

MODEL FLOODPLAIN MANAGEMENT / FLOOD DAMAGE PREVENTION ORDINANCE

Description:

Floodplain management involves the designation of flood-prone areas and the managing of their uses. It is also aimed at minimizing modifications to streams, reducing flood hazards, and protecting the beneficial uses of the floodplain such as water quality protection. As such, floodplain management can be seen as a subset of the larger consideration of surface water and stormwater management.

Floodplain regulations and development restrictions can greatly reduce future flooding impacts, preserve greenspace and habitat, and protect their function in safely conveying floodwaters and protecting water quality. This model ordinance aims to help communities integrate floodplain management with stormwater management during the land development process.

The ordinance requires that a local government regulate the floodplains that will be expected with future land-use conditions, which are based upon the communities adopted future land use map, zoning, or watershed study projections. The ordinance also requires the local government to regulate floodplains on all streams with a drainage area of 100 acres and greater.

In order to administer the ordinance, “future-conditions” floodplains must be established:

- Future-conditions floodplains for streams with a drainage area of one square mile (640 acres) and greater in size are to be delineated by the local jurisdiction. As required in the District-wide Watershed Management Plan, cities and counties are expected to model and map at least 10% of their area each year until future-conditions floodplains have been established for the entire community.

- For streams with a drainage area between 100 acres and 640 acres, the local jurisdiction shall model and map the future-conditions floodplains -or- require the future-conditions floodplains be determined on a per development basis by the applicant.
- For development projects in watersheds of any size where future-conditions floodplains have not yet been established, the applicant will be required to determine the future-conditions floodplain boundaries located on their property.

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Note: Italicized text with this symbol ➡ should be interpreted as comments, instructions, or information to assist the local government in tailoring the ordinance. This text would not appear in a final adopted ordinance.

Introduction

It is hereby determined that:

The flood hazard areas of (**jurisdiction**) are subject to periodic inundation which may result 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.

Flood hazard areas can serve important stormwater management, water quality, streambank protection, stream corridor protection, wetland preservation and ecological purposes when permanently protected as undisturbed or minimally disturbed areas.

Effective floodplain management and flood hazard protection activities can (1) Protect human life and health; (2) Minimize damage to private property; (3) Minimize damage to public facilities and infrastructure such as water and gas mains, electric, telephone and sewer lines, streets and bridges located in floodplains; and (4) Minimize expenditure of public money for costly flood control projects associated with flooding and generally undertaken at the expense of the general public.

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, (**jurisdiction**), Georgia, does ordain this ordinance and establishes this set of floodplain management and flood hazard reduction policies for the purpose of regulating the use of flood hazard areas. It is determined that the regulation of flood hazard areas and the prevention of flood damage are in the public interest and will minimize threats to public health and safety, as well as to private and public property.

Section 1. General Provisions

1.1. Purpose and Intent

The purpose of this ordinance is to protect, maintain and enhance the public health, safety, environment and general welfare and to minimize public and private losses due to flood conditions in flood hazard areas, as well as to protect the beneficial uses of floodplain areas for water quality protection, streambank and stream corridor protection, wetlands preservation and ecological and environmental protection 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 flooding 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;
- (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) Limit the alteration of natural floodplains, stream channels, and natural protective barriers which are involved in the accommodation of flood waters; and,
- (6) Protect the stormwater management, water quality, streambank protection, stream corridor protection, wetland preservation and ecological functions of natural floodplain areas.

1.2. Applicability

This ordinance shall be applicable to all Areas of Special Flood Hazard within **(jurisdiction)**.

1.3. Designation of Ordinance Administrator

The **(title of administrator)** or **(designee)** is hereby appointed to administer and implement the provisions of this ordinance.

1.4. Basis for Area of Special Flood Hazard – Flood Area Maps and Studies

For the purposes of this ordinance, the following are adopted by reference:

- (1) The Flood Insurance Study (FIS), dated _____, with accompanying maps and other supporting data and any revision thereto are hereby adopted by reference. *[For those land areas acquired by a municipality through annexation, the current effective FIS and data for **(unincorporated county)**, dated _____, with accompanying maps and other supporting data and any revision thereto are hereby adopted by reference.]*
- (2) Other studies which may be relied upon for the establishment of the base flood elevation or delineation of the 100-year floodplain and flood-prone areas include:
 - (a) Any flood or flood-related study conducted by the United States Army Corps of Engineers, the United States Geological Survey or any other local, State or Federal agency applicable to **(jurisdiction)**; or
 - (b) Any base flood study authored by a registered professional engineer in the State of Georgia which has been prepared by FEMA approved methodology and approved by **(local permitting authority)**.

- (3) Other studies which may be relied upon for the establishment of the future-conditions flood elevation or delineation of the future-conditions floodplain and flood-prone areas include:
- (a) Any flood or flood-related study conducted by the United States Army Corps of Engineers, the United States Geological Survey, or any other local, State or Federal agency applicable to **(jurisdiction)**; or
 - (b) Any future-conditions flood study authored by a registered professional engineer in the State of Georgia which has been prepared by FEMA approved methodology approved by **(local permitting authority)**.
- (4) The repository for public inspection of the FIS, accompanying maps and other supporting data is located at **(specify repository location)**.

1.5. Compatibility with Other Regulations

This ordinance is not intended to modify or repeal any other ordinance, rule, regulation, statute, easement, covenant, deed restriction or other provision of law. The requirements of this ordinance are in addition to the requirements of any other ordinance, rule, regulation or other provision of law, and where any provision of this ordinance imposes restrictions different from those imposed by any other ordinance, rule, regulation or other provision of law, whichever provision is more restrictive or impose higher protective standards for human health or the environment shall control.

1.6. Severability

If the provisions of any section, subsection, paragraph, subdivision or clause of this ordinance shall be adjudged invalid by a court of competent jurisdiction, such judgment shall not affect or invalidate the remainder of any section, subsection, paragraph, subdivision or clause of this ordinance.

1.7. 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 manmade 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 **(jurisdiction)** or by any officer or employee thereof for any flood damages that result from reliance on this ordinance or any administrative decision lawfully made there under.

Section 2. Definitions

☞ * *NOTE: data must be inserted*

"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 fire wall. Any walled and roofed addition which is connected by a fire wall or is separated by an independent perimeter load-bearing wall shall be considered New Construction.

* **"Appeal"** means a request for a review of the (appointed official)'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 subject to a one percent or greater chance of flooding in any given year. This includes all floodplain and flood prone areas at or below the base flood elevation (including A, A1-30, A-99, AE, AO, AH, and AR on the FHBM or the FIRM), all floodplain and flood prone areas at or below the future-conditions flood elevation, and all other flood prone areas as referenced in Section 1.4. All streams with a drainage area of 100 acres or greater shall have the area of special flood hazard delineated.

"Base Flood" means the flood having a one percent chance of being equaled or exceeded in any given year, also known as the 100-year flood.

"Base Flood Elevation" means the highest water surface elevation anticipated at any given point during the base flood.

"Basement" means that portion of a building having its floor subgrade (below ground level) on all sides.

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

"Development" means any man-made change to improved or unimproved real estate including but not limited to buildings or other structures, mining, dredging, filling, clearing, grubbing, grading, paving, any other installation of impervious cover, excavation or drilling operations or storage of equipment or materials.

"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"** Any structure for which the "start of construction" commenced before (a specific date) [i.e., the effective date of the FIRST floodplain management code or ordinance adopted by the community as a basis for that community's participation in the National Flood Insurance Program (NFIP)].

* **"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 a specific date [i.e., the effective date of the FIRST 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.

"FEMA" means the 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" or "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" or "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" or "FIS" means 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.

"Floodproofing" 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" or "Regulatory Floodway" means the channel of a stream or other watercourse and the adjacent areas of the floodplain which is necessary to contain and discharge the base flood flow without cumulatively increasing the base flood elevation more than one foot.

"Functionally Dependent Use" means a use which cannot perform its intended purpose unless it is located or carried out in close proximity to water.

"Future Conditions Flood" means the flood having a one percent chance of being equaled or exceeded in any given year based on future-conditions hydrology. Also known as the 100-year future-conditions flood.

"Future-conditions Flood Elevation" means the flood standard equal to or higher than the Base Flood Elevation. The Future-conditions Flood Elevation is defined as the highest water surface anticipated at any given point during the future-conditions flood.

"Future-conditions Floodplain" means any land area susceptible to flooding by the future-conditions flood.

"Future-conditions Hydrology" means the flood discharges associated with projected land-use conditions based on a community's zoning map, comprehensive land-use plans, and/or watershed study projections, and without consideration of projected future construction of flood detention structures or projected future hydraulic modifications

within a stream or other waterway, such as bridge and culvert construction, fill, and excavation.

"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.

"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 ordinance.

"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 includes any structure commonly referred to as a "mobile home" regardless of the date of manufacture. The term also includes parked trailers, travel trailers and similar transportable structures placed on a site for 180 consecutive days or longer and intended to be improved property.

"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 this ordinance the term is synonymous with National Geodetic Vertical Datum (NGVD) and/or the North American Vertical Datum (NAVD) of 1988.

"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 any structure (see definition) for which the "start of construction" commenced after (* specific date) and includes any subsequent improvements to the structure. [* i.e., the effective date of the FIRST floodplain management ordinance adopted by the community as a basis for community participation in the (NFIP)].

* **"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 (* specific date) [i.e., the effective date of the first floodplain management regulations adopted by a community].

"North American Vertical Datum (NAVD) of 1988" is a vertical control used as a reference for establishing varying elevations within the floodplain.

"Owner" means the legal or beneficial owner of a site, including but not limited to, a mortgagee or vendee in possession, receiver, executor, trustee, lessee or other person, firm or corporation in control of the site.

"Permit" means the permit issued by the (**local permitting authority**) to the applicant which is required prior to undertaking any development activity.

"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 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.

"Site" means the parcel of land being developed, or the portion thereof on which the development project is located.

"Start of Construction" means the date the 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" means the division of a tract or parcel of land resulting in one or more new lots or building sites for the purpose, whether immediately or in the future, of sale, other transfer of ownership or land development, and includes divisions of land resulting from or made in connection with the layout or development of a new street or roadway or a change in an existing street or roadway.

"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 combination of repairs, reconstruction, alteration, or improvements to a building, taking place during a 10-year period, in which the cumulative cost equals or exceeds 50 percent of the market value of the structure prior to the improvement. The market value of the building means (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. 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 building commences, whether or not that alteration affects the external dimensions of the building. The term does not, however, include those improvements of a building required to comply with existing health, sanitary, or safety code specifications which are solely necessary to assure safe living conditions, which have been pre-identified by the Code Enforcement Official, and not solely triggered by an improvement or repair project.

"Substantially Improved Existing Manufactured Home Park or Subdivision" is where the repair, reconstruction, rehabilitation or improvement of the streets, utilities and pads equals or exceeds 50 percent of the value of the streets, utilities and pads before the repair, reconstruction or improvement commenced.

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

Section 3. Permit Procedures and Requirements

3.1. Permit Application Requirements

No owner or developer shall perform any development activities on a site where an Area of Special Flood Hazard is located without first meeting the requirements of this ordinance prior to commencing the proposed activity.

Unless specifically excluded by this ordinance, any landowner or developer desiring a permit for a development activity shall submit to the **(local permitting authority)** a permit application on a form provided by the **(local permitting authority)** for that purpose.

No permit will be approved for any development activities that do not meet the requirements, restrictions and criteria of this ordinance.

3.2. Floodplain Management Plan Requirements

An application for a development project with any Area of Special Flood Hazard located on the site will be required to include a floodplain management / flood damage prevention plan. This plan shall include the following items:

- (1) Site plan drawn to scale, which includes but is not limited to:
 - (a) Existing and proposed elevations of the area in question and the nature, location and dimensions of existing and/or proposed structures, earthen fill placement, amount and location of excavation material, and storage of materials or equipment;
 - (b) For all proposed structures, spot ground elevations at building corners and 20-foot or smaller intervals along the foundation footprint, or one foot contour elevations throughout the building site;
 - (c) Proposed locations of water supply, sanitary sewer, and utilities;
 - (d) Proposed locations of drainage and stormwater management facilities;
 - (e) Proposed grading plan;
 - (f) Base flood elevations and future-conditions flood elevations;
 - (g) Boundaries of the base flood floodplain and future-conditions floodplain;
 - (h) If applicable, the location of the floodway; and
 - (i) Certification of the above by a registered professional engineer or surveyor.
- (2) Building and foundation design detail, including but not limited to:
 - (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 floodproofed;
 - (c) Certification that any proposed non-residential floodproofed structure meets the criteria in Section 5.2(2);
 - (d) For enclosures below the base flood elevation, location and total net area of foundation openings as required in Section 5.1(5).
 - (e) Design plans certified by a registered professional engineer or architect for all proposed structure(s).
- (3) Description of the extent to which any watercourse will be altered or relocated as a result of the proposed development;
- (4) Hard copies and digital files of computer models, if any, copies of work maps, comparison of pre-and post development conditions base flood elevations, future-conditions flood elevations, flood protection elevations, Special Flood Hazard Areas and regulatory floodway widths, flood profiles and all other computations and other information similar to that presented in the FIS;

- (5) Copies of all applicable State and Federal permits necessary for proposed development; and
- (6) All appropriate certifications required under this ordinance.

The approved floodplain management / flood damage prevention plan shall contain certification by the applicant that all development activities will be done according to the plan or previously approved revisions. Any and all development permits and/or use and occupancy certificates or permits may be revoked at any time if the construction and development activities are not in strict accordance with approved plans.

3.3. Construction Stage Submittal Requirements

For all new construction and substantial improvements on sites with a floodplain management / flood damage prevention plan, the permit holder shall provide to the **(administrator)** a certified as-built Elevation Certificate or Floodproofing Certificate for non-residential construction including the lowest floor elevation or flood-proofing level immediately after the lowest floor or flood-proofing is completed. A final Elevation Certificate shall be provided after completion of construction including final grading of the site. Any lowest 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 approval of these certifications shall be at the permit holder's risk. The **(administrator)** 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 work being allowed to proceed. Failure to submit certification or failure to make the corrections required hereby shall be cause to issue a stop work order for the project.

3.4. Duties and Responsibilities of the Administrator

Duties of the **(administrator)** shall include, but shall not be limited to:

- (1) Review all development applications and permits to assure that the requirements of this ordinance have been satisfied and to determine whether proposed building sites will be reasonably safe from flooding;
- (2) Require that copies of all necessary permits from governmental agencies from which approval is required by Federal or state law, including but not limited to Section 404 of the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1334, be provided and maintained on file;
- (3) When Base Flood Elevation data or floodway data have not been provided, then the **(administrator)** shall require the applicant to obtain, review and reasonably

- utilize any base flood elevation and floodway data available from a Federal, state or other sources in order to meet the provisions of Sections 4 and 5;
- (4) Review and record the actual elevation in relation to mean sea level (or highest adjacent grade) of the lowest floor, including basement, of all new or substantially improved structures;
 - (5) Review and record the actual elevation, in relation to mean sea level to which any substantially improved structures have been flood-proofed;
 - (6) When flood-proofing is utilized for a non-residential structure, the **(administrator)** shall obtain certification of design criteria from a registered professional engineer or architect;
 - (7) Notify affected 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);
 - (8) Where interpretation is needed as to the exact location of boundaries of the Areas of Special Flood Hazard (e.g., where there appears to be a conflict between a mapped boundary and actual field conditions) the **(administrator)** 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. Where floodplain elevations have been defined, the floodplain shall be determined based on flood elevations rather than the area graphically delineated on the floodplain maps; and,
 - (9) All records pertaining to the provisions of this ordinance shall be maintained in the office of the **(administrator)** and shall be open for public inspection.

Section 4. Standards for Development

4.1. Definition of Floodplain Boundaries

- (1) Studied “A” zones, as identified in the FIS, shall be used to establish base flood elevations whenever available.
- (2) For all streams with a drainage area of 100 acres or greater, the future-conditions flood elevations shall be provided by the **(local permitting authority)**. If future-conditions elevation data is not available from the **(local permitting authority)**, then it shall be determined by a registered professional engineer using a method approved by FEMA and the **(local permitting authority)**.

4.2. Definition of Floodway Boundaries

- (1) The width of a floodway shall be determined from the FIS or FEMA approved flood study. For all streams with a drainage area of 100 acres or greater, the regulatory floodway shall be provided by the **(local permitting authority)**. If floodway data is not available from the **(local permitting authority)**, then it shall be determined by a registered professional engineer using a method approved by FEMA and the **(local permitting authority)**.

4.3. General Standards

- (1) No development shall be allowed within the future-conditions floodplain that could result in any of the following:
 - (a) Raising the base flood elevation or future-conditions flood elevation equal to or more than 0.01 foot;
 - (b) Reducing the base flood or future-conditions flood storage capacity;
 - (c) Changing the flow characteristics as to the depth and velocity of the waters of the base flood or future-conditions flood as they pass both the upstream and the downstream boundaries of the development area; or,
 - (d) Creating hazardous or erosion-producing velocities, or resulting in excessive sedimentation.
- (2) Any development within the future-conditions floodplain allowed under (1) above shall also meet the following conditions:
 - (a) Compensation for storage capacity shall occur between the average ground water table elevation and the base flood elevation for the base flood, and between the average ground water table elevation and the future-condition flood elevation for the future-conditions flood, and lie either within the boundaries of ownership of the property being developed and shall be within the immediate vicinity of the location of the encroachment. Acceptable means of providing required compensation include lowering of natural ground elevations within the floodplain, or lowering of adjoining land areas to create additional floodplain storage. In no case shall any required compensation be provided via bottom storage or by excavating below the elevation of the top of the natural (pre-development) stream channel unless such excavation results from the widening or relocation of the stream channel;
 - (b) Cut areas shall be stabilized and graded to a slope of no less than 2.0 percent;
 - (c) Effective transitions shall be provided such that flow velocities occurring on both upstream and downstream properties are not increased or decreased;
 - (d) Verification of no-rise conditions (0.01 foot or less), flood storage volumes, and flow characteristics shall be provided via a step-backwater analysis meeting the requirements of Section 4.4;

(e) Public utilities and facilities, such as water, sanitary sewer, gas, and electrical systems, shall be located and constructed to minimize or eliminate infiltration or contamination from flood waters; and

(f) Any significant physical changes to the base flood floodplain shall be submitted as a Conditional Letter of Map Revision (CLOMR) or Conditional Letter of Map Amendment (CLOMA), whichever is applicable. The CLOMR submittal shall be subject to approval by the **(local permitting authority)** using the Community Consent forms before forwarding the submittal package to FEMA for final approval. The responsibility for forwarding the CLOMR to FEMA and for obtaining the CLOMR approval shall be the responsibility of the applicant. Within six months of the completion of construction, the applicant shall submit as-built surveys for a final Letter of Map Revision (LOMR).

4.4. Engineering Study Requirements for Floodplain Encroachments

An engineering study is required, as appropriate to the proposed development activities on the site, whenever a development proposes to disturb any land within the future-conditions floodplain, except for a residential single-lot development on streams without established base flood elevations and/or floodways for which the provisions of Section 5.4 apply. This study shall be prepared by a currently registered Professional Engineer in the State of Georgia and made a part of the application for a permit. This information shall be submitted to and approved by the **(local permitting authority)** prior to the approval of any permit which would authorize the disturbance of land located within the future-conditions floodplain. Such study shall include:

- (1) Description of the extent to which any watercourse or floodplain will be altered or relocated as a result of the proposed development;
- (2) Step-backwater analysis, using a FEMA-approved methodology approved by the **(local permitting authority)**. Cross-sections (which may be supplemented by the applicant) and flow information will be obtained whenever available. Computations will be shown duplicating FIS results and will then be rerun with the proposed modifications to determine the new base flood profiles, and future-conditions flood profiles;
- (3) Floodplain storage calculations based on cross-sections (at least one every 100 feet) showing existing and proposed floodplain conditions to show that base flood floodplain and future-conditions floodplain storage capacity would not be diminished by the development;
- (4) The study shall include a preliminary plat, grading plan, or site plan, as appropriate, which shall clearly define all future-conditions floodplain encroachments.

4.5. Floodway Encroachments

Located within Areas of Special Flood Hazard are areas designated as floodway. A floodway may be an extremely hazardous area due to velocity flood waters, debris or erosion potential. In addition, floodways 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:

- (1) Encroachments are prohibited, including earthen fill, new construction, substantial improvements or other development within the regulatory floodway, except for activities specifically allowed in (2) below.
- (2) Encroachments for bridges, culverts, roadways and utilities within the regulatory floodway may be permitted 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 to the pre-project base flood elevations, floodway elevations, or floodway widths during the base flood discharge. A registered professional engineer must provide supporting technical data and certification thereof; and,
- (3) If the applicant proposes to revise the floodway boundaries, no permit authorizing the encroachment into or an alteration of the floodway shall be issued by the **(local permitting authority)** until an affirmative Conditional Letter of Map Revision (CLOMR) is issued by FEMA and no-rise certification is approved by the **(local permitting authority)**.

4.6. Maintenance Requirements

The property owner shall be responsible for continuing maintenance as may be needed within an altered or relocated portion of a floodplain on his property so that the flood-carrying or flood storage capacity is not diminished. The **(local permitting authority)** may direct the property owner (at no cost to **[jurisdiction]**) to restore the flood-carrying or flood storage capacity of the floodplain if the owner has not performed maintenance as required by the approved floodplain management plan on file with the **(local permitting authority)**.

Section 5. Provisions for Flood Damage Reduction

5.1. General Standards

In all Areas of Special Flood Hazard the following provisions apply:

- (1) New construction of principal buildings (residential or non-residential), including manufactured homes, shall not be allowed within the limits of the future-conditions floodplain, unless all requirements of Sections 4.3, 4.4 and 4.5 have been met;

- (2) New construction or substantial improvements of existing structures shall be anchored to prevent flotation, collapse or lateral movement of the structure;
- (3) New construction or substantial improvements of existing structures shall be constructed with materials and utility equipment resistant to flood damage;
- (4) New construction or substantial improvements of existing structures shall be constructed by methods and practices that minimize flood damage;
- (5) Elevated Buildings - All new construction and 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 and 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.
 - (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 and flood resistant enclosure shall solely 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.
- (6) All heating and air conditioning equipment and components (including ductwork), all electrical, ventilation, plumbing, and other service facilities shall be designed and/or located three (3) feet above the base flood elevation or one (1) foot above the future-conditions flood elevation, whichever is higher, so as to prevent water from entering or accumulating within the components during conditions of flooding;
- (7) 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;

- (8) New and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system;
- (9) 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;
- (10) On-site waste disposal systems shall be located and constructed to avoid impairment to them, or contamination from them, during flooding; and,
- (11) 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.
- (12) If the proposed development is located in multiple flood zones or multiple base flood elevation cross the proposed site, the higher or more restrictive base flood elevation or future condition elevation and development standards shall take precedence.

5.2. Building Standards for Structures and Buildings Within the Future-Conditions Floodplain

The following provisions, in addition to those in Section 5.1, shall apply:

- (1) Residential Buildings
 - (a) New construction. New construction of principal buildings, including manufactured homes shall not be allowed within the limits of the future-conditions floodplain unless all requirements of Sections 4.3, 4.4 and 4.5 have been met. If all of the requirements of Sections 4.3, 4.4 and 4.5 have been met, all new construction shall have the lowest floor, including basement, elevated no lower than three (3) feet above the base flood elevation or one (1) foot above the future-conditions flood elevation, whichever is higher. Should solid foundation perimeter walls be used to elevate the structure, openings sufficient to equalize the hydrologic flood forces on exterior walls and to facilitate the unimpeded movements of floodwaters shall be provided in accordance with standards of Section 5.1(5).
 - (b) Substantial Improvements. Substantial improvement of any principal structure or manufactured home shall have the lowest floor, including basement, elevated no lower than three (3) feet above the base flood elevation or one (1) foot above the future-conditions flood elevation, whichever is higher. Should solid foundation perimeter walls be used to elevate a structure, openings sufficient to equalize the hydrologic flood forces on exterior walls and to facilitate the unimpeded movements of flood waters shall be provided in accordance with standards of Section 5.1(5).

- (2) **Non-Residential Buildings**
- (a) **New construction.** New construction of principal buildings, including manufactured homes shall not be allowed within the limits of the future-conditions floodplain unless all requirements of Sections 4.3, 4.4 and 4.5 have been met. New construction that has met all of the requirements of Sections 4.3, 4.4 and 4.5 may be flood-proofed in lieu of elevation. The structure, together with attendant utility and sanitary facilities, must be designed to be watertight to one (1) foot above the base flood elevation, or at least as high as the future-conditions flood elevation, whichever is higher, 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 **(administrator)**.
- (b) **Substantial Improvements.** Substantial improvement of any principal non-residential structure located in A1- 30, AE, or AH zones, may be authorized by the **(administrator)** to 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 (1) foot above the base flood elevation, or at least as high as the future-conditions flood elevation, whichever is higher, 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 **(administrator)**.
- (3) **Accessory Structures and Facilities**
- Accessory structures and facilities (i.e., barns, sheds, gazebos, detached garages, parking lots, recreational facilities and other similar non-habitable structures and facilities) which are permitted to be located within the limits of the floodplain shall be constructed of flood-resistant materials and designed to pass all floodwater in accordance with Section 5.1(5) and be anchored to prevent flotation, collapse or lateral movement of the structure.
- (4) **Standards for Recreational Vehicles**
- All recreational vehicles placed on sites must either:
- (a) Be on the site for fewer than 180 consecutive days and 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

- (b) The recreational vehicle must meet all the requirements for Residential Buildings—Substantial Improvements (Section 5.2(1)(b)), including the anchoring and elevation requirements.
- (5) Standards for Manufactured Homes
 - (a) New manufactured homes shall not be allowed to be placed within the limits of the future-conditions floodplain unless all requirements of Sections 4.3, 4.4 and 4.5 have been met.
 - (b) Manufactured homes placed and/or substantially improved in an existing manufactured home park or subdivision shall be elevated so that either:
 - (i) The lowest floor of the manufactured home is elevated no lower than three (3) feet above the level of the base flood elevation, or one (1) foot above the future-conditions flood elevation, whichever is higher; 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 in accordance with standards of Section 5.1(7).

5.3. Building Standards for Structures and Buildings Authorized Adjacent to the Future-Conditions Floodplain

- (1) Residential Buildings – For new construction or substantial improvement of any principal residential building or manufactured home, the elevation of the lowest floor, including basement and access to the building, shall be at least three (3) feet above the base flood elevation or one (1) foot above the future-conditions flood elevation, whichever is higher.
- (2) Non-Residential Buildings – For new construction or substantial improvement of any principal non-residential building, the elevation of the lowest floor, including basement and access to the building, shall be at least one (1) foot above the level of the base flood elevation or at least as high as the future-conditions flood elevation, whichever is higher.

5.4. Building Standards for Residential Single-Lot Developments on Streams Without Established Base Flood Elevations and/or Floodway (A-Zones)

For a residential single-lot development not part of a subdivision that has Areas of Special Flood Hazard, where streams exist but no base flood data have been provided (A-Zones), the **(administrator)** shall review and reasonably utilize any available scientific or historic flood elevation data, base flood elevation and floodway data, or future-conditions flood elevation data available from a Federal, State, local or other source, in order to administer the provisions and standards of this ordinance.

If data are not available from any of these sources, the following provisions shall apply:

- (1) No encroachments, including structures or fill material, shall be located within an area equal to twice the width of the stream or fifty (50) feet from the top of the bank of the stream, whichever is greater.
- (2) In special flood hazard areas without base flood or future-conditions 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 (3) feet above the highest adjacent grade at the building site. Openings sufficient to facilitate the unimpeded movements of floodwaters shall be provided in accordance with Section 5.1(5).

5.5. Building Standards for Areas of Shallow Flooding (AO-Zones)

Areas of Special Flood Hazard may include designated "AO" shallow flooding areas. These areas have base flood depths of one (1) to three (3) feet above ground, with no clearly defined channel. In these areas the following provisions apply:

- (1) All substantial improvements of residential and non-residential structures shall have the lowest floor, including basement, elevated to no lower than one (1) foot above the flood depth number in feet 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 (3) feet above the highest adjacent grade. Openings sufficient to facilitate the unimpeded movements of flood waters shall be provided in accordance with standards of Section 5.1(5).
- (2) 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 (1) foot above the 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; and,
- (3) Drainage paths shall be provided to guide floodwater around and away from any proposed structure.

5.6. Standards for Subdivisions

- (1) All subdivision proposals shall identify the special flood hazard area and provide base flood elevation data and future-conditions flood elevation data;

- (2) All residential lots in a subdivision proposal shall have sufficient buildable area outside of the future-conditions floodplain such that encroachments into the future-conditions floodplain for residential structures will not be required;
- (3) All subdivision plans will provide the elevations of proposed structures in accordance with Section 3.2.
- (4) All subdivision proposals shall be consistent with the need to minimize flood damage;
- (5) All subdivision proposals shall have public utilities and facilities such as water, sanitary sewer, gas, and electrical systems located and constructed to minimize or eliminate infiltration of flood waters, and discharges from the systems into flood waters; and,
- (6) All subdivision proposals shall include adequate drainage and stormwater management facilities per the requirements of **(jurisdiction)** to reduce potential exposure to flood hazards.

Section 6. Variance Procedures

The following variance and appeals procedures shall apply to an applicant who has been denied a permit for a development activity, or to an owner or developer who has not applied for a permit because it is clear that the proposed development activity would be inconsistent with the provisions of this ordinance. A request for a variance may be submitted by an applicant who has been denied a permit by the **(local permitting authority)**, or by an owner or developer who has not previously applied for a permit for the reasons stated herein above.

- (1) Requests for variances from the requirements of this ordinance shall be submitted to the **(local permitting authority)**. All such requests shall be heard and decided in accordance with procedures to be published in writing by the **(local permitting authority)**. At a minimum, such procedures shall include notice to all affected parties and the opportunity to be heard.
- (2) Any person adversely affected by any decision of the **(local permitting authority)** shall have the right to appeal such decision to the **(appointed board)** as established by **(jurisdiction)** in accordance with procedures to be published in writing by the **(appointed board)**. At a minimum, such procedures shall include notice to all affected parties and the opportunity to be heard.
- (3) Any person aggrieved by the decision of the **(appointed board)** may appeal such decision to the **(appropriate court)**, as provided in **Section 5-4-1 of the Official Code of Georgia Annotated**.

- (4) 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 an Historic structure, and the variance issued shall be the minimum necessary to preserve the historic character and design of the structure.
- (5) Variances may be issued for development necessary for the conduct of a functionally dependent use, provided the criteria of this Section 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.
- (6) Variances shall not be issued within any designated floodway if any increase in flood levels during the base flood discharge would result.
- (7) In reviewing such requests, the **(local permitting authority)** and **(appointed board)** shall consider all technical evaluations, relevant factors, and all standards specified in this and other sections of this ordinance.
- (8) Conditions for Variances:
 - (a) 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, or the creation of a nuisance.
 - (b) 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 determination that the variance is the minimum necessary, considering the flood hazard, to afford relief; and, in the instance of a Historic structure, a determination that the variance is the minimum necessary so as not to destroy the historic character and design of the building.
 - (c) Any person 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.

- (d) The **(administrator)** shall maintain the records of all appeal actions and report any variances to the Federal Emergency Management Agency upon request.
- (9) Any person requesting a variance shall, from the time of the request until the time the request is acted upon, submit such information and documentation as the **(local permitting authority)** and **(appointed board)** shall deem necessary to the consideration of the request.
- (10) Upon consideration of the factors listed above and the purposes of this ordinance, the **(local permitting authority)** and the **(appointed board)** may attach such conditions to the granting of variances as they deem necessary or appropriate, consistent with the purposes of this ordinance.
- (11) Variances shall not be issued “after the fact.”

Section 7. Violations, Enforcement and Penalties

Any action or inaction which violates the provisions of this ordinance or the requirements of an approved stormwater management plan or permit, may be subject to the enforcement actions outlined in this Section. Any such action or inaction which is continuous with respect to time is deemed to be a public nuisance and may be abated by injunctive or other equitable relief. The imposition of any of the penalties described below shall not prevent such equitable relief. The imposition of any of the penalties described below shall not prevent such equitable relief.

7.1. Notice of Violation

If the **(local permitting authority)** determines that an applicant or other responsible person has failed to comply with the terms and conditions of a permit, an approved stormwater management plan or the provisions of this ordinance, it shall issue a written notice of violation to such applicant or other responsible person. Where a person is engaged in activity covered by this ordinance without having first secured a permit therefor, the notice of violation shall be served on the owner or the responsible person in charge of the activity being conducted on the site.

The notice of violation shall contain:

- (1) The name and address of the owner or the applicant or the responsible person;
- (2) The address or other description of the site upon which the violation is occurring;
- (3) A statement specifying the nature of the violation;

- (4) A description of the remedial measures necessary to bring the action or inaction into compliance with the permit, the stormwater management plan or this ordinance and the date for the completion of such remedial action;
- (5) A statement of the penalty or penalties that may be assessed against the person to whom the notice of violation is directed; and,
- (6) A statement that the determination of violation may be appealed to the **(local permitting authority)** by filing a written notice of appeal within thirty (30) days after the notice of violation (except, that in the event the violation constitutes an immediate danger to public health or public safety, 24 hours notice shall be sufficient).

7.2. Penalties

In the event the remedial measures described in the notice of violation have not been completed by the date set forth for such completion in the notice of violation, any one or more of the following actions or penalties may be taken or assessed against the person to whom the notice of violation was directed. Before taking any of the following actions or imposing any of the following penalties, the **(local permitting authority)** shall first notify the applicant or other responsible person in writing of its intended action, and shall provide a reasonable opportunity, of not less than ten (10) days (except, that in the event the violation constitutes an immediate danger to public health or public safety, 24 hours notice shall be sufficient) to cure such violation. In the event the applicant or other responsible person fails to cure such violation after such notice and cure period, the **(local permitting authority)** may take any one or more of the following actions or impose any one or more of the following penalties.

- (1) **Stop Work Order** -The **(local permitting authority)** may issue a stop work order which shall be served on the applicant or other responsible person. The stop work order shall remain in effect until the applicant or other responsible person has taken the remedial measures set forth in the notice of violation or has otherwise cured the violation or violations described therein, provided the stop work order may be withdrawn or modified to enable the applicant or other responsible person to take the necessary remedial measures to cure such violation or violations.
- (2) **Withhold Certificate of Occupancy** - The **(local permitting authority)** may refuse to issue a certificate of occupancy for the building or other improvements constructed or being constructed on the site until the applicant or other responsible person has taken the remedial measures set forth in the notice of violation or has otherwise cured the violations described therein.
- (3) **Suspension, Revocation or Modification of Permit** - The **(local permitting authority)** may suspend, revoke or modify the permit authorizing the development project. A suspended, revoked or modified permit may be reinstated after the applicant or other responsible person has taken the remedial measures set

forth in the notice of violation or has otherwise cured the violations described therein, provided such permit may be reinstated (upon such conditions as the **(local permitting authority)** may deem necessary) to enable the applicant or other responsible person to take the necessary remedial measures to cure such violations.

- (4) **Civil Penalties** - In the event the applicant or other responsible person fails to take the remedial measures set forth in the notice of violation or otherwise fails to cure the violations described therein within ten (10) days, or such greater period as the **(local permitting authority)** shall deem appropriate (except, that in the event the violation constitutes an immediate danger to public health or public safety, 24 hours notice shall be sufficient) after the **(local permitting authority)** has taken one or more of the actions described above, the **(local permitting authority)** may impose a penalty not to exceed \$1,000 (depending on the severity of the violation) for each day the violation remains unremedied after receipt of the notice of violation.

- (5) **Criminal Penalties** - For intentional and flagrant violations of this ordinance, the **(local permitting authority)** may issue a citation to the applicant or other responsible person, requiring such person to appear in **(appropriate municipal, magistrate or recorders)** court to answer charges for such violation. Upon conviction, such person shall be punished by a fine not to exceed \$1,000 or imprisonment for 60 days or both. Each act of violation and each day upon which any violation shall occur shall constitute a separate offense.

Ordinance adopted on _____

By: _____

Certified by: _____

Date: _____