Adopted: May 1985

Revised: September, 1991, September 30, 2003, November 3, 2004, April 30, 2009

CHAPTER 26 STREAM BUFFER REGULATIONS

26.1 Title, Purpose and Intent

- 26.1.1 Title. This chapter shall be known as the "Stream Buffer Regulations of Boone County, Missouri."
- 26.1.2 Purpose. The County Commission of Boone County, Missouri has determined that these regulations are necessary for the purpose of promoting the health, safety, comfort, and/or general welfare; and conserving the values of property throughout the County; and lessening or avoiding undue impact of stormwater runoff on adjoining properties and the environment. Buffers adjacent to stream systems provide numerous environmental protection and resource management benefits which can include the following:
 - Restoring and maintaining the chemical, physical and biological integrity of the water resources,
 - Removing pollutants delivered in urban storm water,
 - Reducing erosion and controlling sedimentation,
 - Stabilizing stream banks,
 - Providing infiltration of storm water runoff,
 - Maintaining the base flow of streams,
 - Contributing the organic matter that is a source of food and energy for the aquatic ecosystem,
 - Providing tree canopy to shade streams and promote desirable aquatic organisms,
 - Providing riparian wildlife habitat,
 - Furnishing scenic value and recreational opportunity,
 - Protecting the public from flooding, property damage and loss, and
 - Providing sustainable, natural vegetation.

26.1.3 Intent. It is the purpose of this section to establish minimum acceptable standards for the design of stream buffers to protect the streams, wetlands, floodplains and riparian and aquatic ecosystems of the County of Boone, and the implementation of specifications for the establishment, protection and maintenance of vegetation along all stream systems and/or waterbodies within our County's authority. It is the desire of the County to protect and maintain natural vegetation in riparian and wetland areas by implementing specifications for the establishment, protection and maintenance of buffer vegetation along stream systems and/or waterbodies within our County's authority.

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- 26.1.4 Jurisdictional Area These regulations apply to all unincorporated lands within Boone County.
- 26.1.5 Authority These regulations are adopted pursuant to the provisions of Sections 64.825 64.885 and 64.907, Revised Statutes of Missouri.

26.1.6 Applicability

- 26.1.6.1 This article shall apply to:
 - 26.1.6.1.1 All proposed development except as provided in Section 26.1.6.2
 - 26.1.6.1.2 Activities that involve clearing, earthwork and excavation within the buffer zone as defined herein.
 - 26.1.6.1.3 All tracts and parcels of land in the County except as provided in Section 26.1.6.2.
- 26.1.6.2 This article shall not apply to:
 - 26.1.6.2.1 Development which prior to the effective date of this article:
 - Is covered by a plat recorded of record in accordance with subdivision regulations.
 - Is covered by an approved and unexpired Preliminary Plat or Review Plan.
 - Is covered by a valid, unexpired building permit.
 - Has applied for a building permit.
 - 26.1.6.2.2 This article shall not apply to surface mining operations which are operating in compliance with a State-approved surface mining permit.
 - 26.1.6.2.3 This article shall not apply to agricultural or farming activities.
 - 26.1.6.2.4 This article shall not be construed so as to prevent modifications to stream channels or wetlands if such modifications have been approved and permitted by a Federal Agency such as the U.S. Army Corps of Engineers.
 - 26.1.6.2.5 Structures that exist on or before the date of adoption of this section, that do not conform to this section and cannot be made to conform by using the stream buffer averaging provisions of Section 26.5.6 shall be

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allowed to remain in the present location and footprint. Such structures can be expanded or enlarged if the expansion or enlargement is vertical and/or away from the stream being buffered.

26.2 Administration

- 26.2.1 Limitation on liability. This chapter does not guarantee that properties will always be free from storm water flooding or flood damage. This chapter shall not create liability on the part of, or a cause of action against, the county or any county officer or employee for any flood damage.
- 26.2.2 Conflicts. Where any provision of this chapter imposes restrictions different from those imposed by any other law or regulation, whether state, federal or local, whichever is more restrictive or imposes a higher standard shall control.
- 26.2.3 Administration and Enforcement. The provisions of this chapter shall be administered and enforced by the Director. The Director shall receive applications required by these regulations and issue permits. He/she shall examine premises for which permits have been issued, and shall make the necessary inspections to see that the provisions of law are complied with. He/she shall, when requested by the County Commission, or when the interests of the county so require, make investigations in connection with matters referred to in these regulations and render written reports on the same. For the purpose of enforcing compliance with the law, he/she shall issue such notices or orders as may be necessary.
- Inspections: Inspections shall be made by the Director or his/her designee(s).
- Rules/ Policies: For carrying into effect its provisions, the County Commission and/or its designee may adopt rules/ policies consistent with these regulations.
- Records: The Director shall keep careful and comprehensive records of applications, of permits issued, of inspections made, of reports rendered, and of notices of orders issued. All such records shall be open to public inspection at reasonable hours, but shall not be removed from the office of the Director.
- 26.2.4 Appeals. Any person aggrieved by any decision of the Director in the administration or enforcement of this Chapter may appeal such decision to the Board of Adjustment.

26.2.5 Variances

26.2.5.1 Variances by the Director. The Director may grant a waiver for the following:

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- Those projects or activities serving a public need where no feasible alternative is available.
- The repair and maintenance of public improvements where avoidance and minimization of adverse impacts to wetlands and associated aquatic ecosystems have been addressed.
 - 26.2.5.1.1 Application. The applicant shall submit a written request for a variance to the Director in a form specified by the Director. The application shall include information specified by the Director and specific reasons justifying the variance and any other information necessary to evaluate the proposed variance request. The Director may require an alternatives analysis that clearly demonstrates that no other feasible alternatives exist and that minimal impact will occur as a result of the project or development.
 - 26.2.5.1.2 Review by Director. Upon receipt of all application materials the Director shall certify the application complete. The Director shall have 10-working days from the date of the complete application in which to issue a decision. If during review of the application the Director requests additional information, then the time between when the request was made and when the information is submitted shall not count against the 10-day review period.
- 26.2.5.2 Other Variances. Where undue hardships or practical difficulties may result from strict compliance with this chapter, the developer may file an application for a variance. Said applications shall be directed to the Boone County Board of Adjustment organized and existing under the zoning regulations of Boone County, Missouri, which shall have the jurisdiction and shall be charged with the duty of hearing and deciding applications for variances from the strict application of the provisions of this ordinance. The Board may grant a variance only if it finds after public hearing and upon competent and substantial evidence that the applicant meets the following criteria:
 - The variance shall not have the effect of nullifying the intent and purpose of these regulations;
 - The granting of the variance will not be detrimental to the public safety, health or welfare, or injurious to other property or improvements.
 - The conditions upon which the request for a variance is based are unique to the property for which the variance is sought, are not applicable generally to other property, and are not self-imposed.
 - Because of the particular physical surroundings, shape or topographical conditions of the specific property involved, a particular hardship to the

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owner would result, as distinguished from a mere inconvenience, if this chapter was strictly interpreted and carried out.

26.2.5.2.1 Conditions: In recommending variances and exceptions, staff may recommend and the Board may require such conditions as will, in the judgment of each, secure substantially the objectives of the standards or requirements of this chapter.

26.2.5.2.2 Application: An application for a variance shall be submitted at the time of filing for a preliminary plat or for application for a building permit, whenever possible. The application shall be on forms provided by the County and shall state fully the grounds for the request and all facts relied upon by the practitioner. The application shall be filed with the Director and after review thereof the Director shall make a recommendation to the Board to grant or deny the application and state the reasons for his or her recommendation. Either the applicant or the Director may appeal or seek judicial review of any decision of the Board as provided by law.

26.3 Definitions

<u>Best Management Practices (BMPs)</u> - Conservation practices or management measures which control soil loss and reduce water quality degradation mainly caused by nutrients, animal wastes, toxins, sediment in the runoff. BMPs may be either structural (grass swales, terraces, retention and detention ponds), or non-structural (disconnection of impervious surfaces, directing downspouts onto grass surfaces and educational activities).

<u>Buffer</u> - A vegetated area including trees, shrubs, managed lawn areas, and herbaceous vegetation which exists or is established to protect a stream system. Alteration of this natural area is strictly limited.

<u>Development</u> - A change in the zoning, intensity of use or allowed use of any land, building, structure or premises for any purpose. The subdivision or severance of land. The construction, erection or placing of one or more buildings or structures on land or use of land or premises for storage of equipment or materials. Making of an addition, enlargement or alteration to a building or structure, in, on, over or under land, which has the effect of increasing the size or usability thereof. Land disturbance activities such as but not limited to site-grading, excavation, drilling, removal of topsoil or the placing or dumping of fill and installation of drainage works. The use of the term shall include redevelopment, as defined in the stormwater regulations, in all cases unless otherwise specified in these regulations.

<u>Director</u> – The Boone County Director of Public Works or Boone County Director of Planning and Building Inspection as designated by the County Commission.

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Farming Activities – See Agriculture or Farming Activity (Zoning Regulations Section 2)

<u>Flood Control Structures</u>— Use of levees, walls, ditching or reservoirs in an effort to minimize the occurrence of floods.

<u>Indigenous Vegetation</u> – Any species that was present in Missouri prior to European Settlement (approximately 1735 A.D.) or any plant identified as native or indigenous on lists maintained by agencies such as the Missouri Department of Conservation or United States Department of Agriculture.

<u>Managed Lawn Areas</u> - Any area greater than five hundred (500) square feet where the vegetative ground cover is maintained at a uniform height of less than 5-inches.

<u>Ordinary High Water Mark</u> – That line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter or debris, or other appropriate means that consider the characteristics of the surrounding area.

<u>Pollution</u> - Any contamination or alteration of the physical, chemical, or biological properties of any waters which will render the waters harmful or detrimental to domestic, commercial, industrial, agricultural, recreational, or other legitimate beneficial uses; or to livestock, wild animals, birds, fish or other aquatic life.

<u>Streams</u> - Perennial and intermittent watercourses identified through site inspection and United States Geological Survey (USGS) maps and further defined and categorized as follows:

- A. Type I Streams are defined as perennial streams shown as solid blue lines on the United States Geological Survey seven and one-half minutes series topographical map and have a drainage area of greater than 50 acres.
- B. Type II Streams are defined as intermittent streams shown as dashed blue lines on the United States Geological Survey seven and one-half minutes series topographical map and have a drainage area of greater than 50 acres.
- C. Type III Streams are defined as intermittent streams or natural channels which are not shown on the United States Geological Survey seven and one-half minutes series topographical map as either blue or dashed blue lines which have drainage areas of greater than 50 acres..

<u>Wetlands</u> - Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence

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of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

26.4 Stream Buffer Plan Requirements

- 26.4.1 General Plan Requirements. All administrative surveys, plats, development plans and building permits shall set forth an informative, conceptual and schematic representation of the proposed stream buffers by means of maps, graphs, charts, or other written or drawn documents so as to enable the Director an opportunity to make a reasonably informed decision regarding the proposed activity.
- 26.4.2 Specific Plan: Stream buffer plans shall contain the following information and shall be shown on one or more sheets as required by the Director:
 - 26.4.2.1 A site plan map at a minimum scale of 1"=200'.
 - 26.4.2.2 Field delineated and surveyed streams, springs, seeps, bodies of water, sink holes, and wetlands (include a minimum of 200 feet into adjacent properties).
 - 26.4.2.2.1 Stream buffer plans for an individual single family or two family dwelling or an administrative survey are not required to survey the features listed above.
 - 26.4.2.3 Delineated stream buffers.
 - 26.4.2.4 Limits of the 100-year floodplain as shown on the adopted floodplain maps for the County of Boone.
 - 26.4.2.5 Steep slopes greater than 15% for areas adjacent to and within 200 feet of Type I, II or III streams
- 26.4.3 Plan Submittal. The buffer plan shall be submitted in conjunction with the required development permit application or land disturbance plan for any development, whichever is submitted first. The buffer must be clearly delineated on the site grading plan.
 - 26.4.3.1 Provide a note on the site grading and drainage plans or development site plan stating, "There shall be no clearing, grading, construction or disturbance of vegetation except as specifically approved by the Director."
- 26.4.4 Temporary Boundary Markers. Markers will be installed by the applicant prior to commencing clearing and grading operations and maintained throughout the applicant's development activities. The markers will be placed on the outside edge of the buffer zone

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prior to the start of any activity within 50-feet of the buffer or as shown on a land disturbance plan approved by Boone County. Markers shall be clearly visible and shall be spaced at a maximum of 100 feet. The markers shall be joined by marking tape or fencing. Orange construction fencing should be used to delineate the limits of the stream buffer.

26.4.5 Plan Preparation. Stream buffer plans, except for single family dwellings, two family dwellings or administrative surveys, shall be prepared by a professional surveyor, engineer or architect licensed to practice in the State of Missouri.

26.5 Design Standards for Stream Buffers

- 26.5.1 General. An adequate buffer for a stream system shall consist of a predominantly undisturbed strip of land extending along both sides of a stream and their adjacent wetlands, floodplains or slopes. The buffer width may be adjusted to include contiguous sensitive areas, such as steep slopes or erodible soils, where disturbance may adversely affect water quality, streams, wetlands, or other water bodies. All specified stream buffer widths are minimums and may be increased as specified in these regulations or on a voluntary basis by the property owner.
- 26.5.2 Buffer Measurement. The buffer shall begin and be measured from the ordinary high water mark of the channel during base flows.
- 26.5.3 Minimum Buffer Width. The required base width for all buffers shall be determined based on the type of stream being protected, as specified in TABLE I. of this ordinance below:

TABLE I. Required Minimum Stream Buffer Width					
Stream Type	Required Width (each side)				
Type I	100 feet				
Type II	50 feet				
Type III	30 feet				

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26.5.4 Modifications to Buffer Width. Stream buffer width shall be modified if there are steep slopes which are above the ordinary high water mark and within the required stream buffer width and drain into the stream system. In those cases, the buffer width will be adjusted according to the guidance in TABLE II. Below:

TABLE II. Modifications to Stream Buffer Width Based on Slope					
Percent Slope	Width of Buffer				
0 – 14%	No Change				
15% - 25%	add 25 feet				
Greater than 25%	add 50 feet				

- 26.5.5 No Buffer Required. A stream buffer shall not be required for portions of a stream that are less than 150 feet in length due to the stream having been previously enclosed within a pipe or box structure immediately upstream and downstream of the subject location. In such cases, said stream portion may be similarly enclosed in a pipe or box structure.
- 26.5.6 Stream Buffer Averaging. The stream buffer width may be relaxed and the buffer permitted to become narrower at some points to allow for structures existing on the date of adoption of these regulations provided:
 - 26.5.6.1 The average width of the stream buffer must meet the minimum requirement specified in Table 1 and Table 2.
 - 26.5.6.2 There is no reduction in the width of the Streamside Zone (Zone 1)
 - 26.5.6.3 No new structures are built in the 100-year floodplain. This does not restrict allowable uses in the streamside zone as defined in Section 26.6.1 and 26.6.2.3.

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26.6 Two Zone Stream Buffer System

26.6.1 Buffer Zones. The stream buffer shall be composed of two distinct zones, with each zone having its own set of allowable uses and vegetative targets as specified in this section. (Table III contains information that has been condensed from subsequent text. For a complete listing of uses see Section 26.6.2 and 26.6.3).

Table III. Stream Buffers										
Streamside Zone (Zone 1)			Outer Zone (Zone 2)							
	Type I Stream	Type II Stream	Type III Stream		Type I Stream	Type II Stream	Type III Stream			
Width	50	25	15	Width	50	25	15			
Vegetation	Indigenous Vegetation			Vegetation	Type I – Indigenous Vegetation Type II - Managed Lawns Permissible Type III – Managed Lawns Permissible					
Uses	Flood control, permeable-surfaced foot and bicycle paths, road crossings, utility crossings, stream or stream bank restoration and restoration of indigenous vegetation			Uses	All uses allowed in Streamside Zone, hard-surfaced biking/hiking paths, detention/retention structures, utility corridors, storm water BMPs, residential yards, landscaped areas					
Function	Protect the physical and ecological integrity of the stream ecosystem			Function	Protect key components of the stream and filter and slow velocity of water runoff					

26.6.2 Zone 1. Streamside Zone

26.6.2.1 Function. The function of the streamside zone is to protect the physical, biological and ecological integrity of the stream ecosystem. The vegetative target for the streamside zone is undisturbed indigenous vegetation.

26.6.2.2 Adjoining Wetlands. The streamside zone will begin and be measured as defined and extend away from the ordinary high water mark a distance as shown in Table III. Wetlands that adjoin the buffer shall be added to the buffer. There shall be a 15-foot buffer around any edge of the wetland that is not within the stream buffer (inner or outer zone).

26.6.2.3 Allowable uses in the streamside zone:

- Flood control structures, stream gauging and water quality monitoring equipment, stormwater treatment facilities in accordance with an approved plan
- Utility crossings

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- Permeable surfaced foot and bicycle paths
- Road crossings
- Utilities where no practical alternatives exist as determined by the director.
- Stream restoration, stream bank restoration or restoration of indigenous vegetation in accordance with an approved plan
- Roads, that exist on or before the date of adoption of these regulations, and associated maintenance activities.

26.6.2.4 Restricted uses in the streamside zone. The following uses are prohibited except where incidental to an allowable use:

- Clearing of existing vegetation,
- Grading, stripping or other soil-disturbing practices,
- Filling or dumping,
- Draining the buffer area by ditching, underdrains or other systems,
- Use, storage or application of pesticides, except for the spot spraying of noxious weeds or other species consistent with recommendations of the Missouri Department of Conservation, Boone County Soil and Water Conservation District, United States Department of Agriculture or University of Missouri Extension Service
- Storage or operation of motorized vehicles except for maintenance or emergency use.
- Walls, solid fences, chain link fences, woven or welded wire fences
- Structures or any type of impervious surface except as provided above

26.6.3 Zone 2, Outer Zone.

26.6.3.1 Function. The function of the outer zone is to prevent encroachment into the streamside zone and to filter runoff from residential and commercial development.

26.6.3.2 Adjoining Wetlands. The outer zone will begin at the outside edge of the streamside zone and extend outward, away from the streamside zone the distances as shown in Table III. Wetlands that adjoin the buffer shall be added to the buffer.

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There shall be a 15-foot buffer around any edge of the wetland that is not within the stream buffer (inner or outer zone).

26.6.3.3 Allowable uses in outer zone

- All uses allowed in the streamside zone
- Utilities
- Hard-surfaced biking/hiking paths,
- Detention/retention structures,
- Storm water BMPs.
- Landscaped areas (Type II and Type III streams only) although planting of indigenous vegetation is encouraged.

26.6.3.4 Restricted Uses in Outer Zone

- Walls, solid fences, chain link fences, woven or welded wire fences
- Structures or any type of impervious surface except as provided above

26.7 Stream Buffer Management and Maintenance

- 26.7.1 Management, Responsible Party. The stream buffer, including wetlands and floodplains, shall be managed by the landowner to enhance and maximize the unique value of these resources. Management includes specific limitations on alteration of the natural conditions of the land and vegetation.
- 26.7.2 Allowed maintenance practices and activities in the streamside zone of the buffer. All allowed uses may be maintained subject to the review of the County. Any entity conducting an allowed activity within the streamside zone shall restore any disturbed area to it previous condition or in accordance with a plan approved by the Director. In addition to maintenance of allowed uses, the following maintenance activities may be conducted:
 - Roads, bridges, paths, and utilities existing as of the date of adoption of these regulations.
 - Rights of way for roads and utilities should be the minimum width to allow for installation, access and maintenance.
 - Removal of diseased or dead trees, brush and trash.
 - Maintenance of all County-approved improvements, including utilities
 - Removal of debris which could cause flooding.
 - Selective (spot) spraying of noxious or other vegetation consistent with recommendations from the Missouri Department of Conservation, Boone County Soil and Water Conservation District, United States Department of Agriculture or University of Missouri Extension Service

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26.7.3 Restricted maintenance practices and activities within the streamside zone of the stream buffer:

- Clearing of existing vegetation.
- Soil disturbance by grading, stripping, or other practices.
- Filling or dumping.
- Drainage by ditching, under drains or other systems.
- Use, storage, or application of pesticides, except as provided for in 26.7.2 above.
- Storage or operation of motorized vehicles, except for maintenance and emergency use approved by the County or when operated on a legally established roadway.
- 26.7.4 Allowed maintenance practices and activities within the outer zone of the stream buffer:
 - All Allowed Uses
 - All maintenance practices and activities that are allowed in the Streamside Zone.
- 26.7.5 Restricted maintenance practices and activities within the outer zone of the stream buffer:
 - Structures or buildings except as otherwise allowed by these regulations
- 26.7.6 Water pollution hazards The following land uses and/or activities are designated as potential water pollution hazards and must be set back from any stream by the distance indicated below:
 - Storage & use of hazardous substances 300 feet provided:
 - Up to 20 gallons of liquid fertilizer or pesticide is allowed but must remain outside of the stream buffer
 - Up to 100 pounds of granular fertilizer or pesticide is allowed but must remain outside of the stream buffer
 - Above- or below-ground petroleum storage facilities 300 feet provided:
 - Up to 500 gallons of heating oil, gasoline or diesel fuel is allowed but must remain outside of the stream buffer
 - Up to 1000 gallons of propane is allowed but must remain outside of the stream buffer

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• Salvage yards or Automobile Recyclers 600 feet

26.8 Violations, Penalties and Remedies

It shall be unlawful for any person to violate any provision or fail to comply with any of the requirements of these regulations. A violation of or failure to comply with any of the requirements of these regulations shall constitute a misdemeanor and shall be upon conviction punished as provided by law. In addition, any person permitting, aiding, abetting or concealing a violation of this ordinance shall be deemed guilty of a misdemeanor and shall be upon conviction punished as provided by law. Each day a violation of these regulations continues shall constitute a separate offense. The penalty provided in this section shall not be construed to be exclusive but is intended to be supplemental and in addition to any other remedy provided by law or at equity. The County may institute in the circuit court of the County any appropriate action or other proceedings to prevent any unlawful activity proscribed in this ordinance or to correct any violations of this ordinance.

26.9 Conflict with Other Regulations

Where the standards and management requirements of this buffer ordinance are in conflict with other laws, regulations, and policies regarding streams, steep slopes, erodible soils, wetlands, floodplains, timber harvesting, land disturbance activities, or other environmental protective measures, the more restrictive shall apply.

26.10 Severability

If any part or parts of this Ordinance shall be held unconstitutional, invalid, or otherwise unenforceable by any court of competent jurisdiction, such decision shall not affect the validity of the remaining provisions of this Ordinance.