ORDINANCE NO. 22-22

AN ORDINANCE TO AMEND ARTICLE 7 SECTION 2, F-1 OPEN FLOODWAY DISTRICT OF THE UNIFIED DEVELOPMENT CODE

WHEREAS, on August 20, 2018 the Board of Mayor and Aldermen adopted Ordinance 18-21 to adopt the Unified Development Code, along with subsequent amendments thereto, that sets forth standards and requirements for Floodplain Regulations necessary for the safe development within the mapped and unmapped floodplain and to maintain compliance with state and federal regulations; and

WHEREAS, the City intends to ensure that the development of any land within the City of Spring Hill subject to the standards and requirements set forth in the Unified Development and other applicable standards and requirements of the City will reasonably protect the citizens and taxpayers from having undue hardship due to inadequate regulations pertaining to development within the mapped and unmapped floodplain; and

WHEREAS, the Board of Mayor and Aldermen recognizes the proper execution of such regulations in a proper and orderly manner is in the best interest of the public health, safety, general public, taxpayers, commercial businesses and general welfare of the community; and

WHEREAS, the Board of Mayor and Aldermen acknowledges the importance of understanding the requirements of development within the regulated floodplain or Special Flood Hazard Area (SFHA) and positive impact of adopting higher regulatory standards; and

WHEREAS, the Board of Mayor and Aldermen recognizes the necessity of regulating floodplain development in order to ensure development is reasonably safe from flooding and in compliance with Title 44 Code of Federal Regulations (CFR) Part 60.3.; and

WHEREAS, the Spring Hill Municipal Planning Commission after conducting a public meeting on June 13, 2022, has reviewed the proposed amendments to the Unified Development Code in their entirety and provides a favorable recommendation for their adoption by the Board of Mayor and Aldermen as provided in Resolution 22-55 approved on June 13, 2022 by the Planning Commission.

BE IT THEREFORE ORDAINED BY THE BOARD OF MAYOR AND ALDERMEN OF THE CITY OF SPRING HILL, TENNESSEE, that the following is hereby adopted relative to the inclusion of requirements floodplain development to be regulated:

1. Exhibit A – Redline copy of Article 7 Section 5
2. Exhibit B – Revised copy of Article 7 Section 5
3. Exhibit C – Resolution 22-55 Planning Commission Recommendation
4. Exhibit D – TEMA Model Floodplain Ordinance

The effective date for the amendments referenced herein shall be October 17, 2022.

Passed and adopted by the Board of Mayor and Aldermen of the City of Spring Hill, Tennessee on the 17th day of October, 2022.

Jim Hagaman, Mayor

ATTEST:

April Goad, City Recorder

LEGAL FORM APPROVED:

Patrick Carter, City Attorney

PASSED ON 1ST READING: October 3, 2022

PASSED ON 2ND READING: October 17, 2022

RESOLUTION 22-55
OF THE SPRING HILL PLANNING COMMISSION OF THE CITY OF SPRING HILL

A RESOLUTION TO RECOMMEND AMENDMENTS TO THE UNIFIED DEVELOPMENT CODE, ARTICLE 7, SPECIAL PURPOSE DISTRICT, 7.5 F-1 THROUGH H-1, OPEN FLOODWAY DISTRICT

WHEREAS, the Municipal Planning Commission for the City of Spring Hill may, pursuant to its charter and general laws of the State of Tennessee, recommend for enactment an amendment to the Board of Mayor and Aldermen zoning ordinance regulations in accordance with a comprehensive plan for the purpose of promoting the public health, safety, morals, convenience, order, prosperity, and general welfare of the community;

WHEREAS, the Spring Hill Municipal Planning Commission intends to make a recommendation for approval to the Board of Mayor and Alderman regarding the adoption of amendments to Article 7 Special Purpose District, 7.5 Open Floodway District of the Unified Development Code as attached hereto.

NOW, THEREFORE BE IT RESOLVED, that the City of Spring Hill Municipal Planning Commission hereby adopts Resolution 22-55 recommending approval of the following amendments to the Article 7 Special Purpose District, 7.5 Open Floodway District of the Unified Development Code:

Passed and adopted this 13th day of June, 2022.

Chairman

Secretary, Planning Commission

Secretary

Chair, Planning Commission

SUBJECT: **Floodplain Ordinance Update**
SUBMITTED BY: **Lawrence Holdorf, City Engineer**
DATE: **October 3, 2022**

PURPOSE:

The purpose of this memorandum is to provide additional information regarding the proposed revision to the City of Spring Hill's Floodplain Ordinance (UDC Article 7.5 F-1 Open Floodway District). Article 7.5 will be revised to be consistent with the State of Tennessee Model Ordinance (formatted to match UDC format style). The primary purpose of the revision is to ensure all state and federal minimum requirements are met and to ensure that the City or Spring Hill remains in good standing within the NFIP program. The revision also includes the addition of higher standards that will help improve the quality of development within mapped and unmapped floodplains to ensure future development is reasonably safe from flooding.

BACKGROUND:

At the request of FEMA, the Tennessee Emergency Management Agency (TEMA) and FEMA conducted a Community Assistance Visit (CAV) with the City of Spring Hill on Tuesday, September 21, 2021. The purpose of these visits is to provide an opportunity for FEMA to assess the effectiveness of local floodplain management, the needs for technical assistance, and for coordination with local officials.

A participating community determined to not be in compliance with the NFIP can be subjected to any of the three approaches by FEMA to incentivize the community to become compliant:

1. Reclassification under the Community Rating System (discount system)
2. Probation
3. Suspension from the program

The findings of the CAV identified a number of changes that will be required by FEMA to bring the City of Spring Hill's Flood Damage Prevention Ordinance into compliance with Title 44 Code of Federal Regulations (CFR) Part 60.3. The identified revisions must be completed to the satisfaction of TEMA and FEMA to avoid being suspended from the NFIP.

PLANNING COMMISSION ACTION:

The Planning Commission reviewed this item on May 23, 2022 at the PC work session and voted to recommend approval of the ordinance amendment to BOMA on June 13, 2022.

Alderman Matt Fitterer made a motion to Recommend Resolution 22-55 to the BOMA and seconded by Aldermine Linville.

Motion Carried 7-0

BASIC REQUIREMENT:

The responsibility for reducing flood losses is shared by all units of government (local, state, and federal) and the private sector. The NFIP provides the maps and regulatory basis for local floodplain management. It is also the primary source of Insurance protection for floodprone properties. It's success depends on the people responsible for administering its mapping, regulatory, and Insurance aspects.

Title 44 CFR Part 60.3 requires communities that participate in the NFIP to at a minimum regulate development within the floodplain and floodprone areas. Participating communities commit to:

- Issuing or denying floodplain development/building permits
- Inspecting all development to assure compliance with the local ordinance.
- Maintaining records of floodplain development.
- Assisting in the preparation and revision of floodplain maps.
- Helping residents obtain information on flood hazards, floodplain map data, flood insurance and proper construction measures.
- Adopt a floodplain management ordinance that meets or exceeds the minimum NFIP criteria.

These standards are intended to prevent loss of life and property, as well as economic and social hardships that result from flooding. The NFIP requirements are a minimum, and are cumulative.

All development, even isolated small developments must meet the requirements of 60.3(a)(3), which requires the community to determine if the site is reasonably safe from flooding and, if it is not, that the community ensures development is constructed with methods and practices that minimize flood damages and meets other all other applicable construction requirements.

The City of Spring Hill has been provided FIRMs with base flood elevations and shows floodways. Therefore, all development within the community must adhere to the requirements as established under Title 44 CFR 60.3(d).

TEMA has created a model ordinance to be used as a template, which communities can modify to add higher standards (which is encouraged by FEMA and TEMA being that local flood hazards vary and what makes sense in one state or community may not make sense in another). The model ordinance states:

- Encroachment within a Zone AE with floodway will require a study to show a 0.00 rise of the Base Flood Elevation (BFE) per CFR 60.3 (d)(3). If a rise in the BFE is shown, it will be limited to 1.0 foot, but the applicant must complete a CLOMR/LOMR through FEMA.
- Encroachments within a Zone AE without floodway will require a study to show no more than a 1.00-foot rise of the BFE per CFR 60.3 (c)(10). Any increase to the floodway widths, base flood discharge, or BFE will require a CLOMR/LOMR through FEMA.
- Encroachments within a Zone A stream will require a study to show no more than a 1.00-foot rise of the BFE per CFR 60.3 (c)(10). Any increase to the floodway widths, base flood discharge, or BFE will require a CLOMR/LOMR through FEMA.
- Encroachments within the buffer of Unmapped Streams will require a study to show no more than a 1.00-foot rise of the BFE per 60.3 (c)(10). Encroachments within the buffer of Unmapped Streams will require a CLOMR/LOMR through FEMA.

In all instances, any development that will causes an increase to the floodway widths, base flood discharge, or BFE triggers a CLOMR/LOMR per CFR 65.12.

STAFF RECOMMENDATIONS:

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. Some states and communities are not comfortable with allowing development in the flood fringe to increase flood heights by up to a foot. A one-foot increase in the flood heights will increase the potential for flood damage to floodprone buildings and affect properties that were otherwise not threatened by the base flood.

Staff recommends to adopt the state model ordinance and has provided the model ordinance as reference and review by the BOMA. The model ordinance with higher standards, similar to our neighboring communities and per the recommendations of the Association of State Floodplain Managers (ASFPM) and FEMA, as outlined below:

1. A "No Adverse Impact" determination will be required.
2. Alterations of the floodplain will not result in any rise of the 1% annual chance storm (100-year) water surface elevations on other properties under separate ownership unless the results of the study are not objected to by effected property owners upon notice.
3. Alterations of the floodplain will not create an erosive water velocity or increase erosive velocities on- or off-site.
4. Alterations of the floodplain shall be permitted only to the extent permitted by the "equal conveyance" principle in order to ensure equitable treatment for all property owners. Under equal conveyance, if the city allows a change in the flood carrying capacity (capacity to carry a particular volume of water per unit of time) on one side of the stream due to a proposed alteration of the floodplain, it shall also allow an equal change to the owner on the other side.
5. All streams shall remain in a natural (unaltered) condition when possible. Drainage may be channelized (lined or unlined) provided all environmental considerations are addressed satisfactorily with FEMA and the US Army Corps of Engineers (examples being endangered species, and section 404 of the Clean Water Act) as approved by the Floodplain Administrator.
6. In or adjacent to AE Zones where Base Flood Elevation data is available, new construction and substantial improvement of any structural development shall have the lowest floor, including basements, elevated to no lower than two (2) feet above the Base Flood Elevation.
7. New construction and substantial improvement of any structural development within or adjacent to approximate A Zones (zones where Base Flood Elevations have not been established), where alternative data are not available and relevant Base Flood Elevations are not obtainable from the US Army Corps of Engineers (USACE) or FEMA, the administrator shall require a detailed hydrologic and hydraulic analysis (flood study) to establish Base Flood Elevations (BFE) through the FEMA CLOMR/LOMR process.
8. Encroachments of developments within or adjacent to any floodplain, including floodways, will require a study and a CLOMR/LOMR through FEMA.
9. Developments within 100 feet or twice the top width (whichever is greater) of any unmapped streams that are regulated by the USACE, where special flood hazard areas (SFHA) are neither indicated nor identified on the FIRM, will require a study and a CLOMR/LOMR through the FEMA process.
10. In all instances, any development that will causes an increase to the floodway widths, base flood discharge, or BFE triggers a CLOMR/LOMR.

The increased regulations will do the following:

- Protect human life, health, safety and property;
- Minimize expenditure of public funds for costly flood control projects;
- Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
- Minimize prolonged business interruptions;
- 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;
- Help maintain a stable tax base by providing for the sound use and development of floodprone areas to minimize blight in flood areas;
- Ensure that potential homebuyers are notified that property is in a floodprone area;
- Maintain eligibility for participation in the NFIP.

BOMA PACKET EXHBIT LIST:

1. Tennessee Model Municipal Ordinance
2. Redline of existing UDC Article 7.5
3. Revised UDC Article 7.5
4. Ordinance Document for Approval
5. PC Resolution 22-55
6. Floodplain Ordinance Comparison Table
7. Planning Commission Staff Report/Memo

ACTION REQUIRED (INCLUDE DEADLINE /PRIORITY):

This item is before the BOMA for consideration and approval. Staff welcomes any additional feedback regarding the prepared ordinance and exhibits. Time is of the essence on this resolution. TEMA has been working with the City of Spring Hill staff since September of 2021 to draft a regulation that is in compliance with the NFIP. TEMA has extended the deadline on adoption of a compliant ordinance in an attempt to work with the City of Spring Hill and its citizens, with the understanding that the revised ordinance will be adopted as soon as possible.

Floodplain Ordinance Comparison Table

	NFIP	TEMA	Current Ordinance	Proposed Ordinance
Zone AE With Floodway	Encroachment will require a study to show a 0.00 rise of the Base Flood Elevation (BFE) per CFR 60.3 (d)(3). If a rise in the BFE is shown, it will be limited to 1.0 foot, but the applicant must complete a CLOMR/LOMR through FEMA.	Encroachment will require a study to show a 0.00 rise of the Base Flood Elevation (BFE) per CFR 60.3 (d)(3). If a rise in the BFE is shown, it will be limited to 1.0 foot, but the applicant must complete a CLOMR/LOMR through FEMA.	Encroachment will require a study to show a 0.00 rise of the Base Flood Elevation (BFE) per CFR 60.3 (d)(3). If a rise in the BFE is shown, it will be limited to 1.0 foot, but the applicant must complete a CLOMR/LOMR through FEMA.	Encroachment or development adjacent to, will require a study to show a 0.00 rise of the Base Flood Elevation (BFE) per CFR 60.3 (d)(3) on other properties under separate ownership unless the results of the study are not objected to by effected property owners upon notice. A rise greater than 1.0 foot can be allowed. All encroachments will require the applicant to complete a CLOMR/LOMR through FEMA.
	At or above BFE	1 foot of freeboard	2 feet of freeboard	2 feet of freeboard
Zone AE without Floodway	Encroachments will require a study to show no more than a 1.00 foot rise of the BFE per CFR 60.3 (c)(10). Any increase to the floodway widths, base flood discharge, or BFE will require a CLOMR/LOMR through FEMA.	Encroachments will require a study to show no more than a 1.00 foot rise of the BFE per CFR 60.3 (c)(10). Any increase to the floodway widths, base flood discharge, or BFE will require a CLOMR/LOMR through FEMA.	Encroachments will require a study to show no more than a 1.00 foot rise of the BFE per CFR 60.3 (c)(10). Any increase to the floodway widths, base flood discharge, or BFE will require a CLOMR/LOMR through FEMA.	Same as "With Floodway"
Zone A (Where alternative data are not available and relevant Base Flood Elevations are not obtainable from the US Army Corps of Engineers (USACE) or FEMA,)	Encroachments will require a study to show no more than a 1.00 foot rise of the BFE per CFR 60.3 (c)(10). Any increase to the floodway widths, base flood discharge, or BFE will require a CLOMR/LOMR through FEMA.	A detailed study is required for encroachments within an area equal to the width of the stream or twenty feet, whichever is greater, measured from the top of the stream bank and per CFR 60.3 (b)(3), and limited to no more than one foot at any point within the community. Encroachments outside the buffer is required to be a minimum of 3 feet above the highest adjacent grade.	A detailed study is required for encroachments within an area equal to the width of the stream or twenty feet, whichever is greater, measured from the top of the stream bank, and limited to no more than one foot at any point within the community. Encroachments outside the buffer is required to be a minimum of 3 feet above the highest adjacent grade.	Development within or adjacent to approximate A Zones will require a detailed hydrologic and hydraulic analysis to establish Base Flood Elevations (BFE) through the FEMA CLOMR/LOMR process, creating a Zone AE with Floodway. Development will be governed by regulations of Zone AE with Floodway.
Unmapped	Reasonably safe from flooding.	Encroachments within twice the width of the stream will require a study to show no more than a 1.00 foot rise of the BFE per 60.3 (c)(10). Encroachments within the buffer of Unmapped Streams will require a CLOMR/LOMR through FEMA.	Encroachments within twice the width of the stream will require a study to show no more than a 1.00 foot rise of the BFE per 60.3 (c)(10).	Developments within 100 feet or twice the top width (whichever is greater) of any unmapped streams that are regulated by the USACE, where special flood hazard areas (SFHA) are neither indicated nor identified on the FIRM, will require a study and a CLOMR/LOMR through the FEMA process. Development will be governed by regulations of Zone AE with Floodway.
Additional				Alterations of the floodplain will not create an erosive water velocity or increase erosive velocities on- or off-site.
				Alterations of the floodplain shall be permitted only to the extent permitted by the "equal conveyance" principle in order to ensure equitable treatment for all property owners.
				All streams shall remain in a natural (unaltered) condition when possible.
				Encroachments of developments within or adjacent to any floodplain, including floodways, will require a study and a CLOMR/LOMR through FEMA.

Code of Federal Regulations	
60.3 (b)(3)	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.
60.3 (c)(10)	Require until a regulatory floodway is designated, that no new construction, substantial, or other development, including fill shall be permitted within Zone AE on the community's FIRM, unless it is demonstrated through hydrologic and hydraulic analyses performed 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.
60.3(d)(3)	Encroachments are prohibited, including fill, new construction, substantial improvements or other development within the adopted regulatory floodway. Development may be permitted however, provided it is demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the encroachment shall not result in any increase in flood levels or floodway widths during a base flood discharge. A registered professional engineer must provide supporting technical data and certification thereof.
"Equal Conveyance"	Under equal conveyance, if the city allows a change in the flood carrying capacity (capacity to carry a particular volume of water per unit of time) on one side of the stream due to a proposed alteration of the floodplain, it shall also allow an equal change to the owner on the other side.

SUBJECT: **Floodplain Ordinance Update**

SUBMITTED BY: **Lawrence Holdorf, City Engineer**

DATE: **May 23, 2022**

PURPOSE:

The purpose of this memorandum is to provide additional information regarding the NFIP (National Floodplain Insurance Program) regulatory requirements and the proposed updates to the City's Floodplain Ordinance (Article 7.5 F-1 Open Floodway District).

BACKGROUND:

The City of Spring Hill has been a participant in the NFIP since May 4, 1987. The Federal Emergency Management Agency's (FEMA)'s database shows Spring Hill to have 135 active insurance policies, with a total of $39,753,800 of flood insurance coverage. The database shows a total of 12 claims, with the total payments being at $134,774.

At the request of FEMA, the Tennessee Emergency Management Agency (TEMA) and FEMA conducted a Community Assistance Visit (CAV) with the City of Spring Hill on Tuesday, September 21, 2021. The purpose of these visits is to provide an opportunity for FEMA to assess the effectiveness of local floodplain management, the needs for technical assistance, and for coordination with local officials.

A participating community determined to not be in compliance with the NFIP can be subjected to any of the three approaches by FEMA to incentivize the community to become compliant:

- Reclassification under the Community Rating System (discount system)
- Probation
- Suspension from the program

The findings of the CAV identified a number of changes that will be required by FEMA to bring the City of Spring Hill's Flood Damage Prevention Ordinance into compliance with Title 44 Code of Federal Regulations (CFR) Part 60.3. The identified revisions must be completed to the satisfaction of TEMA and FEMA to avoid being suspended from the NFIP.

FLOODPLAINS:

Over time, floodplains develop to handle flooding and erosion with natural features that provide floodwater storage and conveyance, which reduces flood velocities and flood peaks, and curbs sedimentation. These controls help to maintain water quality by filtering nutrients and impurities from runoff, process organic wastes, and moderating temperature fluctuations. These natural controls also contribute to recharging groundwater by promoting infiltration and refreshing aquifers, and by reducing the frequency and duration of low surface flows.

Floodplains enhance biological productivity by supporting a high rate of plant growth. This helps to maintain biodiversity and the integrity of ecosystems. Floodplains also provide excellent habitats for fish and wildlife by serving as breeding and feeding grounds. They also create and enhance waterfowl habitats, and help to protect habitats for rare and endangered species.

People benefit from floodplains through the food they provide, the recreational opportunities they afford and the scientific knowledge gained in studying them. Wild and cultivated products are harvested in floodplains, which are enhanced agricultural land made rich by sediment deposits. They provide open space, which may be used to restore and enhance forest lands, or for recreational opportunities or simple enjoyment of their aesthetic beauty. They contain cultural resources such as historic and archaeological sites, and thus provide opportunities for environmental and other kinds of studies.

The natural resources and functions can increase a community's overall quality of life, a role that often has been undervalued. By transforming streams and river floodplains from problem areas into value-added assets, the community can improve its quality of life. Assets such as parks, bike paths, open spaces, wildlife conservation areas and aesthetic features. These assets make the community more appealing to potential employers, investors, residents, property owners and tourists.

The filling of floodplains obstructs flood flows, backing up floodwaters onto upstream and adjacent properties. It also reduces the floodplain's ability to store excess water, sending more water downstream and causing floods to rise to higher levels. This also increases floodwater velocities, increasing sediment transport and erosion.

Development in riverine watersheds affects the runoff of stormwater. Buildings and parking lots replace the natural vegetation which used to absorb water. When rain falls in a natural setting, as much as ninety percent of it will infiltrate the ground; in an urbanized area, as much as ninety percent of it will run off. Urban features (storm sewers and efficient ditches) alter flood dynamics by increasing the speed of flood flows. The result being more runoff that is moving faster, increasing flooding

downstream. Thus, a 10-year storm may produce the runoff equivalent of a 25-year storm, overloading the man-made drainage system. Timing of the runoff is also altered through urbanization. As a watershed develops, subbasin runoff increases and speeds up, possibly arriving at the main channel at the same time as the peak of the channel, causing increased flooding downstream.

WHAT ARE THE ODDS OF BEING FLOODED?

The term "100-year flood" has caused much confusion for people not familiar with statistics. Another way to look at flood risk is to think of the odds that a 100-year flood will happen sometime during the life of a 30-year mortgage—a 26% chance for a structure located in the SFHA.

Chance of Flooding over a Period of Years

Time Period	Flood Size 10-year	25-year	50-year	100-year
1 year	10%	4%	2%	1%
10 years	65%	34%	18%	10%
20 years	88%	56%	33%	18%
30 years	96%	71%	45%	26%
50 years	99%	87%	64%	39%

Even these numbers do not convey the true flood risk because they focus on the larger, less frequent, floods. If a house is low enough, it may be subject to the 10- or 25-year flood. During a 30-year mortgage, it may have a 26% chance of being hit by the 100-year flood, but the odds are 96% (nearly guaranteed) that it will be hit by a 10-year flood. Compare those odds to the only 1-2% chance that the house will catch fire during the same 30-year mortgage.

FLOOD INSURANCE RATE MAP (FIRM):

The National Flood Insurance Act of 1968 directed the Federal Insurance Administration (FIA) to identify all floodprone areas within the United States and establish flood-risk zones within floodprone areas. Today, FEMA's Mitigation Division is responsible for implementing this directive. As money was appropriated by Congress, FEMA performed detailed studies for many communities, resulting in the publication of Flood Insurance Study (FIS) reports and FIRMs. These studies were carried out for developed

communities and for those areas experiencing rapid growth. However, further development of the communities, up to and outside the limits of these original study's, has created a need for additional detailed studies in the areas that were not previously studied, or were studied using approximate methods.

BASIC REQUIREMENT:

The responsibility for reducing flood losses is shared by all units of government (local, state, and federal) and the private sector. The NFIP provides the maps and regulatory basis for local floodplain management. It is also the primary source of Insurance protection for floodprone properties. It's success depends on the people responsible for administering its mapping, regulatory, and Insurance aspects.

Title 44 CFR Part 60.3 requires communities that participate in the NFIP to at a minimum regulate development within the floodplain and floodprone areas. Participating communities commit to:

- Issuing or denying floodplain development/building permits
- Inspecting all development to assure compliance with the local ordinance.
- Maintaining records of floodplain development.
- Assisting in the preparation and revision of floodplain maps.
- Helping residents obtain information on flood hazards, floodplain map data, flood insurance and proper construction measures.
- Adopt a floodplain management ordinance that meets or exceeds the minimum NFIP criteria.

These standards are intended to prevent loss of life and property, as well as economic and social hardships that result from flooding. The NFIP requirements are a minimum, and are cumulative.

All development, even isolated small developments must meet the requirements of 60.3(a)(3), which requires the community to determine if the site is reasonably safe from flooding and, if it is not, that the community ensures development is constructed with methods and practices that minimize flood damages and meets other all other applicable construction requirements.

The City of Spring Hill has been provided FIRM's with base flood elevations and shows floodways. Therefore, all development within the community must adhere to the requirements as established under Title 44 CFR 60.3(d).

TEMA has created a model ordinance to be used as a template, which communities can modify to add higher standards (which is encouraged by FEMA and TEMA being that local flood hazards vary and what makes sense in one state or community may not make sense in another). The model ordinance states:

1. Encroachment within a Zone AE with floodway will require a study to show a 0.00 rise of the Base Flood Elevation (BFE) per CFR 60.3 (d)(3). If a rise in the BFE is shown, it will be limited to 1.0 foot, but the applicant must complete a CLOMR/LOMR through FEMA.
2. Encroachments within a Zone AE without floodway will require a study to show no more than a 1.00 foot rise of the BFE per CFR 60.3 (c)(10). Any increase to the floodway widths, base flood discharge, or BFE will require a CLOMR/LOMR through FEMA.
3. Encroachments within a Zone A stream will require a study to show no more than a 1.00 foot rise of the BFE per CFR 60.3 (c)(10). Any increase to the floodway widths, base flood discharge, or BFE will require a CLOMR/LOMR through FEMA.
4. Encroachments within the buffer of Unmapped Streams will require a study to show no more than a 1.00 foot rise of the BFE per 60.3 (c)(10). Encroachments within the buffer of Unmapped Streams will require a CLOMR/LOMR through FEMA.

In all instances, any development that will causes an increase to the floodway widths, base flood discharge, or BFE triggers a CLOMR/LOMR per CFR 65.12.

CITY OF SPRING HILL:

Like most states and cities, areas within The City of Spring Hill has a history of periodic inundation (flooding) 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.

For example, on May 1st, 2010 was a devastating flood, coined The Great Nashville Flood, which effected more than Nashville, including Spring Hill. On September 19th, 2021 flooding was reported in middle Tennessee. And on August 23rd, 2021 flooding was reported in Waverly, Tennessee.

Floodplain management is a necessity for any developing community. The City of Spring Hill has chosen to join the NFIP, and thereby has chosen to adopt regulations in conformance with the NFIP, regulated by FEMA and TEMA.

STAFF RECOMMENDATIONS:

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. Some states and communities are not comfortable with allowing development in the flood fringe to increase flood heights by up to a foot. A one-foot increase in the flood heights will increase the potential for flood damage to floodprone buildings and affect properties that were otherwise not threatened by the base flood.

The staff recommends to adopt the state model ordinance with higher standards, similar to our neighboring communities and per the recommendations of the Association of State Floodplain Managers (ASFPM) and FEMA, as outlined below:

1. A "No Adverse Impact" determination will be required.
2. Alterations of the floodplain will not result in any rise of the 1% annual chance storm (100-year) water surface elevations on other properties under separate ownership unless the results of the study are not objected to by effected property owners upon notice.
3. Alterations of the floodplain will not create an erosive water velocity or increase erosive velocities on- or off-site.
4. Alterations of the floodplain shall be permitted only to the extent permitted by the "equal conveyance" principle in order to ensure equitable treatment for all property owners. Under equal conveyance, if the city allows a change in the flood carrying capacity (capacity to carry a particular volume of water per unit of time) on one side of the stream due to a proposed alteration of the floodplain, it shall also allow an equal change to the owner on the other side.
5. All streams shall remain in a natural (unaltered) condition when possible. Drainage may be channelized (lined or unlined) provided all environmental considerations are addressed satisfactorily with FEMA and the US Army Corps of Engineers (examples being endangered species, and section 404 of the Clean Water Act) as approved by the Floodplain Administrator.
6. In or adjacent to AE Zones where Base Flood Elevation data is available, new construction and substantial improvement of any structural development shall have the lowest floor, including basements, elevated to no lower than two (2) feet above the Base Flood Elevation.
7. New construction and substantial improvement of any structural development within or adjacent to approximate A Zones (zones where Base Flood Elevations have not been established), where alternative data are not available and relevant Base Flood Elevations are not obtainable from the US Army Corps of Engineers

(USACE) or FEMA, the administrator shall require a detailed hydrologic and hydraulic analysis (flood study) to establish Base Flood Elevations (BFE) through the FEMA CLOMR/LOMR process.

8. Encroachments of developments within or adjacent to any floodplain, including floodways, will require a study and a CLOMR/LOMR through FEMA.
9. Developments within 100 feet or twice the top width (whichever is greater) of any unmapped streams that are regulated by the USACE, where special flood hazard areas (SFHA) are neither indicated nor identified on the FIRM, will require a study and a CLOMR/LOMR through the FEMA process.
10. In all instances, any development that will causes an increase to the floodway widths, base flood discharge, or BFE triggers a CLOMR/LOMR.

The increased regulations will do the following:

1. Protect human life, health, safety and property;
2. Minimize expenditure of public funds for costly flood control projects;
3. Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
4. Minimize prolonged business interruptions;
5. 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. Help maintain a stable tax base by providing for the sound use and development of floodprone areas to minimize blight in flood areas;
7. Ensure that potential homebuyers are notified that property is in a floodprone area;
8. Maintain eligibility for participation in the NFIP.

CLOSING STATEMENT:

The NFIP program utilizes a discount system (Community Rating System CRS) to discount the flood insurance premiums for communities that adopt an ordinance that increases to the minimum NFIP regulations. Staff will continue to work with TEMA and FEMA to identify additional applicable regulations that can increase this communities rating, thereby decreasing premiums for Spring Hill residences and businesses.

ACTION REQUIRED (INCLUDE DEADLINE /PRIORITY):

Time is of the essence on this resolution. TEMA has been working with the City of Spring Hill staff since September of 2021 to draft a regulation that is in compliance with the NFIP. TEMA has extended the deadline on adoption of a compliant ordinance in an attempt to work with the City of Spring Hill and its citizens, with the understanding that the revised ordinance will be adopted as soon as possible.

SPRING HILL

UNIFIED DEVELOPMENT

Revised

Prepared by Camiros for the City of Spring Hill, Tennessee

Adopted:

Ordinance 18-21 *August 20, 2018* *Board of Mayor and Alderman*

Articles 1-14, 18, 19, Official Zoning Map

Resolution 18-01 *May 29, 2018* *Design Review Commission*

Resolution 18-44 *May 14, 2018* *Planning Commission*

Articles 15, 16, 17

Resolution 21-106 *October 11, 2021* *Planning Commission*

Amendments:

Date	Approval Authority	Resolution or Ordinance Number
February 11, 2019	*Planning Commission*	*Resolution 19-14*
February 11, 2019	*Design Review Com.*	*Resolution 19-01*
April 15, 2019	*Board of Mayor & Alderman*	*Ordinance 19-09*
September 16, 2019	*Board of Mayor & Alderman*	*Ordinance 19-28*
March 9, 2020	*Planning Commission*	*Resolution 20-11*
April 13, 2020	*Planning Commission*	*Resolution 20-18*
November 15, 2021	*Board of Mayor & Alderman*	*Ordinance 21-14*
November 15, 2021	*Board of Mayor & Alderman*	*Ordinance 21-29*
September 6, 2022	*Board of Mayor & Alderman*	*Ordinance 22-18*
October 17, 2022	*Board of Mayor & Alderman*	*Ordinance 22-25*

7.5 City of Spring Hill Floodplain Regulations and Overly District

A. Statutory Authorization

The Legislature of the State of Tennessee has in Sections 13-7-201 through 13-7-210, Tennessee Code Annotated delegated the responsibility to local governmental units to adopt regulations designed to promote the public health, safety, and general welfare of its citizenry. Therefore, the City of Spring Hill, Tennessee, Mayor and the Spring Hill Board of Alderman, do ordain as follows:

B. Findings of Fact

1. The City of Spring Hill, Tennessee, Mayor and its Board of Alderman 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 the City of Spring Hill, 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.

C. Purpose

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

D. Objectives

This district applies to all areas within the incorporated area of the city. The objectives of this Floodplain regulation 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.

E. Definitions

Unless specifically defined below, words or phrases used in this Floodplain regulation shall be interpreted as to give them the meaning they have in common usage and to give this Floodplain regulation 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 Floodplain regulation, 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 Floodplain regulation 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.

"Equal Conveyance" means having the same pre-development conveyance properties after development.

"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 Floodplain regulation which relieves the applicant from the requirements of a rule, regulation, order or other determination made or issued pursuant to this Floodplain regulation.

"Existing Construction" means any structure for which the "start of construction" commenced before the effective date of the initial floodplain management code or floodplain regulation 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 floodplain regulation 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"
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.
3. Mudslides (i.e., mudflows) which are proximately caused by flooding as defined in paragraph (a)(2) of this definition and are akin to a river of liquid and flowing mud on the surfaces of normally dry land areas, as when earth is carried by a current of water and deposited along the path of the current.

The collapse or subsidence of land along the shore of a lake or other body of water as a result of erosion or 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 flash flood or an abnormal tidal surge, or by some similarly unusual and unforeseeable event which results in flooding as defined in paragraph (a)(1) of this definition.

"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 City of Spring Hill, 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 Floodplain regulation.

"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 Floodplain regulation, 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 Floodplain regulation 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 floodplain regulation or the effective date of the initial floodplain management floodplain regulation 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.

"Regulatory Flood Protection Elevation" means the "Base Flood Elevation" plus the "Freeboard". In "Special Flood Hazard Areas" where Base Flood Elevations (BFEs) have been determined, this elevation shall be the BFE plus 2 feet.

"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 Emergency Management Agency, State NFIP 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 Floodplain regulation, 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 Floodplain regulation.

"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 Floodplain regulation 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.

F. GENERAL PROVISIONS

1. Application: This Floodplain regulation shall apply to all areas within the incorporated area of the City of Spring Hill, Tennessee.

2. Basis for Establishing the Areas of the Special Flood Hazard Area: The Areas of Special Flood Hazard identified on the City of Spring Hill, Tennessee, as identified by FEMA, and in its Flood Insurance Study (FIS) dated May 04, 2009 and Flood Insurance Rate Map (FIRM), Community Panel Numbers 47119C0065E, 47119C0070E, 47119C0090E, 47119C0180E, 47119C0185E, and 47119C0205E dated April 16, 2007, along with all supporting technical data, are adopted by reference and declared to be a part of this Floodplain regulation.

3. Requirement for Development Permit: A development permit shall be required in conformity with this Floodplain regulation prior to the commencement of any development activities.

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

5. Abrogation and Greater Restrictions: This Floodplain regulation is not intended to repeal, abrogate, or impair any existing easements, covenants or deed restrictions. However, where this Floodplain regulation conflicts or overlaps with another regulatory instrument, whichever imposes the more stringent restrictions shall prevail.

6. Interpretation: In the interpretation and application of this Floodplain regulation, 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.

7. Warning and Disclaimer of Liability: The degree of flood protection required by this Floodplain regulation 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 Floodplain regulation 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 Floodplain regulation shall not create liability on the part of the City of Spring Hill, Tennessee or by any officer or employee thereof for any flood damages that result from reliance on this Floodplain regulation or any administrative decision lawfully made hereunder.

8. Penalties for Violation: Violation of the provisions of this Floodplain regulation 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 floodplain regulation 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 the City of Spring Hill, Tennessee from taking such other lawful actions to prevent or remedy any violation.

G. Administration

1. Designation of Floodplain Regulation Administrator: The City Engineer or his designee is hereby appointed as the Administrator to implement the provisions of this Floodplain regulation.

2. 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:

    a. Application stage

        i. 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 Floodplain regulation.

ii. 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 Floodplain regulation.

iii. 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 Section H, subsections 1 and 2.

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

v. In order to determine if improvements or damage meet the Substantial Improvement or Substantial Damage criteria, the applicant shall provide to the Floodplain Administrator a detailed cost to repair all damages and/or cost of improvements which includes the complete costs associated with all types of work necessary to completely repair or improve a building. These include the costs of all materials, labor, and other items necessary to perform the proposed work. These must be in the form of:

(A) An itemized cost of materials, and labor, or estimates of materials and labor that are prepared by licensed contractors or professional construction cost estimators

(B) Building valuation tables published by building code organizations and cost-estimating manuals and tools available from professional building cost-estimating services.

(C) A qualified estimate of costs that is prepared by the local official using professional judgement and knowledge of local and regional construction costs.

(D) A detailed cost estimate provided and prepared by the building owner. This must include as much supporting documentation as possible (such as pricing information from lumber companies, plumbing and electrical suppliers, etc). In addition, the estimate must include the value of labor, including the value of the owner's labor.

b. 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.

c. Finished Construction Stage: A final Finished Construction Elevation Certificate is required after construction is completed and prior to Certificate of Compliance/Occupancy issuance. It shall be the duty of the permit holder to submit to the Floodplain Administrator a certification of final as-built construction of the elevation of the reference level and all attendant utilities. The Administrator will keep the certificate on file in perpetuity.

3. Duties and Responsibilities of the Administrator: Duties of the Administrator shall include, but not be limited to, the following:

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

b. 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.

c. Notify adjacent communities and the Tennessee Emergency Management Agency, State NFIP Office, prior to any alteration or relocation of a watercourse and submit evidence of such notification to FEMA.

d. 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.

e. Assure that the flood carrying capacity within an altered or relocated portion of any watercourse is maintained.

f. 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 Section G, Subsection 2.

g. 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 Section G, Subsection 2.

h. When floodproofing is utilized for a nonresidential structure, obtain certification of design criteria from a Tennessee registered professional engineer or architect, in accordance with Section G, Subsection 2.

i. 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 Floodplain regulation.

j. 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 City of Spring Hill, Tennessee FIRM meet the requirements of this Floodplain regulation.

k. Maintain all records pertaining to the provisions of this Floodplain regulation in the office of the Administrator and shall be open for public inspection. Permits issued under the provisions of this Floodplain regulation shall be maintained in a separate file or marked for expedited retrieval within combined files

l. A final Finished Construction Elevation Certificate (FEMA Form 086-0-33) is required after construction is completed and prior to Certificate of Compliance/Occupancy issuance. It shall be

the duty of the permit holder to submit to the Floodplain Administrator a certification of final as-built construction of the elevation of the reference level and all attendant utilities. The Floodplain Administrator shall review the certificate data submitted. Deficiencies detected by such review shall be corrected by the permit holder immediately and prior to Certificate of Compliance/Occupancy issuance. In some instances, another certification may be required to certify corrected as-built construction. Failure to submit the certification or failure to make required corrections shall be cause to withhold the issuance of a Certificate of Compliance/Occupancy. The Finished Construction Elevation Certificate certifier shall provide at least 2 photographs showing the front and rear of the building taken within 90 days from the date of certification. The photographs must be taken with views confirming the building description and diagram number provided in Section A. To the extent possible, these photographs should show the entire building including foundation. If the building has split-level or multi-level areas, provide at least 2 additional photographs showing side views of the building. In addition, when applicable, provide a photograph of the foundation showing a representative example of the flood openings or vents. All photographs must be in color and measure at least 3" × 3". Digital photographs are acceptable.

H. PROVISIONS FOR FLOOD HAZARD REDUCTION

1. General Standards: In all areas of special flood hazard, the following provisions are required:

   a. New construction and substantial improvements shall be anchored to prevent flotation, collapse and lateral movement of the structure;

   b. 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.

   c. New construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage;

   d. New construction and substantial improvements shall be constructed by methods and practices that minimize flood damage;

   e. 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;

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

   g. 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;

   h. On-site waste disposal systems shall be located and constructed to avoid impairment to them or contamination from them during flooding;

   i. Any alteration, repair, reconstruction or improvements to a building that is in compliance with the provisions of this Floodplain regulation, shall meet the requirements of "new construction" as contained in this Floodplain regulation;

   j. Any alteration, repair, reconstruction or improvements to a building that is not in compliance with the provision of this Floodplain regulation, shall be undertaken only if said non-conformity is not further extended or replaced;

k. 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;

l. All subdivision proposals and other proposed new development proposals shall meet the standards of Section H, Subsection 2;

m. 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;

n. 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.

o. When deemed appropriate by the administrator and as per Section H, development endeavors within the city of Spring Hill's Special Flood Hazard Areas shall be required to certify, utilizing a professional engineer licensed in the state of Tennessee, that the development endeavors of one property owner or community do not adversely affect flood risks for other properties or communities as measured by increased flood stages, increased flood velocity, increased flows, increased potential for erosion, or any other impact deemed important or as specified by the city of Spring Hill. This certification shall employ industry standards for hydraulic and hydrological analysis to determine no adverse impact and all data shall be provided in hard copy and digitally for review and corroboration by the city's engineer, his designee, or any governmental review agency acceptable to the city of Spring Hill.

p. Alterations of the floodplain shall not result in a rise of the 1% annual chance storm (100-year) water surface elevations on other properties under separate ownership unless the results of the study are not objected to by effected property owners upon notice.

q. Alterations of the floodplain that could result in any degree of increased flooding to other properties, adjacent, upstream, or downstream is strictly prohibited unless the results of the study are not objected to by effected property owners upon notice and results in structures being reasonably safe from flooding as determined the Administrator.

r. Alterations of the floodplain shall not create an erosive water velocity or increase erosive velocities on- or off-site. Alteration to the floodplain that would increase velocities of flood waters to the extent that the erosion of floodplain and channel soils will occur or increase either on the subject property or on other properties up or downstream is prohibited. Erosive velocities are defined by TDOT in the TDOT hydraulic engineering manual.

Tractive Force Equation (erosive water velocity equation):

$$\tau_{max} = \gamma d S$$

Where: τ_{max} = maximum shear stress, (lb/ft^2)
γ = unit weight of water, (62.4 lb/ft^3)
d = maximum depth of flow, (ft)
S= average bed slope or energy slope, expressed as a decimal, (ft/ft)

		Permissible Unit Shear Stress	
Lining Category	**Lining Type**	**(lb/ft^2)**	**(Pa)**
Erosion Control Blanket [a]	Type I	1.5	72
	Type II	1.75	84
	Type III	2.00	96
	Type IV	2.25	108
Turf Reinforcement Mat [a]	Unvegetated	3.0	143.6
	Class I	6.0	288
	Class II	8.0	384
	Class III	10.0	480
Grass [b]	Class A	3.70	177.2
	Class B	2.10	100.5
	Class C	1.00	47.9
	Class D	0.60	28.7
	Class E	0.35	16.8
Rock Riprap	Class A1	3.00	143.6
	Class B	5.00	239.4
	Class C	6.70	320.8
Bare Soil	Non-cohesive	(See Hydraulic Engineering Circular No. 15)	
	Cohesive		

General values based on vendor information, assuming a vegetated condition. Maximum permissible shear stress for an unvegetated mat is 3.0 lb/ft^2)
Consult with individual vendors for more specific information.

Grassed linings are classified into 5 vegetal retardance classifications
See Section 5.04.6.1 and Table 5A-4

Table 5A-7
Permissible Shear Stresses for Lining Materials
Reference: USDOT, FHWA, HDS-4 (2001) &
Erosion Control Technology Council, St. Paul, Minnesota

Material	Maximum Velocity (feet/second)
Bare Soil	
Silt or fine sand	1.5
Sandy loam	1.75
Silt loam	2
Stiff clay	3.75
Ordinary firm loam	2.5
Fine gravel	2.5
Graded, loam to cobbles (noncolloidal)	3.7
Graded, silt to cobbles (colloidal)	4
Alluvial Silts (noncolloidal)	2
Alluvial Silts (colloidal)	3.7
Coarse gravel (noncolloidal)	4
Cobbles and shingles	5
Shales and hard pans	6
Sod	4
Lapped Sod	5.5
Vegetation	See Table 5A-5
Rigid	10

Table 5A-3
Maximum Velocities for Comparing Lining Materials
Reference: USDOT, FHWA, HDS-3 (1961) &
USDA, SCS, TP-61 (March, 1947)

s. Alterations of the floodplain shall be permitted only to the extent permitted by equal conveyance on both sides of the natural channel. Staff's calculation of the impact of the proposed alteration shall be based on the "equal conveyance" principle in order to ensure equitable treatment for all property owners. Under equal conveyance, if the city allows a change in the flood carrying capacity (capacity to carry a particular volume of water per unit of time) on one side of the stream due to a proposed alteration of the floodplain, it shall also allow an equal change to the owner on the other side. The combined change in flood carrying capacity, due to the proposed alteration, plus corresponding alteration to the other side of the stream, shall not cause either an increase in flood elevation or an erosive velocity, or violate the other criteria established in this floodplain regulation.

t. All streams shall remain in a natural (unaltered) condition when possible. Drainage may be channelized (lined or unlined) provided all environmental considerations are addressed satisfactorily with FEMA and the US Army Corps of Engineers (examples being endangered species, and section 404 of the Clean Water Act) as approved by the Floodplain Administrator.

2. Specific Standards: In all Areas of Special Flood Hazard, the following provisions, in addition to those set forth in Section H, Subsection 1, are required:

   a. Residential Structures

      i. 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 basements, elevated to no lower than two (2) feet 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".

      ii. New construction and substantial improvement of any residential building (or manufactured home) within approximate A Zones where Base Flood Elevations have not been established, alternative data are not available and relevant Base Flood Elevations are not obtainable from the US Army Corps of Engineers or FEMA, the administrator shall require a detailed hydrologic and hydraulic analysis in accordance with acceptable engineering practices to establish Base Flood Elevations through the FEMA CLOMR/LOMR process that will update the City's FIRM and FIS in which the flooding source is located, and shall be regulated as development within a Zone AE.

   b. Non-Residential Structures

      i. 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 basements, elevated or floodproofed to no lower than two (2) feet 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".

      ii. New construction and substantial improvement of any residential building (or manufactured home) within approximate A Zones, where Base Flood Elevations have not been established, alternative data are not available and relevant Base Flood Elevations are not obtainable from the US Army Corps of Engineers or FEMA, the administrator shall require a detailed hydrologic and hydraulic analysis in accordance with acceptable engineering practices to establish Base Flood Elevations through the FEMA CLOMR/LOMR process that will update the City's FIRM and FIS in which the flooding source is located, and shall be regulated as development within a Zone AE.

      iii. 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 Section G, Subsection 2.

   c. Enclosures

      i. 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.

d. Standards for Manufactured Homes and Recreational Vehicles

i. 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.

ii. Any manufactured home, which has incurred "substantial damage" as the result of a flood, must meet the standards of Section H, Subsection 1 and 2.

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

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

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

(B) 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;

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

e. 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.

i. All subdivision and other proposed new development proposals shall be consistent with the need to minimize flood damage.

ii. 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.

iii. All subdivision and other proposed new development proposals shall have adequate drainage provided to reduce exposure to flood hazards.

iv. Within all approximate A Zones or unmapped streams, 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 for the purpose of updating the City's FIRM through the FEMA's CLOMR/LOMR process.

3. Standards for Special Flood Hazard Areas with Established Base Flood Elevations and With Floodways Designated

Located within the Special Flood Hazard Areas established in Section F, Subsection 2, 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:

a. Encroachments or increase in runoff are prohibited, including fill, new construction, substantial improvements or other development within the adopted regulatory floodway and the floodplain in which it resides. Development or increase in runoff within the regulatory floodway and the floodplain in which it resides may be permitted however, provided it is demonstrated through an hydrologic and hydraulic analyses performed in accordance with standard engineering principles and practices by a Tennessee registered professional engineer with supporting technical data and certification thereof that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not result in an increase to the water surface elevations, increase of floodway widths, or result in an increase of the open channel velocities that will create or worsen erosive velocities during a base flood discharge at any point within the City of Spring Hill, Tennessee;

b. The City of Spring Hill, Tennessee may permit encroachments or increased runoff within the adopted regulatory floodway and the floodplain in which it resides, that results in an increase to the water surface elevations and/or floodway widths provided the applicant first applies for a conditional letter of map revision (CLOMR) and floodway revision, fulfills the requirements for such revisions as established under the provisions of § 65.12, and the results of the study are not objected to by effected property owners upon notice, are accepted by the City of Spring Hill's Administrator, and receives the approval of the FEMA.

c. ONLY if Section H, Subsection 3, provisions (1) through (2) are satisfied, then any new construction or substantial improvement shall comply with all other applicable flood hazard reduction provisions of Section H, Subsection 1 and 2.

4. 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 Section F, Subsection 2, where streams exist with base flood data provided but where no floodways have been designated (Zones AE), the following provisions apply:

a. Require until a regulatory floodway is designated, that no new construction, substantial improvements, increased runoff, or other development, including fill shall be permitted within a Zone AE on the community's FIRM, unless it is demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering principles and practices by a Tennessee registered professional engineer with supporting technical data and certification thereof that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not result in an increase to the water surface elevations

or result in an increase of the open channel velocities that will create or worsen erosive velocities during a base flood discharge at any point within the City of Spring Hill, Tennessee.

b. A community may permit encroachments or increased runoff within Zones AE on the community's FIRM that would result in an increase in the water surface elevation of the base flood, provided that the applicant first applies for a conditional letter of map revision (CLOMR) and establishes a floodway, fulfills the requirements as established under the provisions of § 65.12, and the results of the study are not objected to by effected property owners upon notice, are accepted by the City of Spring Hill's Administrator, and receives the approval of the FEMA;

c. ONLY if Section H, Subsection 4, provisions (1) through (2) are satisfied, then any new construction or substantial improvement shall comply with all other applicable flood hazard reduction provisions of Section H, Subsection 1 and 2.

5. Standards for Streams without Established Base Flood Elevations and Floodways (A Zones)

Located within the Special Flood Hazard Areas established in Section F, Subsection 2, where streams exist, but no base flood data has been provided and where a Floodway has not been delineated, the following provisions shall apply:

a. 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 Section H, Subsection 1 and 2.

b. Require that all new subdivision proposals, increased runoff, and other proposed developments (including proposals for manufactured home parks and subdivisions) within approximate Zone A include within such proposals Base Flood Elevation data.

c. Require until a regulatory floodway is designated, that no new construction, substantial improvements, increased runoff, or other development, including fill shall be permitted within approximate A Zones on the community's FIRM, unless it is demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering principals and practices by a Tennessee registered professional engineer through supporting technical data and certification thereof that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not result in an increase to the water surface elevations, increase or decrease in the floodplain inundation boundary widths, or result in an increase of the open channel velocities that will create or worsen erosive velocities during a base flood discharge at any point within the City of Spring Hill, Tennessee.

d. The community may permit encroachments or increased runoff within approximate A Zones on the community's FIRM that would result in an increase in the water surface elevation of the base flood, provided that the applicant first applies for a conditional letter of map revision (CLOMR) and establishes a floodway, fulfills the requirements as established under the provisions of § 65.12, and the results of the study are not objected to by effected property owners upon notice, are accepted by the City of Spring Hill's Administrator, and receives the approval of the FEMA;

e. New construction and substantial improvements of buildings, where permitted, shall comply with all applicable flood hazard reduction provisions of Section H, Subsections 1 and 2. Within approximate A Zones, require that those subsections of Sections H, Subsection 2 dealing with the alteration or relocation of a watercourse, assuring watercourse carrying capacities are maintained and manufactured homes provisions are complied with as required.

6. Standards For Areas of Shallow Flooding (Zone AO)

Located within the Special Flood Hazard Areas established in Section F, Subsection 2, 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. In addition to Sections H, Subsection 1 and 2, all new construction and substantial improvements shall meet the following requirements:

a. The lowest floor (including basement) shall be elevated at least as high as the depth number specified on the Flood Insurance Rate Map (FIRM), in feet, plus a freeboard of two (2) feet above the highest adjacent grade; or at least three (3) feet above the highest adjacent grade, if no depth number is specified.

b. Non-residential structures may, in lieu of elevation, be floodproofed to the same level as required in Section H, Subsection 6.a so that the structure, together with attendant utility and sanitary facilities, below that level shall be watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy. Certification is required in accordance with Section G, Subsection Article 4, Section 2.a.1 and Section H, Subsection 2.b.

c. Adequate drainage paths shall be provided around structures on slopes, to guide floodwaters around and away from proposed structures.

7. Standards For Areas of Shallow Flooding (Zone AH)

Located within the Special Flood Hazard Areas established in Section F, Subsection 2, are areas designated as shallow flooding areas. These areas are subject to inundation by 1-percent-annual-chance shallow flooding (usually areas of ponding) where average depths are one (1) to three (3) feet. Base Flood Elevations are derived from detailed hydraulic analyses are shown in this zone. In addition to meeting the requirements of Section H, Subsection 1 and 2, all new construction and substantial improvements shall meet the following requirements:

a. Adequate drainage paths shall be provided around structures on slopes, to guide floodwaters around and away from proposed structures.

8. Standards For Areas Protected by Flood Protection System (A-99 Zones)

Located within the Areas of Special Flood Hazard established in Section F, Subsection 2, 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 Section G and Section H shall apply.

9. Standards for Unmapped Streams

Located within the City of Spring Hill, Tennessee, are unmapped streams that are regulated by the United States Army Corps of Engineers under the Clean Water Act Section 404, where areas of special flood hazard are neither indicated nor identified. Adjacent to such streams, the following provisions shall apply:

a. Require until a regulatory floodway is designated, that no new construction, substantial improvements, increased runoff, or other development, including fill shall be permitted within unmapped streams (at least equal to twice the width of the stream, measured from the top of each stream bank or 20 feet, whichever is greater, measured from the closest top of bank), unless it is demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering principles and practices by a Tennessee registered professional engineer with supporting technical data and certification thereof that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not result in an increase to the water surface elevations or result in an increase of the open channel velocities that will create or worsen erosive velocities during a base flood discharge at any point within the City of Spring Hill, Tennessee and establishes a SFHA accepted by FEMA.

b. A community may permit encroachments or increased runoff within unmapped streams that would result in an increase in the water surface elevation of the base flood, provided that the applicant first applies for a conditional letter of map revision (CLOMR) and establishes a floodway, fulfills the requirements as established under the provisions of § 65.12, and the results of the study

are not objected to by effected property owners upon notice, are accepted by the City of Spring Hill's Administrator, and receives the approval of the FEMA;

c. 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 Section G and H.

d. ONLY if Section H, Subsection 9, provisions (1) and (2) are satisfied, then any new construction or substantial improvement shall comply with all other applicable flood hazard reduction provisions of Section H, Subsection 1 and 2.

10. No Adverse Impact Determination

After examination of the National Flood Insurance Program standards for floodplain development, the Board of Mayor and Alderman of the city of Spring Hill has made the judgment that additional protections must be employed to protect the lives and property within the jurisdiction of the city of Spring Hill.

No structure or land shall be located, extended, converted, altered or developed in any way within the special flood hazard area, nor shall any floodplain development permit be issued except as otherwise provided in this floodplain regulation, until the Administrator makes a determination that the project would not increase danger to life or property and would have no adverse impact based upon the affirmative findings that:

a. The granting of the floodplain development permit will not create a danger that fill, construction materials or other debris or construction spoils may be swept onto properties upstream from, downstream from, or adjacent to the project area, or increase erosion; and

b. The granting of the floodplain development permit will not increase or alter the width or extent of the floodway or special flood hazard area except within the property or properties upon which the floodplain development is located or the property of a consenting owner, where such property is protected from future development by means of a drainage easement or other, similar restriction that is acceptable to the administrator; and

c. The granting of the floodplain development permit will not increase the susceptibility of any property to flooding during the base flood except the property or properties upon which the floodplain development is located or the property of a consenting owner, where such property is protected from future development by means of a conservation easement or other similar deed restriction that is acceptable to the administrator; and

d. The granting of the floodplain development permit will not increase the susceptibility of existing or proposed structure to flooding during the base flood; and

e. The granting of the floodplain development permit will not detrimentally impact the functionality of any street, bridge or culvert, or public utility during the base flood; and

f. The granting of the floodplain development permit will not increase the susceptibility of any critical facility to flooding, nor detrimentally impact access thereto during the base flood.

I. VARIANCE PROCEDURE

1. Municipal Board of Zoning appeals

a. Authority

i. The City of Spring Hill, Tennessee Municipal Board of Zoning Appeals shall hear and decide appeals and requests for variances from the requirements of this Floodplain regulation.

b. Procedure

i. Meetings of the Municipal Board of Zoning Appeals shall be held at such times, as the Board shall determine. All meetings of the Municipal Board of Zoning Appeals shall be open to the public. The Municipal 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 Municipal Board of Zoning Appeals shall be set by the Board of Alderman.

c. Appeals: How Taken

i. An appeal to the Municipal 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 Floodplain regulation. Such appeal shall be taken by filing with the Municipal 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 determined by the local newspaper for the cost of publishing a notice of such hearings shall be paid by the appellant. The Administrator shall transmit to the Municipal Board of Zoning Appeals all papers constituting the record upon which the appeal action was taken. The Municipal 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 30 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.

d. Powers

i. The Municipal 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 Floodplain regulation.

ii. Variance Procedures: In the case of a request for a variance the following shall apply:

(A) The City of Spring Hill, Tennessee Municipal Board of Zoning Appeals shall hear and decide appeals and requests for variances from the requirements of this Floodplain regulation.

(B) 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 Floodplain regulation to preserve the historic character and design of the structure.

(C) In passing upon such applications, the Municipal Board of Zoning Appeals shall consider all technical evaluations, all relevant factors, all standards specified in other sections of this Floodplain regulation, and:

(1) The danger that materials may be swept onto other property to the injury of others;

(2) The danger to life and property due to flooding or erosion;

(3) The susceptibility of the proposed facility and its contents to flood damage;

i. The importance of the services provided by the proposed facility to the community;

ii. The necessity of the facility to a waterfront location, in the case of a functionally dependent use;

iii. The availability of alternative locations, not subject to flooding or erosion damage, for the proposed use;

iv. The relationship of the proposed use to the comprehensive plan and floodplain management program for that area;

v. The safety of access to the property in times of flood for ordinary and emergency vehicles;

vi. 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;

vii. 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 Floodplain regulation, the Municipal Board of Zoning Appeals may attach such conditions to the granting of variances, as it deems necessary to effectuate the purposes of this Floodplain regulation.

(5) Variances shall not be issued within any designated floodway if any increase in flood levels during the base flood discharge would result.

2. Conditions for Variances

a. Variances shall be issued upon a determination that the variance is the minimum relief necessary, considering the flood hazard and the factors listed in Section G, Subsection 1.

b. 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 Floodplain regulations.

c. 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.

d. The Administrator shall maintain the records of all appeal actions and report any variances to FEMA upon request.

J. Legal Status Provision

1. Conflict with Other Regulations

    a. In case of conflict between this Floodplain regulation or any part thereof, and the whole or part of any existing or future regulations or Ordinances of the City of Spring Hill, Tennessee, the most restrictive shall in all cases apply.

2. Severability

    a. If any section, clause, provision, or portion of this Floodplain regulation 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 Floodplain regulation which is not of itself invalid or unconstitutional.

3. Effective Date

    a. This Floodplain regulation shall become effective on August 1, 2022, in accordance with the Charter of the City of Spring Hill, Tennessee, and the public welfare demanding it.

    b. Approved and adopted by the City of Spring Hill, Tennessee, Mayor and the Spring Hill Board of Alderman.

NEW WATER APPLICATION
(RESIDENTIAL)

(After submitting application, call 931-486-2252, ext. 0 to pay the $50.00 non-refundable connection fee.)

NAME: Kalie victoria caudell (first) (mi) (last) SPOUSE: Jacob Tyler foster (first) (mi) (last)

DRIVER'S LICENSE # 123431898 ST ___ DRIVER'S LICENSE # _____ ST ___

ATTACH COLOR COPY(S) OF DRIVER'S LICENSE(S) (FRONT SIDE ONLY)

MOVE-IN/ACTIVATION DATE: November 8th 2022

PHYSICAL ADDRESS:
1042-A pinehurst Drive
Spring hill, TN 37174

MAILING ADDRESS (if different):
_____
_____

THIS IS A (CIRCLE ONE): HOUSE (TOWNHOUSE) APARTMENT OTHER

SUBDIVISION NAME: Port Royal at Spring hill

HOME PH # N/A CELL # 615-478-3723 SPOUSE'S CELL # 615-484-0342

EMAIL ADDRESS K.vcaudell@gmail.com

EMPLOYER european wax center PHONE # 629-888-1392

PREVIOUS ADDRESS: 5206 windchase circle franklin, TN 37067

I/We hereby apply to Spring Hill Water Department for water service in accordance with the terms and conditions appearing below and provided by the City and I/we acknowledge having received and read same. If signed by someone other than the applicant, it is understood that party(s) signing shall be jointly and severally liable, as are customer and spouse, for any charges/expenses payable to Spring Hill Water Department. Driver's license numbers are needed for collection purposes only. Customer information will not be shared with unauthorized parties.

I/We hereby acknowledge that failure to receive my bill does not waive late charges or exempt me from being disconnected. I provide permission for my telephone number(s) to be used for contact regarding past-due amounts. Past due accounts may be turned over to a collection agency and accounts turned over to collection will be assessed additional charges. Please call if the bill has not been received by the end of the first week of the month.

SIGNATURE: [signature] DATE: 10/17/2022

199 Town Center Parkway
P.O. Box 789
Spring Hill TN 37174

Phone: 931-486-2252
Fax: 931-486-0516
www.springhilltn.org

SPRING HILL

UNIFIED DEVELOPMENT CODE

Revised

Prepared by Camiros for the City of Spring Hill, Tennessee

Adopted:

Ordinance 18-21 August 20, 2018 Board of Mayor and Alderman

Articles 1-14, 18, 19, Official Zoning Map

Resolution 18-01 May 29, 2018 Design Review Commission

Resolution 18-44 May 14, 2018 Planning Commission

Articles 15, 16, 17

Resolution 21-106 October 11, 2021 Planning Commission

Amendments:

Date	Approval Authority	Resolution or Ordinance Number
February 11, 2019	*Planning Commission*	*Resolution 19-14*
February 11, 2019	*Design Review Com.*	*Resolution 19-01*
April 15, 2019	*Board of Mayor & Alderman*	*Ordinance 19-09*
September 16, 2019	*Board of Mayor & Alderman*	*Ordinance 19-28*
March 9, 2020	*Planning Commission*	*Resolution 20-11*
April 13, 2020	*Planning Commission*	*Resolution 20-18*
November 15, 2021	*Board of Mayor & Alderman*	*Ordinance 21-14*
November 15, 2021	*Board of Mayor & Alderman*	*Ordinance 21-29*
September 6, 2022	*Board of Mayor & Alderman*	*Ordinance 22-18*
October 17, 2022	*Board of Mayor & Alderman*	*Ordinance 22-25*

7.5 F-1 OPEN FLOODWAY DISTRICT

A. Purpose

The purpose of the F-1 District is to minimize public and private losses due to flood conditions in specific areas. This Ordinance is designed to:

1. Restrict or prohibit uses which are vulnerable to water 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 accommodate 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.

B. Application and Objectives

This district applies to all areas within the incorporated area of the city. The objectives of the F-1 District are:

1. To protect human life, health, 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 floodable areas.
6. To help maintain a stable tax base by providing for the sound use and development of flood prone areas in such a manner as to minimize blight in flood areas.
7. To ensure that potential homebuyers are notified that property is in a floodable area.
8. To maintain eligibility for participation in the National Flood Insurance Program.

C. Definitions

The definitions of this section only apply to the F-1 District. Unless specifically defined below, other words or phrases used in the F-1 District are as defined in Article 2. In the case of conflict between terms defined in Article 2, when applied to the F-1 District, the definition in this section control.

100-Year Flood. A flood having a 1% chance of happening in any year. It is based on statistical analysis of stream flow records available for the watershed and analysis of rainfall and runoff characteristics in the general region of the watershed.

25-Year Flood. A flood having a 4% chance of happening in any year.

Accessory Structure. A subordinate structure to the principal structure, which must meet the following:

1. Accessory structures cannot be used for human habitation.
2. Accessory structures must be designed to have low flood damage potential.
3. Accessory structures must be constructed and placed on the building site to offer the minimum resistance to the flow of floodwaters.
4. Accessory structures must be firmly anchored to prevent flotation that may result in damage to other structures.
5. Service facilities, such as electrical and heating equipment, must be elevated or floodproofed.

Act. The statutes authorizing the National Flood Insurance Program that are incorporated in 42 U.S.C. 4001-4128.

Addition (To An Existing Building). Any walled and roofed expansion to the perimeter of a building in which the addition is connected by a common load-bearing wall other than a firewall. Any walled and roofed addition, which is

connected by a firewall or is separated by an independent perimeter load-bearing wall, is considered "new construction," as defined in this section.

Appeal. A request for a review of the local enforcement officer's interpretation of any provision of the F-1 District or a request for a variance to the F-1 District.

Area of Shallow Flooding. A designated AO or AH Zone on a community's Flood Insurance Rate Map (FIRM) with 1% 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. Land within a community that 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. The land in the floodplain within a community subject to a 1% 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.

Base Flood. See 100-Year Flood as defined in this Section.

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

Breakaway Wall. A wall that is not part of the structural support of the building and is intended through its design and construction to collapse under specific lateral loading forces, without causing damage to the elevated portion of the building or supporting foundation system.

Building. Any structure built for support, shelter, or enclosure for any occupancy or storage. (See "structure" as defined in this Section.)

Development. 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. 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 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/Emergency Program. 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. The process of the gradual wearing away of landmasses. This peril is not per se covered under the Program.

Exception. A waiver from the provisions of the F-1 District, which relieves the applicant from the requirements of a rule, regulation, order, or other determination made or issued pursuant to the F-1 District.

Existing Construction. Any structure for which the "start of construction," as defined in this Section, commenced before 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. 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 ordinance adopted by the community as a basis for that community's participation in the National Flood Insurance Program (NFIP)).

Existing Structures. See "existing construction," as defined in this Section.

Expansion to an Existing Manufactured Home Park or Subdivision. 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/Flooding. 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. A determination by the administrator of the water surface elevations of the base flood, that is, the flood level that has a 1% or greater chance of occurrence in any given year

Flood Elevation Study. 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). An official map of a community, issued by the Federal Emergency Management Agency, where the boundaries of areas of special flood hazard have been designated as Zone A.

Flood Insurance Rate Map (FIRM). An official map of a community, issued by the Federal Emergency Management Agency, delineating the areas of special flood hazard or the risk premium zones applicable to the community.

Flood Insurance Study. The official report provided by the Federal Emergency Management Agency, evaluating flood hazards and containing flood profiles and water surface elevation of the base flood.

Floodplain/Flood-Prone Area. Any land area susceptible to being inundated by water from any source. (See definition of "flooding," as defined in this Section)

Floodplain Management. 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. 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," as defined in this Section, 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. 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, structures and their contents.

Flood-Related Erosion. 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/Flood-Related Erosion Prone Area. 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. 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 flood plain management regulations.

Floodway. 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 one foot.

Floor. The top surface of an enclosed area in a building, including basement, i.e., top of slab in concrete slab construction or top of wood flooring in wood frame construction. The term does not include the floor of a garage used solely for parking vehicles.

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

Functionally Dependent Use. A use that 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. The highest natural elevation of the ground surface, prior to construction, adjacent to the proposed walls of a structure.

Historic Structure. 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 preliminary 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 a local inventory of historic places and determined as eligible by communities with historic preservation programs that have been certified either:

    a. By an approved state program as determined by the Secretary of the Interior.

    b. Directly by the Secretary of the Interior.

Levee. 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. 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. 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 in the F-1 District.

Manufactured Home. 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," as defined in this Section, unless such transportable structures are placed on a site for 180 consecutive days or longer.

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

Map. The Flood Hazard Boundary Map (FHBM) or the Flood Insurance Rate Map (FIRM) for a community issued by the Agency.

Mean Sea Level. 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 Article, the term is synonymous with National Geodetic Vertical Datum (NGVD) or other datum, to which base flood elevations shown on a community's Flood Insurance Rate Map are referenced

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

New Construction. Any structure for which the "start of construction," as defined in this Section, commenced after the effective date of the F-1 District or the effective date of the first floodplain management ordinance and includes any subsequent improvements to such structure.

New Manufactured Home Park or Subdivision. 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 after the effective date of the F-1 District or the effective date of the first floodplain management ordinance and includes any subsequent improvements to such structure.

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

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

Recreational Vehicle. 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 or automobile.

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

Regulatory Floodway. 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. Relating to, formed by, or resembling a river (including tributaries), stream, brook, etc.

Special Hazard Area. 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 as designated by the Governor of the State of Tennessee at the request of the Administrator to assist in the implementation of the National Flood Insurance Program for the state.

Structure. For purposes of this section, means a walled and roofed building that is principally above ground, a manufactured home, a gas or liquid storage tank, or other man-made facilities or infrastructures.

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

Substantial Improvement. Any repairs, reconstruction's, rehabilitation's, additions, alterations or other improvements to a structure, taking place during a 5-year period, in which the cumulative cost equals or exceeds fifty percent of the market value of the structure before the "start of construction" of the improvement. The market value of the structure should be: 1) the appraised value of the structure prior to the start of the initial repair or improvement; or 2) in the case of damage, the value of the structure prior to the damage occurring. This term includes structures that have incurred "substantial damage," as defined in this Section, regardless of the actual repair work performed.

For the purpose 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 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," as defined in this Section, provided that the alteration will not preclude the structure's continued designation as a historic structure.

Substantially Improved Existing Manufactured Home Parks or Subdivisions. Where the repair, reconstruction, rehabilitation or improvement of the streets, utilities and pads equals or exceeds 50% of the value of the streets, utilities and pads before the repair, reconstruction, or improvement commenced.

Variance. As defined in this Section, a grant of relief from the requirements of the F-1 District which permits construction in a manner otherwise prohibited by the F-1 District where specific enforcement would result in unnecessary hardship.

Violation. 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 the F-1 District is presumed to be in violation until such time as that documentation is provided.

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

D. Basis for Establishing the Areas of Special Flood Hazard

The Areas of Special Flood Hazard identified on the Williamson County, Tennessee, and Incorporated Areas, Federal Emergency Management Agency, Flood Insurance Study (FIS) Number 47187CV000B, dated September 29, 2006 and Flood Insurance Rate Map (FIRM), Community Panel Numbers 47187C0343F, 47187C0345F, 47187C0365F, 47187C0435F, 47187C0455F, dated September 29, 2006; and the Areas of Special Flood Hazard identified on the Maury County, Tennessee, and Incorporated Areas, Federal Emergency Management Agency, Flood Insurance Study (FIS) Number 470123C0000E, dated April 16, 2007 and Flood Insurance Rate Map (FIRM), Community Panel Numbers 47119C0065E, 47119C0070E, 47119C0090E, 47119C0180E, 47119C0185E, 47119C0205E, dated April 16, 2007, along with all supporting technical data, are adopted by reference and declared to be a part of this Code.

E. Applicability

1. A development permit is required in conformity with this Section prior to any development activities. No land, structure, or use may be located, extended, converted, or structurally altered without full compliance with the terms of this Section and other applicable regulations.
2. This Section is not intended to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where this Section conflicts or overlaps with another regulatory instrument, the stricter requirement controls.
3. In the interpretation and application of this Section, all provisions are considered as minimum requirements; liberally construed in favor of the governing body, and; deemed neither to limit nor repeal any other powers granted under Tennessee statutes.
4. The degree of flood protection required by this Section 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 Section 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 Section does not create liability on the part of the City or by any officer or employee thereof for any flood damages that result from reliance on this Section or any administrative decision lawfully made hereunder.
5. Violation of the provisions of this Section or failure to comply with any of its requirements, including violation of conditions and safeguards established in connection with grants of variance constitute a misdemeanor punishable as other misdemeanors as provided by law. Each day such violation continues is considered a separate offense. Nothing contained herein prevents the City from taking such other lawful actions to prevent or remedy any violation.

F. Administration

1. Duties and Responsibilities of the Building Official (Administrator)

   Duties of the Building Official include, but are not limited to:

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

   b. Advise the permittee that additional federal or state permits may be required, and if specific federal or state permit requirements are known, require that copies of such permits be provided and maintained on file with the development permit. This includes Section 404 of the Federal Water Pollution Control Act Amendments of 1972, 33 U. S. C. 1334.

c. Notification to 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 submission of evidence of such notification to the Federal Emergency Management Agency.

d. For any altered or relocated watercourse, submit engineering data/analysis within six months to the Federal Emergency Management Agency to ensure accuracy of community flood maps through the Letter of Map Revision process.

e. Assure that the flood carrying capacity within an altered or relocated portion of any watercourse is maintained.

f. 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 or substantially improved buildings, in accordance with this Section.

g. Record the actual elevation; in relation to mean sea level or the highest adjacent grade, where applicable to which the new or substantially improved buildings have been flood-proofed, in accordance with this Section.

h. When flood proofing is utilized for a structure, the Building Official will obtain certification of design criteria from a registered professional engineer or architect, in accordance with this Section.

i. Where interpretation is needed as to the exact location of boundaries of the areas of special flood hazard (for example, where there appears to be a conflict between a mapped boundary and actual field conditions) the Building Official will make the necessary interpretation. Any person contesting the location of the boundary will be given a reasonable opportunity to appeal the interpretation as provided in this Section.

2. Procedure

Application for a development permit must be made to the Building Official on forms furnished by the City 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. In addition, the following information is required:

a. Application Stage

i. 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 the highest adjacent grade when applicable under this Section.

ii. Elevation in relation to mean sea level to which any non-residential building will be flood-proofed where base flood elevations are available, or to the highest adjacent grade when applicable under this Section.

iii. Design certificate from a registered professional engineer or architect that the proposed non-residential flood-proofed building will meet the flood-proofing criteria of this Section.

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

b. Construction Stage

i. Within unnumbered A zones, where flood elevation data are not available, the Building Official will record the elevation of the lowest floor on the development permit. The elevation of the lowest floor is determined as the measurement of the lowest floor of the building relative to the highest adjacent grade.

ii. For all new construction and substantial improvements, the permit holder must provide to the Building Official an as-built certification of the regulatory floor elevation or floodproofing level upon the completion of the lowest floor or floodproofing. Within unnumbered A zones, where flood elevation data is not available, the elevation of the lowest floor is determined as the measurement of the lowest floor of the building relative to the highest adjacent grade.

iii. Any lowest floor certification made relative to mean sea level must be prepared by or under the direct supervision of, a registered land surveyor and

certified by same. When floodproofing is utilized for a non-residential building said certification must be prepared by or under the direct supervision of, a professional engineer or architect and certified by same.

iv. Any work undertaken prior to submission of the certification is at the permit holder's risk. The Building Official will review the above-referenced certification data. Deficiencies detected by such review will 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, is cause to issue a stop-work order for the project.

G. Provisions for Flood Hazard Reduction

1. General Standards

In all flood prone areas, the following provisions are required:

a. New construction and substantial improvements to existing buildings must be anchored to prevent flotation, collapse, or lateral movement of the structure.

b. Manufactured homes must be elevated and 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 is in addition to and consistent with applicable state requirements for resisting wind forces.

c. New construction and substantial improvements to existing buildings must be constructed with materials and utility equipment resistant to flood damage.

d. New construction or substantial improvements to existing buildings must be constructed by methods and practices that minimize flood damage.

e. All electrical, heating, ventilation, plumbing, air conditioning equipment, and other service facilities must be designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding.

f. New and replacement water supply systems must be designed to minimize or eliminate infiltration of flood waters into the system.

g. New and replacement sanitary sewage systems must be designed to minimize or eliminate infiltration of flood waters into the systems and discharges from the systems into flood waters.

h. On-site waste disposal systems must be located and constructed to avoid impairment to them or contamination from them during flooding.

i. Any alteration, repair, reconstruction, or improvements to a building that is in compliance with the provisions of this Section, must meet the requirements of "new construction" as defined in this Code.

j. Any alteration, repair, reconstruction, or improvements to a building that is not in compliance with the provision of this Section, must be undertaken only if said nonconformity is not further extended or replaced.

2. Specific Standards

These provisions apply to all Areas of Special Flood Hazard as provided herein:

a. Residential Construction

i. Where base flood elevation data is available, new construction, or substantial improvement of any residential building (or manufactured home) must have the lowest floor, including basement, elevated no lower than two feet 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 and to ensure unimpeded movement of floodwater must be provided in accordance with the standards of this Section.

ii. Within unnumbered A zones, where base flood elevations have not been established and where alternative data is not available, the Building Official will require the lowest floor of a building to be elevated or floodproofed to a level of at least three feet above the highest adjacent grade (lowest floor and highest adjacent grade as defined in this Code). All applicable data including elevations or flood proofing certifications shall be recorded as set forth in this Section.

b. Non-Residential Construction

i. New construction or substantial improvement of any commercial, industrial, or non-residential building, when BFE data is available, must have the lowest floor, including basement, elevated or floodproofed no lower than two feet above the level of the base flood elevation.

ii. Within unnumbered A zones, where base flood elevations have not been established and where alternative data is not available, the Building Official must require the lowest floor of a building to be elevated or floodproofed to a level of at least three feet above the highest adjacent grade (lowest floor and highest adjacent grade as defined in this Code). All applicable data including elevations or flood proofing certifications shall be recorded as set forth in this Section.

iii. Buildings located in all A-zones may be flood-proofed, 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 registered professional engineer or architect must certify that the design and methods of construction are in accordance with accepted standards of practice for meeting the provisions above, and provide such certification to the Building Official as set forth in this Section.

c. Elevated Building

i. All new construction or substantial improvements to existing buildings that include any fully enclosed areas formed by foundation and other exterior walls below the base flood elevation, or required height above the highest adjacent grade, must 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.

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

(b) 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.

(c) The bottom of all openings cannot be higher than one foot above the finish grade.

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

i. Access to the enclosed area must be the minimum necessary to allow for parking of vehicles (garage door) or limited storage of maintenance equipment used in connection with the premises (standard exterior door) or entry to the elevated living area (stairway or elevator).

ii. The interior portion of such enclosed area must not be partitioned or finished into separate rooms in such a way as to impede the movement of floodwaters and all such petitions must comply with the provisions of this Section.

a. **Standards for Manufactured Homes and Recreational Vehicles**

i. All manufactured homes placed, or substantially improved, on individual lots or parcels, in expansions to existing manufactured home parks, or in new or

substantially improved manufactured home parks, must meet all the requirements of new construction, including elevations and anchoring.

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

(a) When base flood elevations are available the lowest floor of the manufactured home is elevated on a permanent foundation no lower than two feet above the level of the base flood elevation.

(b) Absent base flood elevations the manufactured home chassis is elevated and supported by reinforced piers (or other foundation elements) at least three feet in height above the highest adjacent grade.

iii. Any manufactured home, which has incurred "substantial damage," as defined in this Code, as the result of a flood or that has substantially improved, must meet the standards of this Section.

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

v. All recreational vehicles placed on identified flood hazard sites must either:

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

(b) 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.)

(c) The recreational vehicle must meet all the requirements for new construction, including the anchoring and elevation requirements of this Section if on the site for longer than 180 consecutive days.

b. Standards for Subdivisions

Subdivisions and other proposed new developments, including manufactured home parks, must be reviewed to determine whether such proposals will be reasonably safe from flooding. If a subdivision proposal or other proposed new development is in a flood-prone area, any such proposals must be reviewed to ensure that:

i. All subdivision proposals must be consistent with the need to minimize flood damage.

ii. All subdivision proposals must have public utilities and facilities such as sewer, gas, electrical, and water systems located and constructed to minimize or eliminate flood damage.

iii. All subdivision proposals must have adequate drainage provided to reduce exposure to flood hazards.

iv. Base flood elevation data must be provided for subdivision proposals and other proposed developments (including manufactured home parks and subdivisions) that are greater than 50 lots and/or five acres in area.

f. Standards for Areas of Special Flood Hazard with Established Base Flood Elevations and With Floodways Designated

Located within the Areas of Special Flood Hazard 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 apply:

i. Encroachments are prohibited, including earthen fill material, new construction, substantial improvements, or other developments 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, when combined with all other existing and anticipated development, does not result in any increase the water surface elevation of the base flood level, velocities, or floodway widths during the occurrence of a base flood discharge at any point within the community. A

registered professional engineer must provide supporting technical data and certification thereof.

ii. New construction or substantial improvements of buildings must comply with all applicable flood hazard reduction provisions of this Section.

g. Zones AE with Established Base Flood Elevations but Without Floodways Designated

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

i. No encroachments, including fill material, new structures, or substantial improvements must be located within areas of special flood hazard, unless certification by a 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 foot at any point within the community. The engineering certification should be supported by technical data that conforms to standard hydraulic engineering principles.

ii. New construction or substantial improvements of buildings must be elevated or flood-proofed to elevations established in accordance with this Section.

h. Standards for Streams without Established Base Flood Elevations or Floodways (A Zones)

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

i. When base flood elevation data or floodway data have not been provided in accordance with Section 3, then the Building Official must obtain, review, and reasonably utilize any scientific or historic base flood elevation and floodway data available from a Federal, State, or other source, in order to administer the provisions of this Section. Only if data is not available from these sources, then the following provisions apply:

(a) No encroachments, including structures or fill material, may be located within an area equal to the width of the stream or twenty feet, whichever is greater, measured from the top of the stream bank, unless certification by 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 foot at any point within the community. The engineering certification should be supported by technical data that conforms to standard hydraulic engineering principles.

(b) In special flood hazard areas without base flood elevation data, new construction or substantial improvements of existing buildings must have the lowest floor of the lowest enclosed area (including basement) elevated no less than three feet above the highest adjacent grade at the building site. Openings sufficient to facilitate the unimpeded movements of floodwaters must be provided in accordance with the standards of elevated buildings of this Section.

i. Standards for Areas of Shallow Flooding (AO and AH Zones)

Located within the Areas of Special Flood Hazard are areas designated as shallow flooding areas. These areas have special flood hazards associated with base flood depths of one to three feet where a clearly defined channel does not exist and where the path of flooding is unpredictable and indeterminate. Therefore, the following provisions apply:

i. All new construction and substantial improvements of residential and non-residential buildings must have the lowest floor, including basement, elevated to at least one foot above the flood depth number specified on the Flood Insurance Rate Map (FIRM), in feet, above the highest adjacent grade. If no flood depth number is specified, the lowest floor, including basement, must be elevated, at least three feet above the highest adjacent grade. Openings sufficient to facilitate the unimpeded movements of floodwaters must be provided in accordance with standards of this Section for elevated buildings.

ii. All new construction and substantial improvements of non-residential buildings may be flood-proofed in lieu of elevation. The structure together with attendant utility and sanitary facilities must be flood-proofed and designed watertight to be completely flood-proofed to at least one foot above the specified FIRM flood level, 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, the lowest floor, including basement, must be flood-proofed to at least three feet above the highest adjacent grade. A registered professional engineer or architect must certify that the design and methods of construction are in accordance with accepted standards of practice for meeting the provisions of this Article and shall provide such certification to the Building Official.

iii. Adequate drainage paths must be provided around slopes to guide floodwaters around and away from proposed structures.

iv. The Building Official must certify the elevation or the highest adjacent grade, where applicable, and the record will become a permanent part of the permit file.

j. Standards for Areas Protected by Flood Protection System (A-99 Zones)

Located within the areas of special flood hazard are areas of the 100-year floodplain protected by a flood protection system but where base flood elevations and flood hazard factors have not been determined. Within these areas (A-99 Zones) all provisions of Section F.1 apply.

k. Standards for Unmapped Streams

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

i. In areas adjacent to such unmapped streams, no encroachments including fill material or structures, can 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 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 foot at any point within the City.

iii. When new elevation data is available, new construction, or substantial improvements of buildings must be elevated or flood proofed to elevations established in accordance with this Section.

iv. The Building Official must certify the elevation or the highest adjacent grade, where applicable, and the record will become a permanent part of the permit file.

j. Standards for Areas Protected by Flood Protection System (A-99 Zones)

Located within the areas of special flood hazard are areas of the 100-year floodplain protected by a flood protection system but where base flood elevations and flood hazard factors have not been determined. Within these areas (A-99 Zones) all provisions of Section F.1 apply.

k. Standards for Unmapped Streams

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

i. In areas adjacent to such unmapped streams, no encroachments including fill material or structures, can 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 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 foot at any point within the City.

ii. When new elevation data is available, new construction, or substantial improvements of buildings must be elevated or flood proofed to elevations established in accordance with this Section.

H. Variance Procedures

The provisions of this section apply exclusively to areas of Special Flood Hazard within the City. However, the Board of Zoning Appeals may hear and decide appeals and requests for variances from the requirements of this Section.

Variances may be issued for the repair or rehabilitation of historic structures (see definition) upon a determination that the proposed repair or rehabilitation will not preclude the structure's continued designation as a historic structure and the variance is the minimum to preserve the historic character and design of the structure

In passing upon such applications, the Board of Zoning Appeals will consider all technical evaluations, all relevant factors, all standards specified in other sections of this Article, and the following:

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 facility.

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, and water systems, and streets and bridges.

Upon consideration of the factors listed above, and the purposes of this Section, the Board of Zoning Appeals may attach such conditions to the granting of variances as it deems necessary to effectuate the purposes of this Section.

Variances cannot be issued within any designated floodway if any increase in flood levels during the base flood discharge would result.

The following conditions apply to the granting of variances:

a. Variances will be issued upon a determination that the variance is the minimum relief necessary, considering the flood hazard; and in the instance of a historical building, a determination that the variance is the minimum relief necessary so as not to destroy the historic character and design of the building.

b. Variances will 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 ordinances.

c. Any applicant to whom a variance is granted will be given written notice that the issuance of a variance to construct a structure below the base flood level will result in increased premium rates for flood insurance, and that such construction below the base flood level increases risks to life and property.

The Building Official will maintain the records of all appeal actions and report any variances to the Federal Emergency Management Agency upon request.