

ARTICLE IX. FLOODPLAIN MANAGEMENT

Sec. 44-488. Statutory authorization.

The Legislature of the State of Missouri has in RSMo 77.260 delegated the responsibility to local governmental units to adopt *floodplain management regulations* designed to protect the health, safety, and general welfare of the public. Therefore, the City Council of the City of Kirksville, Missouri, ordains as follows:

Sec. 44-489. Definitions.

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

100-year Flood see *base flood*.

Accessory Structure means the same as *appurtenant structure*.

Actuarial Rates see *risk premium rates*.

Administrator means the Federal Insurance Administrator.

Agency means the Federal Emergency Management Agency (FEMA).

Agricultural Commodities means agricultural products and livestock.

Agricultural Structure means any *structure* used exclusively in connection with the production, harvesting, storage, drying, or raising of *agricultural commodities*.

Appeal means a request for review of the *floodplain* administrator's interpretation of any provision of this ordinance or a request for a variance.

Appurtenant Structure means a *structure* that is on the same parcel of property as the principal *structure* to be insured and the use of which is incidental to the use of the principal *structure*.

Area of Special Flood Hazard is the land in the *floodplain* within a *community* subject to a one percent or greater chance of *flooding* in any given year.

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

Base Flood Elevation means the elevation of the surface of the water during a one percent annual chance *flood* event.

Basement means any area of the *structure* having its floor subgrade (below ground level) on all sides.

Building see *structure*.

Chief Executive Officer or *Chief Elected Official* means the official of the *community* who is charged with the authority to implement and administer laws, ordinances, and regulations for that *community*.

Community means any State or area or political subdivision thereof, which has authority to adopt and enforce *floodplain management regulations* for the areas within its jurisdiction.

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

Elevated Building means for insurance purposes, a non-basement *building* which has its lowest elevated floor raised above ground level by foundation walls, shear walls, posts, piers, pilings, or columns.

Eligible Community or Participating Community means a *community* for which the Administrator has authorized the sale of flood insurance under the National Flood Insurance Program (NFIP).

Existing Construction means for the purposes of determining rates, *structures* for which the *start of construction* commenced before the effective date of the FIRM or before January 1, 1975, for FIRMs effective before that date. *Existing construction* may also be referred to as *existing structures*.

Existing Manufactured Home Park or Subdivision means a *manufactured home park or subdivision* for which the construction of facilities for servicing the lots on which the *manufactured homes* are to be affixed (including, at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed before the effective date of the *floodplain management regulations* adopted by a *community*.

Expansion to an Existing Manufactured Home Park or Subdivision means the preparation of additional sites by the construction of facilities for servicing the lots on which the *manufactured homes* are to be affixed (including the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads).

Flood or Flooding means a general and temporary condition of partial or complete inundation of normally dry land areas from: (1) the overflow of inland waters; (2) the unusual and rapid accumulation or runoff of surface waters from any source; and (3) 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 by some similarly unusual and unforeseeable event which results in *flooding* as defined above in item (1).

Flood Boundary and Floodway Map (FBFM) means an official *map* of a *community* on which the Administrator has delineated both *special flood hazard areas* and the designated regulatory *floodway*.

Flood Hazard Map means the document adopted by the governing body showing the limits of: (1) the *floodplain*; (2) the *floodway*; (3) streets; (4) stream channel; and (5) other geographic features.

Flood Elevation Determination means a determination by the Administrator 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.

Flood Fringe means the area outside the *floodway encroachment lines*, but still subject to inundation by the regulatory *flood*.

Flood Hazard Boundary Map (FHBM) means an official *map* of a *community*, issued by the Administrator, where the boundaries of the *flood* areas having special *flood* hazards have been designated as (unnumbered or numbered) A zones.

Flood Insurance Rate Map (FIRM) means an official *map* of a *community*, on which the Administrator has delineated both the *special flood hazard areas* and the risk premium zones applicable to the *community*.

Flood Insurance Study (FIS) means an examination, evaluation and determination of *flood* hazards and, if appropriate, corresponding *water surface elevations*.

Floodplain or Flood-prone Area means any land area susceptible to being inundated by water from any source (*see "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*.

Floodplain Management Regulations means zoning ordinances, subdivision regulations, building codes, health regulations, special purpose ordinances (such as *floodplain* and grading ordinances) and other applications of police power. The term describes such state or local regulations, in any combination thereof that provide standards for the purpose of *flood* damage prevention and reduction.

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

Floodway or *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 one foot.

Floodway Encroachment Lines means the lines marking the limits of *floodways* on Federal, State and local *floodplain maps*.

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 bridge openings and the hydrological effect of urbanization of the watershed.

Functionally Dependent Use means a use that cannot perform its intended purpose unless it is located or carried out in close proximity to water. This term includes only docking facilities and facilities that are necessary for the loading and unloading of cargo or passengers 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 next 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 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 a state inventory of historic places in 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 in communities with historic preservation programs that have been certified either:
 - (a) by an approved state program as determined by the Secretary of the Interior or
 - (b) directly by the Secretary of the Interior in states without approved programs.

Lowest Floor means the lowest floor of the lowest enclosed area, including basement. An unfinished or *flood*-resistant enclosure, usable 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 *floodproofing* design requirements of this ordinance.

Manufactured Home means a *structure*, transportable in one or more sections, that is built on a permanent chassis and is 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)*, *Flood Insurance Rate Map (FIRM)*, or the *Flood Boundary and Floodway Map (FBFM)* for a *community* issued by the Federal Emergency Management Agency (FEMA).

Market Value or *Fair Market Value* means an estimate of what is fair, economic, just and equitable value under normal local market conditions.

Mean Sea Level means, for purposes of the National Flood Insurance Program (NFIP), the National Geodetic Vertical Datum (NGVD) of 1929 or other datum, to which *base flood* elevations shown on a *community's Flood Insurance Rate Map (FIRM)* are referenced.

New Construction means, for the purposes of determining insurance rates, *structures* for which the *start of construction* commenced on or after the effective date of an initial *FIRM* or after December 31, 1974, whichever is later, and includes any subsequent improvements to such *structures*. For *floodplain management* purposes, *new construction* means *structures* for which the *start of construction* commenced on or after the effective date of the *floodplain management regulations* adopted by a *community* and includes any subsequent improvements to such *structures*.

New Manufactured Home Park or Subdivision means a *manufactured home park or subdivision* for which the construction of facilities for servicing the lot 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 *floodplain management regulations* adopted by the *community*.

(NFIP) means the National Flood Insurance Program (NFIP).

Numbered A Zone means a *special flood hazard area* where the Flood Insurance Rate Map shows the *Base Flood Elevation*.

One Percent Annual Chance Flood see *base flood*.

Participating Community also known as an *eligible community*, means a *community* in which the *Administrator* has authorized the sale of *flood insurance*.

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

Permit means a signed document from a designated *community* official authorizing *development* in a *floodplain*, including all necessary supporting documentation such as:

- (1) the site plan;
- (2) an elevation certificate; and
- (3) any other necessary or applicable approvals or authorizations from local, state or federal authorities.

Principally Above Ground means that at least 51 percent of the actual cash value of the *structure*, less land value, is above ground.

Reasonably Safe From Flooding means *base flood* waters will not inundate the land or damage *structures* to be removed from the SFHA and that any subsurface waters related to the *base flood* will not damage existing or proposed *buildings*.

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 projections;
- (3) designed to be self-propelled or permanently towable by a light- duty truck; and
- (4) designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or seasonal use.

Remedy A Violation means to bring the *structure* or other *development* into compliance with Federal, State, or local *floodplain management regulations*; or, if this is not possible, to reduce the impacts of its noncompliance.

Repetitive Loss means *flood*-related damages sustained by a *structure* on two separate occasions during a 10-year period for which the cost of repairs at the time of each such *flood* event, equals or exceeds twenty-five percent of the *market value* of the *structure* before the damage occurred.

Risk Premium Rates means those rates established by the Administrator pursuant to individual *community* studies and investigations which are undertaken to provide *flood* insurance in accordance with Section 1307 of the National Flood Disaster Protection Act of 1973 and the accepted actuarial principles. *Risk premium rates* include provisions for operating costs and allowances.

Special Flood Hazard Area see *area of special flood hazard*.

Special Hazard Area means an area having special *flood* hazards and shown on an *FHBM*, *FIRM* or *FBFM* as zones (unnumbered or numbered) A and AE.

Start of Construction includes substantial-improvements, and means the date the building *permit* was issued, provided the actual *start of construction*, repair, reconstruction, rehabilitation, addition placement, or other improvements were within 180 days of the *permit* date. The *actual start* means either the first placement of permanent construction of a *structure* on a site, such as the pouring of slabs or footings, the installation of piles, the construction of columns, any work beyond the stage of excavation, or the placement of a *manufactured home* on a foundation. Permanent construction does not include land preparation, such as clearing, grading and filling, the installation of streets and/or walkways, excavation for a basement, footings, piers, foundations, the erection of temporary forms, nor installation on the property of *accessory structures*, 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 means that *agency* of the state government, or other office designated by the governor of the state or by state statute at the request of the *Administrator* to assist in the implementation of the *National Flood Insurance Program (NFIP)* in that state.

Structure means, for *floodplain management* purposes, a walled and roofed *building*, including a gas or liquid storage tank, that is *principally above ground*, as well as a *manufactured home*. *Structure* for insurance purposes, means a walled and roofed *building*, other than a gas or liquid storage tank that is *principally above ground* and affixed to a permanent site, as well as a *manufactured home* on a permanent foundation. For the latter purpose, the term includes a building while in the course of construction, alteration or repair, but does not include building materials or supplies intended for use in such construction, alteration or repair, unless such materials or supplies are within an enclosed *building* on the premises.

Substantial-Damage means damage of any origin sustained by a *structure* whereby the cost of restoring the *structure* to its before damaged condition would equal or exceed 50 percent of the *market value* of the *structure* before the damage occurred. The term includes *Repetitive Loss buildings* (see definition).

For the purposes of this definition, “repair” is considered to occur when the first repair or reconstruction of any wall, ceiling, floor, or other structural part of the building commences.

The term does not apply to:

- a.) Any project for improvement of a building required to comply with existing health, sanitary, or safety code specifications which have been identified by the Code Enforcement Official and which are solely necessary to assure safe living conditions, or
- b.) Any alteration of a “*historic structure*” provided that the alteration will not preclude the *structure’s* continued designation as a “*historic structure*.”

Substantial Improvement means any combination of reconstruction, alteration, or improvement to a *building*, taking place for a 10-year period, in which the cumulative percentage of improvement equals or exceeds fifty percent of the current *market value* of the *building*. For the purposes of this definition, an improvement occurs 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*. This term includes *structures*, which have incurred *repetitive loss* or *substantial damage*, regardless of the actual repair work done.

The term does not apply to:

- a.) Any project for improvement of a *building* required to comply with existing health, sanitary, or safety code specifications which have been identified by the Code Enforcement Official and which are solely necessary to assure safe living conditions, or
- b.) 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 50 percent of the value of the streets, utilities and pads before the repair, reconstruction or improvement commenced.

Temporary Structure means a *structure* permitted in a district for a period not to exceed 180 days and is required to be removed upon the expiration of the *permit* period. *Temporary structures* may include *recreational vehicles*, temporary construction offices, or temporary business facilities used until permanent facilities can be constructed, but at no time shall it include *manufactured homes* used as residences.

Unnumbered A Zone means a *special flood hazard area* shown on either a *flood hazard boundary map* or *flood insurance rate map* where the *base flood elevation* is not determined.

Variance means a grant of relief by the *community* from the terms of a *floodplain management regulation*. *Flood insurance requirements remain in place for any varied use or structure and cannot be varied by the community.*

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 certifications, or other evidence of compliance required by this ordinance 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 (or other datum where specified) of floods of various magnitudes and frequencies in the *floodplain*

Sec. 44-490. Findings of fact.

(a) *Flood Losses Resulting from Periodic Inundation*

The *special flood hazard areas* of the City of Kirksville, Missouri, are subject to inundation which results 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.

(b) *General Causes of the Flood Losses*

These *flood* losses are caused by (1) the cumulative effect of *development* in any delineated *floodplain* causing increases in *flood* heights and velocities; and (2) the occupancy of *flood* hazard areas by uses vulnerable to *floods*, hazardous to others, inadequately elevated, or otherwise unprotected from flood damages.

(c) *Methods Used To Analyze Flood Hazards*

The *Flood Insurance Study* (FIS) that is the basis of this ordinance uses a standard engineering method of analyzing *flood* hazards, which consist of a series of interrelated steps.

- (1) Selection of a *base flood* that is based upon engineering calculations, which *permit* a consideration of such *flood* factors as its expected frequency of occurrence, the area inundated, and the depth of inundation. The *base flood* selected for this ordinance is representative of large *floods*, which are characteristic of what can be expected to occur on the particular streams subject to this ordinance. The *base flood* is the *flood* that is estimated to have a one percent chance of being equaled or exceeded in any given year as delineated on the Federal Insurance Administrator's FIS, and illustrative materials for Adair County, dated February 14, 2025, as amended, and any future revisions thereto.

- (2) Calculation of water surface profiles are based on a standard hydraulic engineering analysis of the capacity of the stream channel and overbank areas to convey the regulatory *flood*.
- (d) Computation of a *floodway* required to convey this *flood* without increasing *flood* heights more than one (1) foot at any point.
- (e) Delineation of *floodway encroachment lines* within which no *development* is permitted that would cause **any** increase in *flood* height.
- (f) Delineation of *flood fringe*, i.e., that area outside the *floodway encroachment lines*, but still subject to inundation by the *base flood*.

Sec. 44-491. Statement of purpose.

It is the purpose of this ordinance to promote the public health, safety, and general welfare of the public; to minimize those losses described in 44-490 (a) to establish or maintain the *community'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) by applying the provisions of this ordinance to:

- (a) Restrict or prohibit uses that are dangerous to health, safety, or property in times of *flooding* or cause undue increases in *flood* heights or velocities;
- (b) Require uses vulnerable to *floods*, including public facilities that serve such uses, be provided with *flood* protection at the time of initial construction; and
- (c) Protect individuals from buying lands that are unsuited for the intended *development* purposes due to the *flood* hazard.

Sec. 44-492. General provisions.

- (a) *Land to which this ordinance applies.* This ordinance shall apply to all lands within the jurisdiction of the City of Kirksville, Missouri, identified as *numbered* and *unnumbered A zones* and AE zones, on the *Flood Insurance Rate Map* (FIRM) panel numbers 29001C0075C, 29001C0178C, 29001C0179C, 29001C0180C, 29001C0183C, 29001C0185C, 29001C0187C, 29001C0189C, 29001C0190C, 29001C0191C, and 29001C0193C dated February 14, 2025, as amended, and any future revisions thereto. In all areas covered by this ordinance, no *development* shall be permitted except through the issuance of a *floodplain development permit*, granted by the City Council or its duly designated representative under such safeguards and restrictions as the City Council or the designated representative may reasonably impose for the promotion and maintenance of the general welfare, health of the inhabitants of the *community*, and as specifically noted in 44-494.
- (b) *Compliance.* No *development* located within the *special flood hazard areas* of this *community* shall be located, extended, converted, or structurally altered without full compliance with the terms of this ordinance and other applicable regulations.
- (c) *Abrogation and greater restrictions.* It is not intended by this ordinance to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where this ordinance imposes greater restrictions, the provisions of this ordinance shall prevail. All other ordinances inconsistent with this ordinance are hereby repealed to the extent of the inconsistency only.
- (d) *Interpretation.* In their interpretation and application, the provisions of this ordinance shall be held to be minimum requirements, shall be liberally construed in favor of the governing body, and shall not be deemed a limitation or repeal of any other powers granted by Missouri statutes.
- (e) *Warning and disclaimer of liability.* The degree of *flood* protection required by this ordinance is considered reasonable for regulatory purposes and is based on engineering and scientific methods of study. Larger *floods* may occur on rare occasions, or the *flood* heights may be increased by man-made or natural causes, such as ice jams and bridge openings restricted by debris. This ordinance does not imply that areas outside the *floodway* and *flood fringe* or land uses permitted within such areas will be free from *flooding* or *flood* damage. This ordinance shall not create a liability on the part of the City of Kirksville, any officer or employee

thereof, for any *flood* damages that may result from reliance on this ordinance, or any administrative decision lawfully made thereunder.

- (f) *Severability.* If any section, clause, provision, or portion of this ordinance is adjudged unconstitutional or invalid by a court of appropriate jurisdiction, the remainder of this ordinance shall not be affected thereby.

Sec. 44-493. Administration.

- (a) *Floodplain development permit.* A *floodplain development permit* shall be required for all proposed construction or other *development*, including the placement of *manufactured homes*, in the areas described in 44-492 (a) No *person*, firm, corporation, or unit of government shall initiate any *development* or substantial-improvement or cause the same to be done without first obtaining a separate *floodplain development permit* for each *structure* or other *development*.
- (b) *Designation of Floodplain Administrator.* The Code Administrator is hereby appointed to administer and implement the provisions of this ordinance.
- (c) *Duties and responsibilities of Floodplain Administrator.* Duties of the *floodplain* administrator shall include, but not be limited to:
- (1) Review of all applications for *floodplain development permits* to assure that sites are *reasonably safe from flooding* and that the *floodplain development permit* requirements of this ordinance have been satisfied;
 - (2) Review of all applications for *floodplain development permits* for proposed *development* to assure that all necessary *permits* have been obtained from Federal, State, or local governmental agencies from which prior approval is required by Federal, State, or local law;
 - (3) Review all subdivision proposals and other proposed new *development*, including *manufactured home parks or subdivisions*, to determine whether such proposals will be *reasonably safe from flooding*;
 - (4) Issue *floodplain development permits* for all approved applications;
 - (5) Notify adjacent communities and the Missouri State Emergency Management Agency (MoSEMA) prior to any alteration or relocation of a watercourse, and submit evidence of such notification to the Federal Emergency Management Agency (FEMA);
 - (6) Assure that the *flood* carrying capacity is not diminished and shall be maintained within the altered or relocated portion of any watercourse.
 - (7) Verify and maintain a record of the actual elevation (in relation to *mean sea level*) of the *lowest floor*, including *basement*, of all new or substantially improved *structures*;
 - (8) Verify and maintain a record of the actual elevation (in relation to *mean sea level*) that the new or substantially improved non-residential *structures* have been *floodproofed*;
 - (9) When *floodproofing* techniques are utilized for a particular non-residential *structure*, the *floodplain* administrator shall require certification from a Missouri registered professional engineer or architect.
- (d) *Application for Floodplain Development Permit.* To obtain a *floodplain development permit*, the applicant shall first file an application in writing on a form furnished for that purpose. Every *floodplain development permit* application shall:
- (1) Describe the land on which the proposed work is to be done by lot, block and tract, house and street address, or similar description that will readily identify and specifically locate the proposed *structure* or work;
 - (2) Identify and describe the work to be covered by the *floodplain development permit*;
 - (3) Indicate the use or occupancy for which the proposed work is intended;
 - (4) Indicate the *fair market value* of the *structure* and the *fair market value* of the improvement;
 - (5) Specify whether *development* is located in designated *flood fringe* or *floodway*;
 - (6) Identify the existing *base flood elevation* and the elevation of the proposed *development*;
 - (7) Give such other information as reasonably may be required by the *floodplain* administrator;
 - (8) Be accompanied by plans and specifications for proposed construction; and

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- (9) Be signed by the permittee or his authorized agent who may be required to submit evidence to indicate such authority.

Sec. 44-494. Provisions for *flood* hazard reduction.

(a) *General standards.*

- (1) No *permit* for *floodplain development* shall be granted for *new construction, substantial improvements*, and other improvements, including the placement of *manufactured homes*, within any numbered or unnumbered A, AE zones, unless the conditions of this section are satisfied.
- (2) All areas identified as *unnumbered A zones* on the FIRM are subject to inundation of the *100-year flood*; however, the *base flood elevation* is not provided. *Development* within *unnumbered A zones* is subject to all provisions of this section. If *flood insurance study* data is not available, the *community* shall obtain, review, and reasonably utilize any *base flood elevation* or *floodway* data currently available from federal, state, or other sources.
- (3) Until a *floodway* is designated, no *new construction, substantial improvements*, or other *development*, including fill, shall be permitted within any numbered A or AE zone on the FIRM, unless it is demonstrated 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*.
- (4) All *new construction*, subdivision proposals, *substantial improvements*, prefabricated *structures*, placement of *manufactured homes*, and other *developments* shall require:
 - a. Design or adequate anchorage to prevent flotation, collapse, or lateral movement of the *structure* resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy;
 - b. Construction with materials resistant to *flood* damage;
 - c. Utilization of methods and practices that minimize *flood* damages;
 - d. All electrical, heating, ventilation, plumbing, air conditioning equipment, and other service facilities be designed and/or located so as to prevent water from entering or accumulating within the components during conditions of *flooding*;
 - e. New or replacement water supply systems and/or sanitary sewage systems be designed to minimize or eliminate infiltration of floodwaters into the systems and discharges from the systems into floodwaters, and on-site waste disposal systems be located so as to avoid impairment or contamination; and
 - f. Subdivision proposals and other proposed new *development*, including *manufactured home parks or subdivisions*, located within *special flood hazard areas* are required to assure that:
 1. All such proposals are consistent with the need to minimize *flood* damage;
 2. All public utilities and facilities, such as sewer, gas, electrical, and water systems, are located and constructed to minimize or eliminate *flood* damage;
 3. Adequate drainage is provided so as to reduce exposure to *flood* hazards; and
 4. All proposals for *development*, including proposals for *manufactured home parks and subdivisions*, of five acres or 50 lots, whichever is lesser, include within such proposals *base flood elevation* data.
- (5) Storage, material, and equipment.
 - a. The storage or processing of materials within the *special flood hazard area* that are in time of *flooding* buoyant, flammable, explosive, or could be injurious to human, animal, or plant life is prohibited.

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- b. Storage of other material or equipment may be allowed if not subject to major damage by **floods**, if firmly anchored to prevent flotation, or if readily removable from the area within the time available after a *flood warning*.
 - (6) *Accessory structures*. *Structures* used solely for agricultural purposes in connection with the production, harvesting, storage, drying, or raising of agricultural commodities, including the raising of livestock, may be constructed at-grade and wet-floodproofed provided there is no human habitation or occupancy of the *structure*; the *structure* is of single-wall design; there is no permanent retail, wholesale, or manufacturing use included in the *structure*; the *structure* meets the following *floodplain management* requirements; and a *floodplain development permit* has been issued.
 - (7) *Agricultural structures*. *Structures* used solely for agricultural purposes in connection with the production, harvesting, storage, drying, or raising of agricultural commodities, including the raising of livestock, may be constructed at-grade and wet-floodproofed, provided there is no human habitation or occupancy of the *structure*; the *structure* is of single-wall design; there is no permanent retail, wholesale, or manufacturing use included in the *structure*; a *variance* has been granted from the *floodplain management* requirements of this section; and a *floodplain development permit* has been issued.
 - (8) *Nonconforming Use*. A *structure*, or the use of a *structure* or premises that was lawful before the passage or amendment of the ordinance, but which is not in conformity with the provisions of this ordinance, may be continued subject to the following conditions:
 - a. If such *structure*, use, or utility service is discontinued for six (6) consecutive months, any future use of the *building* shall conform to this ordinance.
 - b. If any nonconforming use or *structure* is destroyed by any means, including *flood*, it shall not be reconstructed if the cost is more than 50 percent of the pre-damaged *market value* of the *structure*. This limitation does not include the cost of any alteration to comply with existing state or local health, sanitary, building, safety codes, regulations or the cost of any alteration of a *structure* listed on the National Register of Historic Places, the State Inventory of Historic Places, or local inventory of historic places upon determination
 - (9) *Temporary Structure*. A *Temporary Structure* is strictly permitted only by special use *permit* issued by the governing body of the *community*. Any application for a special use *permit* to allow a *temporary structure* will be reviewed for compliance with all existing ordinances and codes, including the special use *permit* regulations
- (b) *Specific standards*. In all areas identified as numbered and unnumbered A and AE zones, where *base flood elevation* data have been provided, as set forth in Section 44-494 (a)(2), the following provisions are required:
- (1) *Residential construction*. *New construction* or *substantial improvement* of any residential *structures*, including *manufactured homes*, shall have the *lowest floor*, including *basement*, elevated to one (1) foot above *base flood elevation*. The elevation of the *lowest floor* shall be certified by a Missouri licensed land surveyor, engineer, or architect.
 - (2) *Nonresidential construction*. *New construction* or *substantial-improvement* of any commercial, industrial, or other non-residential *structures*, including *manufactured homes*, shall have the *lowest floor*, including *basement*, elevated to one (1) foot above the *base flood elevation* or, together with attendant utility and sanitary facilities, be floodproofed so that below the *base flood elevation* 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. A Missouri registered professional engineer or architect shall certify that the standards of this subsection are satisfied. Such certification shall be provided to the *floodplain* administrator as set forth in 44-493 c (7), (8), (9).
 - (3) *Enclosures below lowest floor*. Require, for all *new construction* and *substantial improvements*, that fully enclosed areas below *lowest floor* used solely for parking of vehicles, *building* access, or storage in an area other than a *basement* and that are 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 certified by a registered professional engineer or architect, or 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 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, valves, or other coverings or devices provided that they *permit* the automatic entry and exit of floodwaters.

(c) *Manufactured homes.*

- (1) All *manufactured homes* to be placed within all unnumbered and numbered A, and AE zones, on the *community's* FIRM, shall be required to be installed using methods and practices that minimize *flood* damage. For the purposes of this requirement, *manufactured homes* must be elevated and anchored to resist 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.
- (2) *Manufactured homes* that are placed or substantially improved within unnumbered or numbered A and AE zones, on the *community's* FIRM on sites:
 - a. Outside of *manufactured home park or subdivision*;
 - b. In a *new manufactured home park or subdivision*;
 - c. In an expansion to and *existing manufactured home park or subdivision*; or
 - d. In an *existing manufactured home park or subdivision* on which a *manufactured home* has incurred substantial damage as the result of a *flood*;

are required to be elevated on a permanent foundation such that the *lowest floor* of the manufactured home is elevated to, or one foot above, the *base flood elevation*, and be securely attached to an adequately anchored foundation system to resist flotation, collapse, and lateral movement. The elevation of the *lowest floor* shall be certified by a Missouri licensed land surveyor, engineer, or architect.

- (3) *Manufactured homes* to be placed or substantially improved on sites in an *existing manufactured home park or subdivision* within all unnumbered and numbered A, and AE zones, on the *community's* FIRM, that are not subject to the provisions of section 44-494 (c)(2), are required to be elevated so that either:
 - a. The *lowest floor* of the *manufactured home* is at or one (1) foot above the *base flood* level; or
 - b. The *manufactured home* chassis is supported by reinforced piers or other foundation elements of at least equivalent strength that are no less than 36 inches in height above grade and be securely attached to an adequately anchored foundation system to resist flotation, collapse, and lateral movement.

(d) *Floodway.* Located within areas of *special flood* hazard established in section 44-492(a) are areas designated as *floodways*. Since the *floodway* is an extremely hazardous area due to the velocity of floodwaters that carry debris and potential projectiles, the following provisions shall apply:

- (1) The *community* shall select and adopt a regulatory *floodway* based on the principle that the area chosen for the regulatory *floodway* must be designed to carry the waters of the *base flood* without increasing the *water surface elevation* of that *flood* more than one (1) foot at any point.
- (2) The *community* shall prohibit any encroachments, including fill, *new construction*, *substantial improvements*, and other *development* within the adopted regulatory *floodway* unless it has been demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the proposed encroachment would not result in any increase in *flood* levels within the *community* during the occurrence of the *base flood* discharge.

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- (3) A *community* may permit encroachments within the adopted regulatory *floodway* that would result in an increase in *base flood elevations*, provided that the *community* first applies for a conditional FIRM and *Floodway* revision, fulfills the requirements of such revisions as established under the provisions of 44 CFR § 65.12, and receives the approval of FEMA.
 - (4) If section 44-494 (d)(2) is satisfied, all *new construction* and *substantial improvements* shall comply with all applicable *flood* hazard reduction provisions of section 44-494
 - (5) In *unnumbered A zones*, the *community* shall obtain, review, and reasonably utilize any *base flood elevation* or *floodway* data currently available from Federal, State, or other sources as set forth in 44-494(a)(2).

(e) *Recreational vehicles.*

- (1) *Recreational vehicles* placed on sites within all unnumbered and numbered A and AE zones on the *community's* FIRM shall either:
 - a. Be on the site for fewer than 180 days consecutive days;
 - b. Be fully licensed and ready for highway use; or
 - c. Meet the permitting, elevation, and anchoring requirements for *manufactured homes* of this section.
- (2) A *recreational vehicle* is ready for highway use if it is on its wheels or jacking system, is attached to the site only by quick-disconnect type utilities and security devices, and has no permanently attached additions.

Sec. 44-495. Floodplain management *variance* procedures.

- (a) *Variances.* *Variances* from the *floodplain management* requirements of this section shall be heard by the city council, after receiving a recommendation by the planning and zoning commission.
- (b) *Responsibility of appeal board.*
 - (1) Where an application for a *floodplain development permit* is denied by the code enforcement director, the applicant may apply for such *floodplain development permit* directly to the *appeal* board.
 - (2) The city board of adjustment shall hear and decide *appeals* when it is alleged that there is an error in any requirement, decision, or determination made by the code enforcement director in the enforcement or administration of this section.
- (c) *Further appeals.* Any *person* aggrieved by the decision of the board of adjustment, or any taxpayer, may *appeal* such decision to the circuit court of the county, as provided in RSMo Ch. 89.110 and further provided in section 44-36.
- (d) *Floodplain management variance criteria.* In passing upon such applications for *variances*, the planning and zoning commission and city council shall consider all technical data and evaluations, all relevant factors, standards specified in other sections of this ordinance, and the following criteria:
 - (1) The danger to life and property due to *flood* damage;
 - (2) The danger that materials may be swept onto other lands to the injury of others;
 - (3) The susceptibility of the proposed facility and its contents to *flood* damage and the effect of such damage on the individual owner;
 - (4) The importance of the services provided by the proposed facility to the *community*;
 - (5) The necessity to the facility of a waterfront location, where applicable;
 - (6) The availability of alternative locations, not subject to *flood* damage, for the proposed use;

- (7) The compatibility of the proposed use with existing and anticipated *development*;
- (8) The relationship of the proposed use to the comprehensive plan and *floodplain management* program for that area;
- (9) The safety of access to the property in times of *flood* for ordinary and emergency vehicles;
- (10) The expected heights, velocity, duration, rate of rise and sediment transport of the floodwaters, if applicable, expected at the site; and
- (11) 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; streets; and bridges.

(e) *Conditions for approving floodplain management variance.*

- (1) Generally, *variances* may be issued for *new construction* and *substantial improvements* to be erected on a lot of one-half acre or less in size contiguous to and surrounded by lots with existing *structures* constructed below the *base flood* level, providing subsections (e)(2) through (6) of this section have been fully considered. As the lot size increases beyond the one-half acre, the technical justification required for issuing the *variance* increases.
- (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 local inventory of historic places upon determination provided the proposed activity will not preclude the *structure's* continued historic designation and the *variance* is the minimum necessary to preserve the historic character and design of the *structure*.
- (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* shall only be issued upon a determination that the *variance* is the minimum necessary, considering the *flood* hazard, to afford relief.
- (5) *Variances* shall only be issued upon:
 - a. A showing of good and sufficient cause;
 - b. A determination that failure to grant the *variance* would result in exceptional hardship to the applicant; and
 - c. A 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 on or victimization of the public, or conflict with existing local laws or ordinances.
- (6) A *community* shall notify the applicant in writing over the signature of a *community* official that:
 - a. The issuance of a *variance* to construct a *structure* below *base flood* level 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 *base flood* level increases risks to life and property.

Such notification shall be maintained with the record of all *variance* actions as required by this section.
- (7) A *community* shall maintain a record of all *variance* actions, including justification for their issuance.
- (8) *Variances* may be issued by a *community* for *new construction* and *substantial improvements* and for other *development* necessary for the conduct of a *functionally dependent* use provided that the criteria of items 1 through 5 of this section are met, and the *structure* or other *development* is protected by methods that minimize *flood* damages during the *base flood* and create no additional threats to public safety.

(f) *Conditions for approving variances for accessory structures.*

- (1) Any *permit* granted for an *accessory structure* shall be decided individually based on a case-by-case analysis of the *building's* unique circumstances. *Variances* granted shall meet the following conditions as well as those criteria and conditions set forth in subsections (d) and (e) of this section.
 - (2) In order to minimize *flood* damages during the one percent annual chance *flood* event, also referred as the 100-year *flood* and the threat to public health and safety, the following conditions shall be included for any *variance* issued for *agricultural structures* that are constructed at-grade and wet-floodproofed:
 - a. Use of the *accessory structures* must be solely for parking and limited storage purposes in any *special flood hazard area* as identified on the *community's Flood Insurance Rate Map (FIRM)*.
 - b. For any new substantially damaged *accessory structures*, the exterior and interior *building* components and elements (i.e., foundation, wall framing, exterior and interior finishes, flooring, etc.) below the *base flood elevation*, must be built with flood-resistant materials in accordance with 44-494 (a)(4)(b) of this ordinance.
 - c. The *accessory structures* must be adequately anchored to prevent flotation, collapse, or lateral movement of the *structure* in accordance with 44-494 (a)(4)(a) of this ordinance. All of the *building's* structural components must be capable of resisting specific flood-related forces including hydrostatic, buoyancy, and hydrodynamic and debris impact forces.
 - d. Any mechanical, electrical, or other utility equipment must be located above the *base flood elevation* or floodproofed so that they are contained within a watertight, floodproofed enclosure that is capable of resisting damage during *flood* conditions in accordance with 44-494 (a)(4)(d) of this ordinance.
 - e. The *accessory structures* must meet all *NFIP* opening requirements. The *NFIP* requires that enclosure or foundation walls, subject to the one percent annual chance *flood* event, also referred to as the 100-year *flood*, contain openings that will *permit* the automatic entry and exit of *flood* waters in accordance with 44-494 (b)(1)(c) of this ordinance.
 - f. The *accessory structures* must comply with the *floodplain management floodway* encroachment provisions of 44-494 (d)(2) of this ordinance. No *permits* may be issued for *accessory structures* within any designated *floodway*, if any increase in *flood* levels would result during the 100-year *flood*.
 - g. Equipment, machinery, or other contents must be protected from any *flood* damage.
 - h. No disaster relief assistance under any program administered by any Federal agency shall be paid for any repair or restoration costs of the *accessory structures*.
 - i. *Wet-floodproofing* construction techniques must be reviewed and approved by the *community*. The *community* may request approval by a registered professional engineer or architect prior to the issuance of any *floodplain development permit* for construction. Cost for any required professional certification to be paid by the developer.
- (g) *Conditions for approving variances for agricultural structures.*
- (1) Any *permit* granted for an *agricultural structure* shall be decided individually based on a case-by-case analysis of the *building's* unique circumstances. *Variances* granted shall meet the following conditions as well as those criteria and conditions set forth in subsections (d) and (e) of this section.
 - (2) In order to minimize *flood* damages during the 100-year *flood* and the threat to public health and safety, the following conditions shall be included for any *variance* issued for *accessory structures* that are constructed at-grade and wet-floodproofed:
 - a. All proposed agricultural structures shall demonstrate that no other alternate location outside of the *special flood hazard area* exists for the *agricultural structure*. Residential structures, such as farmhouses, cannot be considered *agricultural structures*.

- b. Use of *structures* must be limited to agricultural purposes in any *special flood hazard area* only as identified on the community's *Flood Insurance Rate Map* (FIRM).
 - c. For any new or substantially damaged *agricultural structures*, the exterior and interior *building* components and elements (i.e., foundation, wall framing, exterior and interior finishes, flooring, etc.) below the *base flood elevation*, must be built with flood-resistant materials in accordance with 44-494(a)(4)(b) of this ordinance.
 - d. The *agricultural structures* must be adequately anchored to prevent flotation, collapse, or lateral movement of the *structures* in accordance with 44-494(a)(4)(a) of this ordinance. All of the *building's* structural components must be capable of resisting specific *flood*-related forces including hydrostatic, buoyancy, and hydrodynamic and debris impact forces.
 - e. Any mechanical, electrical, or other utility equipment must be located one (1) foot above the *base flood elevation*, or floodproofed so that they are contained within a watertight, floodproofed enclosure that is capable of resisting damage during *flood* conditions in accordance with 44-494 (a)(4)(d) of this ordinance. The elevation shall be certified by a licensed land surveyor or professional engineer.
 - f. The *agricultural structures* must meet all National Flood Insurance Program (NFIP) opening requirements. The NFIP requires that enclosure or foundation walls, subject to the one percent annual chance *flood* event, also referred to as the *100-year flood*, contain openings that will *permit* the automatic entry and exit of *flood* waters in accordance with 44-494 (b)(1)(c) of this ordinance.
 - g. The *agricultural structure* must comply with the *floodplain management floodway* encroachment provisions of 44-494 (a)(4)(a) of this ordinance. No *permits* may be issued for *agricultural structures* within any designated *floodway*, if any increase in flood levels would result during the one percent annual chance *flood* event, also referred to as the *100-year flood*.
 - h. Major equipment, machinery, or other contents must be protected from any *flood* damage.
 - i. No disaster relief assistance under any program administered by any Federal *agency* shall be paid for any repair or restoration costs of the *agricultural structures*.
 - j. Wet-proofing construction techniques must be reviewed and approved by the *community*. The *community* may request approval by a registered professional engineer or architect prior to the issuance of any *floodplain development permit* for construction. Cost for any required professional certification to be paid by the developer.
- (h) *Conditions for approving temporary structures.*
- (1) A *temporary structure* may be considered for location within the one percent annual chance *flood* event, also referred to as the *100-year floodplain* only when all of the following criteria are met:
 - a. Use of the *temporary structure* is unique to the land to be developed and cannot be located outside of the *floodplain* nor meet the NFIP design standards;
 - b. Denial of the *temporary floodplain development permit* will create an undue hardship on the property owner;
 - c. *Community* has adopted up to date NFIP and building regulations to direct placement and removal of the *temporary structure*; and,
 - d. *Community* has sufficient staff to monitor the placement, use, and removal of the *temporary structure* throughout the duration of the *permit*.
 - (2) Once all of the above conditions are met, an application for a *temporary floodplain development permit* must be made to the City Council. The City Council shall consider all applications for *temporary floodplain development permits* for a *temporary structure* based on the following criteria:

- a. The placement of any *temporary structure* within the *special flood hazard areas* as shown on the *community's* adopted FEMA/NFIP map shall require an approved *temporary floodplain development permit*. The *temporary floodplain development permit* shall be valid for a period not to exceed 180 days.
- b. *Temporary floodplain development permit* applications, for a *temporary structure* to be located in *special flood hazard areas*, shall conform to the standard public hearing process prior to any *community* action on the *permit* request.
- c. An emergency plan for the removal of the *temporary structure* that includes specific removal criteria and time frames from the *agency* or firm responsible for providing the manpower, equipment, and the relocation and disconnection of all utilities shall be required as part of the *temporary floodplain development permit* application for the placement of any *temporary structure*.
- d. On or before the expiration of the end of the 180-day *permit* period, the *temporary structure* shall be removed from the site. All utilities, including water, sewer, communication, and electrical services shall be disconnected.
- e. To ensure the continuous mobility of the *temporary structure* for the duration of the *permit*, the *temporary structure* shall retain its wheels and tires, licenses, and towing appurtenance on the *structures* at all times.
- f. Under emergency *flooding* conditions, the *temporary structure* shall be removed immediately or as directed by the *community* and as specified in the emergency removal plan.
- g. Location of any *temporary structure* within the regulatory *floodway* requires the provision of a "no-rise" certificate by a registered professional engineer.
- h. *Violation* of or non-compliance with any of the stated conditions of the *temporary floodplain development permit* during the term thereof, shall make the *permit* subject to revocation by resolution of the governing body of the *community*. Issuance of *permit* revocation notice shall be made to the landowner, the occupant of the land, and to the general public.
- i. Any deviation from the approved site plan shall be deemed a *violation* of the *temporary floodplain development permit* approval and the uses allowed shall automatically be revoked. The subsequent use of the land shall be as it was prior to the *permit* approval. In event of any *violation*, all permitted special uses shall be deemed a *violation* of this ordinance and shall be illegal, non-conforming uses and shall be summarily removed and abated.
- j. If the *temporary structure* is to be returned to its previously occupied site, the process for issuing a *temporary floodplain development permit* must be repeated in full. Any subsequent *permit* shall be valid for 180 days only.

Sec. 44-496. Penalties for *violation*.

1. *Violation* of the provisions of this ordinance or failure to comply with any of its requirements (including *violations* of conditions and safeguards established in connection with granting of *variances*) shall constitute an ordinance *violation*. Any *person* who violates this ordinance or fails to comply with any of its requirements shall, upon conviction thereof, be fined as provided for in section 1-8 and, in addition, shall pay all costs and expenses involved in the case. Each day such *violation* continues shall be considered a separate offense.
2. A *structure* or other *development* without a *floodplain* permit or other evidence of compliance is presumed to be in *violation* until such documentation is provided.
3. The imposition of such fines or penalties for any *violation* for non-compliance with this ordinance shall not excuse the *violation* or noncompliance or allow it to continue. All such *violations* or noncompliant actions shall be remedied within an established and reasonable time.

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4. Nothing herein contained shall prevent the City of Kirksville or other appropriate authority from taking such other lawful action as is necessary to prevent or remedy any *violation*.

Sec. 44-497. Amendments.

The regulations, restrictions, and boundaries set forth in this ordinance may from time to time be amended, supplemented, changed, or appealed to reflect any and all changes in the National Flood Disaster Protection Act of 1973; provided, however, that no such action may be taken until after a public hearing in relation thereto, at which parties of interest and citizens shall have an opportunity to be heard. Notice of the time and place of such hearing shall be published in a newspaper of general circulation in the city. At least 20 days shall elapse between the date of this publication and the public hearing. A copy of such amendments will be provided to the Region VII office of the Federal Emergency Management Agency (FEMA). The regulations of this ordinance are in compliance with the National Flood Insurance Program (NFIP) regulations.

Secs. 44-498—44-519. Reserved.