

ORDINANCE NO. 15-040

AN ORDINANCE OF THE CITY OF GALVESTON, TEXAS, AMENDING CHAPTER 10, "BUILDING CODE," OF "THE CODE OF THE CITY OF GALVESTON, 1982; AS AMENDED", BY ADOPTING WITH AMENDMENTS, THE "2012 INTERNATIONAL RESIDENTIAL CODE"; ESTABLISHING RELATED PERMIT FEES AND PENALTIES; PROVIDING FOR AN EFFECTIVE DATE OF JULY 1, 2015; MAKING VARIOUS FINDINGS AND PROVISIONS RELATED TO THE SUBJECT.

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**WHEREAS**, the City of Galveston is currently operating under the 2009 edition of the "International Residential Code" ("IRC") as amended and after reviewing this code, the Building Department (staff) has noticed important differences between the contents of the 2009 edition and the 2012 edition; and,

**WHEREAS**, staff desires to keep the City of Galveston current with the most recent codes pertaining to construction and development; and,

**WHEREAS**, Internationally, code officials recognize the need for modern, up-to-date residential construction codes addressing the design and construction of one and two family dwellings and townhouses. The International Residential Code for one and two family dwellings is designed to meet these needs through model code regulations that safeguard the public health and safety and consider dwelling affordability in all communities, large and small; and,

**WHEREAS**, Staff has presented the proposed code updates and amendments to the Building Board of Adjustments and Appeals. The Building Board of Adjustments and Appeals, appointed by City Council is comprised of local builders, engineers, architects, Mechanical, Electrical, Plumbing Contractors and was formed with the intent to have local input into the permit process as well as review potential amendments to regulatory codes; and,

**WHEREAS**, regulations for flood damage prevention are not adequately described in the International Residential Code. Staff recommends the inclusion of Appendix "T", to address the local requirements for flood damage prevention; and,

**WHEREAS**, regulations for site inspections are not adequately described in the International Residential Code. Staff recommends the inclusion of Appendix "U" to address the local requirements for site inspections; and,

**WHEREAS**, regulations for allowing observation rooms in residential construction above the third story are not adequately described in the International Residential Code, and therefore, Staff recommends the inclusion of Appendix "V" to address the local requirements for residential construction; and,

**WHEREAS**, staff recommends amending Chapter 10 "The Building Code" of "The Code of the City of Galveston 1982, as amended" by adopting the "2012 International Residential Code" with City of Galveston amendments, a modified fee schedule with regard to inspections, and selected appendices, A, B, C, D, E, F, G, H, J, K, M, N, O, P, Q, R, S, T, U and V. The remaining appendices I and L are not recommended for adoption; and,

**WHEREAS**, the City Council of the City of Galveston deems it to be in the public interest to adopt the "2012 International Residential Code" with amendments as provided below; and,

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF GALVESTON, TEXAS:

**SECTION 1.** The findings and recitations set out in the preamble to this Ordinance are found to be true and correct and they are hereby adopted by the City Council and made a part hereof for all purposes.

**SECTION 2.** The Code of the City of Galveston 1982, as amended, Chapter 10, "Building Code", Article III, "Residential code" is hereby amended to read and provide as follows:

**Sec. 10-40. Adopted.**

The ~~2009~~ 2012 edition of the "International Residential Code" (IRC), hereinafter referred to as the "Residential Code of the City of Galveston", copies of which have this day been exhibited to and approved by the city council and certified copies of which are on file in the respective offices of the city secretary and the building official of the city, with selected appendices and local amendments is hereby adopted by reference for regulating and governing the construction, alteration, movement, enlargement, replacement, repair, equipment, location, removal, and demolition of detached one- and two-family dwellings and multiple single family dwellings (townhouses) not more than three (3) stories in height with separate means of egress as herein provided within the city; providing for the issuance of permits and collection of fees therefore, and each and all of the regulations, provisions, penalties, terms of said residential code on file in the office of the city secretary of the city, are hereby referred to, adopted, and made a part hereof, as if fully set out in this article, save and except such portions as are hereinafter deleted, amended, varied or modified.

**Sec. 10.41. Amendments to the ~~2009~~ 2012 "International Residential Code"**

The ~~2009~~ 2012 edition of the "International Residential Code", adopted pursuant to the foregoing provisions of this chapter is hereby modified and amended to the extent set forth in that document entitled "Amendments for ~~2009~~ 2012 International Residential Code", which is hereby incorporated as "Attachment A", which document is hereby adopted, its contents and provisions being incorporated herein by reference, and same

being available for inspection and copying in the respective offices of the city secretary and building official.

The ~~2009~~ 2012 International Residential Code is adopted with the following selected appendices, A, B, C, D, E, F, G, H, J, K, M, N, O, P, Q, R, S, T, U, and V, which may be modified and amended as shown in "Attachment A" which are listed as follows:

- A Sizing and Capacities of Gas Piping
- B Sizing of Venting Systems Serving Appliances Equipped with Draft Hood, Category I Appliances, and Appliances listed for use with Type B Vents
- C Exit Terminals of Mechanical Draft and Direct-Vent Venting Systems
- D Recommended Procedure for Safety Inspection of an Existing Appliance Installation
- E Manufactured Housing Used As Dwellings
- F Radon Control Methods
- G Swimming Pools, Spas and Hot Tubs
- H Patio Covers
- J Existing Buildings and Structures
- K Sound Transmission
- M Home Day Care – R-3 Occupancy
- N Venting Methods
- O Automatic Vehicular Gates
- P Sizing of Water Piping System
- Q ICC International Residential Code Electrical Provisions/National Electrical Code Cross-Reference
- R 2009 IRC Schedule of Building Permit Fees
- S City of Galveston 2009 IRC Amendments
- T Galveston Flood Ordinance
- U Site Plan Inspection
- V Wood and Steel Frame Construction

Appendices I and L of the ~~2009~~ 2012 International Residential Code are deleted in their entirety and are not adopted.

~~The Building Division of the Department of Planning and Community Development~~ of the City of Galveston is subject to all applicable City Charter, City Code, and Personnel Rules and Regulations pertaining to jurisdiction and employment. No provision contained in the Residential Code governing the employment, staffing, hiring, termination, or discipline of an official or employee shall apply. Furthermore, the Residential Code shall not govern the appointment, liability and legal defense of any officer or employee.

**SECTION 3.** The Code of the City of Galveston 1982, as amended, Article I. "International Residential Code", Chapter 10, "Building Code", is amended by adding "Palapa and/or Thatched Roof Structures", to read and provide as follows:

~~Sec. 10-44-49. Reserved.~~ Sec. 10-44. – Palapa and/or Thatched Roof Structures

Palapa and/or thatched roof structures shall be no larger than 300 square feet accessory to a main structure and shall be separated from any building and property line by at least 10 feet. The structure cannot be used with any open flame appliance or anything that produces a flame. The palapa and/or thatched roof structure shall be open on all sides and be limited to one structure per property. The owner is responsible for the application of required Fire Retardant for said palapa and/or thatched roofing.

**SECTION 4.** The Code of the City of Galveston 1982, as amended, Article I. "International Residential Code", Chapter 10, "Building Code", is amended by adding "Detached Accessory Structures – Tool Shed, Storage Shed, Playhouses", to read and provide as follows

**Sec. 10-45. Detached Accessory Structure - Tool Sheds, Storage Sheds, Playhouses.**

One Story detached accessory structures used as tool and storage sheds, playhouses and similar uses provided floor area does not exceed 200 Square Feet, may have approved engineering anchoring systems

**SECTION 5.** The Code of the City of Galveston 1982, as amended, Article I. "International Residential Code", Chapter 10, "Building Code", is amended by adding "Projections – Deck, Stairs, A/C Platforms", to read and provide as follows

**Sec. 10-46. Projections - Decks, Stairs, A/C Platforms**

All uncovered decks, stairs and A/C platforms equal to or greater than two (2) feet but less than five(5) feet from interior property lines shall be exempt from Section R302.1(1) Fire-Resistant Construction and Table R302.1(2) Exterior Walls. These projections are not permitted less than two feet to interior property lines.

**Sec. 10-47. – 10-49. – Reserved.**

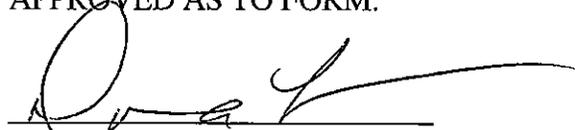
**SECTION 6.** It is hereby declared to be the intention of the City Council that the sections, paragraphs, sentences, clauses and phrases of this Ordinance are severable and, if any phrase, clause, sentence, paragraph or section of this Ordinance should be declared invalid by the final judgment or decree of any court of competent jurisdiction, such invalidity shall not affect any of the remaining phrases, clauses, sentences, paragraphs and sections of this Ordinance.

**SECTION 7.** All Ordinances or parts thereof in conflict herewith are repealed to the extent of such conflict only.

**SECTION 8.** In accordance with the provisions of Sections 12 and 13 of Article II of the City Charter this Ordinance has been publicly available in the office of the City Secretary for not less than 72 hours prior to its adoption; that this Ordinance may be read and published by descriptive caption only.

**SECTION 9.** This Ordinance shall be and become effective on July 1, 2015 after its adoption and publication in accordance with the provisions of the Charter of the City of Galveston.

APPROVED AS TO FORM:



DONNA M. FAIRWEATHER  
ASSISTANT CITY ATTORNEY

I, Janelle Williams, Secretary of the City Council of the City of Galveston, do hereby certify that the foregoing is a true and correct copy of an Ordinance adopted by the City Council of the City of Galveston at its regular meeting held on June 11, 2015 as the same appears in records of this office.

IN TESTIMONY WHEREOF, I subscribe my name hereto officially under the corporate seal of the City of Galveston this 15 day of June, 2015.



Janelle Williams  
Secretary for the City Council  
of the City of Galveston

## Appendix S

### City of Galveston 2009 2012 IRC Amendments

**SECTION 101 “General”** of the “International Residential Code 2012 Edition” is hereby amended to read and provide as follows:

**R101.1 Title.** These provisions shall be known as the Residential Code for One – and Two-Family Dwellings of the City of Galveston, and shall be cited as such and will be referred herein as “this code.”

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**R101.2.1 Allowable Building Height.** Buildings constructed in flood hazard areas in accordance with the provisions of Section R322, Flood-Resistant Construction, shall have their height determined as follows:

1. Enclosed areas located below flood elevation and used solely for vehicle parking, building access, or limited storage as defined in Section R322.2.2 shall not be considered a story for purposes of determining building height.
2. The third story above the flood elevation is limited as follows:
  - 2.1 The total area of all enclosed and exterior deck areas, excluding the stair, may not exceed 1/3 of the area of the floor below or 350 square feet, whichever is less.
  - 2.2 The enclosed area shall be one uninterrupted space, with no subdividing partitions. Small closets of less than 10 square feet are permitted. The space shall be open to the stairway, and shall not be separated from the stairway by a door at the top or bottom of the stair.
  - 2.3 No bathrooms are permitted.
  - 2.4 This story must be served by at least one means of egress in compliance with Section R311. Additionally, the story must be served by an emergency escape and rescue opening complying with Section R310.
  - 2.5 A sign shall be posted in a prominent location near the stair leading up to the third level reading: “The upper floor is intended as an observation area only and shall not be used as a sleeping area.”
3. The total allowable height of the building is limited to 45 feet above the first floor platform (the first occupied level above the required flood elevation) or 55 feet above grade, whichever is lower.

**R105.2 Work Exempt From Permit** shall be amended to read and provide as follows:

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**Building:**

- (1) ~~One story detached accessory structures, used as tool and storage sheds, playhouses and similar uses, provided the floor does not exceed 200 square feet (18.58 m2).~~
- (2) ~~Fences not over 7 feet (2134mm) high.~~

\*\*\*

- (10) ~~Decks not exceeding 200 square feet (18.58m2) in area that are not more than 30 inches (762mm) above grade at any point, are not attached to a dwelling and do not serve the exit door required by Section R311.4~~

Permits shall be required for sub paragraphs 1, 2, and 10 as described below:

- (1) One-story detached accessory structures, used as tool and storage sheds, playhouses and similar uses, provided the floor does not exceed 200 square feet (18.58 m2).
- (2) Fences not over 7 feet (2134mm) high.

\*\*\*

- (10) Decks not exceeding 200 square feet (18.58m2) in area that are not more than 30 inches (762mm) above grade at any point, are not attached to a dwelling and do not serve the exit door required by Section R311.4

**R105.3 Application for Permit.** To obtain a permit, the applicant shall first file an application therefor in writing on a form furnished by the department of building safety for that purpose. Such application shall:

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- (8) Department of Army Permit (DA) documentation is required by the Building Official prior to the issuance of a Building Permit to fill, dredge or construct structures in/or affecting any navigable waters of the United States (this includes all waters affected by the daily tides). Any proposed modifications to authorize work by the Department of Army shall be resubmitted to the Corp of Engineers for evaluation and approval prior to the issuance of a Building Permit by the Building Official.

**R108.2 Schedule of permit fees.** On buildings, structures, electrical, gas, mechanical and plumbing systems or alterations requiring a permit, a fee for each permit shall be paid as required, in accordance with the schedule as established by the City of Galveston.

Fee schedule for electrical is located in the amendments to the 2014 NEC  
Fee schedule for mechanical is located in the amendments to the 2012 IMC  
Fee schedules for plumbing is located in the amendments to the 2012 IPC

**Section R112 “Board of Appeals”** is hereby deleted and amended to read and provide as follows:

Refer to Chapter 10, Article II. Building Board of Adjustments and Appeals, of the Code of the City of Galveston

**Chapter 3. “Building Planning”** of the “International Residential Code 2012 Edition” is hereby amended to read and provide as follows:

Figure R301.2(4)(A) “Basic Wind Speeds” shall be amended to reflect a minimum 114 mph or 130 mph 3-Second Gust and in accordance with ASCE 7-05.

Figure R301.2.1.3 “Equivalent Basic Wind Speeds”, shall be amended to reflect a minimum 114 mph or 130 mph 3-Second Gust and in accordance with ASCE 7-05.

Table R302.1(2) “Exterior Walls- Dwellings with Fire Sprinklers” shall be amended to reflect, all uncovered decks, stairs and A/C platforms equal to or greater than two (2) feet but less than five(5) feet from interior property lines shall be exempt from Section R302.1(1) Fire-Resistant Construction and Table R302.1(2) Exterior Walls. These projections are not permitted less than two feet to interior property lines.

**Chapter 13 “General Mechanical System Requirements”** shall be amended to read and provide as follows:

**M1305.1.1 Furnaces and air handlers.** ~~Central~~ Furnaces and air handlers within compartments or alcoves shall have a minimum working space clearance of 3 6 inches (76 mm) along the sides, back and top with a total width of the enclosing space being at least 12 (305 mm) 24 inches wider than the furnace or air handler. Furnaces having a firebox open to the atmosphere shall have at least 6-inches (152 mm) working space along the front combustion chamber side. Combustion air openings at the rear or side of the compartment shall comply with requirements of Chapter 17. clearance from the furnace door to the back side of the compartment or alcove door. Electric furnaces shall have at least 3 inches clearance from the furnace door to the back side of the closet or alcove door. Door opening width to these compartments or alcoves must be a minimum of 36 inches.

**Exception:** This section shall not apply to replacement appliances installed in existing compartments and alcoves where the working space clearances are in accordance with the equipment or appliance manufacturer’s installation instructions.

**M1305.1.3 - Appliances in attics.** Attics containing appliances requiring access shall be provided with an opening and ~~an a clear and~~ unobstructed passageway large enough to allow removal of the largest appliance, ~~but not less than 30 inches (762mm) high and 22 inches (559 mm) wide and not more than 20 feet (6096 mm) long measured along the centerline of the passageway from the opening to the appliance. The passage way shall have continuous solid flooring in accordance with Chapter 5 not less than 24 inches (610mm) wide. A level service space at least 30 inches (762 mm) deep and 30 inches (762 mm) wide shall be present along all sides of the appliance where access is required. The clear access opening dimensions shall be a minimum of 20 inches by 30 inches (508~~

mm by 762 mm), and large enough to allow removal of the largest appliance. There must be a disappearing staircase with a minimum opening width of 22 inches and rated at 350 lbs. This disappearing staircase is required for both new and replacement installations. The disappearing staircase, walkway and platform must be installed at the time of mechanical rough-in inspection. The passageway shall not be less than 48 inches high and 24 inches wide from the point of attic access to the equipment location and not more than 20 feet from the access. The passageway shall have a continuous solid flooring of ¾ inch plywood not less than 24 inches wide. A level service space decked with ¾ inch plywood not less than 72 inches deep and 96 inches wide shall be provided for equipment installation. The equipment must be installed on said platform with a minimum working space on the operator side of 30". Additionally the platform and level service space and walkway must be installed in accordance with the 2012 IECC. (This code requires that attic deck insulation not be compressed).

**Exceptions:**

1. The passageway and level service space are not required where the appliance can be is capable of being serviced and removed through the required opening. If utilizing this exception, 18 inch access space must still be provided to the non-operator side of the equipment. This exception does not preclude the use of a disappearing staircase.
2. Where the passageway is unobstructed and not less than 6 feet (1829 mm) high and 22 inches (559 mm) 24 inches wide for its entire length, the passageway shall be not more greater than 50 feet (15 250 mm) long in length.

**M1305.1.3.1 Electrical Requirements.** A luminaire controlled by a switch located at the required passageway opening and a receptacle outlet shall be installed at or near the appliance location in accordance with ~~Chapter 39~~ the 2014 NEC.

**M1305.1.4.1 Ground Clearance.** ~~Equipment and appliances~~ Appliances supported from the ground shall be level and firmly supported on a concrete slab ~~or other approved material extending not less than 3 inches (76 mm) above the adjoining ground. Such support shall be in accordance with the manufacturer's installation instructions.~~ weighing a minimum of 90 pounds or other approved material extending above the adjoining ground a minimum of 3 inches. These appliances must be anchored consistent with the requirements of the Texas Windstorm Code. Appliances suspended from the floor shall have a clearance of not less than 6 inches (152mm) from the ground and must also be located above Base Flood Elevation.

**M1305.1.4.3 Electrical Requirements.** A luminaire controlled by a switch located at the required passageway opening and a receptacle outlet shall be installed at or near the appliance location in accordance with ~~Chapter 39~~ the 2014 NEC.

### **M1307.5 Electrical Requirements**

Electrical *appliances* shall be installed in accordance with Chapters 14, 15, 19, 20 and 34 through 43 of this code the 2014 NEC.

**M1307.6 Plumbing connections.** Potable water and drainage system connections to equipment and appliances regulated by this code shall be in accordance with Chapters 29 and 30 the 2012 International Plumbing Code.

**Chapter 14 “Heating and Cooling Equipment”** shall be amended to read and provide as follows:

**M1403.1 Heat Pumps.** ~~The minimum unobstructed total area of the outside and return air ducts or openings to a heat pump shall be not less than 6 square inches per 1,000 Btu/h (13 208 mm<sup>2</sup>/kW) output rating or as indicated by the conditions of the listing of the heat pump. Electric heat pumps shall conform to a UL-1995. All return air systems shall have a minimum ducted size of 144 sq. in. per ton of cooling. The minimum unobstructed total area of the outside and return air ducts or openings to an air handling unit shall be not less than 144 sq. in. per 12,000 Btu/h output rating or as indicated by the conditions of the listing of the heat pump. Electric heat pumps shall conform to UL 559 or UL 1995.~~

**M1403.2 Foundations and supports.** Ground ~~S~~supports and foundations for the outdoor unit of a heat pump shall ~~be weigh a minimum of 90 lbs and~~ be raised at least 3 inches (76 mm) above the ground to permit free drainage of defrost water, and shall conform to the manufacturer’s installation instructions. Heat pumps must be anchored in accordance with the Texas Windstorm Code.

**M1411.3.2 - Drain pipe materials and sizes.** Components of the condensate disposal system shall be cast iron, galvanized steel, copper, ~~polybutylene, polyethylene, ABS, CPVS or PVC pipe piping or tubing.~~ All components shall be selected for the pressure and temperature rating of the installation. ~~Joints and connections shall be made in accordance with the materials specified in Chapter 30.~~ Condensate waste and drain line size shall be not less than ¾ inch (19 mm) internal diameter and shall not decrease in size from the drain pan connection to the place of condensate disposal. ~~Where the drain pipes from more than one unit are manifold together for condensate drainage, the pipe or tubing shall be sized in accordance with an approved method.~~ Primary or secondary drain lines may not be manifolded together. All primary condensate lines must be insulated to a minimum of ½ inch to their point of termination. All horizontal sections of drain piping shall be installed in uniform alignment at a uniform slope.

**Chapter 15 “Exhaust Systems”** shall be amended to read and provide as follows:

**M1502.4.4.2 Manufacturer’s Instructions.** Shall be deleted in its entirety

**Chapter 24 “Fuel Gas”** shall be amended to read and provide as follows:

**G2414.5.2 (403.5.2) Copper Tubing.** Copper tubing shall not be used for gas lines.  
~~Copper tubing shall comply with standard Type K or L of ASTM B 88 or ASTM B 280.~~

~~Copper and brass tubing shall not be used if the gas contains more than an average of 0.3 grains of hydrogen sulfide per 100 standard cubic feet of gas (0.7 milligrams per 100 liters).~~

## Appendix R

### 2009 2012 IRC Schedule of Building Permit Fees

(A) Existing Structures & Signs  
**Additions, Alterations, Repairs, Storage Buildings, Garage, Roofing**

<u>Valuation of Work</u>	<u>Fee</u>
\$500.00 to \$1,000.00	<b><u>\$24.00</u></b>
\$1,001.00 to \$15,000.00	<b><u>\$29.50</u></b> for the first \$2,000.00 plus \$5.50 for each additional thousand or fraction thereof, to and including \$15,000.00.
\$15,001.00 to \$50,000.00	<b><u>\$101.00</u></b> for the first \$15,000.00 plus \$4.50 for each additional thousand or fraction thereof to and including \$50,000.00.
\$50,001.00 to \$100,000.00	<b><u>\$293.50</u></b> for the first \$50,000.00 plus \$4.50 for each additional thousand or fraction thereof to and including \$100,000.00.
\$100,001.00 to \$500,000.00	<b><u>\$518.50</u></b> for the first \$100,000.00 plus \$3.50 for each additional thousand or fraction thereof to and including \$500,000.00.
\$500,001.00 and up	<b><u>\$1,918.50</u></b> for the first \$500,000.00 plus \$2.50 for each additional thousand or fraction thereof.

(B) New Construction

<i>Residential</i> One & Two Family Dwelling	<i>15 cents per square foot plus Site Inspection Charge and Plan Check Fee.</i>
Commercial	20 cents per square foot for the first 20,000 square feet plus .05 per square foot thereafter, plus Site

Inspection Charge, Plan Checking Fee and Fire Marshall Fee.

- (C) **Plan Checking Fees** When a plan is required to be submitted to the Planning Division, a Plan Checking Fee shall be assessed. Said fee shall be equal to one half of the building permit fee for Building Division review.
- (D) **Site Inspection Fees** A Site Inspection for building layout shall be required on all new construction. Said Site Inspection fee shall be \$25.00.
- (E) **Demolition** For the demolition of any building or structures, the fee shall be: 0 up to 100,000 cu ft. is \$50.00. 100,000+ cu ft. at \$.50/per thousand cu ft.
- (F) **Moving Permit** The moving of any building or structure shall be \$100.00, plus Site Inspection Charge provided if the structure remains in the City limits.
- (G) **Late Fee/Stop Work Orders** Where work for which a permit is required by this Code, is started or proceeded with, prior to obtaining said permit, the fees herein specified shall be doubled with minimum being \$100.00.
- (H) **Energy related plan review** Plan review fee \$50.00  
Inspection fee for 3 inspections  
\$75.00
- (I) **Re-inspection Fee (1<sup>st</sup> visit)** \$50.00  
**Re-inspection Fee (2 or more visits to same property for same violation)** \$200.00
- (J) **Dredging and/or Fill Permit in any navigable waters in the U.S** **\$20.00**

## **APPENDIX T**

### **Galveston Flood Ordinance**

#### **FLOOD DAMAGE PREVENTION ORDINANCE**

**Effective December 6, 2002**

#### **ARTICLE 1**

#### **STATUTORY AUTHORIZATION, FINDINGS OF FACT, PURPOSE AND METHODS**

##### **SECTION A. STATUTORY AUTHORIZATION**

The Legislature of the State of Texas has in (statutes) VTCS 16.311 — 16.318 delegated the responsibility of local governmental units to adopt regulations designed to minimize flood losses. Therefore, the City Council of the City of Galveston, Texas, does ordain as follows:

##### **SECTION B. FINDINGS OF FACT**

- (1) The flood hazard areas of the City of Galveston City of Galveston are subject to periodic inundation, which results in loss of life and property, health and safety hazards, disruption of commerce and governmental services, and extraordinary public expenditures for flood protection and relief, all of which adversely affect the public health, safety and general welfare.
- (2) These flood losses are created by the cumulative effect of obstructions in floodplains which cause *an* increase in flood heights and velocities, and by the occupancy of flood hazards areas by uses vulnerable to floods and hazardous to other lands because they are inadequately elevated, floodproofed or otherwise protected from flood damage.

##### **SECTION C. STATEMENT OF PURPOSE**

It is the purpose of this ordinance to promote the public health, safety and general welfare and to minimize public and private losses due to flood conditions in specific areas by provisions designed to:

- (1) Protect human life and health;
- (2) Minimize expenditure of public money for costly flood control projects;
- (3) Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;

- (4) Minimize prolonged business interruption;
- (5) Minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets and bridges located in floodplains;
- (6) Help maintain a stable tax base by providing for the sound use and development of flood-prone areas in such a manner as to minimize future flood blight areas; and
- (7) Insure that potential buyers are notified that property is in a flood area.

#### **SECTION D. METHODS OF REDUCING FLOOD LOSSES**

In order to accomplish its purposes, this ordinance uses the following methods:

- (1) Restrict or prohibit uses that are dangerous to health, safety or property in times of flood, or cause excessive increases in flood heights or velocities;
- (2) Require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;
- (3) Control the alteration of natural floodplains, stream channels, and natural protective barriers, which are involved in the accommodation of flood waters;
- (4) Control filling, grading, dredging and other development, which may increase flood damage;
- (5) Prevent or regulate the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards to other lands.

### **ARTICLE 2**

#### **DEFINITIONS**

Unless specifically defined below, words or phrases used in this ordinance shall be interpreted to give them the meaning they have in common usage and to give this ordinance its most reasonable application.

**ALLUVIAL FAN FLOODING** - means flooding occurring on the surface of an alluvial fan or similar landform which originates at the apex and is characterized by high-velocity flows; active processes of erosion, sediment transport and deposition; and unpredictable flow paths.

**APEX** - means a point on an alluvial fan or similar landform below which the flow path of the major stream that formed the fan becomes unpredictable and alluvial fan flooding

can occur.

**AREA OF SHALLOW FLOODING** - means a designated AO, AH, or VO zone on a community's Flood Insurance Rate Map (FIRM) with a one percent chance or greater annual chance of flooding to an average depth of one to three feet where a clearly defined channel does not exist, where the path of flooding is unpredictable and where velocity flow may be evident. Such flooding is characterized by ponding or sheet flow.

**AREA OF SPECIAL FLOOD HAZARD** - is the land in the floodplain within a community subject to a one percent or greater chance of flooding in any given year. The area may be designated as Zone A on the Flood Hazard Boundary Map (FHBM). After detailed ratemaking has been completed in preparation for publication of the FIRM, Zone A usually is refined into Zones A, AE, AH, AO, A1-99, VO, V1-30, VE or V.

**BASE FLOOD** - means the flood having a one percent chance of being equalled or exceeded in any given year.

**BASEMENT** - means any area of the building having its floor subgrade (below ground level) on all sides.

**BREAKAWAY WALL** - means a wall that is not part of the structural support of the building and is intended through its design and construction to collapse under specific lateral loading forces, without causing damage to the elevated portion of the building or supporting foundation system.

**COASTAL HIGH HAZARD AREA** - means an area of special flood hazard extending from offshore to the inland limit of a primary frontal dune along an open coast and any other area subject to high velocity wave action from storms or seismic sources.

**CRITICAL FEATURE** - means an integral and readily identifiable part of a flood protection system, without which the flood protection provided by the entire system would be compromised.

**DEVELOPMENT** - means any man-made change in improved and unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations or storage of equipment or materials.

**ELEVATED BUILDING** - means a nonbasement building (i) built, in the case of a building in Zones A1-30, AE, A, A99, AO, AH, B, C, X, and D, to have the top of the elevated floor, or in the case of a building in Zones V 1-30, VE, or V, to have the bottom of the lowest horizontal structure member of the elevated floor elevated above the ground level by means of pilings, columns (posts and piers), or shear walls parallel to the floor of the water and (ii) adequately anchored so as not to impair the structural integrity of the building during a flood of up to the magnitude of the base flood. In the case of Zones A1-30, AE, A, A99, AO, AH, B, C, X, and D, "elevated building" also includes a building elevated by means of fill or solid foundation perimeter walls with openings sufficient to

facilitate the unimpeded movement of flood waters. In the case of Zones VI-30, VE, or V, “elevated building” also includes a building otherwise meeting the definition of “elevated building” even though the lower area is enclosed by means of breakaway walls if the breakaway walls met the standards of Section 60.3(e)(5) of the National Flood Insurance Program regulations.

**EXISTING CONSTRUCTION** - means for the purposes of determining rates, structures for which the “start of construction” commenced before the effective date of the FIRM or before January 1, 1975, for FIRMs effective before that date. “Existing construction” may also be referred to as “existing structures.”

**EXISTING MANUFACTURED HOME PARK OR SUBDIVISION** - means a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including, at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed before the effective date of the floodplain management regulations adopted by a community.

**EXPANSION TO AN EXISTING MANUFACTURED HOME PARK OR SUBDIVISION** - means the preparation of additional sites by the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads).

**FLOOD OR FLOODING** - means a general and temporary condition of partial or complete inundation of normally dry land areas from:

- (1) the overflow of inland or tidal waters.
- (2) the unusual and rapid accumulation or runoff of surface waters from any source.

**FLOOD INSURANCE RATE MAP (FIRM)** - means an official map of a community, on which the Federal Emergency Management Agency has delineated both the areas of special flood hazards and the risk premium zones applicable to the community.

**FLOOD INSURANCE STUDY** - is the official report provided by the Federal Emergency Management Agency. The report contains flood profiles, water surface elevation of the base flood, as well as the Flood Boundary-Floodway Map.

**FLOODPLAIN OR FLOOD-PRONE AREA** - means any land area susceptible to being inundated by water from any source (see definition of flooding).

**FLOODPLAIN MANAGEMENT** - means the operation of an overall program of corrective and preventive measures for reducing flood damage, including but not limited to emergency preparedness plans, flood control works and floodplain management regulations

**FLOODPLAIN MANAGEMENT REGULATIONS** - means zoning ordinances, subdivision regulations, building codes, health regulations, special purpose ordinances (such as a floodplain ordinance, grading ordinance and erosion control ordinance) and other applications of police power. The term describes such state or local regulations, in any combination thereof, which provide standards for the purpose of flood damage prevention and reduction.

**FLOOD PROTECTION SYSTEM** - means those physical structural works for which funds have been authorized, appropriated, and expended and which have been constructed specifically to modify flooding in order to reduce the extent of the areas within a community subject to a "special flood hazard" and the extent of the depths of associated flooding. Such a system typically includes hurricane tidal barriers, dams, reservoirs, levees or dikes. These specialized flood modifying works are those constructed in conformance with sound engineering standards.

**FLOOD PROOFING** - means any combination of structural and non-structural additions, changes, or adjustments to structures which reduce or eliminate flood damage to real estate or improved real property, water and sanitary facilities, structures and their contents.

**FLOODWAY (REGULATORY FLOODWAY)** - means the channel of a river 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.

**FUNCTIONALLY DEPENDENT USE** - means a use which cannot perform its intended purpose unless it is located or carried out in close proximity to water. The term includes only docking facilities, port facilities that are necessary for the loading and unloading of cargo or passengers, and ship building and ship repair facilities, but does not include long-term storage or related manufacturing facilities.

**HIGHEST ADJACENT GRADE** - means the highest natural elevation of the ground surface prior to construction next to the proposed walls of a structure.

**HISTORIC STRUCTURE** - means any structure that is:

- (a) Listed individually in the National Register of Historic Places (a listing maintained by the Department of Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register;
- (b) Certified or preliminarily determined by the Secretary of the Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district;

- (c) Individually listed on a state inventory of historic places in states with historic preservation programs which have been approved by the Secretary of Interior, or
- (d) Individually listed on a local inventory of historic places in communities with historic preservation programs that have been certified either:
  - (1) By an approved state program as determined by the Secretary of the Interior or;
  - (2) Directly by the Secretary of the Interior in states without approved programs.

**LEVEE** - means a man-made structure, usually an earthen embankment, designed and constructed in accordance with sound engineering practices to contain, control, or divert the flow of water so as to provide protection from temporary flooding.

**LEVEE SYSTEM** - means a flood protection system which consists of a levee, or levees, and associated structures, such as closure and drainage devices, which are constructed and operated in accordance with sound engineering practices

**LOWEST FLOOR** - means the lowest floor of the lowest enclosed area (including basement). An unfinished or flood resistant enclosure, usable solely for parking or vehicles, building access or storage in an area other than a basement area is not considered a building's lowest floor; provided that such enclosure is not built so as to render the structure in violation of the applicable non-elevation design requirement of Section 60.3 of the National Flood insurance Program regulations.

**MANUFACTURED HOME** - means a structure transportable in one or more sections, which is built on a permanent chassis and is designed for use with or without a permanent foundation when connected to the required utilities. The term "manufactured home" does not include a "recreational vehicle".

**MANUFACTURED HOME PARK OR SUBDIVISION** - means a parcel (or contiguous parcels) of land divided into two or more manufactured home lots for rent or sale.

**MEAN SEA LEVEL** - means, for purposes of the National Flood Insurance Program, the National Geodetic Vertical Datum (NGVD) of 1929 or other datum, to which base flood elevations shown on a community's Flood Insurance Rate Map are referenced.

**NEW CONSTRUCTION** - means, for the purpose of determining insurance rates, structures for which the "start of construction" commenced on or after the effective date of an initial FIRM or after December 31, 1974, whichever is later, and includes any subsequent improvements to such structures. For floodplain management purposes "new construction" means structures for which the "start of construction" commenced on or

after the effective date of a floodplain management regulation adopted by a community and includes any subsequent improvements to such structures.

**NEW MANUFACTURED HOME PARK OR SUBDIVISION** - means a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed on or after the effective date of floodplain management regulations adopted by a community.

**PRIMARY FRONTAL DUNE** - means a continuous or nearly continuous mound or ridge of sand with relatively steep seaward and landward slopes immediately landward and adjacent to the beach and subject to erosion and overtopping from high tides and waves during major coastal storms. The inland limit of the primary frontal dune occurs at the point where there is a distinct change from a relatively steep slope to a relatively mild slope.

**RECREATIONAL VEHICLE** - means a vehicle which is (i) built on a single chassis; (ii) 400 square feet or less when measured at the largest horizontal projections; (iii) designed to be self-propelled or permanently towable by a light duty truck; and (iv) designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or seasonal use.

**SAND DUNES** - mean naturally occurring accumulations of sand in ridges or mounds landward of the beach.

**START OF CONSTRUCTION** - (for other than new construction or substantial improvements under the Coastal Barrier Resources Act (Pub. L. 97-348)), includes substantial improvement and means the date the building permit was issued, provided the actual start of construction, repair, reconstruction, rehabilitation, addition, placement, or other improvement was within 180 days of the permit date. The actual start means either the first placement of permanent construction of a structure on a site, such as the pouring of slab or footings, the installation of piles, the construction of columns, or any work beyond the stage of excavation; or the placement of a manufactured home on a foundation. Permanent construction does not include land preparation, such as clearing, grading and filling; nor does it include the installation of streets and/or walkways; nor does it include excavation for basement, footings, piers or foundations or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main structure. 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.

**STRUCTURE** - means a walled and roofed building, including a gas or liquid storage tank, that is principally above ground, as well as a manufactured home.

**SUBSTANTIAL DAMAGE** - means 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** - means any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before “start of construction” of the improvement. This includes structures which have incurred “substantial damage”, regardless of the actual repair work performed. The term does not, however, include either: (1) Any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code specifications which have been identified by the local code enforcement official and which are the minimum necessary conditions or (2) Any alteration of a “historic structure”, provided that the alteration will not preclude the structure’s continued designation as a “historic structure.”

**VARIANCE** - is a grant of relief to a person from the requirement of this ordinance when specific enforcement would result in unnecessary hardship. A variance, therefore, permits construction or development in a manner otherwise prohibited by this ordinance. (For full requirements see Section 60.6 of the National Flood Insurance Program regulations.)

**VIOLATION** - means the failure of a structure or other development to be fully compliant with the community’s floodplain management regulations. A structure or other development without the elevation certificate, other certifications, or other evidence of compliance required in Section 60.3(b)(5), (c)(4), (c)(10), (d)(3), (e)(2), (e)(4), or (e)(5) is presumed to be in violation until such time as that documentation is provided.

**WATER SURFACE ELEVATION** - means the height, in relation to the National Geodetic Vertical Datum (NGVD) of 1929 (or other datum, where specified), of floods of various magnitudes and frequencies in the floodplains of coastal or riverine areas.

### **ARTICLE 3**

#### **GENERAL PROVISIONS**

##### **SECTION A. LANDS TO WHICH THIS ORDINANCE APPLIES**

The ordinance shall apply to all areas of special flood hazard with the jurisdiction of City of Galveston.

##### **SECTION B. BASIS FOR ESTABLISHING THE AREAS OF SPECIAL FLOOD HAZARD**

The areas of special flood hazard identified by the Federal Emergency Management Agency in a scientific and engineering report entitled, “The Flood Insurance Study for the City of Galveston dated December 6, 2002, with accompanying Flood Insurance Rate

Maps and Flood Boundary-Floodway Maps (FIRM and FBFM) and any revisions thereto are hereby adopted by reference and declared to be a part of this ordinance.

**SECTION C. ESTABLISHMENT OF DEVELOPMENT PERMIT**

A Development Permit shall be required to ensure conformance with the provisions of this ordinance.

**SECTION D. COMPLIANCE**

No structure or land shall hereafter be located, altered, or have its use changed without full compliance with the terms of this ordinance and other applicable regulations.

**SECTION E. ABROGATION AND GREATER RESTRICTIONS**

This ordinance is not intended to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where this ordinance and another ordinance, easement, covenant, or deed restriction conflict or overlap, whichever imposes the more stringent restrictions shall prevail.

**SECTION F. INTERPRETATION**

In the interpretation and application of this ordinance, all provisions shall be; (1) considered as minimum requirements; (2) liberally construed in favor of the governing body; and (3) deemed neither to limit nor repeal any other powers granted under State statutes.

**SECTION G. WARNING AND DISCLAIMER OR LIABILITY**

The degree of flood protection required by this ordinance is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. On rare occasions greater floods can and will occur and flood heights may be increased by man-made or natural causes. This ordinance does not imply that land outside the areas of special flood hazards or uses permitted within such areas will be free from flooding or flood damages. This ordinance shall not create liability on the part of the community or any official or employee thereof for any flood damages that result from reliance on this ordinance or any administrative decision lawfully made thereunder.

**ARTICLE 4**

**ADMINISTRATION**

**SECTION A. DESIGNATION OF THE FLOODPLAIN ADMINISTRATOR**

The Building Official is hereby appointed the Floodplain Administrator to administer and

implement the provisions of this ordinance and other appropriate sections of 44 CFR (National Flood Insurance Program Regulations) pertaining to floodplain management.

## **SECTION B. DUTIES & RESPONSIBILITIES OF THE FLOODPLAIN ADMINISTRATOR**

Duties and responsibilities of the floodplain Administrator shall include, but not be limited to, the following:

- (1) Maintain and hold open for public inspection all records pertaining to the provisions of this ordinance.
- (2) Review permit application to determine whether proposed building site, including the placement of manufactured homes, will be reasonably safe from flooding.
- (3) Review, approve or deny all applications for development permits required by adoption of this ordinance.
- (4) Review permits for proposed development to assure that all necessary permits have been obtained from those Federal, State or local governmental agencies (including Section 404 of the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1334) from which prior approval is required.
- (5) Where interpretation is needed as to the exact location of the boundaries of the areas of special flood hazards (for example, where there appears to be a conflict between a mapped boundary and actual field conditions) the Floodplain Administrator shall make the necessary interpretation.
- (6) Notify in riverine situations, adjacent communities and the State Coordinating Agency which is Texas Commission on Environmental Quality, prior to any alteration or relocation of a watercourse, and submit evidence of such notification to the Federal Emergency Management Agency.
- (7) Assure that the flood carrying capacity within the altered or relocated portion of any watercourse is maintained.
- (8) When base flood elevation data has not been provided in accordance with Article 3 Section B, the Floodplain Administrator shall obtain, review and reasonably utilize any base flood elevation data and floodway data available from a Federal, State or other source, in order to administer the provisions of Article 5.
- (9) When a regulatory floodway has not been designated, the Floodplain Administrator must require that no new construction, substantial improvements, or other development (including fill) shall be permitted within Zones AI-30 and

AE on the community's FIRM, unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the community.

- (10) Under the provisions of 44 CFR Chapter 1, Section 65.12, of the National Flood Insurance Program regulations, a community may approve certain development in Zones A1-30, AE, AH, on the community's FIRM which increases the water surface elevation of the base flood by more than one foot, provided that the community first applies for a conditional FIRM revision through FEMA.

### **SECTION C. PERMIT PROCEDURES**

- (1) Application for a Development Permit shall be presented to the Floodplain Administrator on forms furnished by him/her and may include, but not be limited to, plans in duplicate drawn to scale showing the location, dimensions, and elevation of proposed landscape alterations, existing and proposed structures, including the placement of manufactured homes, and the location of the foregoing in relation to areas of special flood hazard. Additionally, the following information is required:
  - a. Elevation (in relation to mean sea level), of the lowest floor (including basement) of all new and substantially improved structures;
  - b. Elevation in relation to mean sea level to which any nonresidential structure shall be floodproofed;
  - c. A certificate from a registered professional engineer or architect that the nonresidential floodproofed structure shall meet the floodproofing criteria of Article 5, Section B (2);
  - d. Description of the extent to which any watercourse or natural drainage will be altered or relocated as a result of proposed development.
  - e. Maintain a record of all such information in accordance with Article 4, Section (B) (1).
- (2) Approval or denial of a Development Permit by the Floodplain Administrator shall be based on all of the provisions of this ordinance and the following relevant factors:
  - a. The danger to life and property due to flooding or erosion damage;
  - b. The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner;

- c. The danger that materials may be swept onto other lands to the injury of others;
- d. The compatibility of the proposed use with existing and anticipated development;
- e. The safety of access to the property in times of flood for ordinary and emergency vehicles;
- f. The costs of providing governmental services during and after flood conditions including maintenance and repair of streets and bridges, and public utilities and facilities such as sewer, gas, electrical and water systems;
- g. The expected heights, velocity, duration, rate of rise and sediment transport of the flood waters and the effects of wave action, if applicable, expected at the site;
- h. The necessity to the facility of a waterfront location, where applicable;
- i. The availability of alternative locations, not subject to flooding or erosion damage, for the proposed use;
- j. The relationship of the proposed use to the comprehensive plan for that area.

#### **SECTION D. VARIANCE PROCEDURES**

- (1) The appeal Board as established by the community shall hear and render judgment on requests for variances from the requirements of this ordinance.
- (2) The Appeal Board shall hear and render judgment on an appeal only when it is alleged there is an error in any requirement, decision, or determination made by the Floodplain Administrator in the enforcement or administration of this ordinance.
- (3) Any person or persons aggrieved by the decision of the Appeal Board may appeal such decision in the courts of competent jurisdiction.
- (4) The floodplain Administrator shall maintain a record of all actions involving an appeal and shall report variances to the Federal Emergency Management Agency upon request.
- (5) Variances may be issued for the reconstruction, rehabilitation or restoration of structures listed on the National Register of Historic Places or the State

Inventory of Historic Places, without regard to the procedures set forth in the remainder of this ordinance.

- (6) Variances may be issued for new construction and substantial improvements to be erected on a lot of one-half acre or less in size contiguous to and surrounded by lots with existing structures constructed below the base flood level, providing the relevant factors in Section C(2) of this Article have been fully considered. As the lot size increases beyond the one-half acre, the technical justification required for issuing the variance increases.
- (7) Upon consideration of the factors noted above and the intent of this ordinance, the Appeal Board may attach such conditions to the granting of variances as it deems necessary to further the purpose and objectives of this ordinance (Article I, Section C).
- (8) Variances shall not be issued within any designated floodway if any increase in flood levels during the base flood discharge would result.
- (9) Variances may be issued for the repair or rehabilitation of historic structures upon a determination that the proposed repair or rehabilitation will not preclude the structure's continued designation as a historic structure and the variance is the minimum necessary to preserve the historic character and design of the structure.
- (10) Prerequisites for granting variances:
  - a. Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.
  - b. Variances shall only be issued upon, (i) showing a good and sufficient cause; (ii) a determination that failure to grant the variance would result in exceptional hardship to the applicant, and (iii) a determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisances, cause fraud on or victimization of the public, or conflict with existing local laws or ordinances.
  - c. Any application to whom a variance is granted shall be given written notice that the structure will be permitted to be built with the lowest floor elevation below the base flood elevation, and that the cost of flood insurance will be commensurate with the increased risk resulting from the reduced lowest floor elevation.
- (11) Variances may be issued by a community for new construction and substantial improvements and for other development necessary for the conduct of a functionally dependent use provided that (i) the criteria

outlined in Article 4, Section D (1)-(9) are met, and (ii) the structure or other development is protected by methods that minimize flood damages during the base flood and create no additional threats to public safety.

## **ARTICLE 5**

### **PROVISIONS FOR FLOOD HAZARD REDUCTION**

#### **SECTION A. GENERAL STANDARDS**

In all areas of special flood hazards the following provisions are required for all new construction and substantial improvements.

- (1) All new construction or substantial improvements shall be designed (or modified) and adequately anchored to prevent flotation, collapse or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy;
- (2) All new construction or substantial improvements shall be constructed by methods and practices that minimize flood damage;
- (3) All new construction or substantial improvements shall be constructed with materials resistant to flood damage;I
- (4) All new construction or substantial improvements shall be constructed with electrical, heating, ventilation, plumbing, and air conditioning equipment and other service facilities that are designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding.
- (5) All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system;
- (6) New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the system and discharge from the systems into flood waters; and,
- (7) On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding.

#### **SECTION B. SPECIFIC STANDARDS**

In all areas of special flood hazards where base flood elevation data has been provided as set forth in (i) Article 3, Section B, (ii) Article 4, Section B(8), or (iii) Article 5, Section C(3), the following provisions are required:

- (1) Residential Construction - new construction and substantial improvement of any residential structure shall have the lowest floor (including basement), elevated to or above the base flood elevation. A registered professional engineer, architect, or land surveyor shall submit a certification to the Floodplain Administrator that the standard of this subsection as proposed in Article 4, Section C (1) a., is satisfied.
- (2) Nonresidential Construction - new construction and substantial improvements of any commercial, industrial or other nonresidential structure shall either have the lowest floor (including basement) elevated to or above the base flood level or together with attendant utility and sanitary facilities, be designed so that below the base flood level the structure is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy. A registered professional engineer or architect shall develop and/or review structural design, specifications, and plans for the construction, and shall certify that the design and methods of construction are in accordance with accepted standards of practice as outlined in this subsection. A record of such certification which includes the specific elevation (in relation to mean sea level) to which such structures are floodproofed shall be maintained by the Floodplain Administrator.
- (3) Enclosures - new construction and substantial improvements, with fully enclosed areas below the lowest floor that are usable solely for parking of vehicles, building access or storage in an area other than a basement and which are subject to flooding shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement must either be certified by a registered professional engineer or architect or meet or exceed the following minimum criteria:
  - a. A minimum of two openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding shall be provided.
  - b. The bottom of all openings shall be no higher than one foot above grade.
  - c. Openings may be equipped with screens, louvers, valves, or other coverings or devices provided that they permit the automatic entry and exit of floodwaters.
- (4) Manufactured Homes --
  - a. Require that all manufactured homes to be placed within Zone A on a community's FHBM or FIRM shall be installed using methods and

practices which minimize flood damage. For the purposes of this requirement, manufactured homes must be elevated and anchored to resist flotation, collapse, or lateral movement. Methods of anchoring may include, but are not limited to, use of over-the-top or frame ties to ground anchors. This requirement is in addition to applicable State and local anchoring requirements for resisting wind forces.

- b. Require that manufactured homes that are placed or substantially improved within Zones A1-30, AH, and AE on the community's FIRM on sites (i) outside of a 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 a result of a flood, be elevated on a permanent foundation such that the lowest floor of the manufactured home is elevated to or above the base flood elevation and be securely anchored to an adequately anchored foundation system to resist flotation, collapse, and lateral movement.
  - c. Require that manufactured homes be placed or substantially improved on sites in an existing manufactured home park or subdivision with Zones A1-30, AH and AE on the community's FIRM that are not subject to the provisions of paragraph (4) of this section be elevated so that either:
    - (i) the lowest floor of the manufactured home is at or above the base flood elevation, or
    - (ii) the manufactured home chassis is supported by reinforced piers or other foundation elements of at least equivalent strength that are no less than 36 inches in height above grade and be securely anchored to an adequately anchored foundation system to resist flotation, collapse, and lateral movement.
- (5) Recreational Vehicles - Require that recreational vehicles placed on sites within Zones A1-30, AH, and AE on the community's FIRM either (i) be on the site for fewer than 180 consecutive days, (ii) be fully licensed and ready for highway use, or (iii) meet the permit requirements of Article 4, Section C (1), and the elevation and anchoring requirements for "manufactured homes" in paragraph (4) of this section. A recreational vehicle is ready for highway use if it is on its wheels or jacking system, is attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached additions.

## **SECTION C. STANDARDS FOR SUBDIVISION PROPOSALS**

- (1) All subdivision proposals including the placement of manufactured home

parks and subdivisions shall be consistent with Article 1, Sections B, C, and D of this ordinance.

- (2) All proposals for the development of subdivisions including the placement of manufactured home parks and subdivisions shall meet Development Permit requirements of Article 3, Section C; Article 4, Section C; and the provisions of Article 5 of this ordinance.
- (3) Base flood elevation data shall be generated for subdivision proposals and other proposed development including the placement of manufactured home parks and subdivisions which is greater than 50 lots or 5 acres, whichever is lesser, if not otherwise provided pursuant to Article 3, Section B or Article 4, Section B (8) of this ordinance.
- (4) All subdivision proposals including the placement of manufactured home parks and subdivisions shall have adequate drainage provided to reduce exposure to flood hazards.
- (5) All subdivision proposals including the placement of manufactured home parks and subdivisions shall have public utilities and facilities such as sewer, gas, electrical and water systems located and constructed to minimize or eliminate flood damage.

#### **SECTION D. STANDARDS FOR AREAS OF SHALLOW FLOODING (AO/AH ZONES)**

Located within the areas of special flood hazard established in Article 3, Section B, are areas designated as shallow flooding. These areas have special flood hazards associated with base flood depths of 1 to 3 feet where a clearly defined channel does not exist and where the path of flooding is unpredictable and where velocity flow may be evident. Such flooding is characterized by ponding or sheet flow; therefore, the following provisions apply:

- (1) All new construction and substantial improvements of **residential** structures have the lowest floor (including basement) elevated above the highest adjacent grade at least as high as the depth number specified in feet on the community's FIRM (at least two feet if no depth number is specified).
- (2) All new construction and substantial improvements of **non-residential** structures:
  - (i) have the lowest floor (including basement) elevated above the highest adjacent grade at least as high as the depth number specified in feet on the community's FIRM (at least two feet if no depth number is specified), or;
  - (ii) together with attendant utility and sanitary facilities be designed so that below the base flood level the structure is watertight with walls substantially

impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads of effects of buoyancy.

(3) A registered professional engineer or architect shall submit a certification to the Floodplain Administrator that the standards of this Section, as proposed in Article 4, Section C (1) a., are satisfied.

(4) Require within Zones AH or AO adequate drainage paths around structures on slopes, to guide flood waters around and away from proposed structures.

### **SECTION E. COASTAL HIGH HAZARD AREAS**

Located within the areas of special flood hazard established in Article 3, Section B, are areas designated as **Coastal High Hazard Areas** (Zones V1-30, VE, and/or V). These areas have special flood hazards associated with high velocity waters from tidal surges and hurricane wave wash; therefore, in addition to meeting all provisions outlined in this ordinance, the following provisions must also apply:

- (1) Obtain the elevation (in relation to mean sea level) of the bottom of the lowest structural member of the lowest floor (excluding pilings and columns) of all new and substantially improved structures, and whether or not such structures contain a basement. The Floodplain Administrator shall maintain a record of all such information.
- (2) All new construction shall be located landward of the reach of mean high tide.
- (3) All new construction and substantial improvements shall be elevated on pilings and columns so that:
  - (i) the bottom of the lowest horizontal structural member of the lowest floor (excluding the pilings or columns) is elevated to or above the base flood level;
  - (ii) the pile or column foundation and structure attached thereto is anchored to resist flotation, collapse and lateral movement due to the effects of wind and water loads acting simultaneously on all building components. Water loading values used shall be those associated with the base flood. Wind loading values used shall be those required by applicable State or local building standards. A registered professional engineer or architect shall develop or review the structural design, specifications and plans for the construction, and shall certify that the design and methods of construction to be used are in accordance with accepted standards of practice for meeting the provisions of (3)(i) and (ii) of this Section.
- (4) Provide that all new construction and substantial improvements have the space below the lowest floor either free of obstruction or constructed with non-supporting

breakaway walls, open wood lattice-work, or insect screening intended to collapse under wind and water loads without causing collapse, displacement, or other structural damage to the elevated portion of the building or supporting foundation system.

For the purpose of this section, a breakaway wall shall have a design safe loading resistance of not less than 10 and no more than 20 pounds per square foot. Use of breakaway walls which exceed a design safe loading resistance of 20 pounds per square foot (either by design or when so required by local or State codes) may be permitted only if a registered professional engineer or architect certifies that the designs proposed meet the following conditions:

- (i) breakaway wall collapse shall result from a water load less than that which would occur during the base flood; and
- (ii) the elevated portion of the building and supporting foundation system shall not be subject to collapse, displacement, or other structural damage due to the effects of wind and water loads acting simultaneously on all building components (structural and nonstructural). Water loading values used shall be those associated with the base flood. Wind loading values used shall be those required by applicable State or local building standards. Such enclosed space shall be useable solely for parking of vehicles, building access, or storage. Such space shall not be used for human habitation.

(5) Prohibit the use of fill or structural support of buildings.

(6) Prohibit man-made alteration of sand dunes and mangrove stands which increase potential flood damage.

(7) Manufactured Homes –

Require that manufactured homes placed or substantially improved within Zone VI-30, V, and VE on the community's FIRM on sites (i) outside of a 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, meet the standards of paragraphs (1) through (6) of this section **and** that manufactured homes placed or substantially improved on other sites in an existing manufactured home park or subdivision within Zones VI-30, V, and VE on the community's FIRM meet the requirements of Article 5, Section B(4) of this ordinance.

(8) Recreational Vehicles –

Require that recreational vehicles placed on sites within Zones VI-30, V, and VE on the community's FIRM either (i) be on the site for fewer than 180 consecutive days,

(ii) be fully licensed and ready for highway use, or (iii) meet the requirements in Article 3, Section C of this ordinance and paragraphs (1) through (6) of this section. A recreational vehicle is ready for highway use if it is on its wheels or jacking system, is attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached additions.

## **ARTICLE 6**

### **PENALTY CLAUSE**

Any person violating any provision of this Code shall be guilty of a Class "C" misdemeanor and upon conviction thereof shall be assessed a fine of not less than \$100 and not more than \$500; however, the maximum penalty for offenses arising under such Code governing fire safety, public health and sanitation shall not exceed the sum of two thousand dollars (\$2,000.00) Each day a violation continues shall constitute a new and separate offense;

### **CERTIFICATION**

It is hereby found and declared by \_\_\_\_\_ (community)

that severe flooding has occurred in the past within its jurisdiction and will certainly occur within the future; that flooding is likely to result in infliction of serious personal injury or death, and is likely to result in substantial injury or destruction of property within its jurisdiction; in order to effectively comply with minimum standards for coverage under the National Flood Insurance Program; and in order to effectively remedy the situation described herein, it is necessary that this ordinance become effective immediately.

Therefore, an emergency is hereby declared to exist, and this ordinance, being necessary for the immediate preservation of the public peace, health and safety, shall be in full force and effect from and after its passage and approval **on December 6, 2002.**

## APPENDIX V

### Wood and Steel Frame Construction

1. Roof decking shall be a minimum of "19/32" plywood or "19/32" Oriented-Strand Board (OSB) structural 1 sheathing panels.

2. All wood frame construction shall be 16" on center or better or designed in accordance with American Society of Civil Engineers (ASCE) standard 7-05.

3. Pilings size shall be a minimum of 10" x 10" under any living or enclosed portion of a structure west of 81<sup>st</sup> street. Engineered foundation with a minimum of 8" x 8" under any living or enclosed portions of a structure east of 81<sup>st</sup> street will be reviewed. Piling replacement on existing structures less than 50% of the piling replacement may match existing piling size with engineer certification.

4. Piling depths shall be minimum 10' embedment and in accordance with FEMA regulations when located in AE or VE flood zone, west of the seawall.

5. Wall sheathing on all exterior walls shall be minimum "19/32" plywood or "19/32" Oriented- Strand Board (OSB) structural 1 sheathing panels.

6. Wood shingles shall not be allowed on roofs or exterior walls except for repair of less than 50 % of such roof or wall.

7. Enclosures below the base flood elevation:

~~A. Enclosures below base flood elevation (BFE) in VE zones landward of 200 feet from the Line of Vegetation (LOV) may be constructed to a maximum of 899 square feet (outside dimensions) with a maximum of 250 square feet for entry use, breakaway construction. All enclosures below Base Flood Elevation in VE Zones shall have a maximum enclosure of 299 Square Feet Outside dimensions.~~

~~B. Enclosures below Base Flood Elevation (BFE) in VE zones within 200 feet landward of the Line of Vegetation (LOV) may be constructed to a maximum of a 299 square feet (outside dimensions), breakaway construction.~~

C. Insect screening, provided that no additional supports are required for screening; or wood or plastic lattice with at least 40 % of the area open and made of material no thicker than 1/2 inch; or wooden or plastic slats or shutters with at least 40 % of the area open and made of material no thicker than 1 inch and breakaway construction shall not be considered enclosure walls. Any of these systems must be designed and installed to collapse under stress without jeopardizing the structural support of the building of abnormally high tides or wind driven water is minimized.

CD. A single wall may constitute an obstruction and may constitute an enclosure based on National Flood Insurance Program Regulations (NFIP).

8. Approved connectors shall be used on all framing connections in lieu of all other framing connections.
9. Collar ties shall be installed on the upper 1/3 of each set of mating rafters.
10. Minimum of one hardwire smoke or heat detector interconnected must be installed in enclosed areas below structures that are 6 feet or more above grade.
11. All steel used in structural applications including but not limited to columns, beams, brackets, base plates, bolts, nuts, washers, handrails, and lintels exposed to the weather or encapsulated outside of the air-conditioned enclosure (including columns/beams located within exterior walls) shall be at a minimum hot dipped galvanized after fabrication in accordance with ASTM A123/A123M-09 or AISI type 304 stainless steel. A surface coating alone is not acceptable to prevent structural elements from corroding from the inside out. Interior structural steel may use a red oxide primer coating in lieu of hot dip galvanizing if the insulation and vapor barrier that comprises the building envelope separates the structural steel from the exterior.

The minimum coating requirements for interior structural steel not directly exposed to weather is red oxide primer unless otherwise required.

Structural steel studs and light gage structural clips, brackets, straps, etc. that are electroplate galvanized during the manufacturing process shall be primed and painted when exposed to the weather.

New or replacement window/door lintels will require hot dipped galvanized steel as the minimum acceptable metal coating in these locations.

Brick ties and nails shall be stainless steel.