODS” AT SECTION 54-35, “DEFINITIONS,” BY AMENDING THE DEFINITIONS FOR BASE FLOOD ELEVATION, CROWN OF ROAD, AND FREEBOARD, AND BY CREATING DEFINITIONS FOR CENTERLINE OF ROADWAY, CRITICAL FACILITY, FUTURE CROWN OF ROAD, MINIMUM FREEBOARD, MAXIMUM FREEBOARD, GREEN INFRASTRUCTURE, LOW IMPACT DEVELOPMENT (LID), AND SURFACE STORMWATER SHALLOW CONVEYANCE; BY AMENDING SECTION 54-45, “PERMIT PROCEDURES,” TO REQUIRE A STORMWATER MANAGEMENT PLAN; BY AMENDING SECTION 54-47, “GENERAL STANDARDS,” TO PROHIBIT SEPTIC SEWAGE SYSTEMS, AND INCLUDE REQUIREMENTS FOR STORAGE OF HAZARDOUS MATERIALS; BY AMENDING SECTION 54-48, “SPECIFIC STANDARDS,” TO CLARIFY THE MINIMUM ELEVATION OF THE LOWEST FINISHED FLOOR FOR RESIDENTIAL AND NON-RESIDENTIAL CONSTRUCTION, AND REQUIRING A MINIMUM ELEVATION FOR GARAGE ENTRANCES; BY AMENDING SECTION 54-51, “STANDARDS FOR COASTAL HIGH HAZARD AREAS (V-ZONES),” TO CLARIFY THE MINIMUM ELEVATION OF THE LOWEST FLOOR OF ALL NEW CONSTRUCTION AND SUBSTANTIAL IMPROVEMENTS; PROVIDING CODIFICATION; REPEALER; SEVERABILITY; AND AN EFFECTIVE DATE.**

**WHEREAS**, sea level rise and flooding is an ongoing concern of the City; and

**WHEREAS**, low lying infrastructure including buildings must also elevate in order to reduce risk or maintain low risk from potential flood damage; and

**WHEREAS**, it is appropriate to establish minimum freeboard requirements for residential and commercial structures to provide additional levels of protection to maintain consistency with U.S. Federal and state guidance, and

**WHEREAS**, these regulations will accomplish these goals and ensure that the public health, safety and welfare will be preserved.

**NOW THEREFORE BE IT ORDAINED BY THE MAYOR AND CITY COMMISSION OF THE CITY OF MIAMI BEACH, FLORIDA:**

**SECTION 1.** Section 54-35, “Definitions,” is amended as follows:

\* \* \*

Base Flood Elevation means the water surface elevation associated with the base flood—the regulatory elevation associated with building elevation, flood-proofing, protection of building systems and utilities and other flood protection provisions as identified in current FEMA Flood Insurance Rate Map (FIRM) panels. This elevation shall not be less than 8.0 ft. NGVD (6.44 ft. NAVD) in the City of Miami Beach.

\* \* \*

Crown of road (Center line) of roadway means a line running parallel with the highway roadway right-of-way which is half the distance between the extreme edges of the official right-of-way width as shown on a map approved by the department of the public works.

\* \* \*

Critical facility means a facility designated as an essential facility including, but not limited to: hospitals, fire, rescue, ambulance and police stations and emergency vehicle garages, emergency shelters, designated emergency preparedness, communications, and operation centers and other facilities required for emergency response, power generating stations and other public utility facilities required in an emergency ancillary structures (including, but not limited to, communication towers, fuel storage tanks, cooling towers, electrical substation structure, fire water storage tanks, or other structures housing or supporting water, or other fire-suppression material or equipment, water storage facilities and pump structures required to maintain water pressure for fire suppression building and other structures (including, but not limited to facilities that manufacture, process, handle, store, use, or dispose of such substances as hazardous fuels, hazardous chemicals, hazardous waste, or explosives) containing extremely hazardous materials.

Crown of road means the highest elevation of the roadway at a specific cross section.

Crown of road, future means the highest elevation of the crown of road as described in the adopted Miami Beach Stormwater Master Plan, located at exhibit X.

\* \* \*

Freeboard means the additional height, usually expressed as a factor of safety in feet, above a flood level for purposes of floodplain management. Freeboard tends to compensate for many unknown factors, such as wave action, blockage of bridge or culvert openings, and hydrological effect of urbanization of the watershed, which could contribute to flood heights greater than the heights calculated for a selected frequency flood and floodway conditions. All new construction and substantial improvements to existing construction shall meet the minimum freeboard requirement, and may exceed the minimum freeboard requirement up to the maximum freeboard without such height counting against the maximum height for construction in the applicable zoning district

Freeboard, minimum equals one (1) foot.

Freeboard, maximum equals five (5') feet.

\* \* \*

Green Infrastructure means natural vegetation, landscape design and engineered techniques that retain, absorb, and often cleanse stormwater runoff.

\* \* \*

Low-Impact development (LID) means techniques that mimic natural processes to manage stormwater, and are frequently cheaper and more attractive than traditional stormwater management techniques.

\* \* \*

Surface stormwater shallow conveyance means vegetated swales, permeable pavement, rain gardens, and rainwater/stormwater capture and infiltration devices.

\* \* \*

**SECTION 2.** Section 54-45, "Permit Procedures," is amended as follows:

Application for a development permit shall be made to the building director or his/her designee on forms furnished by him or her prior to any development activities, and may include, but not be limited to, the following plans in duplicate drawn to scale showing the nature, location, dimension, and elevations of the area in questions, existing and proposed structures, earthen fill, storage of materials or equipment, drainage facilities, and the location of the foregoing. Specifically, the following information is required:

(1) Application stage:

\* \* \*

- (f) A stormwater management plan and site drainage calculations, for new constructions and substantial improvement, shall be prepared by a Florida licensed engineer in accordance with the ~~Public Works Department Manual and Procedures~~ CDM Smith 2011 Stormwater Plan, to demonstrate that adequate surface drainage shall be provided and surface run-off water shall be diverted to a storm conveyance or other approved point of collection, in accordance with Florida Building Code Sections 1804 and R401.3. The site shall be graded in manner to drain surface water away from foundation walls in accordance with Florida Building Code Sections 1804 and R401.3. All site drainage for new construction shall be designed and constructed in such a manner as to provide runoff rates, volume and pollutant loads not exceeding predevelopment conditions and prevent flooding adjacent properties.

\* \* \*

**SECTION 3.** Section 54-47, "General Standards," is hereby amended as follows:

In all areas of special flood hazard, all development sites, including new construction and substantial improvements, shall be reasonably safe from flooding and meet the following provisions:

- \* \* \*
- (16) Installation of new septic swage systems is prohibited in the City of Miami Beach Special Hazard Area.
  - (17) Hazardous materials shall be stored indoors in the City of Miami Beach Special Flood Hazard Area and shall be elevated no lower than Base Flood Elevation plus minimum freeboard.

**SECTION 4.** Section 54-48, "Specific Standards," is hereby amended as follows:

In areas mapped as "Zone X" (shaded and unshaded) on the City of Miami Beach Flood Insurance Rate Map (FIRM), all new construction and substantial improvement of any buildings (including manufactured homes) shall construct the lowest floor at an elevation of at least one foot above the highest adjacent grade or above the crown of the nearest street, whichever is higher.

In all A-zones where base flood elevation data have been provided (zones AE, A1-30, A (with base flood elevation), and AH), as set forth in section 54-37, the following provisions, in addition to those set forth in sections 54-47 54-47 and 54-49 54-49, shall apply:

- (1) *Residential construction.*
  - (a) All new construction and substantial improvement of any residential building (including manufactured homes) shall have the lowest finished floor including electrical, heating, ventilation, plumbing, air conditioning equipment, cable, telephone, and other service facilities, including duct work elevated to no lower than the base flood elevation plus minimum freeboard. Should solid foundation perimeter walls be used to elevate a structure, there must be a minimum of two openings on different sides of each enclosed area sufficient to facilitate automatic equalization of flood hydrostatic forces in accordance with standards of subsection 54-48(3).

The following shall apply for single family residential garage structures:

When constructed as part of a detached or attached garage structure to the main home, garages shall be constructed no lower than adjusted grade, as defined in Section 114.1. Further, the overall height and structural composition of the first floor garage structure shall be designed and built to accommodate a future raised floor slab to meet the height of base flood elevation plus minimum freeboard, subject to the height limitations provided in Section 142-105.

When constructed under the main home, the associated driveway shall be sloped upward from the public right of way to a minimum elevation of adjusted grade, as defined in Section 114.1, and then may slope downward to a lower garage elevation.

The following shall apply to multifamily residential garage structures:

Access drives to garage structures shall be sloped upward from the public right of way to a minimum elevation of adjusted grade, as defined in Section 114.1, and then may slope downward to a lower garage elevation. Further, the overall height and structural composition of the first floor garage structure shall be designed and built to accommodate a future raised floor slab to meet the height of base flood elevation plus minimum freeboard.

- (b) The lowest floor of an addition to the nonsubstantial improvement of a residential structure shall be elevated to no lower than the existing lowest finished floor elevation.

(2) *Nonresidential construction.*

- (a) All new construction and substantial improvement of any commercial, industrial, or nonresidential building (including manufactured homes) shall have the lowest floor, including basement, electrical, heating, ventilation, plumbing, air conditioning equipment, cable, telephone, and other service facilities, including duct work, elevated to no lower than the base flood elevation plus minimum freeboard. All buildings located in A-zones may be floodproofed, in lieu of being elevated, provided that all areas of the building components, together with attendant utilities and sanitary facilities, below the base flood elevation, plus one-foot minimum freeboard are watertight with walls substantially impermeable to the passage of water, and use structural components having the capability of resisting hydrostatic and hydrodynamic loads and the effects of buoyancy. A registered professional engineer or architect shall certify that the standards of this subsection are satisfied using the FEMA floodproofing certificate. Such certification along with the corresponding engineering data, and the operational and maintenance plans shall be provided to the floodplain administrator.
- (b) The lowest floor of an addition to the nonsubstantial improvement of a commercial structure shall be elevated to no lower than the existing lowest finished floor elevation.
- (c) All new construction and substantial improvements to critical facilities shall have the lowest floor, including electrical, heating, ventilation, plumbing, air conditioning equipment, cable, telephone, and other service facilities including duct work, elevated to no lower than the base flood elevation plus two (2) feet.

\* \* \*

(4) *Standards for manufactured homes and recreational vehicles.*

- (a) All manufactured homes that are placed, or substantially improved within azones A1-30, AH, and AE, on sites (i) outside of an existing manufactured home park or subdivision, (ii) in a new manufactured home park or subdivision, (iii) in an expansion to an existing manufactured home park or subdivision, or (iv) in an existing manufactured home park or subdivision on which a manufactured home has incurred "substantial damage" as the result of a flood, the lowest floor be elevated on a permanent foundation to no lower than the base flood elevation, plus freeboard and be securely anchored to an adequately anchored foundation system to resist flotation, collapse, and lateral movement.

\* \* \*

**SECTION 5.** Section 54-51. "Standards for coastal high hazard areas (V-zones)," is amended as follows:

\* \* \*

Located within areas of special flood hazard established in section 54-37 are coastal high hazard areas, designated as zones V1-V30, VE, or V (with BFE). The following provisions shall apply:

- (2) All new construction and substantial improvements in zones V1-V30, VE, and V (with BFE) shall be elevated on pilings or columns so that:

- (a) The bottom of the lowest horizontal structural member of the lowest floor (excluding the pilings or columns) is elevated to no lower than the base flood elevation, plus freeboard, whether or not the structure contains a basement; and

\* \* \*

- (c) For all structures located seaward of the coastal construction control line (CCCL), the bottom of the lowest horizontal structural member of the lowest floor of all new construction and substantial improvements of the habitable structures, as defined in Florida Building Code Section 3109, shall be elevated to the 100-year flood elevation established by the Florida Department of Environmental Protection, plus freeboard or the base flood elevation, plus freeboard, whichever is the higher.

\* \* \*

- (11) For all structures located seaward of the coastal construction control line (CCCL), the bottom of the lowest horizontal structural member of the lowest floor of all new construction and substantial improvements of the habitable structures, as defined in Florida Building Code Section 3109, shall be elevated to the flood elevation established by the Florida Department of Environmental Protection, plus freeboard or the base flood elevation, plus freeboard, whichever is higher. All non-elevation design requirements subsections 54-51(2) through (10) shall apply.

\* \* \*

**SECTION 6. CODIFICATION.**

It is the intention of the Mayor and City Commission of the City of Miami Beach, and it is hereby ordained that the provisions of this ordinance shall become and be made part of the Code of the City of Miami Beach, Florida. The sections of this ordinance may be renumbered or relettered to accomplish such intention, and the word "ordinance" may be changed to "section", "article", or other appropriate word.

**SECTION 7. REPEALER.**

All ordinances or parts of ordinances in conflict herewith be and the same are hereby repealed.

**SECTION 8. SEVERABILITY.**

If any section, subsection, clause or provision of this Ordinance is held invalid, the remainder shall not be affected by such invalidity.

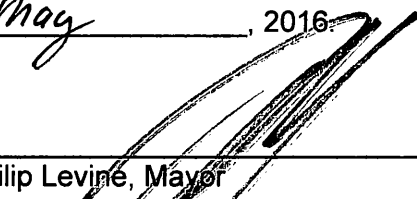
**SECTION 9. EXCEPTIONS.**

This ordinance shall not apply to anyone who filed a completed application package for Board of Adjustment, Historic Preservation Board or Design Review Board Approval with the Planning Department on or before June 8, 2016; or anyone who obtained a Building Permit Process Number from the Building Department on or before June 8, 2016.

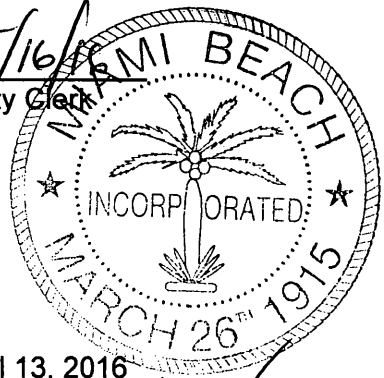
**SECTION 10. EFFECTIVE DATE.**

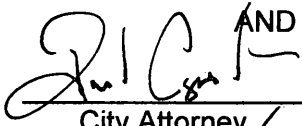
This Ordinance shall take effect on June 8, 2016.

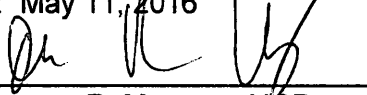
PASSED AND ADOPTED this 11 day of May, 2016.

  
Philip Levine, Mayor

ATTEST:  
  
Rafael E. Granado, City Clerk



APPROVED AS TO FORM  
AND LANGUAGE  
AND FOR EXECUTION  
  
City Attorney  
5/12/16  
Date

First Reading: April 13, 2016  
Second Reading: May 11, 2016  
Verified By:   
Thomas R. Mooney, AICP  
Planning Director

Underline = new language  
~~Strikethrough~~ = deleted language

[Sponsored by Commissioner Joy Malakoff]

T:\AGENDA\2016\May\Planning\Height-Freeboard Ch 54 - 2nd Reading ORD - ADOPTED.docx



**Condensed Title:**

An ordinance amending Chapter 54 of the City Code as it pertains to freeboard and minimum finished floor elevations, and an ordinance amending the Land Development Regulations of the City Code as it pertains to building height, base flood elevation, grade and yard elevation requirements. Keep to one line

**Key Intended Outcome Supported:**

Increase satisfaction with neighborhood character. Increase satisfaction with development and growth management across the City.

**Supporting Data (Surveys, Environmental Scan, etc** 48% of residential respondents and 55% of businesses rate the effort put forth by the City to regulate development is "about the right amount."

**Item Summary/Recommendation:**

**SECOND READING – PUBLIC HEARING**

The first ordinance would amend Chapter 54, "Floods", by establishing a minimum and maximum freeboard above base flood elevation for all properties and the second ordinance would amend the Land Development regulations pertaining to the calculation of building height, and establish minimum elevations of required yards in single family districts.

On January 20, 2016, the Land Use and Development Committee recommended that the City Commission refer the proposed ordinances to the Planning Board. On February 10, 2016, the City Commission referred the subject ordinance amendments (Item C4C) to the Planning Board.


On April 13, 2016, the City Commission 1) accepted the recommendation of the Land Use and Development Committee via separate motion; and 2) approved the attached Ordinances at First Reading and set a Second Reading Public Hearing for May 11, 2016.

The Administration recommends that the City Commission adopt the ordinances.

**Advisory Board Recommendation:**

On March 22, 2016, the Planning Board transmitted the proposed ordinance with modifications to the City Commission with a favorable recommendation (vote 6 to 0).

**Financial Information:**

Source of Funds:		Amount	Account
<div style="border: 1px solid black; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center;">  </div> <p>OBPI</p>	1		
	2		
	3		
	Total		

**Financial Impact Summary:**

In accordance with Charter section 5.02, which requires that the "City of Miami Beach shall consider the long-term economic impact (at least five years) of proposed legislative actions," this shall confirm that the City Administration evaluated the long-term economic impact (at least five years) of this proposed legislative action, and determined that there will be no measurable impact on the City's budget.

**City Clerk's Office Legislative Tracking:**

Thomas Mooney

**Sign-Offs:**

Department Director	Assistant City Manager	City Manager
	<i>[Signature]</i>	<i>[Signature]</i>

T:\AGENDA\2016\May\Planning\Height Freeboard Grade and Yard Elevations - Second Reading SUM.docx

# MIAMI BEACH

City of Miami Beach, 1700 Convention Center Drive, Miami Beach, Florida 33139, www.miamibeachfl.gov

## COMMISSION MEMORANDUM

TO: Mayor Philip Levine and Members of the City Commission

FROM: Jimmy L. Morales, City Manager

DATE: May 11, 2016

SUBJECT: Freeboard height and minimum finished floor elevations.

SECOND READING – PUBLIC HEARING

AN ORDINANCE OF THE MAYOR AND CITY COMMISSION OF THE CITY OF MIAMI BEACH, FLORIDA, AMENDING SUBPART A – GENERAL ORDINANCES, OF THE CITY CODE, BY AMENDING CHAPTER 54 “FLOODS” AT SECTION 54-35, “DEFINITIONS,” BY AMENDING THE DEFINITIONS FOR BASE FLOOD ELEVATION, CROWN OF ROAD, AND FREEBOARD, AND TO ESTABLISH DEFINITIONS FOR CENTERLINE OF ROADWAY, FUTURE CROWN OF ROAD, MINIMUM FREEBOARD, MAXIMUM FREEBOARD, GREEN INFRASTRUCTURE, LOW IMPACT DEVELOPMENT (LID), AND SURFACE STORMWATER SHALLOW CONVEYANCE; AND BY AMENDING SECTION 54-47, “GENERAL STANDARDS” BY REQUIRING A STORMWATER MANAGEMENT PLAN; AND BY AMENDING SECTION 54-48, “SPECIFIC STANDARDS” BY CLARIFYING THE MINIMUM ELEVATION OF THE LOWEST FINISHED FLOOR FOR RESIDENTIAL AND NON-RESIDENTIAL CONSTRUCTION AND REQUIRING A MINIMUM ELEVATION FOR GARAGE ENTRANCES; AND BY AMENDING SECTION 54-51, “STANDARDS FOR COASTAL HIGH HAZARD AREAS (V-ZONES),” BY CLARIFYING THE MINIMUM ELEVATION OF THE LOWEST FLOOR OF ALL NEW CONSTRUCTION AND SUBSTANTIAL IMPROVEMENTS; PROVIDING CODIFICATION; REPEALER; SEVERABILITY; AND AN EFFECTIVE DATE.

Building height, base flood elevation, grade and yard elevation requirements.

AN ORDINANCE OF THE MAYOR AND CITY COMMISSION OF THE CITY OF MIAMI BEACH, FLORIDA, AMENDING THE CITY'S LAND DEVELOPMENT REGULATIONS, BY AMENDING CHAPTER 114, “GENERAL PROVISIONS,” AT SECTION 114-1, “DEFINITIONS,” BY AMENDING THE DEFINITIONS FOR GRADE, FUTURE ADJUSTED GRADE, AND BUILDING HEIGHT, AND TO ESTABLISH BY REFERENCE TO CHAPTER 54-35 DEFINITIONS FOR BASE FLOOD ELEVATION, CROWN OF ROAD, FUTURE CROWN OF ROAD, FREEBOARD, MINIMUM FREEBOARD, MAXIMUM FREEBOARD, GREEN INFRASTRUCTURE, FUTURE ADJUSTED GRADE, AND SURFACE STORMWATER SHALLOW CONVEYANCE; BY AMENDING CHAPTER 142, “ZONING DISTRICTS AND REGULATIONS,” DIVISION 2, “RS-1, RS-

**2, RS-3, RS-4 SINGLE-FAMILY RESIDENTIAL DISTRICTS,” BY AMENDING AND CLARIFYING THE MAXIMUM ELEVATION WITHIN A REQUIRED YARD AND PROVIDING A MINIMUM ELEVATION REQUIREMENT FOR NEW CONSTRUCTION, AND AMENDING HOW MAXIMUM BUILDING HEIGHT IS CALCULATED; PROVIDING CODIFICATION; REPEALER; SEVERABILITY; AND AN EFFECTIVE DATE.**

#### **ADMINISTRATION RECOMMENDATION**

The Administration recommends that the City Commission adopt the ordinances. These ordinances are based on recommendations developed by stormwater and flooding consultant AECOM and vetted by the Mayor’s Blue Ribbon Panel on Sea Level Rise and city staff. The ordinances will not only reduce our risk to sea level rise and flooding, but also will protect against storm surge as referenced in the summary chart herein. Furthermore, these recommendations protect and enhance our economic resiliency in light of forth coming insurance reform, the upcoming FEMA flood map requirements and to improve our Community Rating System (CRS) score that affects private property insurance.

#### **BACKGROUND**

On October 14, 2015, at the request of Commissioner Malakoff, the City Commission referred a discussion item regarding amendments to the City Code to improve the City’s resiliency to sea level rise, flooding and natural disasters to the Land Use and Development Committee (Item C4D). On January 20, 2016 the Land Use Committee discussed the items and recommended that the attached Ordinance Amendments be referred to the Planning Board.

On February 10, 2016 the City Commission referred the proposed Ordinance Amendments (Item C4D) to the Planning Board for review and recommendation. Commissioner Joy Malakoff is the sponsor of the proposed Ordinances.

#### **ANALYSIS**

There are two related ordinance amendments attached. The first ordinance amends chapter 54, “Floods,” and the second ordinance amends the Land Development Regulations, including references to chapter 54. The following is a list of terms, along with their common definitions, which are used throughout this analysis:

**Freeboard** means the additional height between the minimum finished floor elevation and the *base flood elevation*. Freeboard tends to compensate for many unknown factors, such as wave action, stormwater conveyance impediments such as blockage of bridge or culvert openings, and other factors, which could contribute to greater flood heights.

**Base Flood Elevation** means the regulatory elevation associated with building elevation, flood-proofing, protection of building systems and utilities and other flood protection provisions as identified in current FEMA FIRM panels. Currently within the City of Miami Beach, this elevation ranges between 7 to 10 feet *NGVD*.

**FEMA** – **Federal Emergency Management Agency**. FEMA is an agency of Homeland Security, with the stated mission to “support our citizens and first responders to ensure that as a

nation we work together to build, sustain and improve our capability to prepare for, protect against, respond to, recover from and mitigate all hazards.”

**FIRM** – **Flood Insurance Rate Map**. This is the official map of a community on which FEMA has delineated both the special hazard areas and the risk premium zones applicable to the community.

**NGVD** and **NAVD** are reference surface vertical *datums* (a fixed starting point) used to ensure that all elevation records are properly related. The current national datum is the **National Geodetic Vertical Datum (NGVD)** of 1929, which is expressed in relation to mean sea level, or the **North American Vertical Datum (NAVD)** of 1988. **NGVD 29** used a simple model of gravity based on latitude to calculate the approximate sea level and did not take into account other variations. Thus, the elevation difference for points across the country does change between NGVD and NAVD. In order to convert between the two datums in Miami Beach, 1.56 is added to an elevation that is expressed as NAVD. For example, 5.0 feet NAVD = 6.56 feet NGVD. Although NAVD is a more updated standard, NGVD is still more widely used, thus both reference datums are included in this analysis.

**LID** - **Low-Impact Development** techniques mimic natural processes to manage stormwater, and are frequently cheaper and more attractive than traditional stormwater management techniques.

Southeast Florida Regional Climate Change Compact Unified Sea Level Rise Projections from 1992 to 2100. The projection highlights three planning horizons:

1. Short term, by 2030, sea level is projected to rise 6 to 10 inches above 1992 mean sea level,
2. Medium term, by 2060, sea level is projected to rise 14 to 34 inches above 1992 mean sea level,
3. Long term, by 2100, sea level is projected to rise 31 to 81 inches above 1992 mean sea level.

The Miami Beach City Commission adopted these projections for planning purposes on March 9, 2016.

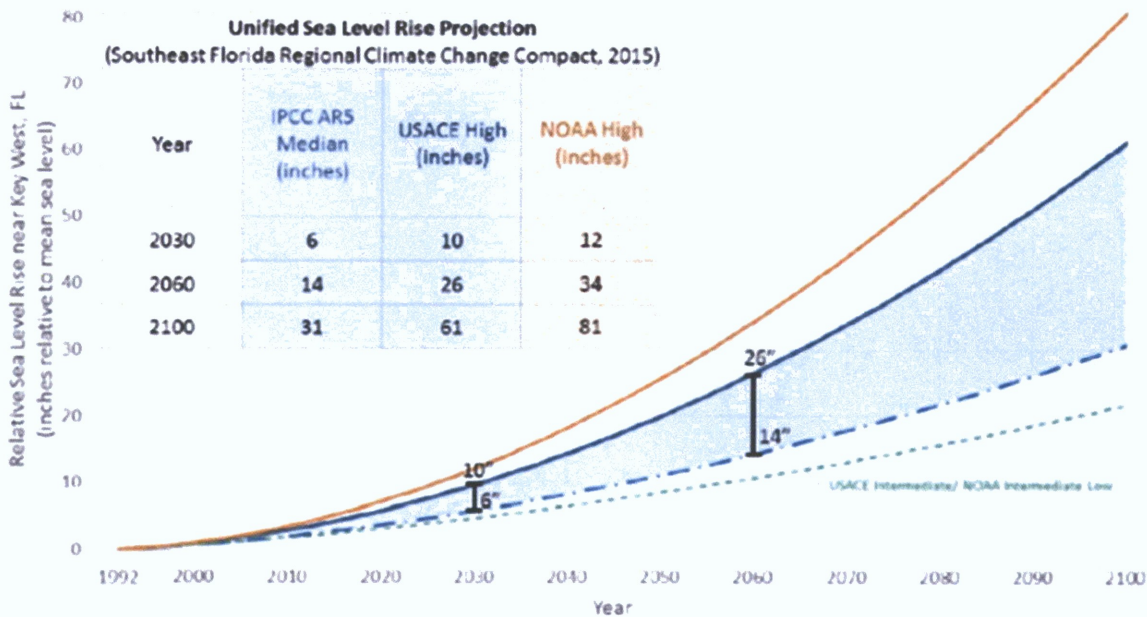


Figure 1: Unified Sea Level Rise Projection. These projections are referenced to mean sea level at the Key West tide gauge. The projection includes three global curves adapted for regional application: the median of the IPCC AR5 RCP8.5 scenario as the lowest boundary (blue dashed curve), the USACE High curve as the upper boundary for the short term for use until 2060 (solid blue line), and the NOAA High curve as the uppermost boundary for medium and long term use (orange solid curve). The incorporated table lists the projection values at years 2030, 2060 and 2100. The USACE Intermediate or NOAA Intermediate Low curve is displayed on the figure for reference (green dashed curve). This scenario would require significant reductions in greenhouse gas emissions in order to be plausible and does not reflect current emissions trends.

**AECOM** is the consultant for the development of the City’s Comprehensive Resiliency Program.

AECOM’s recommendations have been incorporated into the proposed ordinances. The following is a summary of the proposed legislation:

**Minimum Base Flood Elevation:**

Limited areas of the City are depicted on the current FEMA FIRM panels as having a base flood elevation of 7.0 feet NGVD. Although the designation of base flood elevations are based on coastal inundation modeling by FEMA, further research and modeling as part of the ongoing City of Miami Beach Flood Mitigation Study indicates that during a large storm event, this area will be faced with similar flood risks as the surrounding areas currently mapped with a base flood elevation of 8.0 feet NGVD.

Therefore, to provide adequate protection of properties within this zone, it is recommended that the City adopt a minimum base flood elevation of 8.0 feet NGVD. This will affect major renovation and new construction projects, requiring a one foot higher finish floor elevation. However, it should be noted that this ordinance is intended to apply only to design and permitting requirements in the City and is not intended to be used as an insurance rate tool. The adopted FEMA FIRM panels will continue to be used for this purpose.

New FEMA FIRM panels will be available as soon as 2018-19 based on revised coastal modeling, providing updated base flood elevations for the entire City. Once these FEMA maps

are adopted by the City, this section of the code may require additional revisions.

### **Building Freeboard**

As sea levels and storm severity continue to increase, low lying infrastructure including buildings must also elevate in order to reduce risk or maintain low risk from potential flood damage. Consistent with U.S. Federal and State guidance, these code changes provide the basic level of protection for buildings through minimal freeboard requirements. This nominal change in new building finish floor elevation requirements will provide additional levels of protection, potentially reduce insurance premiums and enhance the City's current NFIP CRS (National Flood Insurance Program Community Rating System) status, which can have benefits to all residents and business owners in the City.

As proposed, a minimum freeboard of one (1) foot, and a maximum freeboard of five (5) feet would be established at this time. Building heights would be measured from the base flood elevation plus the actual freeboard provided, which would be between the minimum (1') and maximum (5') freeboard.

In order to account for the future raising of streets and sidewalks for commercial properties, the measurement of building height is also proposed to be modified. Commercial properties often have zero or minimal setbacks, and it is preferable from a business perspective and urban design standpoint to have such commercial uses located at the same level as the sidewalk. In order to accommodate the future raising of streets and sidewalks, additional height will have to be built into projects today, so that the building can be modified with a future raised floor slab to meet the future raised public sidewalk. As proposed, for projects that are designed to accommodate a future raised slab to meet the future sidewalk level, building height would be measured from the base flood elevation plus the provided freeboard. Currently, height for commercial properties that are located predominately at the sidewalk level, are measured from the minimum first floor elevation.

### **Seawall Elevation and Design (included for reference)**

The City of Miami Beach is surrounded by water and protected from erosion and damage from wave action by seawalls. Since much of the island was built out over 50 years ago, many of these sea walls are at a low elevation reducing their effectiveness as the first line of defense against wave energy. For this reason, elevating this critical means of protection for the City is paramount to incorporating resilience.

Understanding the unintended consequences to view sheds from low lying homes, it is recognized that not all sea walls can be built to the ideal elevation of 5.7 feet NAVD at this time. For this reason and to continue protecting properties within the City, private sea walls are recommended to be elevated to an elevation of at least 4.0 feet NAVD, offering additional levels of protection with minimal adverse impacts to view sheds.

In addition to the increase in elevation for private sea walls, the design of the new/renovated walls shall also incorporate a more robust design including larger footer, rebar, width, etc. enabling a retrofit to elevation 5.7 feet NAVD with minimal effort such as with a height extension and new cap. As proposed, all new public sea walls would be constructed to a minimum elevation of 5.7 feet NAVD. Any private sea walls impacted by public right-of-way projects involving City funds would also be constructed to the minimum elevation of 5.7 feet NAVD

consistent with public sea walls.

Specifically, the Public Works Manual, Section A.2 "General Requirements – Sea Wall Elevation", is proposed to be amended as follows:

5) The minimum height—top of wall elevation required requirement—when replacing/repairing a public seawall is 3.2 5.7 ft. NAVD (7.26 ft. NGVD).

5a) The minimum top of wall elevation required when replacing/repairing a private seawall is 4.0 ft. (NAVD 88), unless part of right-of-way project. However, the seawall structural design shall accommodate a future retrofit for a seawall height extension up to a minimum elevation of 5.7 ft. NAVD (7.26 ft. NGVD).

9) When existing seawalls are disturbed as part of a right-of-way project they must be raised to a minimum elevation of 5.7 ft. NAVD. *(no change)*

**Minimum Residential Lot Grade:**

Recently, the City Commission amended the requirements for raising yards within Single Family Districts as an adaptation measure to address the effects of sea level rise. Within single family districts, the maximum elevation of a required front yard and side yards facing a street is limited to no higher than the greater of 'adjusted grade', which is the midpoint between the base floor elevation (BFE) and 'sidewalk grade', or 30 inches above 'sidewalk grade'. Grade is the sidewalk elevation at the center of the property. For example, if grade is 4 feet NGVD, and the base flood elevation (BFE) is 8 feet NGVD, then adjusted grade is 6 feet NGVD. Since the 'adjusted grade' is only 24 inches above 'grade', in this instance the maximum elevation of a required yard could be raised to 30 inches above grade or 6 feet 6 inches NGVD.

As part of its overall review, AECOM has recommended that if the elevation of required yards is less than elevation 2.5 feet NAVD, then required yards may be elevated to 5.0 feet NAVD. While the previous amendments reflect improvements in addressing concerns over sea level rise, there needs to be better agreement between the Land Development Regulations (LDR's) and the Miami Beach Stormwater Management Master Plan (SMP). The adopted SMP calls for the raising of the minimum crowns of roadways in various parts of the City to approximately 5.26 feet NGVD (3.7 feet NAVD). In order to improve consistency between the SMP and LDR's, the proposed ordinance establishes a definition for the 'future crown of the road', where the SMP is referenced. It also establishes a 'future adjusted grade' which is the midpoint elevation between the future crown of the road and the base flood elevation (BFE).

In order to accommodate the raising of the roadways and public sidewalks, the proposed ordinance would require that all required yards be raised to a minimum elevation of 5 feet NAVD (6.56 feet NGVD), with the exception of driveways, private walkways, grade transition areas, surface Stormwater shallow conveyance and LID features and areas where landscaping is to be preserved. However, it would still require that fences within front yards and side yards facing a street be measured from the existing 'sidewalk grade'. This will allow for better transitions between the public right of way and private property as the Stormwater Master Plan is implemented over time.

**SUMMARY**

These recommendations were developed by stormwater and flooding consultant AECOM and vetted by the Mayor's Blue Ribbon Panel on Sea Level Rise and city staff. The proposals contained in the subject ordinances will not only reduce the city's risk to sea level rise and flooding, but also will protect against storm surge as referenced in the summary chart. Furthermore, these recommendations protect and enhance our economic resiliency in light of forth coming insurance reform, the upcoming FEMA flood map requirements and to improve our Community Rating System (CRS) score that affects private property insurance. These requirements will be reviewed periodically against the best available science, in order to adjust and to continue adapting.

The following chart provides a comparison of the primary changes proposed, as described above:

LDR Code / City Policy	Requirement	Policy Elevation (NAVD) ft.	Level of Protection from SLR & 2.0 ft. King Tide (ft.)	Equivalent Storm Surge Protection	Equivalent Storm Surge (return period)	Risk Reduction from Increasing Flood Insurance Costs	Risk Reduction from 1-ft increase in BFE from FIRM update
<b>Base Flood Elevation (BFE) (based on low elevation) actual BFE varies</b>							
<b>Existing</b>	5.44 Feet NAVD  (7 Feet NGVD)	5.44	3.44	Cat. 1	25-yr storm	no	no
<b>Proposed</b>	6.44 Feet NAVD  (8 Feet NGVD)	6.44	4.44	Cat. 1	50-yr storm	for properties at risk in 7 ft BFE zone	for properties at risk in 7 ft BFE zone
<b>Freeboard (comm. &amp; res.) *varies with BFE elevation (based on proposed min.)</b>							
<b>Existing</b>	BFE + 0 ft	6.44	4.44	Cat. 1	50-yr storm	for properties at risk in 7 ft BFE zone	for properties at risk in 7 ft BFE zone



<b>Proposed</b>	+1 ft.	7.44	5.44	Cat. 1	100-yr storm	only until increase in BFE occurs	only until increase in BFE occurs
	+2 ft.	8.44	6.44	Cat. 2	100-yr storm	yes, some cost reduction	yes, some cost reduction
	+3 ft.	9.44	7.44	Cat. 2	100-yr storm	yes, max. cost reduction	yes, some cost reduction
<b>Freeboard (comm. &amp; res.) *varies with BFE elevation (based on proposed min.) [CONTINUED]</b>							
<b>Proposed [CONT.]</b>	+4 ft.	10.44	8.44	Cat. 3	100-yr storm	yes	yes, max. cost reduction
	+5 ft.	11.44	9.44	Cat. 4	100-yr storm	yes	yes
<b>Freeboard (critical infrastructure)</b>							
<b>Existing (critical infra)</b>	+2 ft.	8.44	6.44	Cat. 2	100-yr storm	yes, some cost reduction	yes, some cost reduction
<b>Proposed (critical infra)</b>	+3 ft.	9.44	7.44	Cat. 3	100-yr storm	yes, max. cost reduction	yes, some cost reduction
<b>Seawall Elevation (Private)</b>							
<b>Existing</b>	3.2 FT NAVD (4.76 FT NGVD)	3.2	1.2	Cat. 0	2-year storm	n/a	n/a
<b>Proposed (interim)</b>	4.0 FT NAVD (5.56 FT NGVD)	4	2	Cat. 0	5-yr storm	n/a	n/a
<b>Proposed</b>	5.7 FT NAVD (7.26 FT NGVD)	5.7	3.7	Cat. 1	50-yr storm	n/a	n/a
<b>Seawall Elevation (Public)</b>							
<b>Existing</b>	3.2 FT NAVD (4.76 FT NGVD)	3.2	1.2	Cat. 0	2-year storm	n/a	n/a

<b>Proposed</b>	5.7 FT NAVD (7.26 FT NGVD)	5.7	3.7	Cat. 1	50-yr storm	n/a	n/a
<b>Minimum required yard elevation (existing lot elev. varies)</b>							
<b>Existing</b>	avg. of sidewalk and BFE	varies					
<b>Proposed</b>	5.0 Feet NAVD (6.56 Feet NGVD)	5	3	Cat. 1	25-yr storm	n/a	n/a

**PLANNING BOARD REVIEW**

On March 22, 2016, the Planning Board transmitted the proposed ordinances to the City Commission with a favorable recommendation, including two notable changes. As recommended by the Mayor’s Blue Ribbon Panel on Flooding and Sea Level Rise, the Planning Board recommended increasing the maximum freeboard from three (3’) feet to five (5’) feet above the base flood elevation. The Board also recommended that single family homes which are individually designated as historic structures, or are classified as ‘contributing’ buildings in a local historic district, be exempt from the minimum yard elevation requirements. These recommendations have been incorporated into the text of the attached ordinances and denoted with a double underline. The issue of how to address sea level rise in historic districts is being further reviewed by staff and by the Mayor’s Blue Ribbon Panel on Sea Level Rise.

**FINANCIAL IMPACT**

In accordance with Charter Section 5.02, which requires that the “City of Miami Beach shall consider the long term economic impact (at least five years) of proposed legislative actions,” this shall confirm that the City Administration City Administration evaluated the long term economic impact (at least five years) of this proposed legislative action. The proposed Ordinance is not expected to have a negative fiscal impact upon the City.

**UPDATE**

On April 13, 2016, the subject ordinances were approved at First Reading and a Second Reading Public Hearing was set for May 11, 2016. The Commission also requested that guidelines be included for the regulation of raising front yards, in order to ensure a more gradual transition from the sidewalk level to the higher yard elevation requirements.

The ordinance for Chapter 142 has been modified to account for this transition by limiting the height of retaining walls constructed within four (4’) feet of the front and sideyard facing the street property lines, to no more than 30 inches above the existing adjacent sidewalk or grade elevation. Beyond that point, retaining walls would also be limited to 30 inches above the adjacent grade, and yard slopes would be limited to no more than 11% (5:1, horizontal:vertical). These requirements would ensure that higher yards transition in a stepped or terraced manner down to the lower sidewalk level, and not overwhelm adjacent older homes.

As a point of reference, most single family home lots in the City are less than 30" below the new minimum yard elevation of 5.0 Feet NAVD (6.56 feet NGVD), thus a retaining wall of less than 30" would be required in order to raise most yards up to the new minimum standard. This new standard would only apply to new home construction, and substantial improvements to existing structures. Substantial improvement means any reconstruction, rehabilitation, addition, or other improvement of a structure, taking place during a one-year period, in which the cumulative cost of which equals or exceeds 50 percent of the market value of the structure before the "start of construction" of the improvement.

Additionally, retaining walls will be required to be finished with stucco, stone, or other high quality materials, as well as satisfy the applicable design criteria in Section 142-105. In this regard, there may be instances where the interior sidewalls abut an existing property with dense landscaping and/or hedges, so the specific material and stepping of the walls can be evaluated on a case by case basis.

### **RECOMMENDATION**

The Administration recommends that the City Commission adopt the ordinances.

  
JLM/SMT/TRM/MAB

# MIAMI BEACH

## CITY OF MIAMI BEACH NOTICE OF PUBLIC HEARINGS MAY 11, 2016

**NOTICE IS HEREBY** given that public hearings will be held by the Mayor and City Commissioners of the City of Miami Beach, Florida, in the Commission Chamber, 3rd Floor, City Hall, 1700 Convention Center Drive, Miami Beach, Florida, on **Wednesday, May 11, 2016**, at the times listed, or as soon thereafter as the matter can be heard, to consider:

**10:00 a.m.**  
A Resolution Adopting The Fourth Amendment To The General Fund, Enterprise Fund, Internal Service Fund And Special Revenue Fund Budgets For Fiscal Year (FY) 2015/16. *This Resolution is being heard pursuant to §166.041 FS. Inquiries may be directed to the Budget & Performance Improvement Department at 305.673.7510.*

**10:01 a.m.**  
A Resolution Adopting The Fifth Amendment To The Capital Budget For Fiscal Year (FY) 2015/16. *This Resolution is being heard pursuant to §166.041 FS. Inquiries may be directed to the Budget & Performance Improvement Department at 305.673.7510.*

**10:05 a.m.**  
An Ordinance Amending Subpart A - General Ordinances, Of The City Code, By Amending Chapter 54 "Floods" At Section 54-35, "Definitions," By Amending The Definitions For Base Flood Elevation, Crown Of Road, And Freeboard; And By Creating Definitions For Centerline Of Roadway, Critical Facility, Future Crown Of Road, Minimum Freeboard, Maximum Freeboard, Green Infrastructure, Low Impact Development (LID), And Surface Stormwater Shallow Conveyance; By Amending Section 54-45, "Permit Procedures," To Require A Stormwater Management Plan; By Amending Section 54-47, "General Standards," To Prohibit Septic Sewage Systems, And Include Requirements For Storage Of Hazardous Materials; By Amending Section 54-48, "Specific Standards," To Clarify The Minimum Elevation Of The Lowest Finished Floor For Residential And Non-Residential Construction, And Requiring A Minimum Elevation For Garage Entrances; By Amending Section 54-51, "Standards For Coastal High Hazard Areas (V-Zones)," To Clarify The Minimum Elevation Of The Lowest Floor Of All New Construction And Substantial Improvements; Providing Codification; Repealer; Severability; And An Effective Date. *This Ordinance is being heard pursuant to Section 2.05 of the City Charter and §166.041 FS. Inquiries may be directed to the Planning Department at 305.673.7550.*

**10:06 a.m.**  
An Ordinance Amending The City's Land Development Regulations, By Amending Chapter 114, "General Provisions," At Section 114-1, "Definitions," By Amending The Definitions For Grade, Future Adjusted Grade, And Building Height, And To Establish By Reference To Chapter 54-35 Definitions For Base Flood Elevation, Crown Of Road, Future Crown Of Road, Freeboard, Minimum Freeboard, Maximum Freeboard, Green Infrastructure, Future Adjusted Grade, And Surface Stormwater Shallow Conveyance; By Amending Chapter 142, "Zoning Districts And Regulations," Division 2, "RS-1, RS-2, RS-3, RS-4 Single-Family Residential Districts," By Amending And Clarifying The Maximum Elevation Within A Required Yard And Providing A Minimum Elevation Requirement For New Construction, And Amending How Maximum Building Height Is Calculated; Providing Codification; Repealer; Severability; And An Effective Date. *This Ordinance is being heard pursuant to Section 118-164 of the City's Land Development Code. Inquiries may be directed to the Planning Department at 305.673.7550.*

**10:10 a.m.**  
An Ordinance Amending Chapter 118, Entitled "Administration And Review Procedures," Article I Entitled "In General" At Section 118-5, Entitled "Unity Of Title; Covenant In Lieu Thereof;" Chapter 114, Entitled "General Provisions," At Section 114-4, Entitled "Compliance With Regulations Required;" And Chapter 142, Entitled "Zoning Districts And Regulations," Article II Entitled "District Regulations," Division 1, Entitled "Generally," At Section 142-73, Entitled "Interpretation Of District Boundaries," In Order To Clarify Procedures For The Movement Of FAR Within Unified Development Sites With Differing Zoning Districts; Providing For Enforcement And Penalties; And Providing For Repealer, Codification, Severability, And An Effective Date. *This Ordinance is being heard pursuant to Section 2.05 of the City Charter and §166.041 FS. Inquiries may be directed to the Planning Department at 305.673.7550.*

**10:15 a.m.**  
An Ordinance Amending Chapter 2 Of The Code Of The City Of Miami Beach, Entitled "Administration," Article VI, "Procurement," Division 3, "Contract Procedures," By Creating Section 2-376, Entitled "Fair Chance Requirement For City Contractors," And Amending Chapter 62, "Human Relations," By Creating Article V To Be Entitled The "Fair Chance Ordinance," To Provide Regulations Regarding The Consideration By The City And By City Contractors Of The Criminal History Of Applicants For Employment, And To Provide Limiting Provisions; And Providing For Repealer, Severability, Codification, And An Effective Date. *This Ordinance is being heard pursuant to Section 2.05 of the City Charter and §166.041 FS. Inquiries may be directed to the Office of the City Attorney at 305.673.7470; the Human Resources Department at 305.673.7524, and/or the Procurement Department at 305.673.7490.*

**INTERESTED PARTIES** are invited to appear at this meeting, or be represented by an agent, or to express their views in writing addressed to the City Commission, c/o the City Clerk, 1700 Convention Center Drive, 1<sup>st</sup> Floor, City Hall, Miami Beach, Florida 33139. These items are available for public inspection during normal business hours in the Office of the City Clerk, 1700 Convention Center Drive, 1<sup>st</sup> Floor, City Hall, Miami Beach, Florida 33139. This meeting, or any item herein, may be continued, and under such circumstances, additional legal notice need not be provided.

Pursuant to Section 286.0105, Fla. Stat., the City hereby advises the public that if a person decides to appeal any decision made by the City Commission with respect to any matter considered at its meeting or its hearing, such person must ensure that a verbatim record of the proceedings is made, which record includes the testimony and evidence upon which the appeal is to be based. This notice does not constitute consent by the City for the introduction or admission of otherwise inadmissible or irrelevant evidence, nor does it authorize challenges or appeals not otherwise allowed by law.

To request this material in alternate format, sign language interpreter (five-day notice required), information on access for persons with disabilities, and/or any accommodation to review any document or participate in any City-sponsored proceedings, call 305.604.2489 and select 1 for English or 2 for Spanish, then option 6; TTY users may call via 711 (Florida Relay Service).

Rafael E. Granado, City Clerk  
City of Miami Beach