JOINT WORKSHOP MEETING OF THE FLAGLER BEACH CITY COMMISSION, AND THE FLAGLER BEACH PLANNING AND ARCHITECHTURAL REVIEW BOARD, JANUARY 25, 2016 AT 5:30 PM. 105 SOUTH SECOND STREET, FLAGLER BEACH, FLORIDA 32136

AGENDA

1. Call the meeting to order.

2. Pledge of Allegiance.

3. Discussion and direction to staff regarding development and or amendments to procedures and criteria for development in flood hazard areas.

4. Adjournment.

RECORD REQUIRED TO APPEAL: In accordance with Florida Statute 286.0105 if you should decide to appeal any decision the Commission makes about any matter at this meeting, you will need a record of the proceedings. You are responsible for providing this record. You may hire a court reporter to make a verbatim transcript, or you may buy a CD of the meeting for $3.00 at the City Clerk's office. Copies of CDs are only made upon request. The City is not responsible for any mechanical failure of the recording equipment.

In accordance with the Americans with Disabilities Act, persons needing assistance to participate in any of these proceedings should contact the City Clerk at (386) 517-2000 ext. 233 at least 72 hours prior to the meeting.

The City Commission reserves the right to request that all written material be on file with the City Clerk a minimum of three days before the proposed action.

ORDINANCE NO. 2016-XX

AN ORDINANCE BY THE CITY COMMISSION AMENDING ORDINANCE 2015-03, APPENDIX "A" LAND DEVELOPMENT REGULATIONS, SECTIONS 4.07.03.(D)(3) AND 4.07.09; SECTION 5.00.10 AMENDING SECTION 202 OF THE FLORIDA BUILDING CODE, BUILDING; SECTION 5.00.11 AMENDING SECTION 202 AND SECTION 1103.5 OF THE FLORIDA BUILDING CODE, EXISTING BUILDING; PROVIDING FOR APPLICABILITY; REPEAL; SEVERABILITY; AND AN EFFECTIVE DATE.

WHEREAS, the **City Commission** determined that it is in the public interest to adopt the floodplain management regulations that are coordinated with the *Florida Building Code* and passed Ordinance 2015-03 on February 26, 2015; and

WHEREAS, by passage of Ordinance 2015-03, **Section 4.07.03.(D)(3) Substantial improvement and substantial damage determinations** and **Section 5.00.10** and **Section 5.00.11** amendments to definitions in the *Florida Building Code,* the **City Commission** adopted a higher standard than required by FEMA or the *Florida Building Code* by requiring the Floodplain Administrator to evaluate permits for alterations, improvements, and repairs of flood damage over a 10 year period; and

WHEREAS, by passage of Ordinance 2015-03, **Section 6, Article V, Development and Improvement Standards, Sec. 5.00.12** the **City Commission** adopted a higher standard than required by FEMA or the *Florida Building Code* by requiring one- and two-family dwellings in flood hazard areas not designated as Coastal A Zones or Coastal V Zones, and additions to dwellings, to have their lowest floors elevated to or above the base flood elevation plus 2 feet, or the design elevation, whichever is higher; and

WHEREAS, the **City Commission** has in retrospect determined that amendments to Section 4.07.03.(D)(3) and R322.2.1 impose an undue hardship, especially on residential construction;

WHEREAS, the **City Commission** has determined it appropriate to provide relief for homeowners who propose additions to and substantial improvement of certain dwellings that are already elevated;

NOW, THEREFORE, BE IT ORDAINED by the **City Commission** of the **City of Flagler Beach** that the following Sections be modified accordingly:

SECTION 1. The Appendix A, Land Development Regulations, Article IV, Section 4.07 Floodplain Management, Section 4.07.03 and Section 4.07.09 are hereby amended as follows:

Sec. 4.07.03. Duties and powers of the Floodplain Administrator.

(D) Substantial improvement and substantial damage determinations. For applications for building permits to improve buildings and structures, including alterations, movement, enlargement, replacement, repair, change of occupancy, additions, rehabilitations, renovations, substantial improvements, repairs of substantial damage, and any other improvement of or work on such buildings and structures, the Floodplain Administrator, in coordination with the Building Official, shall:

(1) *Unchanged.*

(2) *Unchanged.*

(3) Determine and document whether the proposed work constitutes substantial improvement or repair of substantial damage; and ~~the determination requires evaluation of previous permits issued for improvements and repairs over a 10-year period as specified in the definition of "substantial improvement"; for proposed work to repair damage caused by flooding, the determination requires evaluation of previous permits issued to repair flood-related damage as specified in the definition of "substantial damage"; and~~

(4) Unchanged

Sec. 4.07.09. Definitions.

The definitions of "Substantial Damage" and "Substantial Improvement" are hereby amended as follows:

Substantial damage. Damage of any origin sustained by a building or structure whereby the cost of restoring the building or structure to its before-damaged condition would equal or exceed 50 percent of the market value of the building or structure before the damage occurred. ~~The term also includes flood-related damage sustained by a structure on two separate occasions during a 10-year period for which the cost of repairs at the time of each such flood event, on average, equals or exceeds 25 percent of the market value of the structure before the damage occurred. [Also defined in FBC, B Section 1612.2., as modified by the City.]~~

Substantial improvement. ~~Any combination of repair, reconstruction, rehabilitation, addition, or other improvement of a building or structure taking place during a 10-year period, the cumulative cost of which equals or exceeds 50 percent of the market value of the building or structure before the improvement or repair is started. For each building or structure, the 10-year period beings on the date of the first improvement or repair of that building or structure subsequent to January 1, 2005. If the structure has incurred substantial damage," any repairs are considered substantial improvement regardless of the actual repair work performed. The term does not, however, include any project for improvement of a building required to correct existing health, sanitary, or safety code violations identified by the building official and that are the minimum necessary to assure safe living conditions. [Also defined in FBC, B, Section 1612.2., as modified by the City.]~~ Any repair, reconstruction, rehabilitation, addition, or other improvement of a building or structure, the cost of which equals or exceeds 50 percent of the market value of the building or structure before the improvement or repair is started. If the structure has incurred "substantial damage," any repairs are considered substantial improvement regardless of the actual repair work performed. The term does not, however, include any project for improvement of a building required to correct existing health, sanitary, or safety code violations identified by the building official and that are the minimum necessary to assure safe living conditions. [Also defined in FBC, B, Section 1612.2.]

SECTION 2. The Appendix A, Land Development Regulations, Article V, Development Design and Improvement Standards, Section 5.00.10 is hereby amended by the following technical amendments to the *Florida Building Code, Building*:

The previously adopted definitions of "Substantial Damage" and "Substantial Improvement" provided in Sec. 202, Florida Building Code, Building, are hereby amended as follows:

Substantial Damage. Damage of any origin sustained by a structure whereby the cost of restoring the structure to its before-damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred. ~~The term also includes flood-related damage sustained by a structure on two separate occasions during a 10-year period for which the cost of repairs at the time of each such flood event, on average, equals or exceeds 25 percent of the market value of the structure before the damage occurred.~~

Substantial improvement. ~~Any combination of repair, reconstruction, rehabilitation, addition, or other improvement of a building or structure taking place during a 10-year period, the cumulative cost of which equals or exceeds 50 percent of the market value of the building or structure before the improvement or repair is started. For each building or structure, the 10-year period beings on the date of the first improvement or repair of that building or structure subsequent to January 1, 2005. If the structure has incurred substantial damage," any repairs are considered substantial improvement regardless of the actual repair work performed. The term does not, however, include any project for improvement of a building required to correct existing health, sanitary, or safety code violations identified by the building official and that are the minimum necessary to assure safe living conditions. [Also defined in FBC, B, Section 1612.2., as modified by the City.]~~ Any repair, reconstruction, rehabilitation, addition, or other improvement of a building or structure, the cost of which equals or exceeds 50 percent of the market value of the building or structure before the improvement or repair is started. If the structure has incurred "substantial damage," any repairs are considered substantial improvement regardless of the actual repair work performed. The term does not, however, include any project for improvement of a building required to correct existing health , sanitary, or safety code violations identified by the building official and that are the minimum necessary to assure safe living conditions. [Also defined in FBC, B, Section 1612.2.]

SECTION 3. The Appendix A, Land Development Regulations, Article V, Development Design and Improvement Standards, Section 5.00.11 is hereby amended to include the following technical amendments to the Florida Building Code, Existing Building.

The previously adopted definitions of "Substantial Damage" and "Substantial Improvement" provided in Sec. 202, Florida Building Code, Existing Building, are hereby amended as follows:

Substantial Damage. Damage of any origin sustained by a structure whereby the cost of restoring the structure to its before-damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred. ~~The term also includes flood-related damage sustained by a structure on two separate occasions during a 10-year period for which the cost of repairs at the time of each such flood event, on average, equals or exceeds 25 percent of the market value of the structure before the damage occurred.~~

Substantial improvement. ~~Any combination of repair, reconstruction, rehabilitation, addition, or other improvement of a building or structure taking place during a 10-year period, the cumulative cost of which equals or exceeds 50 percent of the market value of the building or structure before the improvement or repair is started. For each building or structure, the 10-year period beings on the date of the first improvement or repair of that building or structure subsequent to January 1, 2005. If the structure has incurred substantial damage," any repairs are considered substantial improvement regardless of the actual repair work performed. The term does not, however, include any project for improvement of a building required to correct existing health, sanitary, or safety code violations identified by the building official and that are the minimum necessary to assure safe living conditions. [Also defined in FBC, B, Section 1612.2., as modified by the City.]~~ Any repair, reconstruction, rehabilitation, addition, or other improvement of a building or structure, the cost of which equals or exceeds 50 percent of the market value of the building or structure before the improvement or repair is started. If the structure has incurred "substantial damage," any repairs are considered substantial improvement regardless of the actual repair work performed. The term does not, however, include any project for improvement of a building required to correct existing health , sanitary, or safety code violations identified by the building official and that are the minimum necessary to assure safe living conditions. [Also defined in FBC, B, Section 1612.2.]

SECTION 4. Appendix A, Land Development Regulations, Article V, Development Design and Improvement Standards, Section 5.00.12 is hereby amended to include the following technical amendments to the Florida Building Code, Residential.

Modify Sec. R322 by adding a new section R322.2.1 as follows:

R322.2.1.1. Elevation Requirements for substantial improvements, additions, and repair of substantial damage. Buildings previously constructed with the lowest floor at or above the base flood elevation in effect at the start of construction but below the current effective base flood elevation plus 2 feet shall:

1. For work determined to be substantial improvements, other than horizontal additions, not be required to be brought into compliance with the elevation requirement of base flood elevation plus 2 feet provided the existing lowest floor is at or above the current effective base flood elevation and the building complies with all other requirements of Sections R322.1 and R322.2.
2. Be permitted to have horizontal additions that are structurally connected constructed with the lowest floor of the addition at or above the lowest floor of the building, provided the addition complies with all other requirements of Sections R322.1 and R322.2. If the addition is a substantial improvement, the addition shall be at base flood elevation plus 1 foot.
3. Be required to have the lowest floor of horizontal additions that are not structurally connected to the existing building be at or above the base flood elevation plus 2 feet and comply with all other requirements of Sections R322.1 and R322.2
4. Be required to meet the requirements of Florida Building Code, Existing Building, with the lowest floor at or above the current effective base flood elevation plus 1 foot if the proposed work is determined to be repair of substantial damage. If the existing building is at base flood elevation plus 1 foot, it must comply with other requirements of Sections R322.1 and R322.2.

SECTION 5. INCLUSION INTO THE CODE OF ORDINANCES.
It is the intent of the **City Commission** that the provisions of this ordinance shall become and be made a part of the **City of Flagler Beach's** Code of Ordinances, and that the sections of this ordinance may be renumbered or re-lettered and the word "ordinance" may be changed to "section," "article," "regulations," or such other appropriate word or phrase in order to accomplish such intentions.

SECTION 6. SEVERABILITY.
If any section, subsection, sentence, clause or phrase of this ordinance is, for any reason, declared by the courts to be unconstitutional or invalid, such decision shall not affect the validity of the ordinance as a whole, or any part thereof, other than the part so declared.

SECTION 7. EFFECTIVE DATE. The effective date of this ordinance shall be immediately upon its enactment.

PASSED ON FIRST READING THIS _____DAY OF FEBRUARY, 2016.

PASSED AND ADOPTED THIS _____ DAY OF FEBRUARY, 2016.

CITY OF FLAGLER BEACH, FLORIDA
CITY COMMISSION

_____
Linda Provencher, Mayor

ATTEST:

_____
Penny Overstreet, City Clerk

public way, a monument, pole or other sign or means shall be used to identify the structure.

SECTION R320
ACCESSIBILITY

R320.1 Scope. Shall be in accordance with the provisions of the *Florida Building Code, Accessibility.*

R320.1.1 All new single-family houses, duplexes, triplexes, condominiums and townhouses shall provide at least one bathroom, located with maximum possible privacy, where bathrooms are provided on habitable grade levels, with a door that has a 29-inch (737 mm) clear opening. However, if only a toilet room is provided at grade level, such toilet rooms shall have a clear opening of not less than 29 inches (737 mm).

SECTION R321
ELEVATORS AND PLATFORM LIFTS

R321.1 Elevators. Where provided, passenger elevators, limited-use/limited-application elevators or private residence elevators shall comply with ASME A17.1.

R321.2 Platform lifts. Where provided, platform lifts shall comply with ASME A18.1.

R321.3 Accessibility. Reserved.

SECTION R322
FLOOD-RESISTANT CONSTRUCTION

R322.1 General. Buildings and structures constructed in whole or in part in flood hazard areas (including A or V Zones) as established in Table R301.2(1) shall be designed and constructed in accordance with the provisions contained in this section.

Exception: Buildings and structures located in whole or in part in identified floodways shall be designed and constructed in accordance with ASCE 24.

R322.1.1 Alternative provisions. As an alternative to the requirements in Section R322.2 for buildings and structures located in whole or in part in flood hazard areas (A Zones) or the requirements of Section 322.3 in coastal high-hazard areas (V Zones), ASCE 24 is permitted subject to the limitations of this code and the limitations therein.

R322.1.2 Structural systems. All structural systems of all buildings and structures shall be designed, connected and anchored to resist flotation, collapse or permanent lateral movement due to structural loads and stresses from flooding equal to the design flood elevation.

R322.1.3 Flood-resistant construction. All buildings and structures erected in areas prone to flooding shall be constructed by methods and practices that minimize flood damage.

R322.1.4 Establishing the design flood elevation. The design flood elevation shall be used to define areas prone to flooding. At a minimum, the design flood elevation is the higher of:

1. The base flood elevation at the depth of peak elevation of flooding (including wave height) which has a 1 percent (100-year flood) or greater chance of being equaled or exceeded in any given year, or
2. The elevation of the design flood associated with the area designated on a flood hazard map adopted by the community, or otherwise legally designated.

R322.1.4.1 Determination of design flood elevations. If design flood elevations are not specified, the *building official* is authorized to require the applicant to:

1. Obtain and reasonably use data available from a federal, state or other source; or
2. Determine the design flood elevation in accordance with accepted hydrologic and hydraulic engineering practices used to define special flood hazard areas. Determinations shall be undertaken by a registered *design professional* who shall document that the technical methods used reflect currently accepted engineering practice. Studies, analyses and computations shall be submitted in sufficient detail to allow thorough review and approval.

R322.1.4.2 Determination of impacts. In riverine flood hazard areas where design flood elevations are specified but floodways have not been designated, the applicant shall demonstrate that the effect of the proposed buildings and structures on design flood elevations, including fill, when combined with all other existing and anticipated flood hazard area encroachments, will not increase the design flood elevation more than 1 foot (305 mm) at any point within the jurisdiction.

R322.1.5 Lowest floor. The lowest floor shall be the floor of the lowest enclosed area, including *basement*, but excluding any unfinished flood-resistant enclosure that is useable solely for vehicle parking, building access or limited storage provided that such enclosure is not built so as to render the building or structure in violation of this section.

R322.1.6 Protection of mechanical and electrical systems. Electrical systems, *equipment* and components; heating, ventilating, air conditioning; plumbing *appliances* and plumbing fixtures; *duct systems*; and other service *equipment* shall be located at or above the elevation required in Section R322.2 (flood hazard areas including A Zones) or R322.3 (coastal high-hazard areas including V Zones). If replaced as part of a substantial improvement, electrical systems, *equipment* and components; heating, ventilating, air conditioning and plumbing *appliances* and plumbing fixtures; *duct systems*; and other service *equipment* shall meet the requirements of this section. Systems, fixtures, and *equipment* and components shall not be mounted on or penetrate through walls intended to break away under flood loads.

Exception: Locating electrical systems, *equipment* and components; heating, ventilating, air conditioning; plumbing *appliances* and plumbing fixtures; *duct systems*; and other service *equipment* is permitted below the

elevation required in Section R322.2 (flood hazard areas including A Zones) or R322.3 (coastal high-hazard areas including V Zones) provided that they are designed and installed to prevent water from entering or accumulating within the components and to resist hydrostatic and hydrodynamic loads and stresses, including the effects of buoyancy, during the occurrence of flooding to the design flood elevation in accordance with ASCE 24. Electrical wiring systems are permitted to be located below the required elevation provided they conform to the provisions of the electrical part of this code for wet locations.

R322.1.7 Protection of water supply and sanitary sewage systems. New and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the systems in accordance with the plumbing provisions of this code. New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of floodwaters into systems and discharges from systems into floodwaters in accordance with the plumbing provisions of this code and in accordance with Chapter 64E-6, *Florida Administrative Code*, Standards for Onsite Sewage Treatment and Disposal Systems.

R322.1.8 Flood-resistant materials. Building materials used below the elevation required in Section R322.2 (flood hazard areas including A Zones) or R322.3 (coastal high-hazard areas including V Zones) shall comply with the following:

1. All wood, including floor sheathing, shall be pressure-preservative-treated in accordance with AWPA U1 for the species, product, preservative and end use or be the decay-resistant heartwood of redwood, black locust or cedars. Preservatives shall be listed in Section 4 of AWPA U1.
2. Materials and installation methods used for flooring and interior and *exterior walls* and wall coverings shall conform to the provisions of FEMA/FIA-TB-2.

R322.1.9 Manufactured homes. In addition to the applicable requirements of the state agency with jurisdiction over installation of manufactured homes, installation of manufactured homes in flood hazard areas is subject to the applicable provisions of the local floodplain management ordinance.

R322.1.10 As-built elevation documentation. A registered *design professional* shall prepare and seal documentation of the elevations specified in Section R322.2 or R322.3.

R322.1.11 Structures seaward of a coastal construction line. In addition to the requirements of this section, structures located in flood hazard areas and seaward of the coastal construction line shall be designed to resist the predicted forces of a 100-year storm event in accordance with Section R3109 of the *Florida Building Code, Building*, and the more restrictive provisions shall govern.

R322.2 Flood hazard areas (including A Zones). All areas that have been determined to be prone to flooding but not subject to high velocity wave action shall be designated as flood hazard areas. Flood hazard areas that have been delineated as subject to wave heights between $1^1/_2$ feet (457 mm) and 3 feet (914 mm) shall be designated as Coastal A Zones. All building and structures constructed in whole or in part in flood hazard areas shall be designed and constructed in accordance with Sections R322.2.1 through R322.2.3.

R322.2.1 Elevation requirements.

1. Buildings and structures in flood hazard areas not designated as Coastal A Zones shall have the lowest floors elevated to or above the design flood elevation.
2. Buildings and structures in flood hazard areas designated as Coastal A Zones shall have the lowest floors elevated to or above the base flood elevation plus 1 foot (305 mm), or to the design flood elevation, whichever is higher.
3. In areas of shallow flooding (AO Zones), buildings and structures shall have the lowest floor (including *basement*) elevated at least as high above the highest adjacent *grade* as the depth number specified in feet on the FIRM, or at least 2 feet (610 mm) if a depth number is not specified.
4. Basement floors that are below *grade* on all sides shall be elevated to or above the design flood elevation.

Exception: Enclosed areas below the design flood elevation, including *basements* whose floors are not below *grade* on all sides, shall meet the requirements of Section R322.2.2.

R322.2.2 Enclosed area below design flood elevation. Enclosed areas, including crawl spaces, that are below the design flood elevation shall:

1. Be used solely for parking of vehicles, building access or storage.
2. Be provided with flood openings that meet the following criteria:
   - 2.1. There shall be a minimum of two openings on different sides of each enclosed area; if a building has more than one enclosed area below the design flood elevation, each area shall have openings on exterior walls.
   - 2.2. The total net area of all openings shall be at least 1 square inch (645 mm^2) for each square foot (0.093 m^2) of enclosed area, or the openings shall be designed and the *construction documents* shall include a statement by a registered *design professional* that the design of the openings will provide for equalization of hydrostatic flood forces on exterior walls by allowing for the automatic entry and exit of floodwaters as specified in Section 2.6.2.2 of ASCE 24.
   - 2.3. The bottom of each opening shall be 1 foot (305 mm) or less above the adjacent ground level.
   - 2.4. Openings shall be not less than 3 inches (76 mm) in any direction in the plane of the wall.

2.5. Any louvers, screens or other opening covers shall allow the automatic flow of floodwaters into and out of the enclosed area.

2.6. Openings installed in doors and windows, that meet requirements 2.1 through 2.5, are acceptable; however, doors and windows without installed openings do not meet the requirements of this section.

R322.2.3 Foundation design and construction. Foundation walls for all buildings and structures erected in flood hazard areas shall meet the requirements of Chapter 4.

Exception: Unless designed in accordance with Section R404:

1. The unsupported height of 6-inch (152 mm) plain masonry walls shall be no more than 3 feet (914 mm).
2. The unsupported height of 8-inch (203 mm) plain masonry walls shall be no more than 4 feet (1219 mm).
3. The unsupported height of 8-inch (203 mm) reinforced masonry walls shall be no more than 8 feet (2438 mm).

For the purpose of this exception, unsupported height is the distance from the finished *grade* of the under-floor space and the top of the wall.

R322.2.4 Pools in flood hazard areas. Pools that are located in flood hazard areas established by Table R301.2(1), including above-ground pools, on-ground pools, and in-ground pools that involve placement of fill, shall comply with Sections R322.2.4.1 or R322.2.4.2.

Exception: Pools located in riverine flood hazard areas which are outside of designated floodways.

R322.2.4.1 Pools located in designated floodways. Where pools are located in designated floodways, documentation shall be submitted to the building official, which demonstrates that the construction of the pool will not increase the design flood elevation at any point within the jurisdiction.

R322.2.4.2 Pools located where floodways have not been designated. Where pools are located where design flood elevations are specified but floodways have not been designated, the applicant shall provide a floodway analysis that demonstrates that the proposed pool will not increase the design flood elevation more than 1 foot (305 mm) at any point within the jurisdiction.

R322.3 Coastal high-hazard areas (including V Zones). Areas that have been determined to be subject to wave heights in excess of 3 feet (914 mm) or subject to high-velocity wave action or wave-induced erosion shall be designated as coastal high-hazard areas. Buildings and structures constructed in whole or in part in coastal high-hazard areas shall be designed and constructed in accordance with Sections R322.3.1 through R322.3.6.

R322.3.1 Location and site preparation.

1. New buildings and buildings that are determined to be substantially improved pursuant to the *Florida Building Code, Existing Building* shall be located landward of the reach of mean high tide.
2. For any alteration of sand dunes and mangrove stands the *building official* shall require submission of an engineering analysis which demonstrates that the proposed *alteration* will not increase the potential for flood damage.

R322.3.2 Elevation requirements.

1. All buildings and structures erected within coastal high hazard areas shall be elevated so that the lowest portion of all structural members supporting the lowest floor, with the exception of mat or raft foundations, piling, pile caps, columns, grade beams and bracing, is:

   1.1. Located at or above the design flood elevation, if the lowest horizontal structural member is oriented parallel to the direction of wave approach, where parallel shall mean less than or equal to 20 degrees (0.35 rad) from the direction of approach, or

   1.2. Located at the base flood elevation plus 1 foot (305 mm), or the design flood elevation, whichever is higher, if the lowest horizontal structural member is oriented perpendicular to the direction of wave approach, where perpendicular shall mean greater than 20 degrees (0.35 rad) from the direction of approach.

2. Basement floors that are below *grade*on all sides are prohibited.
3. The use of fill for structural support is prohibited.
4. Minor grading, and the placement of minor quantities of fill, shall be permitted for landscaping and for drainage purposes under and around buildings and for support of parking slabs, pool decks, patios and walkways.

   Exception: Walls and partitions enclosing areas below the design flood elevation shall meet the requirements of Sections R322.3.4 and R322.3.5.

R322.3.3 Foundations. Buildings and structures erected in coastal high-hazard areas shall be supported on pilings or columns and shall be adequately anchored to those pilings or columns. The space below the elevated building shall be either free of obstruction or, if enclosed with walls, the walls shall meet the requirements of Section R322.3.4. Pilings shall have adequate soil penetrations to resist the combined wave and wind loads (lateral and uplift). Water loading values used shall be those associated with the design flood. Wind loading values shall be those required by this code. Pile embedment shall include consideration of decreased resistance capacity caused by scour of soil strata surrounding the piling. Pile systems design and installation shall be certified in accordance with Section R322.3.6. Mat, raft or other foundations that support columns shall not be permitted where soil investigations that are required in accordance

CITY OF FLAGLER BEACH
IN-HOUSE MEMORANDUM

Date: July 2, 2015

To: Members of the Planning and Architectural Review Board
Drew Smith, Legal Counsel

From: Kay McNeely, CFM
Administrative Assistant, Department of Public Works / Planning

Re: Reducing Freeboard from 2 feet to 1 foot above BFE

Background

On February 26, 2015, the City Commission, following the recommendation of the PAR Board, approved Ordinance 2015-03 pertaining to FEMA floodplain regulations written in conformance with the Florida Building Code. The ordinance includes a few higher standards that exceed the minimum requirements of FEMA and the FBC. One of those higher standards is the requirement to elevate the lowest floor two feet at or above the Base Flood Elevation (BFE) in special flood hazard areas. (The previous requirement was one foot.) This applies in Zones AE, AO, Coastal A, and VE, and to new construction and additions to existing structures.

Discussion

Subsequent to passage of the Ordinance, a few homeowners who are planning additions to their existing homes in Zone AE have voiced opposition to the two feet of elevation (known as "freeboard") at or above the BFE. It has been suggested to the City Manager that the PAR Board consider changing the freeboard back to one foot for additions to existing homes.

Florida Building Code

The FBC of 2010, in *Section 1612 Flood Loads, Item 1612.4 Design and Construction*, states "the design and construction of buildings and structures in *flood hazard areas* shall be in accordance with ...ASCE 24." A table from ASCE 24 lists required elevations based on building categories (attached). AE Zone (not Coastal A Zone) Category II buildings, which includes residential and commercial, must be elevated to BFE +1 foot or design flood elevation, whichever is higher. Thus, reverting to one foot of freeboard is consistent with the current FBC.

Community Rating System

The City received points toward its Class Rating in FEMA's Community Rating System for including higher standards in its floodplain ordinance. On June 29, 2015, notice was received that the City will retain its Class 6 rating. The tentative score (and our ISO rep emphasized that the final number must still be determined by further review higher up the chain of authority) is 2,252 points. A Class 6 range is 2000-2500. The City received 287 points for the Higher Standards category. There was no breakdown on how many of those points were for the two feet of freeboard, but it is doubtful that a freeboard reduction from two feet to one foot for additions would result in a reduction in the number of points, i.e., 252, that would have to be taken away to downgrade the City to a Class 7.

Recommendation

In the event the Board decides to reduce the freeboard from two feet to one foot above BFE for additions, perhaps the simplest way to achieve this without resorting to the confusing strike-through and underlining method is to add an exception for Zone AE. A draft ordinance with exception language has been prepared for your review.

Attachments

Included in this packet for your consideration and recommendation to the City Commission for an amendment to the new floodplain ordinance are:

- A draft Ordinance with the Exception language
- Page 6.1 from *Chapter 6 Alterations*, of the 2010 FBC-Existing Building
- Pages 16.32 and 16.33 from *Section 1612 Flood Loads* of the 2010 FBC-Building
- Pages 1-5 from *Highlights of the ASCE 24-05 (rev 12/10)* Table 1-1
- Page 30 excerpted from a presentation on the Homeowner Flood Insurance Affordability Act of 2014, demonstrating average savings on flood insurance for first floor elevations relative to BFE
- A graph dated October 1, 2014 indicating percentages of savings on flood insurance for AE and VE Zones based on amount of freeboard

City of Flagler Beach

Date: September 30, 2015

To: Members of the Planning and Architectural Review Board
Don Deal, Chair
Drew Smith, Legal Counsel

From: Kay McNeely, CFM
Floodplain Administrator

Re: Discussion Topic for October 6 Meeting:
Reduce freeboard from 2 feet to 1 foot for new construction

Background:
On February 26, following the recommendation of the PAR Board, the City Council passed Ordinance 2015-03, a new floodplain ordinance written in conjunction with the *Florida Building Code*. As allowed by *FBC* and FEMA, several higher standards were incorporated in the ordinance, including an increase in the amount of **Freeboard (FB)** from the existing one foot (in effect for 30 years) to two feet for new construction and additions, and **Cumulative Substantial Improvement (CSI)** over a period of 10 years.

Subsequent to its passage, a movement by Flagler Home Builders Association to restore FB to one foot for additions prompted the City Council to ask the PAR Board to review Ordinance 2015-03, and make a recommendation on whether to retain two feet of freeboard for additions, or revert to one foot. New construction was not to be considered.

At the July 7, 2015 meeting of the PAR Board, the motion was made to recommend to City Council a reduction in freeboard to one foot for additions, provided doing so would not have a negative impact on the score of the City's Class 6 rank in the NFIP's Community Rating System.

At the time of that meeting, it was known that the City was only 252 points above the 2000 points needed to retain its Class 6 (Range: 2000-2500), and that it had received 287 points for higher regulatory standards, but it was not known how a reduction in FB and CSI might affect those points. I was tasked with obtaining that information.

Within a few days, a breakdown of the City's score for higher regulatory standards was obtained from ISO (still considered "draft" form, even today) and from ISO's CRS Score Sheet, I prepared a summary report called *FEMA's NFIP Community Rating System, Activity 430 Higher Regulatory Standards (2013 ed) Comparison of 2,042 possible points w/ FB Score of 287.*

City Council Meeting, August 27, 2015

The report was presented to the City Council on August 27 (attached). It indicates that only 76 points were awarded for FB and 0 points for CSI. Thus, because the City's current score is not dependent on FB or CSI, it should retain its Class 6 rating.

The City Council was also presented with Ordinance 2015-09 (attached), written in cooperation with an expert FEMA consultant to ensure correct language. It reduces the freeboard from two feet to one foot for additions and reduces the higher standards for substantial improvement / substantial damage to the minimum definitions required by the *FBC*.

Several representatives of the Flagler Home Builders Association present at the August 27 Commission meeting reintroduced the topic of reducing FB to one foot for new construction also, not just additions. Two members of the City Council were in agreement, one was not, and one was undecided (the fifth councilperson was absent). Without a clear majority, the Commission agreed to table Ordinance 2015-09 and ask the PAR Board to reexamine the issue of 1 foot of FB for new construction.

Recommendation

Retain the two feet of freeboard for new construction because it reduces flood risk.

Attachments included for your information and deliberation (and shared with the City Commission) are:

- The report, *FEMA's NFIP Community Rating System, Activity 430 Higher Regulatory Standards (2013 ed), Comparison of 2,042 possible points w/ FB Score of 276*
- Ordinance 2015-09
- A table, *Community Rating System / Class Rating Ranges*, depicting ranges and recent FB scores
- FEMA NFIP Insurance Report for Flagler County, dated August 20, 2015, which shows that since 1978:
  - Flagler Beach has 1,964 policies, or 18% of the county's 11,091 total policies;
  - Flagler Beach insurance claims account for 170 of the county's 419 claims, i.e., 60%.
  - Claims paid to Flagler Beach total $1,332,137.
- FEMA Fact Sheet, Building Higher in Flood Zones: Freeboard – Reduce Your Risk, Reduce Your Premium

And an additional attachment (prepared subsequent to the August 27 City Commission meeting)

- A table, Historic Local Flood Insurance Claims by street and year

City of Flagler Beach AGENDA ITEM # 23
Item Summary and Recommendation

SUBJECT: Ordinance 2015-09, amending floodplain regulations in Ordinance 2015-03

BACKGROUND: Ordinance 2015-03, adopted February 26, 2015, contains higher regulatory standards than those required by FEMA and the Florida Building Code. Representatives in the local home builders community have expressed their opinion that two of those higher standards, i.e., increasing freeboard from one foot to two feet, and the 10-year cumulative substantial improvement (CSI), pose a hardship on homeowners, particularly those planning additions.

The issue was brought before the PAR Board on July 7, 2015, which recommended returning the freeboard to 1 foot for *additions*, if, after consulting with FEMA on the change, it did not have a negative impact on our Community Rating System score, and by extension, make flood insurance more costly for our residents. The change would impact flood zone AE only, not VE nor Coastal A Zone.

RECOMMENDATIONS: A compromise: retain the two feet of freeboard on new home construction, and reduce it to one foot for additions by amending applicable sections of Ord 2015-03.

ATTACHMENTS:
1. Ordinance 2015-09, amending CSI and Freeboard for additions;
2. FEMA Fact Sheet: Building Higher in Flood Zones: Freeboard – Reduce Your Risk, Reduce Your Premium;
3. PAR Board handout dated 7.7.2015: Insurance Premiums: 1 ft vs 2 ft of Freeboard
3. A report on points earned by the City for Higher Regulatory Standards towards our CRS Score

SUBMITTED BY: Kay McNeely, CFM **DATE:** August 20, 2015

Par Board Submittal, 7.7.2015

INSURANCE PREMIUMS: ONE FOOT VS TWO FEET OF FREEBOARD

An actual Flagler Beach residence* in Special Flood Hazard Area Zone AE, BFE = 5.0 feet

Insurance Type	BFE +1 foot (6.1' FFE)	BFE + 2 feet (7.1 FFE)
$250,000 Structure	$659	$445
$100,000 Contents	$244	$166
Total Annual Premium	**$902**	**$611**
Difference= $291		

The homeowner with one foot of freeboard is paying 47% more than the homeowner with two feet of freeboard.

BTW: In this particular example, the homeowner has a homestead exemption. The premium includes a $25 primary home HFIAA Surcharge of $25. For part-time residents not homesteaded, the surcharge is $250. (Recall that the HFIAA is the Homeowners Flood Insurance Affordability Act of 2014, signed by President Obama to roll back parts of the Biggert-Waters Act of 2012.)

*Data Source: Neal Tipton of Beachside Insurance, Flagler Beach, on 7.6.2015

This Monroe County former townsite is reached by driving to the Flamingo campground in the Everglades, then hiking a trail four and a half miles to the Slagle Ditch. There around 1892, Duncan Brady and other settlers arrived, and when the post office opened the following year, the town consisting of 38 shacks was named for non-indigenous birds seen along the coast of the Gulf of Mexico. By 1910, a year after the post office closed, there were only three occupied houses in what was the southernmost community on the mainland of the continental United States. What was left became part of the Everglades National Park in 1947, and the few remaining residents were moved elsewhere. In this 1916 photo, John Douthet and his family pose on the steps of their home, which is elevated on stilts to allow hurricane flooding to pass underneath.

DRAFT ORDINANCE FOR PRESENTATION TO PAR BOARD,7.7.2015, AMENDING 2 F1 FREEBOARD TO ONE FOOT FOR ADDITIONS

AN ORDINANCE OF THE CITY OF FLAGLER BEACH, FLORIDA, AMENDING APPENDIX A, LAND DEVELOPMENT REGULATIONS, ARTICLE IV, RESOURCE PROTECTION STANDARDS, SECTION 6, R322.2.1 ELEVATION REQUIREMENTS, PROVIDING FOR CODIFICATION, PROVIDING FOR CONFLICTS, AND ESTABLIHSING AND EFFECTIVE DATE.

WHEREAS, the Legislature of the State of Florida has, in **Chapter 166 – Municipalities**, Florida Statutes, conferred upon local governments the authority to adopt regulations designed to promote the public health, safety, and general welfare of its citizenry; and

WHEREAS, the **City of Flagler Beach** was accepted for participation in the National Flood Insurance Program on **May 15, 1985** and the **City Commission** desires to continue to meet the requirements of Title 44 Code of Federal Regulations, Sections 59 and 60, necessary for such participation; and

WHEREAS, Chapter 553, Florida Statutes, was adopted by the Florida Legislature to provide a mechanism for the uniform adoption, updating, amendment, interpretation and enforcement of a state building code, called the *Florida Building Code*; and

WHEREAS, section 553.73(5), Florida Statutes, allows adoption of local administrative or technical amendments to the *Florida Building Code* to implement the National Flood Insurance Program; and

WHEREAS, the **City Commission** determined that it is in the public interest to adopt the proposed floodplain management regulations that are coordinated with the *Florida Building Code* and passed Ordinance 2015-03 on February 26, 2015; and

WHEREAS, by the passage of Ordinance 2015-03, Section 6, Section R322.2.1 the **City Commission** adopted a higher standard than required by FEMA or the Florida Building Code by requiring buildings and structures in flood hazard areas not designated as Coastal A Zones to establish the lowest floor elevation at or above the base flood elevation plus 2 feet, or the design elevation, whichever is higher; and

WHEREAS, the **City Commission** has in retrospect determined that R322.2.1 imposes an undue hardship on residential construction ***alterations***;

NOW, THEREFORE, BE IT ORDAINED by the **City Commission** of the **City of Flagler Beach** that buildings and structures in flood hazard areas not designated as Coastal A Zones establish the lowest floor elevation at or above the base flood elevation plus 1 foot, or the design elevation, whichever is higher; by adding the following exception to R322.2.1:

> **Exception:** Alterations, including any repair, reconstruction, rehabilitation, addition or improvement of a building or structure, including one which qualifies as a substantial improvement, in the flood hazard areas not designated as Coastal A Zones, shall establish the lowest floor elevation at or above the base flood elevation plus 1 foot, or the design elevation, whichever is higher.

Rewritten, the new section would read as follows, with the addition of exception ii.

R322.2.1 Elevation requirements.

1. Buildings and structures in flood hazard areas not designated as Coastal A Zones shall have the lowest floors elevated to or above the base flood elevation plus 2 feet or the design flood elevation, whichever is higher.
2. In areas of shallow flooding (AO Zones), buildings and structures shall have the lowest floor (including basement) elevated at least as high above the highest adjacent grade as the depth number specified in feet on the FIRM plus 2 feet, or at least 4 feet if a depth number is not specified.
3. Basement floors that are below grade on all sides shall be elevated to or above the base flood elevation plus 2 feet or the design flood elevation, whichever is higher.

Exception i: Enclosed areas below the design flood elevation, including basements whose floors are not below grade on all sides, shall meet the requirements of Section R322.2.2.

Exception ii: Alterations, including any repair, reconstruction, rehabilitation, addition or improvement of a building or structure, including one which qualifies as a substantial improvement, to existing buildings and structures in the flood hazard areas not designated as Coastal A Zones, shall establish the lowest floor elevation at or above the base flood elevation <u>plus 1 foot</u>, or the design elevation, whichever is higher.

SECTION 1612
FLOOD LOADS

1612.1 General. Within *flood hazard areas* as established in Section 1612.3, all new construction of buildings, structures and portions of buildings and structures, including substantial improvement and restoration of substantial damage to buildings and structures, shall be designed and constructed to resist the effects of flood hazards and flood loads. For buildings that are located in more than one *flood hazard area*, the provisions associated with the most restrictive *flood hazard area* shall apply.

1612.2 Definitions. The following words and terms shall, for the purposes of this section, have the meanings shown herein.

BASE FLOOD. The flood having a 1-percent chance of being equaled or exceeded in any given year.

BASE FLOOD ELEVATION. The elevation of the *base flood*, including wave height, relative to the National Geodetic Vertical Datum (NGVD), North American Vertical Datum (NAVD) or other datum specified on the Flood Insurance Rate Map (FIRM).

BASEMENT. The portion of a building having its floor subgrade (below ground level) on all sides.

This definition of "Basement" is limited in application to the provisions of Section 1612 (see "Basement" in Section 502.1).

DESIGN FLOOD. The flood associated with the greater of the following two areas:

1. Area with a flood plain subject to a 1-percent or greater chance of flooding in any year; or
2. Area designated as a *flood hazard area* on a community's flood hazard map, or otherwise legally designated.

DESIGN FLOOD ELEVATION. The elevation of the "*design flood*," including wave height, relative to the datum specified on the community's legally designated flood hazard map. In areas designated as Zone AO, the design flood elevation shall be the elevation of the highest existing grade of the building's perimeter plus the depth number (in feet) specified on the flood hazard map. In areas designated as Zone AO where a depth number is not specified on the map, the depth number shall be taken as being equal to 2 feet (610 mm).

DRY FLOODPROOFING. A combination of design modifications that results in a building or structure, including the attendant utility and sanitary facilities, being water tight with walls substantially impermeable to the passage of water and with structural components having the capacity to resist loads as identified in ASCE 7.

EXISTING CONSTRUCTION. Any buildings and structures for which the "start of construction" commenced before the effective date of the community's first flood plain management code, ordinance or standard. "Existing construction" is also referred to as "existing structures."

EXISTING STRUCTURE. See "Existing construction."

FLOOD or FLOODING. A general and temporary condition of partial or complete inundation of normally dry land from:

1. The overflow of inland or tidal waters.
2. The unusual and rapid accumulation or runoff of surface waters from any source.

FLOOD DAMAGE-RESISTANT MATERIALS. Any construction material capable of withstanding direct and prolonged contact with floodwaters without sustaining any damage that requires more than cosmetic repair.

FLOOD HAZARD AREA. The greater of the following two areas:

1. The area within a flood plain subject to a 1-percent or greater chance of flooding in any year.
2. The area designated as a *flood hazard area* on a community's flood hazard map, or otherwise legally designated.

FLOOD HAZARD AREA SUBJECT TO HIGH-VELOCITY WAVE ACTION. Area within the *flood hazard area* that is subject to high-velocity wave action, and shown on a Flood Insurance Rate Map (FIRM) or other flood hazard map as Zone V, VO, VE or V1-30.

FLOOD INSURANCE RATE MAP (FIRM). An official map of a community on which the Federal Emergency Management Agency (FEMA) has delineated both the special flood hazard areas and the risk premium zones applicable to the community.

FLOOD INSURANCE STUDY. The official report provided by the Federal Emergency Management Agency containing the Flood Insurance Rate Map (FIRM), the Flood Boundary and Floodway Map (FBFM), the water surface elevation of the *base flood* and supporting technical data.

FLOODWAY. The channel of the river, creek or other watercourse and the adjacent land areas that must be reserved in order to discharge the *base flood* without cumulatively increasing the water surface elevation more than a designated height.

LOCAL FLOODPLAIN MANAGEMENT ORDINANCE. An ordinance or regulation adopted pursuant to the authority granted to local governments by Title 44 Code of Federal Regulations, Sections 59 and 60 for participation in the National Flood Insurance Program.

LOWEST FLOOR. The floor of the lowest enclosed area, including basement, but excluding any unfinished or flood-resistant enclosure, usable solely for vehicle parking, building access or limited storage provided that such enclosure is not built so as to render the structure in violation of this section.

SPECIAL FLOOD HAZARD AREA. The land area subject to flood hazards and shown on a Flood Insurance Rate Map or other flood hazard map as Zone A, AE, A1-30, A99, AR, AO, AH, V, VO, VE or V1-30.

START OF CONSTRUCTION. The date of issuance for new construction and substantial improvements to existing structures, provided the actual start of construction, repair, reconstruction, rehabilitation, *addition*, placement or other improvement is within 180 days after the date of issuance. The actual start of construction means the first placement of permanent construction of a building (including a manufactured home) on a site, such as the pouring of a slab or footings, installation of pilings or construction of columns.

Permanent construction does not include land preparation (such as clearing, excavation, grading or filling), the installation of streets or walkways, excavation for a basement, footings, piers or foundations, the erection of temporary forms or the installation of accessory buildings such as garages or sheds not occupied as *dwelling units* or not part of the main building. For a substantial improvement, the actual "start of construction" means the first *alteration* of any wall, ceiling, floor or other structural part of a building, whether or not that *alteration* affects the external dimensions of the building.

SUBSTANTIAL DAMAGE. Damage of any origin sustained by a structure whereby the cost of restoring the structure to its before-damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred.

SUBSTANTIAL IMPROVEMENT. Any repair, reconstruction, rehabilitation, *addition* or improvement of a building or structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the improvement or repair is started. If the structure has sustained substantial damage, any repairs are considered substantial improvement regardless of the actual repair work performed. The term does not, however, include either:

1. Any project for improvement of a building required to correct existing health, sanitary or safety code violations identified by the *building official* and that are the minimum necessary to assure safe living conditions.
2. Any *alteration* of a historic structure provided that the *alteration* will not preclude the structure's continued designation as a historic structure.

1612.3 Establishment of flood hazard areas. To establish flood hazard areas, the applicable governing authority shall, by local floodplain management ordinance, adopt a flood hazard map and supporting data. The flood hazard map shall include, at a minimum, areas of special flood hazard as identified by the Federal Emergency Management Agency in an engineering report entitled "The Flood Insurance Study for [INSERT NAME OF JURISDICTION]," dated [INSERT DATE OF ISSUANCE], as amended or revised with the accompanying Flood Insurance Rate Map (FIRM) and Flood Boundary and Floodway Map (FBFM) and related supporting data along with any revisions thereto. The adopted flood hazard map and supporting data are hereby adopted by reference and declared to be part of this Section.

1612.3.1 Design flood elevations. Where design flood elevations are not included in the *flood hazard areas* established in Section 1612.3, or where floodways are not designated, the *building official* is authorized to require the applicant to:

1. Obtain and reasonably utilize any design flood elevation and floodway data available from a federal, state or other source; or
2. Determine the design flood elevation and/or floodway in accordance with accepted hydrologic and hydraulic engineering practices used to define special flood hazard areas. Determinations shall be undertaken by a *registered design professional* who shall document that the technical methods used reflect currently accepted engineering practice.

1612.3.2 Determination of impacts. In riverine *flood hazard areas* where design flood elevations are specified but floodways have not been designated, the applicant shall provide a floodway analysis that demonstrates that the proposed work will not increase the design flood elevation more than 1 foot (305 mm) at any point within the jurisdiction of the applicable governing authority.

1612.4 Design and construction. The design and construction of buildings and structures located in *flood hazard areas*, including flood hazard areas subject to high-velocity wave action, shall be in accordance with Chapter 5 of ASCE 7 and with ASCE 24.

1612.5 Flood hazard documentation. The following documentation shall be prepared and sealed by a registered design professional and shall be submitted to the building official:

1. For construction in flood hazard areas not subject to high-velocity wave action:
   - 1.1 The elevation of the lowest floor, including basement, as required by the foundation inspection and the final inspection in Section 110.3.
   - 1.2. For fully enclosed areas below the design flood elevation where provisions to allow for the automatic entry and exit of floodwaters do not meet the minimum requirements in Section 2.6.2.1, ASCE 24, construction documents shall include a statement that the design will provide for equalization of hydrostatic flood forces in accordance with Section 2.6.2.2 of ASCE 24.
   - 1.3. For dry floodproofed nonresidential buildings, construction documents shall include a statement that the dry floodproofing is designed in accordance with ASCE 24.
2. For construction in flood hazard areas subject to high-velocity wave action:
   - 2.1 The elevation of the bottom of the lowest horizontal structural member as required by the foundation inspection and the final inspection in Section 110.3.
   - 2.2 Construction documents shall include a statement that the building is designed in accordance with ASCE 24, including that the pile or column foundation and building or structure to be attached thereto is designed to be anchored to resist flotation, collapse and lateral movement due to the effects of wind and flood loads acting simultaneously on all building components, and other load requirements of Chapter 16.
   - 2.3 For breakaway walls designed to resist a nominal load of less than 10 psf (0.48 kN/m^2) or more than 20 psf (0.96 kN/m^2), construction documents shall include a statement that the breakaway wall is designed in accordance with ASCE 24.

CHAPTER 6
ALTERATIONS—LEVEL 1

SECTION 601
GENERAL

601.1 Scope. Level 1 alterations as described in Section 403 shall comply with the requirements of this chapter. Level 1 alterations to historic buildings shall comply with this chapter, except as modified in Chapter 11.

601.2 Conformance. An *existing building* or portion thereof shall not be altered such that the building becomes less safe or energy efficient than its existing condition. If in the alteration the current level of safety or sanitation is to be reduced, the portion altered shall conform to the requirements of the *Florida Building Code, Building.*

601.3 Flood hazard areas. In flood hazard areas, alterations that constitute *substantial improvement* shall require that the building comply with Section 1612 of the *Florida Building Code, Building.*

SECTION 602
BUILDING ELEMENTS AND MATERIALS

602.1 Interior finishes. All newly installed interior wall and ceiling finishes shall comply with Chapter 8 of the *Florida Building Code, Building.*

602.2 Interior floor finish. New interior floor finish, including new carpeting used as an interior floor finish material, shall comply with Section 804 of the *Florida Building Code, Building.*

602.3 Interior trim. All newly installed interior trim materials shall comply with Section 806 of the *Florida Building Code, Building.*

602.4 Materials and methods. All new work shall comply with materials and methods requirements in the *Florida Building Code, Building; Florida Building Code; Energy Conservation; Florida Building Code, Mechanical* and *Florida Building Code, Plumbing,* as applicable, that specify material standards, detail of installation and connection, joints, penetrations, and continuity of any element, component, or system in the building.

[FG] 602.4.1 Florida Building Code, Fuel Gas. The following sections of the *Florida Building Code, Fuel Gas* shall constitute the fuel gas materials and methods requirements for Level 1 alterations.

1. All of Chapter 3, entitled "General Regulations," except Sections 303.7 and 306.
2. All of Chapter 4, entitled "Gas Piping Installations," except Sections 401.8 and 402.3.
   2.1. Sections 401.8 and 402.3 shall apply when the work being performed increases the load on the system such that the existing pipe does not meet the size required by code. Existing systems that are modified shall not require resizing as long as the load on the system is not increased and the system length is not increased even if the altered system does not meet code minimums.
3. All of Chapter 5, entitled "Chimneys and Vents."
4. All of Chapter 6, entitled "Specific Appliances."

SECTION 603
FIRE PROTECTION

603.1 General. Alterations shall be done in a manner that maintains the level of fire protection provided.

SECTION 604
MEANS OF EGRESS

604.1 General. Means of egress for buildings undergoing alteration shall comply with the requirements of Section 601.1 and the scoping provisions of Chapter 1 where applicable.

Exception: Door and window dimensions. In residential dwellings and dwelling units, a maximum of 5 percent reduction in the clear opening dimensions of replacement doors and windows shall be allowed.

SECTION 605
ACCESSIBILITY

605.1 General. Accessibility shall be in accordance with the provisions of the *Florida Building Code, Accessibility.*

605.1.1 Entrances. Reserved.

605.1.2 Elevators. Reserved.

605.1.3 Platform lifts. Reserved.

605.1.4 Ramps. Reserved.

605.1.5 Dining areas. Reserved.

605.1.6 Performance areas. Reserved.

605.1.7 Jury boxes and witness stands. Reserved.

605.1.8 Accessible dwelling or sleeping units. Reserved.

605.1.9 Type A dwelling or sleeping units. Reserved.

605.1.10 Toilet rooms. Reserved.

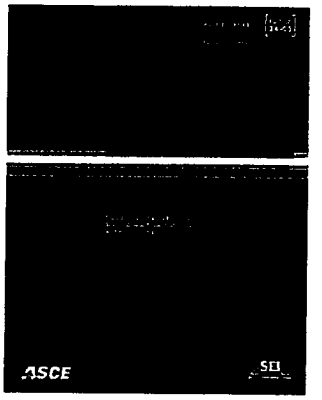
605.1.11 Dressing, fitting and locker rooms. Reserved.

605.1.12 Fuel dispensers. Reserved.

605.1.13 Thresholds. Reserved.

605.1.14 Extent of application. Reserved.

HIGHLIGHTS OF ASCE 24-05 *Flood Resistant Design and Construction*



ASCE 24 is a referenced standard in the *International Building Code®*. Any building or structure that falls within the scope of the IBC that is proposed in a flood hazard area is to be designed in accordance with ASCE 24. The *International Residential Code®* requires that dwellings in floodways be designed in accordance with ASCE 24, and the 2009 edition of the IRC will include an alternative that allows communities to require homes in V zones to be designed in accordance with ASCE 24. Purchase a copy of ASCE 24 at www.asce.org.

ASCE 24 tells the designer the minimum requirements and expected performance for the design and construction of buildings and structures in flood hazard areas. It is not a restatement of all of the NFIP regulations, but offers additional specificity, some additional requirements, and some limitations. Buildings designed according to ASCE 24 are better able to resist flood loads and flood damage.

Highlights of ASCE 24 that complement the NFIP minimum requirements include:

Building Performance

- Freeboard is required as a function of the nature of occupancy and the flood zone (see table below). Dwellings and most other buildings have 1-foot of freeboard; certain essential facilities have 2-3 feet; only agricultural facilities, temporary facilities and minor storage facilities are allowed to have their lowest floors at the BFE.
- Flood loads and other loads are those specified in ASCE 7.
- Performance of foundations exposed to flood loads and load combinations is specified; soil characteristics and underlying strata, including soil consolidation, expansion or movement, erosion and scour, liquefaction and subsidence must be considered.
- Fill is required to be stable under conditions of flooding, including rapid rise and rapid drawdown, prolonged inundation, and erosion and scour; structural fill compaction is specified or an engineering report is required, side slopes are required to be no steeper than 1:1.5.
- Specifications for slabs-on-grade are listed depending on the purpose and location of the slabs.
- Two alternatives are specified for flood openings to allow for the automatic entry and exit of floodwaters in below-BFE enclosures: nonengineered openings which do not require certification (1 sq in per sq ft of enclosed area) and engineered openings which must be certified by a registered design professional.
- Stairs and ramps shall be designed and constructed to resist flood loads and to minimize transfer of flood loads to foundations, or to break away without causing damage.
- In V Zones and Coastal A Zones:
  - Structures shall be supported on piles, columns or shear walls.
  - Foundation depth shall take into account erosion and scour.

- Specifications are provided for pile foundations, attachments to piles, different types of piles (wood, steel H, concrete-filled steel pipe, prestressed concrete, precast concrete, cast-in-place concrete).
- Specifications are provided for pile design (capacity, capacity of supporting soils, minimum penetration, spacing, pile caps, connections, splicing, and mixed and multiple types of piles).
- Specifications are provided for footings, mats, rafts, and slabs-on-grade; grade beams; bracing; and shear walls.
- Walls designed to breakaway shall not produce debris that is capable of damaging structures (breakaway walls in Coastal A Zones require openings).
- Mechanical, heating, ventilation, and air conditioning elements shall be located on the landward side of structures.
- Erosion control structures (bulkheads, seawalls, revetments) shall not be attached to buildings or focus or increase flood forces or erosion impacts on structures.
- Decks, concrete pads, and patios shall be structurally independent of buildings and constructed to break away without producing damaging debris.
- Pools shall be elevated, designed to breakaway without producing damaging debris, or sited to remain in the ground without obstructing flow that causes damage.

- Dry floodproofed nonresidential buildings and non-residential portions of mixed-use buildings are:
  - Not permitted in V Zones, Coastal A Zones, where flood velocities exceed 5 ft/sec, where conformance with certain human intervention limits cannot be achieved.
  - Required to have at least one exit door above the design flood elevation.
  - Allowed where warning time is a minimum of 12 hours unless a community warning system provides a minimum warning time sufficient to accomplish certain activities related to dry floodproofing.
  - Required to have a flood emergency plan, posted in at least two conspicuous locations, that addresses specified elements and actions.

Flood-Damage Resistant Materials

- Flood-damage resistant materials shall be used below the lowest floor elevations, including freeboard (see table below).
- Requires structural steel exposed to salt water, salt spray, or other corrosive agents to be hot-dipped galvanized after fabrication; other metal components shall be stainless steel or hot-dipped galvanized.

Utilities and Service Equipment

- Utilities and attendant equipment that is elevated shall not be located below the lowest floor elevations, including freeboard (see table below).
- Fuel supply lines shall be equipped with float operated automatic shut-off valves.

- Tanks that are below the design flood elevation and that are attached to or beneath buildings shall be installed and anchored to resist at least 1.5 times the potential buoyant and other flood forces assumed to act on empty tanks.
- Elevator cabs that descend below the design flood elevation shall be equipped with controls that prevent the cab from descending into floodwaters.

Siting Considerations

- Structures shall not be built in:
  - Areas subject to flash flooding (floodwaters rise to 3' or more above banks in less than 2 hours).
  - Erosion-prone areas (determined by analyses) unless protected.
  - High velocity flow areas (faster than 10 ft/sec) unless protected.
- Buildings in proximity to flood protective works (dams, levees, floodwalls, diversions, channels) shall not have adverse effects on, or conflict with, maintenance and repairs of those protective works.
- In-ground and above-ground pools shall be designed to withstand flood loads and load combinations; pools that are structurally connected to structures are to be designed to function as a continuation of foundations.

Content from ASCE 24-05 and ASCE 7-05 used with permission from ASCE.

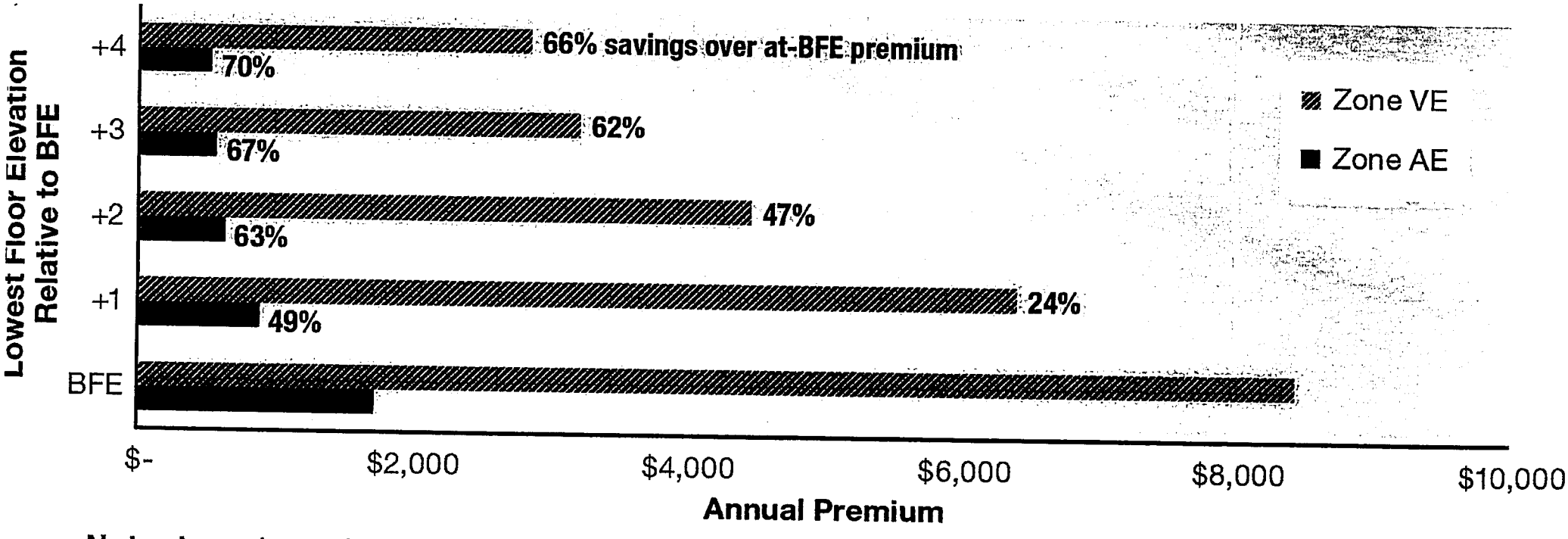
See next page for description of Categories →

		Category I	Category II	Category III	Category IV
Elevation of Lowest Floor (A Zone: Table 2-1)	All A Zones not identified as Coastal A Zones: elevation of lowest floor	DFE	BFE +1 ft or DFE, whichever is higher	BFE +1 ft or DFE, whichever is higher	BFE +2 ft or DFE, whichever is higher
Elevation of Bottom of Lowest Horizontal Structural Member (V Zone: Table 4-1)	All V Zones and Coastal A Zones: where the lowest horizontal structural member is parallel to direction of wave approach	DFE	DFE	BFE +1 ft or DFE, whichever is higher	BFE +1 ft or DFE, whichever is higher
	All V Zones and Coastal A Zones: where the lowest horizontal structural member is perpendicular to direction of wave approach	DFE	BFE +1 ft or DFE, whichever is higher	BFE +2 ft or DFE, whichever is higher	BFE +2 ft or DFE, whichever is higher
Elevation Below Which Flood-Damage-Resistant Materials Shall be Used (Table 5-1)	All A Zones not identified as Coastal A Zones	DFE	BFE +1 ft or DFE, whichever is higher	BFE +1 ft or DFE, whichever is higher	BFE +2 ft or DFE, whichever is higher
	All V Zones and Coastal A Zones: where the lowest horizontal structural member is parallel to direction of wave approach	DFE	BFE +1 ft or DFE, whichever is higher	BFE +2 ft or DFE, whichever is higher	BFE +2 ft or DFE, whichever is higher
	All V Zones and Coastal A Zones: where the lowest horizontal structural member is perpendicular to direction of wave approach	DFE	BFE +2 ft or DFE, whichever is higher	BFE +3 ft or DFE, whichever is higher	BFE +3 ft or DFE, whichever is higher
Minimum Elevation of Utilities and Equipment (Table 7-1)	All A Zones not identified as Coastal A Zones	DFE	BFE +1 ft or DFE, whichever is higher	BFE +1 ft or DFE, whichever is higher	BFE +2 ft or DFE, whichever is higher
	All V Zones and Coastal A Zones: where the lowest horizontal structural member is parallel to direction of wave approach	DFE	BFE +1 ft or DFE, whichever is higher	BFE +2 ft or DFE, whichever is higher	BFE +2 ft or DFE, whichever is higher
	All V Zones and Coastal A Zones: where the lowest horizontal structural member is perpendicular to direction of wave approach	DFE	BFE +2 ft or DFE, whichever is higher	BFE +3 ft or DFE, whichever is higher	BFE +3 ft or DFE, whichever is higher
Dry Floodproofing of non-residential structures and non-residential portions of mixed-use buildings (Table 6-1)	All A Zones not identified as Coastal A Zones: elevation to which dry floodproofing extends	BFE +1 ft or DFE, whichever is higher	BFE +1 ft or DFE, whichever is higher	BFE +1 ft or DFE, whichever is higher	BFE +2 ft or DFE, whichever is higher
	All V Zones and Coastal A Zones: dry floodproofing not allowed	Not permitted	Not permitted	Not permitted	Not permitted

TABLE 1-1. Classification of Structures for Flood-Resistant Design and Construction (Classification same as ASCE 7, Ref. [1])

Nature of Occupancy	Category
Structures that represent a low hazard to human life in the event of failure including, but not limited to: ▪ Agricultural facilities[a] ▪ Certain temporary facilities ▪ Minor storage facilities[b]	I
All structures except those listed in Categories I, III and IV	II
Structures that represent a substantial hazard to human life in the event of failure including, but not limited to: ▪ Buildings and other structures where more than 300 people congregate in one area ▪ Buildings and other structures with day-care facilities with capacity greater than 150 ▪ Buildings and other structures with elementary school or secondary school facilities with capacity greater than 250 ▪ Buildings and other structures with a capacity greater than 500 for colleges or adult education facilities ▪ Health care facilities with a capacity of 50 or more resident patients but not having surgery or emergency treatment facilities ▪ Jails and detention facilities ▪ Power generating stations and other public utility facilities not included in Category IV Buildings and other structures not included in Category IV (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 sufficient quantities of hazardous materials considered to be dangerous to the public if released. Buildings and other structures containing hazardous materials shall be eligible for classification as Category II structures if it can be demonstrated to the satisfaction of the authority having jurisdiction by a hazard assessment as described in Section 1.5.2[c] that a release of the hazardous material does not pose a threat to the public.	III
Structures designated as essential facilities including but not limited to ▪ Hospitals and other health-care facilities having surgery or emergency treatment facilities ▪ Fire, rescue, ambulance, and police stations and emergency vehicle garages ▪ Designated earthquake, hurricane, or other emergency shelters ▪ Designated emergency preparedness, communication, 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 structures, fire water storage tanks or other structures housing or supporting water, or other fire-suppression material or equipment) required for operation of Category IV structures during an emergency ▪ Aviation control towers, air traffic control centers, and emergency aircraft hangars ▪ Water storage facilities and pump structures required to maintain water pressure for fire suppression ▪ Buildings and other structures having critical national defense functions Buildings 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 where the quantity of the material exceeds a threshold quantity established by the authority having jurisdiction. Buildings and other structures containing extremely hazardous materials shall be eligible for classification as Category II structures if it can be demonstrated to the satisfaction of the authority having jurisdiction by a hazard assessment as described in Section 1.5.2[c] that the extremely hazardous material does not pose a threat to the public. This reduced classification shall not be permitted if the buildings or structures also function as essential facilities	IV

[a]Certain agricultural structures may be exempt from some of the provisions of this Standard – see section C..4.3.
[b]For the purposes of this standard, minor storage facilities do not include commercial storage facilities.
[c]Section 1.5.2 reference is made to ASCE Standard 7-05, not this standard.



Note: Annual premiums calculated using the *NFIP Flood Insurance Manual*, October 1, 2014, for a one-story single-family home with no basement, no enclosure, and full replacement coverage. Premiums are based on the maximum available coverage of building coverage of $250,000 for building and $100,000 for contents coverage. Zone V building is assumed to be free of obstructions.

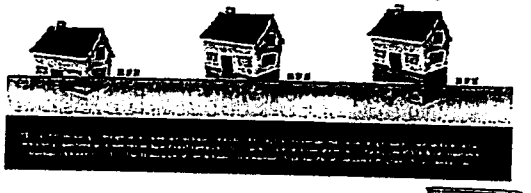
Homeowner Flood Insurance Affordability Act of 2014 (HFIAA14)

- Requires FEMA to expedite an "Affordability Framework" study.
- Instructs FEMA to try to minimize the number of policies with annual premiums that exceed 1% of the coverage provided by the policy.
- Requires FEMA to clearly communicate full flood risk determinations to individuals regardless of whether their premium rates reflect this.

GET A PLAN!

Why Mitigation is Important

Under the Flood Insurance Reform Act of 2012, You Could Save More than $90,000 over 10 Years If You Build 3 Feet above Base Flood Elevation*



GET A PLAN!

1 Ft below $9,500/yr

at BFE $1,410/yr

1 Ft above $.427/yr

Community Rating System

Community Rating System (CRS)

GET A PLAN!

FEMA's NFIP Community Rating System
Activity 430 Higher Regulatory Standards (2013 Edition)
Comparison of 2,042 possible points w/ FB Score of 276

Heading: **Development Limitations** CRS Abbr: 432.a. DL

Description:

Prohibiting fill and other ground-altering measures can protect existing development and habitat, improve water quality, and maintain the flood attenuating benefits of natural areas.

KMc Notes:

City received 66 points for Compensatory Storage (see DL1.b., below)

Possible Points: **1330** FB 2015 Credited Points: **66**

Heading: **Compensatory Storage** CRS Abbr: 432.a. DL1.b

Description:

One method to offset the impacts of the use of fill is to require compensatory storage, but compensatory storage does not compensate for the adverse impact on other natural floodplain functions. Therefore, it is worth approximately half the credit. This credit is for regulations that require new developments to provide compensatory storage at hydraulically equivalent sites up to a ratio of 1.5:1.

KMc Notes:

280 possible points from DL1.a OR possibly as much as 130 for DL1.b.

Possible Points: **130** FB 2015 Credited Points: **66**

Heading: **Freeboard** CRS Abbr: 432.b. FB

Description:

The NFIP requires that the lowest floor of residential structures be elevated to or above the base flood elevation and that non-residential structures be elevated or floodproofed to or above the base flood elevation. Attached garages and utilities (including electrical, heating, ductwork, ventilating, plumbing and air conditioning) must also be protected to the base flood elevation.
A freeboard requirement adds height above the BFE to provide an extra margin of protection to account for waves, debris, miscalculations, or lack of data.
If the community requires that (utilities) be elevated or made of flood-resistant materials above the BFE, but does not require these facilities to be elevated or protected to the freeboard level, then the value for the freeboard is considered to be 75% of the elevation requirement.

KMc Notes:

Points were for 1 foot of freeboard in the past. Because two feet of FB is new and no ECs have been submitted yet, credit will be awarded at next 5 year cycle visit in 2020. Points were deducted because no language expressly requires utilities to be elevated to 2 feet. (Interesting Note: FEMA and ISO do not agree that utility language must be more specific. FEMA says the new Ord references the FBC which states to use the adopted freeboard for utilities, and that should be sufficient. FEMA was not aware that ISO was deducting points until brought to their attention during our ISO visit in Feb. FDEM (FEMA's state rep) and ISO are meeting on this currently to see if all FL communities that received deductions for lacking more specific utility language can be fully credited.)

Possible Points: **500** FB 2015 Credited Points: **76**

Heading: **Building Code**

CRS Abbr: 432.h. BC

Description:

BCGES was initiated by the insurance industry after determining that the catastrophic losses from Hurricane Andrew were compounded by poor building code enforcement.
BCGES assesses the buidling codes in effect in a community and how a community enforces them, with special emphasis on mitigation of losses from natural disasters.
BC1 recognizes that communities have adopted the current editions of the appropriate codes.

KMc Notes:

City received 48 pts for BC1. We may have been docked 2 pts for having septic systems.

Possible Points: **50** FB 2015 Credited Points: **48**

Heading: **Building Code**

CRS Abbr: 432.h. BC

Description:

BC2 credits the community's Building Code Effectiveness Grading Schedule (BCEGS) classification.

KMc Notes:

City piggybacked on County's classification number of 3 for 30 points because in 2012 the County was doing City inspections. (The County's classification expired July 2015. After the ISO review in February, the City received a BCEGS classification number of 4, which equates to 20 points.)

Possible Points: **50** FB 2015 Credited Points: **30**

Heading: **Local Drainage Protection**

CRS Abbr: 432.i. LDP

Description:

LDP credit is for regulations that ensure that every new building will be built so that it is protected from local drainage flooding. A regulation that only addresses drainage plans in new subdivisions in not credited.
LPD1 = 40 x number of feet the lowest floor (including basement) must be above the crown of the nearest street or the highest grade adjacent to the building
LDP2 = 40 points, if the regs require that, as a condition of receivng a building permit, the applicant must prepare a site plan that (a) accounts fpr street flooding and local drainage from and onto adjoing properties, and (b) protects the building from local drainage flows
LDP3 = EITHER 20 points, if the regs require the applicant to provide positive drainage away from the building site to an approved point of collection that does not create a hazard or problem on neighboring properties OR 10 points if the regulations require that the applicant provide positive drainage away from the building site.
LDP4 = 20 points, if the regs require that the increased volume of runoff due to the development (from the 100-year storm) is kept on-site, such as via a low-impact develoment measure.

KMc Notes:

ISO credited LDP3. There are no points for LDP4 because City stormwater projects have been built to the 10-year and 25-year rain event, not the 100-year.

Possible Points: **120** FB 2015 Credited Points: **10**

Heading: **State-mandated Regulatory Standards** CRS Abbr: 432.n. SMS

Description:

KMc Notes:

Points were received for the state's Coastal Construction Control Line (CCCL).

Possible Points: **20** FB 2015 Credited Points: **20**

Heading: **Regulations Administration** CRS Abbr: 432.o. RA

Description:

RA1.
a. 5 points for each CFM or graduate of an approved EMI class OR
b. 25 points, if all proposed development projects in the floodplain and all final inspections and project approvals are reviewed and approved by a CFM. The credit is provided as long as no new floodplain development project is used or occupied without the review and approval of a CFM.

KMc Notes:

I have been a Certified Floodplain Manager since 2008. Beginning in February of this year, I started reviewing floodplain building permits along with the City Engineer / Director of Public Works.

Possible Points: **67** FB 2015 Credited Points: **25**

KMc, 8.20.2015

Community Rating System
Class Rating Ranges

CRS CLASS	CREDIT POINTS		PREMIUM REDUCTION		
			Inside SFHA	Outside SFHA	
1	4,500	and up	45%	10%	
2	4,000	4,499	40%	10%	
3	3,500	6,999	35%	10%	
4	3,000	3,499	30%	10%	
5	2,500	2,999	25%	10%	Flagler Beach Scores
6	**2,000**	**2,499**	**20%**	**10%**	2015: 2,252 (tentative)
7	1,500	1,999	15%	5%	273 pts are for HRS.
8	1,000	1,499	10%	5%	2010: 2,140
9	500	999	5%	5%	
10	0	499	0%	50%	
Inside SFHA: Zones VE, AE, and Coastal A					
Outside SFHA: Zone X					
Preferred Risk Policies (PRPs) are not eligible for CRS premium reductions because they already have lower premiums. There are special eligibility requirements.					

FEMA

Fact Sheet

Building Higher in Flood Zones: Freeboard – Reduce Your Risk, Reduce Your Premium

One way flood risk is communicated is through maps that show base flood elevations (BFEs), or the height floodwaters would reach during a 1-percent-annual-chance flood in any given year.

Freeboard is a term used by FEMA's National Flood Insurance Program (NFIP) to describe a factor of safety usually expressed in feet above the 1-percent-annual-chance flood level. The NFIP requires the lowest floor of structures built in Special Flood Hazard Areas (SFHAs) to be at or above the BFE, so a structure built with freeboard would have its lowest floor 1 foot or more above the BFE. Adding freeboard will reduce NFIP insurance premiums.

Benefits of Freeboard

There are many benefits to incorporating freeboard into new construction plans, the most important being safety (Figure 1). Freeboard provides a margin of safety against extraordinary or unknown flood risk. BFEs reflect estimates of flood risk, but there are many unknown factors that can cause flood heights to rise above the BFE, such as wave action, bridge and culvert openings being blocked by debris, and development in the floodplain. It is important to remember that floods more severe than the 1-percent-annual-chance event can and do occur.

Other benefits of freeboard include incurring less damage, easier and faster cleanup after a flood event, and lower flood insurance rates. Incorporating freeboard into building plans can result in substantial savings in flood insurance premiums each year, especially for buildings located in Zone V (a coastal flood zone at risk from wave action). Figure 2 shows potential flood insurance rates based on the amount of freeboard in both riverine (Zone AE) and coastal (Zone VE) environments.

Communities that incorporate freeboard into their local floodplain ordinances can earn discounts on flood insurance by participating in the NFIP's Community Rating System (CRS) program. CRS rewards communities that engage in floodplain management activities that exceed NFIP standards by offering discounts of up to 45 percent on flood insurance policies written for SFHAs in NFIP-participating communities.

Figure 1: House elevated above the BFE with 1 foot of freeboard

What is Floodplain Management?

Floodplain management is the operation of a program of preventive and corrective measures for reducing flood damage. FEMA helps communities develop floodplain management regulations that comply with NFIP regulations. Communities may adopt more restrictive regulations. Community officials may have knowledge of local conditions that require higher standards than the NFIP regulations, particularly for human safety.

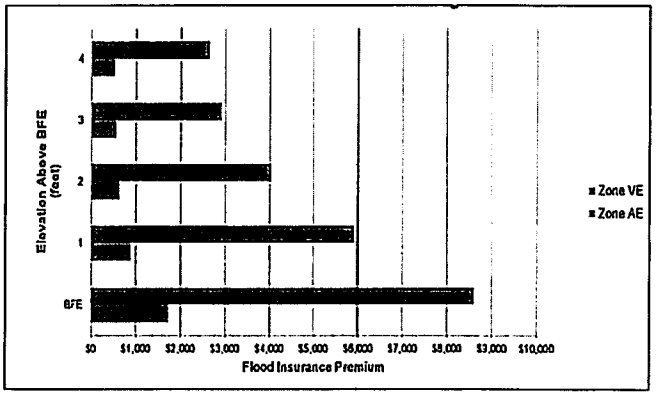


Figure 2: Maximum coverage for a $250,000 residential building and $100,000 contents

Benefit-Cost Comparison

Incorporating freeboard into new construction is extremely cost effective. The up-front costs are generally only about 0.25 to 1.5 percent of the total construction costs for each foot of freeboard. However, the long-term savings on flood insurance will more than offset these costs.

For example, adding 2 feet of freeboard to a new home might add $20 a month to the mortgage payment, or $240 per year. The resulting flood insurance savings could be more than $1,000 a year for a building in Zone AE (for instance, in a riverine flood zone not affected by wave action) and $2,000 a year in Zone VE.

Many States and communities have incorporated freeboard requirements into the elevation and floodproofing requirements stipulated by the NFIP. Freeboard requirements can range from 6 inches to 4 feet, and it would be up to the community to decide what is most appropriate given their location and other community conditions.

Historically Speaking...

Freeboard was (and still is) a nautical term. It refers to the height of a ship's deck above the waterline. If you think of the lowest floor of your house as the deck of your ship, and the BFE as the height of the sea, freeboard is the extra height that keeps the larger waves off your deck.

FOR MORE INFORMATION...

FEMA's Floodplain Management Branch
About floodplain management's role in the NFIP:
http://www.fema.gov/floodplain-management

FEMA 347 – Above the Flood: Elevating Your Floodprone House:
http://www.fema.gov/media-library/assets/documents/725?id=1424

FEMA 312 – Homeowner's Guide to Retrofitting:
http://www.fema.gov/media-library/assets/documents/480?id=1420

Homebuilder's Guide to Coastal Construction:
A series of fact sheets providing information about responsible building practices including freeboard.
http://www.fema.gov/library/viewRecord.do?id=2138

FloodSmart
Information for consumers and insurance agents about flood insurance and the NFIP.
www.FloodSmart.gov

qryHistoricalClaimsAbbr 9/30/2015

Street	# of Claims
S FLAGLER AVE	34
LAMBERT AVE	18
OCEAN PALM VILLAS S	17
S OCEANSHORE BLVD	17
N DAYTONA AVE	9
S DAYTONA AVE	7
OCEAN PALM DR	5
S PALMETTO AVE	4
S CENTRAL AVE	4
PALM DR	4
N OCEANSHORE BLVD	4
S 25TH ST	3
N PALMETTO AVE	3
N CENTRAL AVE	2
MOODY LN	2
N 22ND ST	2
N 4TH ST	2
S 26TH ST	2
N 5TH ST	1
N 11TH ST	1
MAGNOLIA ST	1
LANTANA AVE	1
MOODY BLVD	1
OCEAN MARINA DR	1
27TH AVE	1
OCEANSHORE BLVD	1
WINDSONG CV	1
PEBBLE BEACH CIR	1
PINE TREE ST	1
S 19TH ST	1
S 22ND ST	1
S 23RD ST	1
S 7TH ST	1
SUNSET COVE	1
OCEAN PALM VILLAS N	1

Claims By Year as of 2011		
1983	1	
1987	1	
1990	1	
1992	1	
1994	2	
1995	8	
1996	4	
1999	2	
2000	11	
2001	4	
2002	17	
2004	34	
2005	53	
2008	2	
2009	6	
2010	5	
	152	

Repetitive Loss Properties	
Flagler Beach	11
Uninc County	5
Beverly Beach	1
Palm Coast	0
Bunnell	0