

ARTICLE 22.
FLOOD PLAIN OVERLAY ZONING DISTRICTS

Section 1. INTENT:

This Article establishes overlay zoning districts for flood plain areas pursuant to K.S.A. 19-101 *et seq.* and K.S.A. 19-2956 *et seq.*, and any amendments thereto, if any, through which the State of Kansas has granted and delegated the responsibility to local governmental units to adopt regulations designed to promote the public health, safety, and general welfare of its citizenry.

Section 2. STATUTORY AUTHORIZATION, FINDINGS OF FACT, PURPOSE AND OBJECTIVES:

A. Statutory Authorization:

1. Approval of Article 22 of the Johnson County Zoning and Subdivision Regulations by the Chief Engineer of the Division of Water Resources of the Kansas Department of Agriculture Prior to Adoption: The following portion of the Flood Plain Management Regulations, as written, were approved in draft form by the Chief Engineer of the Division of Water Resources of the Kansas Department of Agriculture on July 22, 2003.
2. Kansas Statutory Authorization: The Legislature of the State of Kansas has in K.S.A. 19-101 *et seq.* and 19-2956 *et seq.*, granted and delegated the responsibility to local governmental units to adopt Flood Plain Management Regulations designed to protect the health, safety, and general welfare. Pursuant to that authority, the Board of County Commissioners of Johnson County, Kansas, adopted Article 22 of these regulations.

B. Findings of Fact:

1. Flood Losses Resulting from Periodic Inundation: The Area of Special Flood Hazard of Johnson County are subject to periodic inundation which may result in loss of life, property, health, and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood damage reduction and relief, and impairment of the tax base, all of which adversely affect the public health, safety and general welfare.
2. General Causes of these Flood Losses: These flood losses are caused by the cumulative effect of obstructions or development in any delineated flood plain causing increases in flood heights and velocities, and by the occupancy of Flood Hazard Areas by uses vulnerable to the flood hazards on such land or hazardous to others because the uses are inadequately elevated, flood-proofed, or otherwise protected from flood damages.

C. Methods Used to Analyze Flood Hazards:

This Article uses a reasonable, standard engineering method of analyzing flood hazards which consists of a series of interrelated steps:

1. Selection of a regulatory flood based upon engineering calculations, which permit a consideration of such flood factors as the potential frequency of occurrence, the potential area inundated, and the potential depth of inundation. The regulatory flood selected for this Article is representative of large floods which are reasonably characteristic of what can be expected to occur along the particular streams subject to this Article. The regulatory flood is the general order of a flood which has a one percent (1%) or greater chance of occurrence

in any given year, as delineated in the "Flood Insurance Study, Johnson County, Kansas and Incorporated Areas Volumes 1 and 2," with a revised date of June 17, 2002, and the Johnson County Flood Insurance Rate Map (FIRM) provided by the Federal Emergency Management Agency (FEMA) as amended.

2. Calculation of water surface profiles based on a standard and accepted hydrologic and hydraulic engineering analyses of the storm water runoff and the capacity of the stream channel and overbank areas to convey the regulatory flood.
 3. Computation of a Floodway and delineation of its Floodway Encroachment Lines that will convey the Base Flood without increasing the Base Flood Elevation more than 1 foot at any point and within which no obstruction shall be permitted which would cause any increase in the Base Flood Elevation.
 4. Delineation of floodway fringe, (i.e., that area outside the Floodway Encroachment Lines but which still is subject to inundation by the regulatory flood) within which no obstruction is permitted which would cause more than a one (1) foot rise in the flood height.
- D. Statement of Purpose: It is the purpose of this Article to promote the public health, safety and general welfare and to minimize public and private losses due to flood conditions in specific areas by applying the provisions of this Article; to maintain the County's eligibility for participation in the National Flood Insurance Program (NFIP) as defined in 44 Code of Federal Regulations (CFR) 59.22(a)(3); and to meet the requirements of 44 CFR 60.3(d) and K.A.R. 5-44-4 by applying the provisions of this Article to:
1. Restrict or prohibit uses which are dangerous to health, safety and property in times of flooding or cause undue increases in flood flows, heights or velocities;
 2. Require that land uses and facilities vulnerable to floods be protected against flood damage at the time of initial construction;
 3. Provide information for evaluating land purchases of flood prone ground within unincorporated Johnson County.
 4. Control the alteration of natural flood plains, stream channels, and natural protective barriers, which are involved in the conveyance of floodwaters;
 5. Control filling, grading, dredging and other development which may increase erosion or flood damage;
 6. Prevent or regulate the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards to other lands; and
 7. Administer Flood Plain Management Regulations so that eligibility is maintained for property owners in the community to purchase flood insurance in the National Flood Insurance Program.
- E. Objectives: The objectives of this Article are:
1. To protect human life and health;
 2. To minimize expenditure of public money for costly flood damage reduction projects;

3. To minimize the need for emergency rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
4. To minimize prolonged public and private interruptions;
5. To minimize damage to public and private facilities and utilities located in flood plains such as water and gas mains; electric, telephone and sewer lines; and streets and bridges;
6. To help maintain a stable tax base by providing for the sound use of flood prone areas in such a manner as to minimize future flood blight areas; and
7. To provide public information for evaluating land purchases of flood prone land.

Section 3. GENERAL PROVISIONS:

- A. **Lands to Which This Article Applies:** This Article shall apply to the "Area of Special Flood Hazard" in unincorporated Johnson County, Kansas, as indicated on the Johnson County Flood Insurance Rate Map (FIRM). Accordingly, this Article shall apply within the Zoning Districts known as the Floodway Fringe Overlay District (FF) and Floodway Overlay District (FW) which coincide with the Regulatory Flood Plain areas, and that are established in Section 5 herein. However, this Article shall not apply if another governmental entity shall have adopted flood plain regulations which are deemed to be the controlling and governing flood plain regulations regarding a particular portion of unincorporated Johnson County, Kansas. In all areas governed by this Article, no development shall be permitted except upon first receiving a Flood Plain Development Permit, which may be granted by the Zoning Administrator under such safeguards and restrictions as the Zoning Administrator may reasonably impose for the promotion and maintenance of the general welfare, and health of the inhabitants of unincorporated Johnson County as specifically provided in Sections 6, 7, and 8 of this Article.
- B. **Basis for Establishing the Area of Special Flood Hazard:** The Area of Special Flood Hazard is hereby established as identified by the Federal Emergency Management Agency through a scientific and engineering report entitled "The Flood Insurance Study, Johnson County, Kansas and Incorporated Areas, Volumes 1 and 2" with a revised date of June 17, 2002, and the accompanying Johnson County Flood Insurance Rate Maps (FIRM), and any revisions thereto, which study is incorporated herein by reference and declared to be a part of this Article.
- C. **Rules for Interpretation of District Boundaries:** The boundaries of the overlay zoning districts for the Floodway Fringe Overlay District (FF) and the Floodway Overlay District (FW) shall be determined by using an engineering scale to measure distances on the zoning map or on the Johnson County Flood Insurance Rate Map (FIRM). Where interpretation is needed as to the exact location of the boundaries of the districts as shown on these maps, as for example where there appears to be a conflict between a mapped boundary and actual field conditions, the Zoning Administrator shall make the necessary interpretation. In such cases where the interpretation is contested, the Board of Zoning Appeals may hear the matter on application pursuant to Article 3 herein that establishes the County's procedures for zoning appeals. The regulatory flood elevation for the point in question shall be the governing factor in the location of the flood plain overlay zoning district boundary on the land.
- D. **Compliance:** No development shall hereafter be located, extended, converted or structurally altered within the known Area of Special Flood Hazard in Johnson County without full compliance with the terms of this Article and any other applicable governmental regulations, if any.

2. Review of all applications for Flood Plain Development Permits for proposed developments to determine whether all necessary permits have been obtained from those governmental agencies from which approval is required by federal or state law, including Section 404 of the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1334.
 3. Issue Flood Plain Development Permits for all approved applications.
 4. Notify adjacent communities and the Chief Engineer of the Division of Water Resources, Kansas Department of Agriculture, prior to approving a Flood Plain Development Permit for any Development that would alter or relocate any watercourse in unincorporated Johnson County, and submit evidence of such notification to the Federal Emergency Management Agency.
 5. Determine that the flood carrying capacity is not diminished and is maintained within the altered or relocated portion of any watercourse.
 6. Verify and record the actual elevation (in relation to mean sea level) of the lowest floor (including basement) of all new or substantially improved structures.
 7. Verify and record the actual elevation (in relation to mean sea level) to which the new or substantially improved non-residential structures have been flood-proofed.
 8. When flood-proofing is utilized for a particular non-residential structure, the Zoning Administrator shall require verification of compliance with the flood standards and requirements of this Article from a registered professional engineer or architect licensed in the State of Kansas that such has been accomplished.
 9. Where interpretation of the district boundaries is needed, the Zoning Administrator shall make the district boundary interpretations in accordance with Section 3 (C) of this Article.
 10. When neither Base Flood Elevation data nor floodway boundaries have been provided in accordance with Section (B) herein, then the Zoning Administrator shall obtain, review, and reasonably utilize any Base Flood Elevation and Floodway data available from federal, state, or other sources, as criteria for reviewing New Construction, Substantial Improvements, or other Development in the A Zone of the Area of Special Flood Hazard as delineated on the Johnson County Flood Insurance Rate Map (FIRM), in order to administer the provisions of Sections 5 through 8 of this Article.
 11. All records pertaining to the provisions of this Article shall be kept in the office of the Zoning Administrator and shall be open for public inspection.
- D. Flood Plain Development Permit Procedure: To obtain a permit, the applicant shall first file a written application for a Flood Plain Development Permit with the Zoning Administrator on forms furnished by the Zoning Administrator for that purpose. Every application shall:
1. Identify and describe the Development to be covered by the Flood Plain Development Permit for which application is being made.
 2. Describe by legal description and street address the land on which the proposed Development is to be located.
 3. Indicate the use or occupancy for which the proposed Development is intended.

4. Be accompanied by plans and specifications for the proposed Development.
 5. Be signed by the applicant landowner or such person's authorized agent, who may be required to submit written evidence of such authority.
 6. Within the Area of Special Flood Hazard, be accompanied by elevations of the lowest floor, including basement, or in the case of flood-proofed non-residential structures, the elevation to which it has been flood-proofed. Submitted documentation or verification of such elevations shall be kept by the Zoning Administrator.
 7. Provide additional information as may be reasonably necessary for proper consideration and evaluation of the requested permit, including, but not limited to, the following:
 - a. Typical valley cross-sections and profiles showing the channel of the stream, elevation of land areas to be affected by the proposed Development and elevation of the 1-percent annual-chance flood event.
 - b. Drawing(s) showing existing and proposed elevations and contours of the ground; pertinent structure, fill or storage elevations; size, location and spatial arrangement of all proposed and existing structures on the site; location and elevations of streets, water supply, sanitary facilities, and other data that will assist the Zoning Administrator in making an evaluation of the potential flood impacts.
 8. When flood-proofing is utilized for a particular non-residential structure, provide verification from a registered professional engineer or architect licensed in the State of Kansas that the non-residential flood-proofed structure meets the flood-proofing criteria in Sections 5 through 8 of this Article.
 9. Describe the extent to which any watercourse will be altered or relocated as a result of proposed Development and identify whether other permits would be necessary as a result of the watercourse alterations.
- E. Appeal and Variance Procedures:
1. The Board of Zoning Appeals (BZA) shall hear and decide appeals of final decisions made by the Zoning Administrator, and also requests for variances from the requirements of this Article.
 2. Appeals to the BZA may be taken, pursuant to the procedures and provisions set forth in Article 3 of these regulations, by any person aggrieved, or by any officer, department head or bureau of the county or any government agency or body affected by any decision of the Zoning Administrator, who alleges there is an error in any order, requirement, decision or determination made by the Zoning Administrator in the enforcement or administration of this Article, including but not limited to, an application request for a Flood Plain Development Permit.
 3. The BZA may authorize in specific cases, pursuant to the procedures and provisions set forth in Article 3 of these regulations, a variance from the specific terms of this Article. In addition to the criteria set forth in Article 3, Section 5(F)(2)(a) through (e) of these regulations, the BZA and the Board, in determining whether the requested variance will not be contrary to the public interest, that the spirit of this Article shall be observed, that public safety and welfare secured, and substantial justice done, shall give consideration which shall include, but not be

limited to, all technical evaluations, all relevant factors and standards specified in other provisions of these regulations, and the following additional criteria:

- a. the danger that materials may be swept onto other lands to the potential injury of others;
 - b. the potential danger to life and property due to flooding or erosion damage;
 - c. the susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner;
 - d. the importance of the services provided by the proposed facility to the community;
 - e. where applicable, the necessity of a waterfront location for the facility;
 - f. the availability of alternative locations for the proposed use that are not in the Area of Special Flood Hazard (and thereby not within the Floodway Fringe Overlay District (FF) or the Floodway Overlay District (FW)), and therefore not subject to erosion damage;
 - g. the compatibility of the proposed use with existing and anticipated other Development;
 - h. the relationship of the proposed use to the County's adopted comprehensive plan and Flood Plain Management program for that area;
 - i. the safety of access to the property in times of a Base Flood for ordinary and emergency vehicles;
 - j. 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; and
 - k. 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.
- F. Restrictions on Variances: Upon consideration of the purpose of this Article, and factors listed above in subparagraph 4(E)(3) of this Article, the Board of Zoning Appeals, and the Board, may attach such reasonable conditions to the granting of variances as it deems necessary to further the purposes of this Article. Furthermore, a request for a variance shall be subject to the following restrictions:
1. Variances may be issued for New Construction and Substantial Improvements to be erected on a lot of one-half acre or less in size which is contiguous to, and surrounded by, lots with existing structures constructed below the Base Flood Elevation, provided subsections F(2) through F(6) below have been fully satisfied. As the lot size increases beyond the one-half-acre size, the burden shall be on the applicant requesting the variance to justify why the variance request should be approved.
 2. Variances may be issued for the reconstruction, rehabilitation or restoration of structures listed on the National Register of Historic Places, the State Inventory of Historic Places, or a local inventory of historic places upon determination that the proposed activity will not preclude the structure's continued historic designation.
 3. Variances shall not be issued within any designated Floodway if any increase in flood levels during the Base Flood discharge would result.

4. Variances may only be issued upon a determination that the variance approved provides the minimum relief necessary, considering the flood hazard.
5. Variances may only be issued upon:
 - a. showing of good and sufficient cause,
 - b. determination that failure to grant the variance would result in unnecessary or exceptional hardship to the applicant, and
 - c. determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisances, cause fraud or victimization of the public, or conflict with existing local laws.
6. Any applicant granted a variance with regard to the provisions of this Article shall be given a written notice from the Zoning Administrator that: (a) the issuance of a variance to construct a structure below the Regulatory Flood Elevation will result in increased premium rates for flood insurance up to amounts as high as \$25.00 for \$100.00 of insurance coverage and (b) such construction below the Regulatory Flood Elevation increases risks to life and property. Such notification shall be kept with the records of all variances approved with respect to this Article.
7. The Zoning Administrator, or such person(s) designee, shall maintain the records of all variance and appeal applications resulting from enforcement of this Article, and shall report any approved variances to the Federal Emergency Management Agency upon request.

Section 5. ESTABLISHMENT OF REGULATORY FLOOD PLAIN OVERLAY ZONING DISTRICTS:

The applicable mapped flood plain areas for this Article are hereby divided into the following two regulatory flood plain overlay zoning districts: A). Floodway Fringe Overlay District (FF) and B). Floodway Overlay District (FW). The boundaries of both of these districts are identified in the Flood Insurance Study, Johnson County, Kansas and Incorporated Areas, Volumes 1 and 2 with a revised date of June 17, 2002, and the accompanying Johnson County Flood Insurance Rate Map (FIRM). Within these districts all uses not meeting the standards of these regulations shall be prohibited unless they are existing uses that are legally nonconforming. These districts shall be consistent with the A Zone, AE Zone, AH Zone, AO Zone, A99 Zone, Floodway Areas in AE Zone, and any other Area of Special Flood Hazard as identified in the Flood Insurance Study, Johnson County, Kansas and Incorporated Areas, Volumes 1 and 2 with a revised date of June 17, 2002, and the accompanying Johnson County Flood Insurance Rate Map (FIRM).

Section 6. GENERAL STANDARDS FOR THE FLOODWAY FRINGE OVERLAY DISTRICT (FF) AND THE FLOODWAY OVERLAY DISTRICT (FW):

- A. No Flood Plain Development Permit shall be granted for New Construction, Substantial Improvements, or other Development, including the placement of manufactured homes, within the A Zone, AE Zone, AH Zone, AO Zone, A99 Zone, Floodway Areas in AE Zone, and any other Area of Special Flood Hazard, unless the conditions of this Section, and the conditions of Section 7, for properties in the Floodway Fringe Overlay District (FF), or the conditions in Section 8, for properties in the Floodway Overlay District (FW), are satisfied.

- B. All areas identified as unnumbered A Zone on the Johnson County Flood Insurance Rate Map (FIRM) are subject to inundation by the 1-percent annual chance flood event; however, the Base Flood Elevation is not provided. Development in the unnumbered A Zone shall be subject to all development provisions and requirements of this Article. If Flood Insurance Study data has not been provided in accordance with Section 3(A) and Section 3(B) herein, then the Zoning Administrator shall obtain, review and reasonably utilize any Base Flood Elevation and Floodway data available from federal, state, or other sources.

- C. All New Construction, Substantial Improvements, or other Development (including but not limited to prefabricated buildings or placement of manufactured homes) shall require:
 - 1. Construction with materials resistant to flood damage, utilizing methods and practices that minimize flood damage, and with electrical, heating, ventilation, plumbing, and air conditioning equipment and other service facilities that are designed and located so as to prevent water from entering or accumulating within the components during flooding.
 - 2. New or replacement water supply systems and sanitary sewage systems that are designed, constructed, and located to minimize or eliminate infiltration of flood waters into the system, and on-site waste disposal systems that are designed to minimize or eliminate discharges from the systems into flood waters, and that are located to avoid impairment to them, or contamination from them, during flooding.
 - 3. All utility facilities, mechanical equipment, all on-site sanitary facilities for residential uses, and all sanitary facilities for non-residential uses, that are elevated or flood-proofed up to the Regulatory Flood Protection Elevation (at least two (2) feet higher than the Base Flood Elevation).
 - 4. A design (or modification) and adequate anchoring to prevent flotation, collapse, or lateral movement of structures resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy.

- D. Until a floodway has been designated by Federal Emergency Management Agency (FEMA) for adoption by the County on the Johnson County Flood Insurance Rate Map (FIRM), no New Construction, Substantial Improvements, or other Development (including fill) may be permitted within the A Zone or AE Zone on the Johnson County Flood Insurance Rate Map (FIRM) unless the applicant for the land use has demonstrated that the cumulative effect of the proposed Development, when combined with all other existing and reasonably anticipated uses of the property, as allowed within the underlying zoning district, will not increase the water surface elevation of the 1-percent-annual-chance flood more than one (1) foot at any point in the identified Flood Plain and across the cross-section of the reach in which the development or fill is located as shown on the Flood Insurance Study incorporated by reference in Section 3, (B) herein.

- E. All new subdivision proposals and other proposed new Development, including manufactured home parks or subdivisions, shall:
 - 1. be reviewed to determine whether such proposals will be reasonably safe from flooding;
 - 2. be consistent with the need to minimize flood damage within the flood prone area;
 - 3. have public utilities and facilities such as sewer, gas, electrical and water systems designed, constructed, and located to minimize or eliminate flood damage;

4. have adequate drainage provided to reduce exposure to flood hazards; and
 5. include Base Flood Elevation data and delineate the boundary of the flood plain if more than 50 lots would be created or if greater than 5 acres would be involved in the subdivision or Development.
- F. Storage of Materials or Equipment: The storage or processing of materials or equipment that are in time of flooding buoyant, flammable, explosive, or could be injurious to human, animal or plant life, is prohibited.

The storage of other materials or equipment shall be allowed if not subject to major damage by floods, and if firmly anchored to prevent flotation, or if the stored items would be readily removable from the area within the time available after a flood warning.

Section 7. FLOODWAY FRINGE OVERLAY DISTRICT (FF), INCLUDING A ZONE, AE ZONE, AH ZONE, AO ZONE, A99 ZONE, AND OTHER AREA OF SPECIAL FLOOD HAZARD:

- A. Permitted Uses: Any use permitted in Section 8 of this Article may also be permitted in the Floodway Fringe Overlay District. No use shall be permitted in the Floodway Fringe Overlay District unless the standards of Section 6 of this Article are met, in addition to the standards of Subsection 7 (B) of this Article.
- B. Standards for the Floodway Fringe Overlay District:
1. Residential Construction: New Construction, Substantial Improvement, or other Development of any residential structure shall have the lowest floor, including basement, and attendant utility facilities and mechanical equipment elevated to at least the Regulatory Flood Protection Elevation (two (2) feet higher than the Base Flood Elevation). - A land surveyor licensed in the State of Kansas shall verify that the standards of this Subsection are satisfied.
 2. Non-residential: New Construction, Substantial Improvement, or other Development of any commercial, industrial or other non-residential structure shall: a.) have the lowest floor, including basement, elevated to at least the Regulatory Flood Protection Elevation (two (2) feet higher than the Base Flood Elevation), or b.) together with attendant utility facilities, and mechanical equipment, be completely flood-proofed so that from the Regulatory Flood Protection Elevation (two (2) feet higher than the Base Flood Elevation) on down, the structure is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy. Where a non-residential structure is intended to be made watertight below the Base Flood Elevation, a registered professional engineer or architect licensed in the State of Kansas shall develop the structural design, specifications, and plans for the construction, and verify that the design and methods of construction are in accordance with accepted standards of practice for complying with the watertight requirements and complying with the hydrostatic, hydrodynamic and buoyancy resistance capability requirements of this Subsection. Such verification shall be provided to the Zoning Administrator as set forth in Subsection 4, (D)(8) of this Article, and a record of such verifications, which include the specific elevation (in relation to mean sea level) to which such structures are flood-proofed, shall be kept by the Zoning Administrator. The elevation of the lowest floor shall be verified by a land surveyor licensed in the State of Kansas.

3. Hydrostatic Force Resistance Measures: All New Construction, Substantial Improvement, or other Development with fully enclosed areas below the lowest floor, that are useable solely for parking of vehicles, building access or storage in an area other than a basement, and which are at or below elevations subject to flooding, shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement must either be verified by a registered professional engineer or architect licensed in the State of Kansas, or must meet or exceed the following minimum criteria:
 - a. A minimum of two (2) openings having a total net area of not less than one (1) square inch for every square foot of enclosed area that is subject to flooding, shall be provided; and
 - b. The bottom of all openings shall be no higher than one (1) foot above grade. Openings may be equipped with screens, louvers, or other coverings or devices provided that they permit the automatic entry and exit of floodwaters.

4. Manufactured Homes:
 - a. All manufactured homes that are placed or substantially improved within the A Zone areas of the Floodway Fringe Overlay District shall be elevated on a permanent foundation such that the lowest floor of the manufactured home is at or above a level which is two (2) feet higher than the Base Flood Elevation and shall be securely anchored to an adequately anchored foundation system to resist floatation, collapse, and lateral movement in accordance with the Building Code. In the event that over-the-top or frame ties to ground anchors are used, the following specific requirements, or their equivalent as determined by the Johnson County Building Codes Official, must be met:
 - 1). over-the-top ties shall be provided at each of the four corners of the manufactured home, with two additional ties per side at intermediate locations, and manufactured homes less than 50 feet long shall require one additional tie per side;
 - 2). frame ties shall be provided at each corner of the manufactured home with five additional ties per side at intermediate points, and manufactured homes less than 50 feet long shall require four additional ties per side;
 - 3). all components of the anchoring system shall be capable of carrying a force of 4,800 pounds as determined in writing by a professional engineer licensed in the State of Kansas; and
 - 4). any additions to the manufactured home shall be similarly anchored.
 - b. All manufactured homes that are placed or substantially improved within the AE Zone or AH Zone in the Floodway Fringe Overlay District on sites:
 - 1). Outside of a manufactured home park or subdivision;
 - 2). In a new manufactured home park or subdivision;
 - 3). In an expansion to an existing manufactured home park or subdivision; or

- 4). In an existing manufactured home park or subdivision on which a manufactured home has incurred "Substantial Damage" as a result of a flood;

shall be elevated on a permanent foundation such that the lowest floor of the manufactured home is at or above a level which is two (2) feet higher than the Base Flood Elevation; and such manufactured homes shall be securely anchored to an adequately anchored foundation system to resist floatation, collapse, and lateral movement in accordance with the provisions of Section 7, (B)(4)(a) above.

- c. All manufactured homes that are placed or substantially improved on sites in an existing manufactured home park or subdivision within the Floodway Fringe Overlay District on the Johnson County Flood Insurance Rate Map (FIRM) that are not subject to the provisions of Section 7, (B)(4)(b) above shall be elevated so that either:
 - 1). The lowest floor of the manufactured home is at or above a level which is two (2) feet higher than the Base Flood Elevation, or
 - 2). The manufactured home chassis is supported by reinforced piers or other foundation elements of at least equal strength that are no less than thirty-six (36) inches in height above the grade and be securely anchored to an adequately anchored foundation system to resist floatation, collapse, and lateral movement in accordance with the provisions of Section 7, (B)(4)(a) above. The elevation of the lowest floor shall be certified by a land surveyor licensed in the State of Kansas.

5. Recreational Vehicles: Recreational vehicles placed on sites within numbered and unnumbered A Zone, AE Zone, AH Zone, and AO Zone on the Johnson County Flood Insurance Rate Map (FIRM) shall either (i) be on the site for fewer than 180 consecutive days, (ii) be fully licensed and ready for highway use*, or (iii) meet the requirements for a Flood Plain Development Permit and the elevation and anchoring requirements for "manufactured homes" in Section 7 (B)(4) of this Article.

*For purposes of this provision, a recreational vehicle is ready for highway use if it is on its wheels or temporary jacking system, is attached to the site only by quick-disconnect type utilities and security devices, and has no permanently attached additions.

6. Special Standards for Areas of Shallow Flooding (AH Zone and AO Zone): Located within the Area of Special Flood Hazard established in Section 3B of this Article, are areas designated as Areas of Shallow Flooding. These areas have special flood hazards associated with Base Flood depths of one (1) to three (3) feet where a clearly defined channel does not exist and where the path of flooding is unpredictable and indeterminate; therefore, the following provisions (a through d) shall apply to Areas of Shallow Flooding in lieu of Sections 7 (B)(1) and (2) above, however, all other provisions of Section 7 of this Article shall remain applicable to Areas of Shallow Flooding.

- a. In AO Zones, all New Construction, Substantial Improvement, or other Development of any residential structure, including manufactured homes, shall have the lowest floor, including basement and attendant utility facilities and mechanical equipment, elevated above the highest adjacent grade, to at least two (2) feet higher than the depth number specified in feet on the Johnson County Flood Insurance Rate Map (FIRM) or at least two (2) feet higher than the highest adjacent grade if no depth number is specified on the Johnson County Flood Insurance Rate Map (FIRM).

- b. In AO Zones, all New Construction, Substantial Improvement, or other Development of any non-residential structure shall:
 - 1). have the lowest floor, including basement and attendant utility facilities and mechanical equipment, elevated above the highest adjacent grade to at least two (2) feet higher than the depth number specified in feet on the Johnson County Flood Insurance Rate Map (FIRM), or at least two (2) feet higher than the highest adjacent grade if no depth number is specified on the Johnson County Flood Insurance Rate Map (FIRM); or
 - 2). together with attendant utility facilities, mechanical equipment, and sanitary facilities, be completely flood-proofed to at least two (2) feet higher than the depth number specified in feet on the Johnson County Flood Insurance Rate Map (FIRM) so that any space below that level is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and the effects of buoyancy. Where a non-residential structure is intended to be made watertight to at least two (2) feet higher than the depth number specified in feet on the Johnson County Flood Insurance Rate Map (FIRM), a registered professional engineer or architect licensed in the State of Kansas shall develop the structural design, specifications, and plans for the construction, and verify that the design and methods of construction are in accordance with accepted standards of practice for complying with the watertight requirements and complying with the hydrostatic, hydrodynamic and buoyancy resistance capability requirements of this Subsection. Such verification shall be provided to the Zoning Administrator as set forth in Subsection 4, (D)(8) of this Article, and a record of such verifications, which includes the specific elevation (in relation to mean sea level) to which such structures are flood-proofed shall be kept by the Zoning Administrator. The elevation of the lowest floor shall be verified by a land surveyor licensed in the State of Kansas.
- c. In AH Zones, the specific standards for the Area of Special Flood Hazard where Base Flood Elevations have been provided are required to be met as set forth in Section 7 (B)(1 through 5) of this Article.
- d. Drainage Around Structures: Within AH and AO zones, adequate drainage paths shall be provided around both residential and non-residential structures on slopes in order to guide floodwaters around and away from structures.

Section 8. FLOODWAY OVERLAY DISTRICT (FW) INCLUDING FLOODWAY AREAS IN THE AE ZONE:

Permitted Uses: Located within the Area of Special Flood Hazard are areas designated as Floodways. The Floodways are extremely hazardous areas due to the velocity of floodwaters that carry debris and potential projectiles and that cause a high potential for erosion. This Section establishes certain requirements and restrictions for Floodway areas. Only uses that have a low-potential for flood damage, that do not result in any increase in the Base Flood Elevation, and that do not obstruct the Base Flood discharge may be permitted within the Floodway Overlay District, provided, however, that they are not prohibited by any other governmental regulation.

All Floodway encroachments from New Construction, Substantial Improvement, or other Development, including fill, are prohibited in the Floodway Overlay District unless hydrologic and hydraulic engineering analyses, performed in accordance with standard civil engineering practices

