RESOLUTION NO. _____

PUTNAM COUNTY, TENNESSEE
FLOOD DAMAGE PREVENTION RESOLUTION

A RESOLUTION ADOPTED FOR THE PURPOSE OF AMENDING THE PUTNAM COUNTY, TENNESSEE REGIONAL ZONING RESOLUTION REGULATING DEVELOPMENT WITHIN THE JURISDICTION OF PUTNAM COUNTY, TENNESSEE, TO MINIMIZE DANGER TO LIFE AND PROPERTY DUE TO FLOODING, AND TO MAINTAIN ELIGIBILITY FOR PARTICIPATION IN THE NATIONAL FLOOD INSURANCE PROGRAM.

ARTICLE I. STATUTORY AUTHORIZATION, FINDINGS OF FACT, PURPOSE AND OBJECTIVES

Section A. Statutory Authorization

The Legislature of the State of Tennessee has in Sections 13-7-101 through 13-7-115, Tennessee Code Annotated delegated the responsibility to the county legislative body to adopt regulations designed to promote the public health, safety, and general welfare of its citizenry. Therefore, the Putnam County Commission does resolve as follows:

Section B. Findings of Fact

1. The Putnam County Commission wishes to maintain eligibility in the National Flood Insurance Program (NFIP) and in order to do so must meet the NFIP regulations found in Title 44 of the Code of Federal Regulations (CFR), Ch. 1, Section 60.3.
2. Areas of Putnam County, Tennessee are subject to periodic inundation which could result in loss of life and property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety and general welfare.
3. Flood losses are caused by the cumulative effect of obstructions in floodplains, causing increases in flood heights and velocities; by uses in flood hazard areas which are vulnerable to floods; or construction which is inadequately elevated, floodproofed, or otherwise unprotected from flood damages.

Section C. Statement of Purpose

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

1. Restrict or prohibit uses which are vulnerable to flooding or erosion hazards, or which result in damaging increases in erosion, flood heights, or velocities;
2. Require that uses vulnerable to floods, including community facilities, be protected against flood damage at the time of initial construction;
3. Control the alteration of natural floodplains, stream channels, and natural protective barriers which are involved in the accommodation of floodwaters;

4. Control filling, grading, dredging and other development which may increase flood damage or erosion;
5. Prevent or regulate the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards to other lands.

Section D. Objectives

The objectives of this Resolution are:

1. To protect human life, health, safety and property;
2. To minimize expenditure of public funds for costly flood control projects;
3. To minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
4. To minimize prolonged business interruptions;
5. To minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets and bridges located in floodprone areas;
6. To help maintain a stable tax base by providing for the sound use and development of floodprone areas to minimize blight in flood areas;
7. To ensure that potential homebuyers are notified that property is in a floodprone area;
8. To maintain eligibility for participation in the NFIP.

ARTICLE II. DEFINITIONS

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

"Accessory Structure" means a subordinate structure to the principal structure on the same lot and, for the purpose of this Resolution, shall conform to the following:

1. Accessory structures shall only be used for parking of vehicles and storage.
2. Accessory structures shall be designed to have low flood damage potential.
3. Accessory structures shall be constructed and placed on the building site so as to offer the minimum resistance to the flow of floodwaters.
4. Accessory structures shall be firmly anchored to prevent flotation, collapse, and lateral movement, which otherwise may result in damage to other structures.
5. Utilities and service facilities such as electrical and heating equipment shall be elevated or otherwise protected from intrusion of floodwaters.

"Addition (to an existing building)" means any walled and roofed expansion to the perimeter or height of a building.

"Appeal" means a request for a review of the local enforcement officer's interpretation of any provision of this Resolution or a request for a variance.

"Area of Shallow Flooding" means a designated AO or AH Zone on a community's Flood Insurance Rate Map (FIRM) with one percent or greater annual chance of flooding to an average depth of one to three feet where a clearly defined channel does not exist, where the path of flooding is unpredictable and indeterminate; and where velocity flow may be evident. Such flooding is characterized by ponding or sheet flow.

"Area of Special Flood-related Erosion Hazard" is the land within a community which is most likely to be subject to severe flood-related erosion losses. The area may be designated as Zone E on the Flood Hazard Boundary Map (FHBM). After the detailed evaluation of the special flood-related erosion hazard area in preparation for publication of the FIRM, Zone E may be further refined.

"Area of Special Flood Hazard" see **"Special Flood Hazard Area"**.

"Base Flood" means the flood having a one percent chance of being equaled or exceeded in any given year. This term is also referred to as the 100-year flood or the one (1)-percent annual chance flood.

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

"Building" see **"Structure"**.

"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, 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 solid foundation perimeter walls with openings sufficient to facilitate the unimpeded movement of floodwater, pilings, columns, piers, or shear walls adequately anchored so as not to impair the structural integrity of the building during a base flood event.

"Emergency Flood Insurance Program" or **"Emergency Program"** means the program as implemented on an emergency basis in accordance with Section 1336 of the Act. It is intended as a program to provide a first layer amount of insurance on all insurable structures before the effective date of the initial FIRM.

"Erosion" means the process of the gradual wearing away of land masses. This peril is not "per se" covered under the Program.

"Exception" means a waiver from the provisions of this Resolution which relieves the applicant from the requirements of a rule, regulation, order or other determination made or issued pursuant to this Resolution.

"Existing Construction" means any structure for which the "start of construction" commenced before the effective date of the initial floodplain management code or resolution adopted by the community as a basis for that community's participation in the 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, final site grading or the pouring of concrete pads) is completed before the effective date of the first floodplain management code or resolution adopted by the community as a basis for that community's participation in the NFIP.

"Existing Structures" see **"Existing Construction"**.

"Expansion to an Existing Manufactured Home Park or Subdivision" means the preparation of additional sites by the construction of facilities for servicing the lots on which the

manufactured homes are to be affixed (including the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads).

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

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

"Flood Elevation Determination" means a determination by the Federal Emergency Management Agency (FEMA) of the water surface elevations of the base flood, that is, the flood level that has a one percent or greater chance of occurrence in any given year.

"Flood Elevation Study" means an examination, evaluation and determination of flood hazards and, if appropriate, corresponding water surface elevations, or an examination, evaluation and determination of mudslide (i.e., mudflow) or flood-related erosion hazards.

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

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

"Flood Insurance Study" is the official report provided by FEMA, evaluating flood hazards and containing flood profiles and water surface elevation of the base flood.

"Floodplain" or **"Floodprone Area"** means any land area susceptible to being inundated by water from any source (see definition of "flooding").

"Floodplain Management" means the operation of an overall program of corrective and preventive measures for reducing flood damage, including but not limited to emergency preparedness plans, flood control works and floodplain management regulations.

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

"Floodproofing" means any combination of structural and nonstructural additions, changes, or adjustments to structures which reduce or eliminate flood damage to real estate or improved real property, water and sanitary facilities and structures and their contents.

"Flood-related Erosion" means the collapse or subsidence of land along the shore of a lake or other body of water as a result of undermining caused by waves or currents of water exceeding anticipated cyclical levels or suddenly caused by an unusually high water level in a natural body of water, accompanied by a severe storm, or by an unanticipated force of nature, such as a flash flood, or by some similarly unusual and unforeseeable event which results in flooding.

"Flood-related Erosion Area" or **"Flood-related Erosion Prone Area"** means a land area adjoining the shore of a lake or other body of water, which due to the composition of the

shoreline or bank and high water levels or wind-driven currents, is likely to suffer flood-related erosion damage.

"Flood-related Erosion Area Management" means the operation of an overall program of corrective and preventive measures for reducing flood-related erosion damage, including but not limited to emergency preparedness plans, flood-related erosion control works and floodplain management regulations.

"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, blockage of bridge or culvert openings, and the hydrological effect of urbanization of the watershed.

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

"Highest Adjacent Grade" means the highest natural elevation of the ground surface, prior to construction, adjacent to the proposed walls of a structure.

"Historic Structure" means any structure that is:

1. 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;
2. 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;
3. Individually listed on the Tennessee 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
4. Individually listed on the Putnam County, Tennessee inventory of historic places and determined as eligible by communities with historic preservation programs that have been certified either:

    a. By the approved Tennessee program as determined by the Secretary of the Interior or
    b. Directly by the Secretary of the Interior.

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

"Levee System" means a flood protection system which consists of a levee, or levees, and associated structures, such as closure and drainage devices, which are constructed and operated in accordance with sound engineering practices.

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

"Manufactured Home" means a structure, transportable in one or more sections, which is built on a permanent chassis and designed for use with or without a permanent foundation when attached to the required utilities. The term "Manufactured Home" does not include a "Recreational Vehicle".

"Manufactured Home Park or Subdivision" means a parcel (or contiguous parcels) of land divided into two or more manufactured home lots for rent or sale.

"Map" means the Flood Hazard Boundary Map (FHBM) or the Flood Insurance Rate Map (FIRM) for a community issued by FEMA.

"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 the purposes of this Resolution, the term is synonymous with the National Geodetic Vertical Datum (NGVD) of 1929, the North American Vertical Datum (NAVD) of 1988, or other datum, to which Base Flood Elevations shown on a community's Flood Insurance Rate Map are referenced.

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

"New Construction" means any structure for which the "start of construction" commenced on or after the effective date of the initial floodplain management Resolution and includes any subsequent improvements to such structure.

"New Manufactured Home Park or Subdivision" means a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed on or after the effective date of this resolution or the effective date of the initial floodplain management resolution and includes any subsequent improvements to such structure.

"North American Vertical Datum (NAVD)" means, as corrected in 1988, a vertical control used as a reference for establishing varying elevations within the floodplain.

"100-year Flood" see **"Base Flood"**.

"Person" includes any individual or group of individuals, corporation, partnership, association, or any other entity, including State and local governments and agencies.

"Reasonably Safe from Flooding" means base flood waters will not inundate the land or damage structures to be removed from the Special Flood Hazard Area and that any subsurface waters related to the base flood will not damage existing or proposed structures.

"Recreational Vehicle" means a vehicle which is:

1. Built on a single chassis;
2. 400 square feet or less when measured at the largest horizontal projection;
3. Designed to be self-propelled or permanently towable by a light duty truck;
4. Designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or seasonal use.

"Regulatory Floodway" means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height.

"Riverine" means relating to, formed by, or resembling a river (including tributaries), stream, brook, etc.

"Special Flood Hazard Area" is the land in the floodplain within a community subject to a one percent or greater chance of flooding in any given year. The area may be designated as Zone A on the FHBM. After detailed ratemaking has been completed in preparation for publication of the FIRM, Zone A usually is refined into Zones A, AO, AH, A1-30, AE or A99.

"Special Hazard Area" means an area having special flood, mudslide (i.e., mudflow) and/or flood-related erosion hazards, and shown on an FHBM or FIRM as Zone A, AO, A1-30, AE, A99, or AH.

"Start of Construction" includes substantial improvement, and means the date the building permit was issued, provided the actual start of construction, repair, reconstruction, rehabilitation, addition, placement, or other improvement was within 180 days of the permit date. The actual start means either the first placement of permanent construction of a structure (including a manufactured home) on a site, such as the pouring of slabs or footings, the installation of piles, the 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 accessory buildings, such as garages or sheds, not occupied as dwelling units or not part of the main structure. For a substantial improvement, the actual start of construction means the first alteration of any wall, ceiling, floor, or other structural part of a building, whether or not that alteration affects the external dimensions of the building.

"State Coordinating Agency" the Tennessee Department of Economic and Community Development's, Local Planning Assistance Office, as designated by the Governor of the State of Tennessee at the request of FEMA to assist in the implementation of the NFIP for the State.

"Structure" for purposes of this Resolution, means a walled and roofed building, including a gas or liquid storage tank, that is principally above ground, as well as a manufactured home.

"Substantial Damage" means damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damaged condition would equal or exceed fifty percent (50%) of the market value of the structure before the damage occurred.

"Substantial Improvement" means any reconstruction, rehabilitation, addition, alteration or other improvement of a structure in which the cost equals or exceeds fifty percent (50%) of the market value of the structure before the "start of construction" of the initial improvement. This term includes structures which have incurred "substantial damage", regardless of the actual repair work performed. The market value of the structure should be (1) the appraised value of the

structure prior to the start of the initial improvement, or (2) in the case of substantial damage, the value of the structure prior to the damage occurring.

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 pre-identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions and not solely triggered by an improvement or repair project or; (2) Any alteration of a "historic structure", provided that the alteration will not preclude the structure's continued designation as a "historic structure".

"Substantially Improved Existing Manufactured Home Parks or Subdivisions" is where the repair, reconstruction, rehabilitation or improvement of the streets, utilities and pads equals or exceeds fifty percent (50%) 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 Resolution.

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

"Water Surface Elevation" means the height, in relation to the National Geodetic Vertical Datum (NGVD) of 1929, the North American Vertical Datum (NAVD) of 1988, or other datum, where specified, of floods of various magnitudes and frequencies in the floodplains of riverine areas.

ARTICLE III. GENERAL PROVISIONS

Section A. Application

This Resolution shall apply to all areas within the unincorporated area of Putnam County, Tennessee.

Section B. Basis for Establishing the Areas of Special Flood Hazard

The Areas of Special Flood Hazard in Putnam County, Tennessee, as identified by FEMA, and in its Flood Insurance Study (FIS) and Flood Insurance Rate Map (FIRM), Community Panel Numbers 4714C0025D-4714C0350D, dated May 16, 2007, along with all supporting technical data, are adopted by reference and declared to be a part of this Resolution.

Section C. Requirement for Development Permit

A development permit shall be required in conformity with this Resolution prior to the commencement of any development activities.

Section D. Compliance

No land, structure or use shall hereafter be located, extended, converted or structurally altered without full compliance with the terms of this Resolution and other applicable regulations.

Section E. **Abrogation and Greater Restrictions**

This Resolution is not intended to repeal, abrogate, or impair any existing easements, covenants or deed restrictions. However, where this Resolution conflicts or overlaps with another regulatory instrument, whichever imposes the more stringent restrictions shall prevail.

Section F. **Interpretation**

In the interpretation and application of this Resolution, 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 Tennessee statutes.

Section G. **Warning and Disclaimer of Liability**

The degree of flood protection required by this Resolution is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. Larger floods can and will occur on rare occasions. Flood heights may be increased by man-made or natural causes. This Resolution 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 Resolution shall not create liability on the part of Putnam County, Tennessee or by any officer or employee thereof for any flood damages that result from reliance on this Resolution or any administrative decision lawfully made hereunder.

Section H. **Penalties for Violation**

Violation of the provisions of this Resolution or failure to comply with any of its requirements, including violation of conditions and safeguards established in connection with grants of variance shall constitute a misdemeanor punishable as other misdemeanors as provided by law. Any person who violates this resolution or fails to comply with any of its requirements shall, upon adjudication therefore, be fined as prescribed by Tennessee statutes, 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 Putnam County, Tennessee from taking such other lawful actions to prevent or remedy any violation.

ARTICLE IV. ADMINISTRATION

Section A. **Designation of Resolution Administrator**

Mr. Lynell Williams, Codes Director, is hereby appointed as the Administrator to implement the provisions of this Resolution.

Section B. **Permit Procedures**

Application for a development permit shall be made to the Administrator on forms furnished by the community prior to any development activities. The development permit may include, but is not limited to the following: plans in duplicate drawn to scale and showing the nature, location, dimensions, and elevations of the area in question; 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 of the proposed lowest floor, including basement, of all buildings where Base Flood Elevations are available, or to certain height above the highest adjacent grade when applicable under this Resolution.

b. Elevation in relation to mean sea level to which any non-residential building will be floodproofed where Base Flood Elevations are available, or to certain height above the highest adjacent grade when applicable under this Resolution.

c. A FEMA Floodproofing Certificate from a Tennessee registered professional engineer or architect that the proposed non-residential floodproofed building will meet the floodproofing criteria in Article V, Sections A and B.

d. Description of the extent to which any watercourse will be altered or relocated as a result of proposed development.

2. Construction Stage

Within AE Zones, where Base Flood Elevation data is available, any lowest floor certification made relative to mean sea level shall be prepared by or under the direct supervision of, a Tennessee registered land surveyor and certified by same. The Administrator shall record the elevation of the lowest floor on the development permit. When floodproofing is utilized for a non-residential building, said certification shall be prepared by, or under the direct supervision of, a Tennessee registered professional engineer or architect and certified by same.

Within approximate A Zones, where Base Flood Elevation data is not available, the elevation of the lowest floor shall be determined as the measurement of the lowest floor of the building relative to the highest adjacent grade. The Administrator shall record the elevation of the lowest floor on the development permit. When floodproofing is utilized for a non-residential building, said certification shall be prepared by, or under the direct supervision of, a Tennessee registered professional engineer or architect and certified by same.

For all new construction and substantial improvements, the permit holder shall provide to the Administrator an as-built certification of the lowest floor elevation or floodproofing level upon the completion of the lowest floor or floodproofing.

Any work undertaken prior to submission of the certification shall be at the permit holder's risk. The Administrator shall review the above-referenced certification data. 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 the 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 the Administrator shall include, but not be limited to, the following:

1. Review all development permits to assure that the permit requirements of this Resolution have been satisfied, and that proposed building sites will be reasonably safe from flooding.

2. Review proposed development to assure that all necessary permits have been received from those 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.
3. Notify adjacent communities and the Tennessee Department of Economic and Community Development, Local Planning Assistance Office, prior to any alteration or relocation of a watercourse and submit evidence of such notification to FEMA.
4. For any altered or relocated watercourse, submit engineering data/analysis within six (6) months to FEMA to ensure accuracy of community FIRM's through the Letter of Map Revision process.
5. Assure that the flood carrying capacity within an altered or relocated portion of any watercourse is maintained.
6. Record the elevation, in relation to mean sea level or the highest adjacent grade, where applicable, of the lowest floor (including basement) of all new and substantially improved buildings, in accordance with Article IV, Section B.
7. Record the actual elevation, in relation to mean sea level or the highest adjacent grade, where applicable to which the new and substantially improved buildings have been floodproofed, in accordance with Article IV, Section B.
8. When floodproofing is utilized for a nonresidential structure, obtain certification of design criteria from a Tennessee registered professional engineer or architect, in accordance with Article IV, Section B.
9. 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), 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 Resolution.
10. When Base Flood Elevation data and floodway data have not been provided by FEMA, obtain, review, and reasonably utilize any Base Flood Elevation and floodway data available from a Federal, State, or other sources, including data developed as a result of these regulations, as criteria for requiring that new construction, substantial improvements, or other development in Zone A on the Putnam County, Tennessee FIRM meet the requirements of this Resolution.
11. Maintain all records pertaining to the provisions of this Resolution in the office of the Administrator and shall be open for public inspection. Permits issued under the provisions of this Resolution shall be maintained in a separate file or marked for expedited retrieval within combined files.

ARTICLE V. PROVISIONS FOR FLOOD HAZARD REDUCTION

Section A. General Standards

In all areas of special flood hazard, the following provisions are required:

1. New construction and substantial improvements shall be anchored to prevent flotation, collapse and lateral movement of the structure;
2. Manufactured homes shall be installed using methods and practices that minimize flood damage. They must be elevated and anchored to prevent flotation, collapse and lateral movement. Methods of anchoring may include, but are not limited to, use of over-the-top or frame ties to ground anchors. This requirement is in

addition to applicable State of Tennessee and local anchoring requirements for resisting wind forces.

3. New construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage;
4. New construction and substantial improvements shall be constructed by methods and practices that minimize flood damage;
5. All electrical, heating, ventilation, plumbing, air conditioning equipment, 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. New and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system;
7. 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;
8. On-site waste disposal systems shall be located and constructed to avoid impairment to them or contamination from them during flooding;
9. Any alteration, repair, reconstruction or improvements to a building that is in compliance with the provisions of this Resolution, shall meet the requirements of "new construction" as contained in this Resolution;
10. Any alteration, repair, reconstruction or improvements to a building that is not in compliance with the provision of this Resolution, shall be undertaken only if said non-conformity is not further extended or replaced;
11. All new construction and substantial improvement proposals shall provide copies of all necessary Federal and State permits, including Section 404 of the Federal Water Pollution Control Act amendments of 1972, 33 U.S.C. 1334;
12. All subdivision proposals and other proposed new development proposals shall meet the standards of Article V, Section B;
13. When proposed new construction and substantial improvements are partially located in an area of special flood hazard, the entire structure shall meet the standards for new construction;
14. When proposed new construction and substantial improvements are located in multiple flood hazard risk zones or in a flood hazard risk zone with multiple Base Flood Elevations, the entire structure shall meet the standards for the most hazardous flood hazard risk zone and the highest Base Flood Elevation.

Section B. **Specific Standards**

In all Areas of Special Flood Hazard, the following provisions, in addition to those set forth in Article V, Section A, are required:

1. Residential Structures

In AE Zones where Base Flood Elevation data is available, new construction and substantial improvement of any residential building (or manufactured home) shall have the lowest floor, including basement, elevated to no lower than one (1) foot above the Base Flood Elevation. Should solid foundation perimeter walls be used to elevate a structure, openings sufficient to facilitate equalization of flood hydrostatic forces on both sides of exterior walls shall be provided in accordance with the standards of this section: "Enclosures".

Within approximate A Zones where Base Flood Elevations have not been established and where alternative data is not available, the administrator shall require the lowest floor of a building to be elevated to a level of at least three (3)

feet above the highest adjacent grade (as defined in Article II). Should solid foundation perimeter walls be used to elevate a structure, openings sufficient to facilitate equalization of flood hydrostatic forces on both sides of exterior walls shall be provided in accordance with the standards of this section: "Enclosures"

2. Non-Residential Structures

In AE Zones, where Base Flood Elevation data is available, new construction and substantial improvement of any commercial, industrial, or non-residential building, shall have the lowest floor, including basement, elevated or floodproofed to no lower than one (1) foot above the level of the Base Flood Elevation. Should solid foundation perimeter walls be used to elevate a structure, openings sufficient to facilitate equalization of flood hydrostatic forces on both sides of exterior walls shall be provided in accordance with the standards of this section: "Enclosures"

In approximate A Zones, where Base Flood Elevations have not been established and where alternative data is not available, new construction and substantial improvement of any commercial, industrial, or non-residential building, shall have the lowest floor, including basement, elevated or floodproofed to no lower than three (3) feet above the highest adjacent grade (as defined in Article II). Should solid foundation perimeter walls be used to elevate a structure, openings sufficient to facilitate equalization of flood hydrostatic forces on both sides of exterior walls shall be provided in accordance with the standards of this section: "Enclosures"

Non-Residential buildings located in all A Zones may be floodproofed, in lieu of being elevated, provided that all areas of the building below the required elevation are watertight, with walls substantially impermeable to the passage of water, and are built with structural components having the capability of resisting hydrostatic and hydrodynamic loads and the effects of buoyancy. A Tennessee 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 as set forth in Article IV, Section B.

3. Enclosures

All new construction and substantial improvements that include fully enclosed areas formed by foundation and other exterior walls below the lowest floor that are subject to flooding, shall be designed to preclude finished living space and designed to allow for the entry and exit of flood waters to automatically equalize hydrostatic flood forces on exterior walls.

a. Designs for complying with this requirement must either be certified by a Tennessee professional engineer or architect or meet or exceed the following minimum criteria.

   1) Provide a minimum of two openings having a total net area of not less than one (1) square inch for every square foot of enclosed area subject to flooding;
   2) The bottom of all openings shall be no higher than one (1) foot above the finished grade;

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

b. The enclosed area shall be the minimum necessary to allow for parking of vehicles, storage or building access.

c. The interior portion of such enclosed area shall not be finished or partitioned into separate rooms in such a way as to impede the movement of floodwaters and all such partitions shall comply with the provisions of Article V, Section B.

4. Standards for Manufactured Homes and Recreational Vehicles

a. All manufactured homes placed, or substantially improved, on: (1) individual lots or parcels, (2) in expansions to existing manufactured home parks or subdivisions, or (3) in new or substantially improved manufactured home parks or subdivisions, must meet all the requirements of new construction.

b. All manufactured homes placed or substantially improved in an existing manufactured home park or subdivision must be elevated so that either:

1) In AE Zones, with Base Flood Elevations, the lowest floor of the manufactured home is elevated on a permanent foundation to no lower than one (1) foot above the level of the Base Flood Elevation; or

2) In approximate A Zones, without Base Flood Elevations, the manufactured home chassis is elevated and supported by reinforced piers (or other foundation elements of at least equivalent strength) that are at least three (3) feet in height above the highest adjacent grade (as defined in Article II).

c. Any manufactured home, which has incurred "substantial damage" as the result of a flood, must meet the standards of Article V, Sections A and B.

d. All manufactured homes must be securely anchored to an adequately anchored foundation system to resist flotation, collapse and lateral movement.

e. All recreational vehicles placed in an identified Special Flood Hazard Area must either:

1) Be on the site for fewer than 180 consecutive days;

2) 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;

3) The recreational vehicle must meet all the requirements for new construction.

5. Standards for Subdivisions and Other Proposed New Development Proposals

Subdivisions and other proposed new developments, including manufactured home parks, shall be reviewed to determine whether such proposals will be reasonably safe from flooding.

a. All subdivision and other proposed new development proposals shall be consistent with the need to minimize flood damage.
b. All subdivision and other proposed new development proposals shall have public utilities and facilities such as sewer, gas, electrical and water systems located and constructed to minimize or eliminate flood damage.
c. All subdivision and other proposed new development proposals shall have adequate drainage provided to reduce exposure to flood hazards.
d. In all approximate A Zones require that all new subdivision proposals and other proposed developments (including proposals for manufactured home parks and subdivisions) greater than 50 lots or 5 acres, whichever is the lesser, include within such proposals Base Flood Elevation data (See Article V, Section E).

Section C. **Standards for Special Flood Hazard Areas with Established Base Flood Elevations and with Floodways Designated**

Located within the Special Flood Hazard Areas established in Article III, Section B, are areas designated as floodways. A floodway may be an extremely hazardous area due to the velocity of 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 and velocities. Therefore, the following provisions shall apply:

1. Encroachments are prohibited, including earthen fill material, 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 practices that the cumulative effect of the proposed encroachments or new development shall not result in any increase in the water surface elevation of the Base Flood Elevation, velocities, or floodway widths during the occurrence of a base flood discharge at any point within the community. A Tennessee registered professional engineer must provide supporting technical data, using the same methodologies as in the effective Flood Insurance Study for Putnam County, Tennessee and certification, thereof.
2. New construction and substantial improvements of buildings, where permitted, shall comply with all applicable flood hazard reduction provisions of Article V, Sections A and B.

Section D. **Standards for Areas of Special Flood Hazard Zones AE with Established Base Flood Elevations but without Floodways Designated**

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

1. No encroachments, including fill material, new construction and substantial improvements shall be located within areas of special flood hazard, unless certification by a Tennessee registered professional engineer is 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 more than one (1) foot at any point within the community. The engineering certification should be supported by technical data that conforms to standard hydraulic engineering principles.

2. New construction and substantial improvements of buildings, where permitted, shall comply with all applicable flood hazard reduction provisions of Article V, Sections A and B.

Section E. **Standards for Streams without Established Base Flood Elevations and Floodways (A Zones)**

Located within the Special Flood Hazard Areas established in Article III, Section B, where streams exist, but no base flood data has been provided and where a Floodway has not been delineated, the following provisions shall apply:

1. The Administrator shall obtain, review, and reasonably utilize any Base Flood Elevation and floodway data available from any Federal, State, or other sources, including data developed as a result of these regulations (see 2 below), as criteria for requiring that new construction, substantial improvements, or other development in approximate A Zones meet the requirements of Article V, Sections A and B.
2. Require that all new subdivision proposals and other proposed developments (including proposals for manufactured home parks and subdivisions) greater than 50 lots or 5 acres, whichever is the lesser, include within such proposals Base Flood Elevation data.
3. Within approximate A Zones, where Base Flood Elevations have not been established and where such data is not available from other sources, require the lowest floor of a building to be elevated or floodproofed to a level of at least three (3) feet above the highest adjacent grade (as defined in Article II). All applicable data including elevations or floodproofing certifications shall be recorded as set forth in Article IV, Section B. Openings sufficient to facilitate automatic equalization of hydrostatic flood forces on exterior walls shall be provided in accordance with the standards of Article V, Section B.
4. Within approximate A Zones, where Base Flood Elevations have not been established and where such data is not available from other sources, no encroachments, including structures or fill material, shall be located within an area equal to the width of the stream or twenty feet (20), whichever is greater, measured from the top of the stream bank, unless certification by a Tennessee registered professional engineer is 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 more than one (1) foot at any point within Putnam County, Tennessee. The engineering certification should be supported by technical data that conforms to standard hydraulic engineering principles.
5. New construction and substantial improvements of buildings, where permitted, shall comply with all applicable flood hazard reduction provisions of Article V, Sections A and B. Within approximate A Zones, require that those subsections of Article V Section B dealing with the alteration or relocation of a watercourse, assuring watercourse carrying capacities are maintained and manufactured homes provisions are complied with as required.

Section F. **Standards for Areas of Shallow Flooding (AO and AH Zones)**

Located within the Special Flood Hazard Areas established in Article III, Section B, are areas designated as shallow flooding areas. These areas have special flood hazards associated with base flood depths of one (1) to three (3) feet where a clearly defined channel does not exist and

where the path of flooding is unpredictable and indeterminate; therefore, the following provisions, in addition to those set forth in Article V, Sections A and B, apply:

1. All new construction and substantial improvements of residential and non-residential buildings shall have the lowest floor, including basement, elevated to at least one (1) foot above as many feet as the depth number specified on the FIRM's, in feet, above the highest adjacent grade. If no flood depth number is specified on the FIRM, the lowest floor, including basement, shall be elevated to at least three (3) feet above the highest adjacent grade. Openings sufficient to facilitate automatic equalization of hydrostatic flood forces on exterior walls shall be provided in accordance with standards of Article V, Section B.
2. All new construction and substantial improvements of non-residential buildings may be floodproofed in lieu of elevation. The structure together with attendant utility and sanitary facilities must be floodproofed and designed watertight to be completely floodproofed to at least one (1) foot above the flood depth number specified on the FIRM, with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and the effects of buoyancy. If no depth number is specified on the FIRM, the structure shall be floodproofed to at least three (3) feet above the highest adjacent grade. A Tennessee 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 of this Resolution and shall provide such certification to the Administrator as set forth above and as required in accordance with Article IV, Section B.
3. Adequate drainage paths shall be provided around slopes to guide floodwaters around and away from proposed structures.

Section G. **<u>Standards for Areas Protected by Flood Protection System (A-99 Zones)</u>**

Located within the Areas of Special Flood Hazard established in Article III, Section B, are areas of the 100-year floodplain protected by a flood protection system but where Base Flood Elevations have not been determined. Within these areas (A-99 Zones) all provisions of Article IV and Article V shall apply.

Section H. **<u>Standards for Unmapped Streams</u>**

Located within Putnam County, Tennessee, are unmapped streams where areas of special flood hazard are neither indicated nor identified. Adjacent to such streams, the following provisions shall apply:

1. No encroachments including fill material or other development including structures shall be located within an area of at least equal to twice the width of the stream, measured from the top of each stream bank, unless certification by a Tennessee registered professional engineer is 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 more than one (1) foot at any point within the locality.
2. When a new flood hazard risk zone, and Base Flood Elevation and floodway data is available, new construction and substantial improvements shall meet the standards established in accordance with Articles IV and V.

ARTICLE VI. VARIANCE PROCEDURES

Section A. Regional Board of Zoning Appeals

1. Authority

The Putnam County, Tennessee Regional Board of Zoning Appeals shall hear and decide appeals and requests for variances from the requirements of this Resolution.

2. Procedure

Meetings of the Regional Board of Zoning Appeals shall be held at such times, as the Board shall determine. All meetings of the Regional Board of Zoning Appeals shall be open to the public. The Regional Board of Zoning Appeals shall adopt rules of procedure and shall keep records of applications and actions thereof, which shall be a public record. Compensation of the members of the Regional Board of Zoning Appeals shall be set by the Legislative Body.

3. Appeals: How Taken

An appeal to the Regional Board of Zoning Appeals may be taken by any person, firm or corporation aggrieved or by any governmental officer, department, or bureau affected by any decision of the Administrator based in whole or in part upon the provisions of this Resolution. Such appeal shall be taken by filing with the Regional Board of Zoning Appeals a notice of appeal, specifying the grounds thereof. In all cases where an appeal is made by a property owner or other interested party, a fee of 0 dollars for the cost of publishing a notice of such hearings shall be paid by the appellant. The Administrator shall transmit to the Regional Board of Zoning Appeals all papers constituting the record upon which the appeal action was taken. The Regional Board of Zoning Appeals shall fix a reasonable time for the hearing of the appeal, give public notice thereof, as well as due notice to parties in interest and decide the same within a reasonable time which shall not be more than 15 days from the date of the hearing. At the hearing, any person or party may appear and be heard in person or by agent or by attorney.

4. Powers

The Regional Board of Zoning Appeals shall have the following powers:

a. Administrative Review

To hear and decide appeals where it is alleged by the applicant that there is error in any order, requirement, permit, decision, determination, or refusal made by the Administrator or other administrative official in carrying out or enforcement of any provisions of this Resolution.

b. Variance Procedures

In the case of a request for a variance the following shall apply:

1) The Putnam County, Tennessee Regional Board of Zoning Appeals shall hear and decide appeals and requests for variances from the requirements of this Resolution.
2) Variances may be issued for the repair or rehabilitation of historic structures as defined, herein, upon a determination that the proposed repair or rehabilitation will not preclude the structure's continued designation as a historic structure and the variance is the minimum necessary deviation from the requirements of this Resolution to preserve the historic character and design of the structure.
3) In passing upon such applications, the Regional Board of Zoning Appeals shall consider all technical evaluations, all relevant factors, all standards specified in other sections of this Resolution, and:

   a) The danger that materials may be swept onto other property to the injury of others;
   b) The danger to life and property due to flooding or erosion;
   c) The susceptibility of the proposed facility and its contents to flood damage;
   d) The importance of the services provided by the proposed facility to the community;
   e) The necessity of the facility to a waterfront location, in the case of a functionally dependent use;
   f) The availability of alternative locations, not subject to flooding or erosion damage, for the proposed use;
   g) The relationship of the proposed use to the comprehensive plan and floodplain management program for that area;
   h) The safety of access to the property in times of flood for ordinary and emergency vehicles;

   i) The expected heights, velocity, duration, rate of rise and sediment transport of the flood waters and the effects of wave action, if applicable, expected at the site;
   j) The costs of providing governmental services during and after flood conditions including maintenance and repair of public utilities and facilities such as sewer, gas, electrical, water systems, and streets and bridges.

4) Upon consideration of the factors listed above, and the purposes of this Resolution, the Regional Board of Zoning Appeals may attach such conditions to the granting of variances, as it deems necessary to effectuate the purposes of this Resolution.
5) Variances shall not be issued within any designated floodway if any increase in flood levels during the base flood discharge would result.

Section B. **Conditions for Variances**

1. Variances shall be issued upon a determination that the variance is the minimum relief necessary, considering the flood hazard and the factors listed in Article VI, Section A.
2. Variances shall only be issued upon: a showing of good and sufficient cause, a determination that failure to grant the variance would result in exceptional hardship; or 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 Resolutions.
3. Any applicant to whom a variance is granted shall be given written notice that the issuance of a variance to construct a structure below the Base Flood Elevation will result in increased premium rates for flood insurance (as high as $25 for $100) coverage, and that such construction below the Base Flood Elevation increases risks to life and property.
4. The Administrator shall maintain the records of all appeal actions and report any variances to FEMA upon request.

ARTICLE VII. LEGAL STATUS PROVISIONS

Section A. **Conflict with Other Resolutions**

In case of conflict between this Resolution or any part thereof, and the whole or part of any existing or future Resolution of Putnam County, Tennessee, the most restrictive shall in all cases apply.

Section B. **Severability**

If any section, clause, provision, or portion of this Resolution shall be held to be invalid or unconstitutional by any court of competent jurisdiction, such holding shall not affect any other section, clause, provision, or portion of this Resolution which is not of itself invalid or unconstitutional.

Section C. **Effective Date**

This Resolution shall become effective immediately after its passage, the public welfare demanding it.

Approved and adopted by the Putnam County Commission.

6-15-09
Date

Mayor of Putnam County, Tennessee

Attest: Wayne Stokes
County Clerk

6/15/09
Date of Public Hearing

12/23/08
Date of Publication of Caption & Summary