ORDINANCE ON FIRST READING

IN COUNCIL

September 11, 2008

ORDINANCE ON SECOND READING

IN COUNCIL

September 25, 2008

ORDINANCE READ FOR THE FIRST TIME _____,

THEN BY UNANIMOUS CONSENT OF COUNCIL, READ A SECOND TIME, PLACED UPON ITS PASSAGE, ADOPTED AND APPROVED

_____.

Otis L. Johnson

MAYOR

# FLOOD DAMAGE PREVENTION ORDINANCE
## ~ City of Savannah ~

## ARTICLE 1. STATUTORY AUTHORIZATION, FINDINGS OF FACT, PURPOSE AND OBJECTIVES

### SECTION A. STATUTORY AUTHORIZATION

Article IX, Section II of the Constitution of the State of Georgia and Section 36-1-20(a) of the Official Code of Georgia Annotated have delegated the responsibility to local governmental units to adopt regulations designed to promote the public health, safety, and general welfare of its citizenry. Therefore, the Mayor and Aldermen of the City of Savannah, GEORGIA, does ordain as follows:

### SECTION B. FINDINGS OF FACT

(1) The flood hazard areas of Savannah, Georgia are subject to periodic inundation which results in loss of life and property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood relief and protection, and impairment of the tax base, all of which adversely affect the public health, safety and general welfare.

(2) These flood losses are caused by the occupancy in flood hazard areas of uses vulnerable to floods, which are inadequately elevated, flood-proofed, or otherwise unprotected from flood damages, and by the cumulative effect of obstructions in floodplains causing increases in flood heights and velocities.

### 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) require that uses vulnerable to floods, including facilities, which serve such uses, be protected against flood damage at the time of initial construction;

(2) restrict or prohibit uses which are dangerous to health, safety and property due to water or erosion hazards, or which increase flood heights, velocities, or erosion;

(3) control filling, grading, dredging and other development which may increase flood damage or erosion, and;

(4) prevent or regulate the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards to other lands;

(5) control the alteration of natural floodplains, stream channels, and natural protective barriers, which are involved in the accommodation of floodwaters.

### SECTION D. OBJECTIVES

The objectives of this ordinance are:

(1) to protect human life and health;

(2) to minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets and bridges located in floodplains;

(3) to 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 flood blight areas,

(4) to minimize expenditure of public money for costly flood control projects;

(5) to minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;

(6) to minimize prolonged business interruptions, and;

(7) to insure that potential homebuyers are notified that property is in a flood area.

## ARTICLE 2. GENERAL PROVISIONS

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

This ordinance shall apply to all Areas of Special Flood Hazard within the jurisdiction of Savannah, Georgia, as defined below in Section B

### SECTION B. BASIS FOR AREA OF SPECIAL FLOOD HAZARD

The Areas of Special Flood Hazard identified by the Federal Emergency Management Agency (FEMA) in its Flood Insurance Study (FIS), dated September 26, 2008, with accompanying maps and other supporting data and any revision thereto, are adopted by reference and declared a part of this ordinance. For those land areas acquired by a municipality through annexation, the current effective FIS, supporting data and any revision thereto, for Chatham County, dated September 26, 2008, are hereby adopted by reference.

Areas of Special Flood Hazard may also include those areas known to have flooded historically or defined through hydraulic analysis modeling, or other standard engineering analysis by governmental agencies or private parties but not yet incorporated in a FIS. The data utilized in the FIS is NAVD North American Vertical Datum of 1988.

The Repository for public inspection of the Flood Insurance Study (FIS), accompanying maps and other supporting data is located: Development Services Offices of the City of Savannah. Repetitive flooding records are maintained by the City's Stormwater Management Department.

### SECTION C. ESTABLISHMENT OF DEVELOPMENT PERMIT

A Development Permit shall be required in conformance with the provisions of this ordinance PRIOR to the commencement of any Development activities.

### SECTION D. COMPLIANCE

No structure or land shall hereafter be located, extended, converted or altered 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 ordinance, easements, covenants, or deed restrictions. However, where this ordinance and another 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 OF LIABILITY**

The degree of flood protection required by this ordinance is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. Larger floods can and will occur; flood heights may be increased by man-made or natural causes. This ordinance does not imply that land outside the Areas of Special Flood Hazard or uses permitted within such areas will be free from flooding or flood damages. This ordinance shall not create liability on the part of City of Savannah or by any officer or employee thereof for any flood damages that result from reliance on this ordinance or any administrative decision lawfully made thereunder.

**SECTION H. PENALTIES FOR VIOLATION**

Failure to comply with the provisions of this ordinance or with any of its requirements, including conditions and safeguards established in connection with grants of variance or special exceptions shall constitute a violation. Any person who violates this ordinance or fails to comply with any of its requirements shall, upon conviction thereof, be punished in accordance with Section 1-1013 of the City of Savannah's Code (not more than $1,000 or imprisoned for not more than 30 days, or both), and in addition, shall pay all costs and expenses involved in the case. Each day such violation continues shall be considered a separate offense. Nothing herein contained shall prevent the City of Savannah from taking such other lawful actions as is necessary to prevent or remedy any violation.

**SECTION I. REPEAL OF PREVIOUS ORDINANCE**

All previous versions of the Flood Damage Protection Ordinance are hereby repealed.

## ARTICLE 3. ADMINISTRATION

**SECTION A. DESIGNATION OF ORDINANCE ADMINISTRATOR**

The Development Services Director and the City Engineer are hereby appointed to administer and implement the provisions of this ordinance.

**SECTION B. PERMIT PROCEDURES**

Application for a Development Permit shall be made to the City Engineer on forms furnished by the City PRIOR to any development activities, and may include, but not be limited to the following: plans in duplicate drawn to scale showing the elevations of the area in question and the nature, location, dimensions, of existing or proposed structures, earthen fill placement, storage of materials or equipment, and drainage facilities.

Specifically, the following information is required:

**(1) Application Stage -**

(a) Elevation in relation to mean sea level (or highest adjacent grade) of the lowest floor, including basement, of all proposed structures;

(b) Elevation in relation to mean sea level to which any non-residential structure will be flood-proofed;

(c) Design certification from a registered professional engineer or architect that any proposed non-residential flood-proofed structure will meet the flood-proofing criteria of Article 4, Section B (2) and D (2);

(d) Design certification from a registered professional engineer or architect that any new construction or substantial improvement placed in a Coastal High Hazard Area will meet the Criteria of Article 4, Section E (5);

(e) Description of the extent to which any watercourse will be altered or relocated as a result of a proposed development;

(f) All certificates shall be submitted in the same datum as identified in Article 2, Section B., and;

**(2) Construction Stage -**

For all new construction and substantial improvements, the permit holder shall provide to the Development Services Director an as-built certification of the regulatory floor elevation or flood-proofing level immediately after the lowest floor or flood proofing is completed. Where a structure is subject to the provisions applicable to Coastal High Hazards Areas, after placement of the lowest horizontal structural members. Any regulatory floor certification made relative to mean sea level shall be prepared by or under the direct supervision of a registered land surveyor or professional engineer and certified by same. When flood proofing is utilized for non-residential structures, said certification shall be prepared by or under the direct supervision of a professional engineer or architect and certified by same.

Any work undertaken prior to submission of these certifications shall be at the permit holder's risk.

The Development Services Director shall review the above referenced certification data submitted. Deficiencies detected by such review shall be corrected by the permit holder immediately and prior to further progressive work being allowed to proceed. Failure to submit certification or failure to make said corrections required hereby shall be cause to issue a stop-work order for the project.

## SECTION C. DUTIES AND RESPONSIBILITIES OF THE ADMINISTRATOR

Duties of City Engineer shall include, but shall not be limited to:

(1) Review all development permits to assure that the permit requirements of this ordinance have been satisfied;

(2) Review proposed development to assure that all necessary permits have been received from governmental agencies from which approval is required by Federal or State law, including section 404 of the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1334. Require that copies of such permits be provided and maintained on file.

(3) Review all permit applications to determine whether proposed building sites will be reasonably safe from flooding.

(4) When Base Flood Elevation data or floodway data have not been provided in accordance with Article 2 Section B, then the City Engineer shall obtain, review and reasonably utilize any base flood elevation and floodway data available from a Federal, State or other sources in order to administer the provisions of Article 4.

(5) Notify adjacent communities and the Georgia Department of Natural Resources prior to any alteration or relocation of a watercourse and submit evidence of such notification to the Federal Emergency Management Agency (FEMA).

(6) For any altered or relocated watercourse, submit engineering data/analysis within six (6) months to FEMA to ensure accuracy of community flood maps through the Letter of Map Revision process. Assure flood carrying capacity of any altered or relocated watercourse is maintained.

(7) Where interpretation is needed as to the exact location of boundaries of the Areas of Special Flood Hazard (for example, where there appears to be a conflict between a mapped boundary and actual field conditions) the City's Stormwater Management Director shall make the necessary interpretation. Any person contesting the location of the boundary shall be given a reasonable opportunity to appeal the interpretation as provided in this Ordinance.

Duties of Development Services Director shall include, but shall not be limited to:

(1) Review and record the actual elevation in relation to mean sea level (or highest adjacent grade) of the regulatory floor, including basement, of all new or substantially improved structures in accordance with Article 3, Section B (2).

(2) Review and record the actual elevation, in relation to mean sea level to which any new or substantially improved structures have been flood-proofed, in accordance with Article 3, Section B (2) and D (2).

(3) When flood-proofing is utilized for a structure, the Development Services Director shall obtain certification of design criteria from a registered professional engineer or architect in accordance with Article 3(B)(1)(c) and Article 4(B)(2) or (D)(2).

(4) Development Services Director shall review submitted design certification from a registered professional engineer or architect that any new construction or substantial improvement placed in a Coastal High Hazard Area will meet the criteria of Article 4, Section E (5).

(5) Make substantial damage determinations following a flood event or any other event that causes damage to structures in flood hazard areas.

(6) All records pertaining to the provisions of this ordinance shall be maintained in the office of the Development Services Director and shall be open for public inspection.

## ARTICLE 4. PROVISIONS FOR FLOOD HAZARD REDUCTION

### SECTION A. GENERAL STANDARDS

In ALL Areas of Special Flood Hazard and also include those areas known to have flooded historically or defined through hydraulic modeling or other standard engineering analysis by governmental agencies or private parties but not yet incorporated in a FIS the following provisions are required:

(1) New construction and substantial improvements of existing structures shall be anchored to prevent flotation, collapse or lateral movement of the structure;

(2) New construction and substantial improvements of existing structures shall be constructed with materials and utility equipment resistant to flood damage;

(3) New construction or substantial improvements of existing structures shall be constructed by methods and practices that minimize flood damage;

(4) Elevated Buildings - All New construction or substantial improvements of existing structures that include ANY fully enclosed area located below the lowest floor formed by foundation and other exterior walls shall be designed so as to be an unfinished or flood resistant enclosure. The enclosure shall be designed to equalize hydrostatic flood forces on exterior walls by allowing for the automatic entry and exit of floodwater. (NOT APPLICABLE IN COASTAL HIGH HAZARD AREAS).

(a) Designs for complying with this requirement must either be certified by a professional engineer or architect or meet the following minimum criteria:

(i) Provide 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;

(ii) The bottom of all openings shall be no higher than ***one foot*** above grade; and,

(iii) Openings may be equipped with screens, louvers, valves or other coverings or devices provided they permit the automatic flow of floodwater in both directions.

(b) So as not to violate the "Lowest Floor" criteria of this ordinance, the unfinished or flood resistant enclosure shall only be used for parking of vehicles, limited storage of maintenance equipment used in connection with the premises, or entry to the elevated area, and

(c) The interior portion of such enclosed area shall not be partitioned or finished into separate rooms

(5) All heating and air conditioning equipment and components (including ductwork), all electrical (except the main disconnect, the electric meter, and one ground fault interrupted outlet and switch), ventilation, plumbing fixtures, and other service facilities shall be designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding.

(6) Manufactured homes shall be anchored to prevent 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 standard shall be in addition to and consistent with applicable State requirements for resisting wind forces.

(7) New and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system;

(8) New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the systems and discharges from the systems into flood waters;

(9) On-site waste disposal systems shall be located and constructed to avoid impairment to them or contamination from them during flooding, and;

(10) Any alteration, repair, reconstruction or improvement to a structure, which is not compliant with the provisions of this ordinance, shall be undertaken only if the non-conformity is not furthered, extended or replaced.

## SECTION B. SPECIFIC STANDARDS

In ALL Areas of Special Flood Hazard designated as A1-30, AE, AH, A (with estimated BFE), the following provisions are required:

(1) **New construction and/or substantial improvements** - Where base flood elevation data are available, new construction and/or substantial improvement of any structure or manufactured home shall have the lowest floor, including basement, elevated no lower than ***one foot*** above the base flood elevation. Should solid foundation perimeter walls be used to elevate a structure, openings sufficient to facilitate the unimpeded movements of flood waters shall be provided in accordance with standards of Article 4, Section A (4), "Elevated Buildings".

a. All heating and air conditioning equipment and components (including ductwork), all electrical (except the main disconnect, the electric meter, and one ground fault interrupted outlet and switch), ventilation, plumbing fixtures and other service facilities shall be elevated at or above ***one foot*** above the base flood elevation.

(2) **Non-Residential Construction** - New construction and/or the substantial improvement of any structure located in A1-30, AE, or AH zones, may be flood-proofed in lieu of elevation. The structure, together with attendant utility and sanitary facilities, must be designed to be water tight to ***one foot*** above the base flood elevation, with walls substantially impermeable to the passage of water, and structural components having the capability of resisting hydrostatic and hydrodynamic loads and the effect of buoyancy. A registered professional engineer or architect shall certify that the design and methods of construction are in accordance with accepted standards of practice for meeting the provisions above, and shall provide such certification to the official as set forth above and in Article 3, Section C. (6).

(3) **Standards for Manufactured Homes and Recreational Vehicles - Where base flood elevation data are available:**

(a) All manufactured homes placed and/or substantially improved on: (1) individual lots or parcels, (2) in new and/or substantially improved manufactured home parks or subdivisions, (3) in expansions to existing manufactured home parks or subdivisions, or (4) on a site in an existing manufactured home park or subdivision where a manufactured home has incurred "substantial damage" as the result of a flood, must have the lowest floor including basement, elevated no lower than ***one foot*** above the base flood elevation.

(b) Manufactured homes placed and/or substantially improved in an either existing manufactured home park or subdivision must be elevated so that:

(i) The lowest horizontal structural member to the lowest floor of the manufactured home is elevated no lower than ***one foot*** above the level of the base flood elevation, or

(ii) The manufactured home chassis is elevated and supported by reinforced piers (or other foundation elements of at least an equivalent strength) of no less than 36 inches in height above grade.

(c) All manufactured homes must be securely anchored to an adequately anchored foundation system to resist flotation, collapse and lateral movement. (ref. Article 4(A)(6) above)

(d) All recreational vehicles placed on sites must either:

(i) Be on the site for fewer than 180 consecutive days.

(ii) Be fully licensed and ready for highway use, (a recreational vehicle is ready for highway use if it is licensed, on its wheels or jacking system, attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached structures or additions), or

(iii) The recreational vehicle must meet all the requirements for "New Construction", including the anchoring and elevation requirements of Article 4, Section B (3)(a)(c), above.

**(4).** **Floodway** - Located within Areas of Special Flood Hazard established in Article 2, Section B, are areas designated as floodway. A floodway may be an extremely hazardous area due to velocity floodwaters, debris or erosion potential. In addition, the area must remain free of encroachment in order to allow for the discharge of the base flood without increased flood heights. Therefore, the following provisions shall apply:

(a) Encroachments are prohibited, including earthen fill, new construction, substantial improvements or other development within the regulatory floodway. Development may be permitted however, provided it is demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the encroachment shall not result in ANY increase in flood levels or floodway widths during a base flood discharge. A registered professional engineer must provide supporting technical data and certification thereof.

(b) ONLY if Article 4 (B)(4)(a) above is satisfied, then any new construction or substantial improvement shall comply with all other applicable flood hazard reduction provisions of Article 4.

## SECTION C. BUILDING STANDARDS FOR STREAMS WITHOUT ESTABLISHED BASE FLOOD ELEVATIONS AND/OR FLOODWAY (A-ZONES) -

Located within the Areas of Special Flood Hazard established in Article 2, Section B, where streams exist but no base flood data have been provided (A-Zones), OR where base flood data have been provided but a Floodway has not been delineated, the following provisions apply:

(1) When base flood elevation data or floodway data have not been provided in accordance with Article 2(B), then the City Engineer shall obtain, review, and reasonably utilize any scientific or historic base flood elevation and floodway data available from a Federal, State, or other source, in order to administer the provisions of Article 4. ONLY if data are not available from these sources, then the following provisions (2&3) shall apply:

(2) No encroachments, including structures or fill material, shall be located within an area equal to the width of the stream or twenty-five feet, whichever is greater, measured from the top of the stream bank, unless:

(i.) an equal or greater volume of material is excavated from the floodway at the point of encroachment, such that there is no increase in the base flow elevation at any point within the community; and

(ii.) certification by a registered professional engineer is provided demonstrating that such encroachment and its mitigation shall not result in any increase in flood levels during the occurrence of the base flood discharge.

(3) In special flood hazard areas without base flood elevation data, new construction and substantial improvements of existing structures shall have the lowest floor of the lowest enclosed area (including basement) elevated no less than ***three feet*** above the highest adjacent grade at the building site. (NOTE: Require the lowest floor to be elevated ***one foot*** above the estimated base flood elevation in A-Zone areas where a Limited Detail Study has been completed). Openings sufficient to facilitate the unimpeded movements of floodwaters shall be provided in accordance with standards of Article 4, Section A (4) "Elevated Buildings".

(a) All heating and air conditioning equipment and components (including ductwork), all electrical (except the main disconnect, the electric meter, and one ground fault interrupted outlet and switch), ventilation, plumbing fixtures, and other service facilities shall be elevated no less than ***three feet*** above the highest adjacent grade at the building site

The Development Services Director shall certify the lowest floor elevation level and the record shall become a permanent part of the permit file.

## SECTION D. STANDARDS FOR AREAS OF SPECIAL FLOOD HAZARD (ZONES AE) WITH ESTABLISHED BASE FLOOD ELEVATIONS WITHOUT DESIGNATED FLOODWAYS

Located within the Areas of Special Flood Hazard established in Article 2, Section B, where streams with base flood elevations are provided but no floodways have been designated, (Zones AE) the following provisions apply:

(1) No encroachments, including fill material, new structures or substantial improvements shall be located within areas of special flood hazard, unless

(i.) Any fill material or portion of any other improvement placed inside a special flood hazard area (SFHA) below base flood elevation shall be mitigated on site or on an adjacent site by an equal or greater volume of excavated material. The mitigation excavation must be connected to the special flood hazard area at an elevation less than or equal to an elevation two feet below the 100 year flood plain elevation, or,

(ii.) a stormwater conveyance system, is sized and constructed to convey the 100 year 24 hour storm to a suitable outfall.

In either case, certification by a registered professional engineer shall be provided demonstrating 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 at any point within the community. The engineering certification should be supported by verifiable technical data that conforms to standard hydraulic engineering principles.

(2) New construction or substantial improvements of buildings shall be elevated or flood-proofed to elevations established in accordance with Article 4, Section B.

## SECTION E. STANDARDS FOR AREAS OF SHALLOW FLOODING (AO ZONES)

Areas of Special Flood Hazard established in Article 2, Section B, may include designated "AO" shallow flooding areas. These areas have base flood depths of ***one to three feet (1'-3')*** above ground, with no clearly defined channel. The following provisions apply:

(1) All new construction and substantial improvements of residential and non-residential structures shall have the lowest floor, including basement,

elevated to the flood depth number specified on the Flood Insurance Rate Map (FIRM), above the highest adjacent grade. If no flood depth number is specified, the lowest floor, including basement, shall be elevated at least ***three feet*** above the highest adjacent grade. Openings sufficient to facilitate the unimpeded movements of flood waters shall be provided in accordance with standards of Article 4, Section A (4), "Elevated Buildings".

The Development Services Director shall certify the lowest floor elevation level and the record shall become a permanent part of the permit file.

(2) New construction or the substantial improvement of a non-residential structure may be flood-proofed in lieu of elevation. The structure, together with attendant utility and sanitary facilities, must be designed to be water tight to the specified FIRM flood level plus ***one foot***, above highest adjacent grade, with walls substantially impermeable to the passage of water, and structural components having the capability of resisting hydrostatic and hydrodynamic loads and the effect of buoyancy. A registered professional engineer or architect shall certify that the design and methods of construction are in accordance with accepted standards of practice for meeting the provisions above, and shall provide such certification to the official as set forth above and as required in Articles 3(B)(1)(c) and (3)(B)(2).

(3) Drainage paths shall be provided to guide floodwater around and away from any proposed structure.

## SECTION F. COASTAL HIGH HAZARD AREAS (V-ZONES)

Located within the areas of special flood hazard established in Article 2, Section B, are areas designated as Coastal High Hazard Areas (V-Zones). These areas have special flood hazards associated with wave action and storm surge, therefore, the following provisions shall apply:

(1) All new construction and substantial improvements of existing structures shall not be located within the buffer of the state waters and salt marsh as determined by the Georgia Department of Natural Resources

(2) All new construction and substantial improvements of existing structures shall be elevated on piles, columns, or shear walls parallel to the flow of water so that the bottom of the lowest supporting horizontal structural member (excluding pilings or columns) is located no lower than one foot above the base flood elevation level. All space below the lowest supporting member shall remain free of obstruction or constructed with non-supporting breakaway walls. Open wood lattice work or decorative screening may be permitted for aesthetic purposes only and must be designed to wash away in the event of abnormal wave action and in accordance with Article 4, Section E (6) below;

(3) All new construction and substantial improvements of existing structures shall be securely anchored on pilings, columns, or shear walls; and

(4) All pile and column foundations and the structures attached thereto shall be anchored to resist flotation, collapse, and lateral movement due to the combined effects of wind and water loads acting simultaneously on ALL building components, both (non-structural and structural). Water loading values shall equal or exceed those of the base flood. Wind loading values shall be in accordance with the most current edition of the Standard Building Code.

(5) A registered professional engineer or architect shall certify that the design, specifications and plans for construction are in compliance with the provisions contained in Article 4, Section E (2)(3)(4) herein.

(6) All space below the lowest horizontal supporting member must remain free of obstruction. Breakaway walls, open wood lattice work or decorative screening may be permitted and must be designed to wash away in the event of abnormal wave action without causing structural damage to the supporting foundation or elevated portion of the structure. The following design specifications are allowed:

(a) The design safe loading resistance of each wall shall not be less than 10 nor more than 20 pounds per square foot; or

(b) If more than 20 pounds per square foot, a registered professional engineer or architect shall certify that the design wall collapse would result from a water load less than that which would occur during the base flood event, and 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 during the base flood event. Maximum wind and water loading values to be used in this determination shall each have one percent chance of being equaled or exceeded in any given year (100-year mean recurrence interval).

(c) Any such enclosed space shall not be used for human habitation, but shall be designed to be used only for parking of vehicles, building access, or limited storage of maintenance equipment used in connection with the premises.

(d). To have a breakaway wall, other than screening or open wood latticework, the owner must sign a non conversion agreement stating that these areas shall not be converted to habitable space allowing the Development Services Director access to ensure the enclosed area is not in violation to this ordinance. The owner must record the agreement with the deed for future owners.

(7) Prior to construction, plans for any structures having open wood latticework or decorative screening must be submitted to the Development Services Director for approval;

(8) Any alteration, repair, reconstruction or improvement to any structure shall not enclose the space below the lowest floor except with open wood latticework or decorative screening, as provided in this Section.

(9) There shall be no fill used as structural support, or to elevate areas used for septic tank drain fields. Non-compacted fill may be used around the perimeter of a building for landscaping/aesthetic purposes provided the fill will wash out from storm surge, (thereby rendering the building free of obstruction) prior to generating excessive loading forces, ramping effects, or wave deflection. The Development Services Director may approve design plans for landscaping/aesthetic fill only after the applicant has provided an analysis by an engineer, architect, and/or soil scientist, which demonstrates that the following factors have been fully considered:

(a) Particle composition of fill material does not have a tendency for excessive natural compaction;

(b) Volume and distribution of fill will not cause wave defection to adjacent properties; and

(c) Slope of fill will not cause wave run-up or ramping.

(10) There shall be no alteration of sand dunes, mangrove stands or hammocks, which would increase potential flood damage;

(11) Prohibit the placement of manufactured homes (mobile homes), except in an existing manufactured homes park or subdivision. A replacement manufactured home may be placed on a lot in an existing manufactured home park or subdivision provided the anchoring standards of Article 4, Section E(4) are met.

## SECTION G. STANDARDS FOR SUBDIVISIONS

(1) In addition to meeting all requirements of the City of Savannah sec. 4-11001, 8-6001, and 8-2001, all subdivision and/or development proposals shall be consistent with the need to minimize flood damage;

(2) All subdivision and/or development proposals shall have public utilities and facilities such as sewer, gas, electrical and water systems located and constructed to minimize flood damage;

(3) All subdivision and/or development proposals shall have adequate drainage provided to reduce exposure to flood hazards, and;

(4) For subdivisions and/or developments greater than fifty ***(50) lots or five (5) acres***, whichever is less, base flood elevation data shall be provided for subdivision and all other proposed development, including manufactured home parks and subdivisions. After all required construction permitting is obtained, any changes or revisions to the flood data adopted herein and shown on the FIRM shall be submitted by the developer's engineer to FEMA for review as a Conditional Letter of Map Revision (CLOMR) or Conditional Letter of Map Amendment (CLOMA), whichever is applicable. Upon completion of the project, the developer is responsible for submitting the "as-built" data to FEMA in order to obtain the final LOMR. The developer's engineer shall additionally provide the Development Services Director with all digital data needed to update local versions of the DFIRM.

(5) All subdivision plats shall delineate all zones as determined from information provided in Article 2, Section B, to include using the same datum, all Letter of Map amendments, and designed finish floors, garages, and carports.

## .SECTION H. STANDARD FOR CRITICAL FACILITIES

(1) Buildings housing new critical facilities shall not be located in the 100-year floodplain or the 500-year floodplain.

(2) All ingress and egress from any new critical facility buildings must be protected to the 500-year flood elevation.

(3) Substantial improvements to critical facilities may be considered as new critical facilities.

## ARTICLE 5. VARIANCE PROCEDURES

(A) The City Engineer shall hear and decide requests for appeals or variance from the requirements of this ordinance.

(B) The City Manager shall hear and decide requests for appeals from the requirements of this ordinance. The City Manager shall hear and decide appeals when it is alleged an error in any requirement, decision, or determination is made by the Development Services Director, the City Engineer, or the Stormwater Management Director in the enforcement or administration of this ordinance.

(C) Any person aggrieved by the decision of the City Manager may appeal such

decision to the Superior Court as provided in O.C.G.A. § 15-6-8.

(D) 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 to preserve the historic character and design of the structure.

(E) Variances may be issued for development necessary for the conduct of a functionally dependent use, provided the criteria of this Article are met, no reasonable alternative exists, and the development is protected by methods that minimize flood damage during the base flood and create no additional threats to public safety.

(F) Variances shall not be issued within any designated floodway or any Special Hazard Flood Area if ANY increase in flood levels during the base flood discharge would result.

(G) In reviewing such requests, the City Engineer shall consider all technical evaluations, relevant factors, and all standards specified in this and other sections of this ordinance.

(H) Conditions for Variances:

(1) A variance shall be issued ONLY when there is:

(i) a finding of good and sufficient cause,

(ii) a determination that failure to grant the variance would result in exceptional hardship, 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 nuisance, cause fraud on or victimization of the public, or conflict with existing local laws or ordinances.

(2) The provisions of this Ordinance are minimum standards for flood loss reduction; therefore any deviation from the standards must be weighed carefully. Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief; and, in the instance of an Historic Structure, a determination that the variance is the minimum necessary so as not to destroy the historic character and design of the building.

(3) Any applicant to whom a variance is granted shall be given written notice specifying the difference between the base flood elevation and the elevation of the proposed lowest floor and stating that the cost of flood insurance will be commensurate with the increased risk to life and property resulting from the reduced lowest floor elevation.

(4) The Development Services Director shall maintain the records of all appeal actions and report any variances to the Federal Emergency Management Agency upon request.

(I) Upon consideration of the factors listed above and the purposes of this ordinance, the Development Services Director may attach such conditions to the granting of variances as it deems necessary to further the purposes of this ordinance

## ARTICLE 6. DEFINITIONS

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

**"Accessory Structure"** means a structure having minimal value and used for parking, storage and other non-habitable uses, such as garages, carports, storage sheds, pole barns, hay sheds and the like. . Any structures that are at or less than one hundred twenty (120) square feet are not required to be permitted. All others must be constructed in accordance with construction below the Base Flood Elevation to include Hydrostatic Vents and Flood resistant materials and out inline in FEMA Technical Bulletins.

**"Addition (to an existing building)"** means any walled and roofed expansion to the perimeter of a building in which the addition is connected by a common load-bearing wall other than a firewall. Any walled and roofed addition, which is connected by a firewall or is separated by an independent perimeter load-bearing wall, shall be considered "New Construction".

**"Appeal"** means a request for a review of the City Engineer's, Development Services Director's or Stormwater Management Director's interpretation of any provision of this ordinance.

**"Area of shallow flooding"** means a designated AO or AH Zone on a community's Flood Insurance Rate Map (FIRM) with base flood depths from one to three feet, and/or where a clearly defined channel does not exist, where the path of flooding is unpredictable and indeterminate, and where velocity flow may be evident.

**"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. In the absence of official designation by the Federal Emergency Management Agency, Areas of Special Flood Hazard shall be those designated by the local community and referenced in Article 2, Section B.

**"Base flood,"** means the flood having a one percent chance of being equaled or exceeded in any given year.

**"Base Flood Elevation (BFE)"** The elevation shown on the Flood Insurance Rate Map for Zones AE, AH, A1-A30, AR, AR/A, AR/AE, AR/A1-A30, AR/AH, AR/AO, V1-V30, and VE that indicates the water surface elevation resulting from a flood that has a one percent chance of equaling or exceeding that level in any given year.

**"Basement"** means that portion of a building having its floor sub grade (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 the supporting foundation system.

**"Building,"** means any structure built for support, shelter, or enclosure for any occupancy or storage.

**"Critical Facility"** means any public or private facility building, which, if flooded, would create an added dimension to the disaster or would increase the hazard to life and health. Critical facilities include:

(a) Structures or facilities that produce, use, or store highly volatile, flammable, explosive, toxic, or water-reactive materials;

(b) Hospitals and nursing homes, and housing for the elderly, which are likely to contain occupants who may not be sufficiently mobile to avoid the loss of life or injury during flood and storm events;

(c) Emergency operation centers or data storage centers which contain records or services that may become lost or inoperative during flood and storm events; and generating plants, and other principal points of utility lines.

(d) Generating plants, and other principal points of utility lines.

(e) Critical facilities do not include water wells, sanitary lift stations, or stormwater pump stations that are required to be in low lying area for the development of the area

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

**"Elevated building"** means a non-basement building built to have the lowest floor of the lowest enclosed area elevated above the ground level by means of fill, solid foundation perimeter walls, pilings, columns, piers, or shear walls adequately anchored so as not to impair the structural integrity of the building during a base flood event.

***"Existing construction"** means for the purposes of determining rates, structures for which the "start of construction" commenced before ~~July 30, 1987~~, July 1, 1974.

***"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 final site grading or the pouring of concrete pads) is completed before July 30, 1987.

**"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.

**"FEMA"**: Federal Emergency Management Agency

**"Flood" or "flooding"** means a general and temporary condition of partial or complete inundation of normally dry land areas from:

(a.) the overflow of inland or tidal waters; or

(b.) the unusual and rapid accumulation or runoff of surface waters from any source.

**"Flood Hazard Boundary Map (FHBM)"** means an official map of a community, issued by the Federal Insurance Administration, where the boundaries of areas of special flood hazard have been defined as Zone A.

**"Flood Insurance Rate Map (FIRM)"** means an official map of a community, issued by the Federal Insurance Administration, delineating the areas of special flood hazard and/or risk premium zones applicable to the community.

**"Flood Insurance Study"** the official report by the Federal Insurance Administration evaluating flood hazards and containing flood profiles and water surface elevations of the base flood.

**"Floodplain"** means any land area susceptible to flooding.

**"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"** 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.

**"Freeboard"** means a factor of safety usually expressed in feet above a flood level for purposes of floodplain management. "Freeboard" tends to compensate for the many unknown factors that could contribute to flood heights greater than the height calculated for a selected size flood and floodway conditions, such as wave action, bridge openings, and the hydrological effect of urbanization of the watershed.

**"Highest adjacent grade"** means the highest natural elevation of the ground surface, prior to construction, adjacent to the proposed foundation of a building.

**"Historic Structure"** means any structure that is;

a. Listed individually in the National Register of Historic Places (a listing maintained by the U.S. 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 and determined as eligible by states with historic preservation programs which have been approved by the Secretary of the Interior; or

d. Individually listed on a local inventory of historic places and determined as eligible by 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.

**"Letter of Map Amendment, (LOMA)",** administrative procedures to change the designation of properties on the FIRM that are designated to be in the floodplain or floodway

**"Letter of Map Revision Based on Fill, or LOMR-F",** administrative procedures to change the designation of properties on the FIRM that are designated to be in the floodplain or floodway based on fill being brought onto the site

**"Lowest floor"** means the lowest floor of the lowest enclosed area, including basement. An unfinished or flood resistant enclosure, used solely for parking of vehicles, building access, or storage, in an area other than a basement, is not considered a building's lowest floor, provided that such enclosure is not built so as to render the structure in violation of other provisions of this code.

**"Manufactured home"** means a building, transportable in one or more sections, built on a permanent chassis and designed to be used with or without a permanent foundation when connected to the required utilities. The term also includes park trailers, travel trailers, and similar transportable structures placed on a site for 180 consecutive days or longer and intended to be improved property.

**"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 the average height of the sea for all stages of the tide. It is used

as a reference for establishing various elevations within the floodplain. 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.

**"National Geodetic Vertical Datum (NGVD)"** as corrected in 1929 is a vertical control used as a reference for establishing varying elevations within the floodplain.

***"New construction"** means, for the purposes of determining insurance rates, structures for which the "start of construction" commenced after ~~September 1971~~ , July 1, 1974 and includes any subsequent improvements to such structures. For floodplain management purposes, "new construction" means structures for which the "start of construction" commenced after July 30, 1987 [the effective date of the FIRST floodplain management ordinance adopted by the 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 ~~July 31, 1987~~, July 30, 1987.

**"Non-engineered foundation openings":** Each of the following four design criteria must be met for new and substantially improved A-zone buildings that have enclosed areas below the BFE with openings not designed and certified by a design professional:
1. There must be a minimum of two openings on different sides of each enclosed area.
2. The total area of all openings must be at least 1 square inch for each 1 square foot of enclosed area.
3. The bottom of each opening can be no more than 1 foot above the adjacent grade.
4. Any louvers, screens, or other opening covers must not block or impede the automatic flow of floodwaters into and out of the enclosed area. .

**"North American Vertical Datum (NAVD)"**. has replaced the National Geodetic Vertical Datum of 1929 in existing and future FEMA Flood Modernization Maps. . In Savannah, an adjustment of 0.94 foot less than the NGVD datum.

**"Recreational vehicle"** means a vehicle, which is:

a. built on a single chassis;

b. 400 square feet or less when measured at the largest horizontal projection;

c. designed to be self-propelled or permanently towable by a light duty truck; and

d. designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or seasonal use.

**"Repetitive Loss"** means flood-related damages 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 the average, equals or exceeds 25 percent of the market value of the structure before the damaged occurred.

**"Special hazard area"** means an area having special flood, mudslide (i.e., mudflow), and/or flood-related erosion hazards, and shown on a FHBM or FIRM as Zone A, AO, A1-30, AE, A99, AH, AR, AR/A, AR/AE, AR/AH, AR/AO, AR/A1-30, VO, V1-30, VE, V, M, or E, or as otherwise defined in Article 2, Section B.

**"Start of construction"** means the date the development permit was issued, provided the actual start of construction, repair, reconstruction, or improvement was within 180 days of the permit date. The actual start means the first placement of permanent construction of the structure such as the pouring of slabs or footings, installation of piles, construction of columns, or any work beyond the stage of excavation, and includes the placement of a

manufactured home on a foundation. (Permanent construction does not include initial 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 a basement, footings, piers or foundations or the erection of temporary forms; nor does it include the installation on the property of buildings appurtenant to the permitted structure, such as garages or sheds not occupied as dwelling units or part of the main structure. (NOTE: accessory structures are NOT exempt from any ordinance requirements) 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 that is principally above ground, a manufactured home, a gas or liquid storage tank.

**"Subdivision"** the division of a single lot into two or more lots for the purpose of sale or development.

**"Substantial damage"** means damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damaged condition, taking place in a five year period in which the cumulative cost would equal or exceed fifty (50) percent of the market value of the structure before the damage occurred. . This term includes structures, which have occurred "repetitive loss" or "substantial damage", regardless of the actual repair work performed.

**"Substantial improvement"** means any reconstruction, rehabilitation, addition, or other improvement of a structure, taking place during a 5-year period, in which the cumulative cost of which equals or exceeds 50 percent of the market value of the structure before the "start of construction" of the improvement. This term includes structures, which have occurred "repetitive loss" or "substantial damage", regardless of the actual repair work performed. NOTE: *The market value of the structure should be (1) the appraised value of the structure prior to the start of the initial repair or improvement, or (2) in the case of damage, the value of the structure prior to the damage occurring.* This term includes structures, which have incurred "substantial damage", regardless of the actual amount of 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 to assure safe living 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".

For the purposes of this definition, "substantial improvement" is considered to occur when the first alteration of any wall, ceiling, floor, or other structural part of the structure commences, whether or not that alteration affects the external dimensions of the structure.

**"Substantially improved existing manufactured home parks or subdivisions"** is where the repair, reconstruction, rehabilitation or improvement of the streets, utilities and pads, taking place during a 5-year period, in which the cumulative cost equals or exceeds 50 percent of the value of the streets, utilities and pads before the repair, reconstruction or improvement commenced.

**"Technical Bulletin":** the Technical Bulletins provide guidance concerning the building performance standards of the NFIP, which are contained in Title 44 of the U.S Code of Federal Regulations at section 60.3. The Bulletins are intended for use by local official for interpreting and enforcing NFIP regulations. New bulletins and updates of existing bulletins are issued periodically. Bulletins do not create regulations; rather they provide specific guidance for complying with the minimum requirements of existing NFIP regulations.

**"Variance"** is a grant of relief from the requirements of this ordinance, which permits construction in a manner otherwise prohibited by this ordinance

**"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, or other certifications, or other evidence of compliance required by this ordinance is presumed to be in violation until such time as that documentation is provided.

## ARTICLE 7. SEVERABILITY

If any section, clause, sentence, or phrase of this Ordinance is held to be invalid or unconstitutional by any court of competent jurisdiction, then said holding shall in no way effect the validity of the remaining portions of this Ordinance.

**ADOPTED AND APPROVED: SEPTEMBER 25, 2008**

Otis S. Johnson

**MAYOR**

**ATTEST:**

Taf M. Tahaka

Acting **CLERK OF COUNCIL**