

ARTICLE 47.5. GROUNDWATER RECHARGE PROTECTION AREA OVERLAY DISTRICT (GRPA)

Section 1. Statement of Intent

- A. The Groundwater Recharge Protection Area Overlay District is intended to provide increased protection of the County's water resources in designated areas where pollutants associated with urbanized development presents an increasing threat to water quality and the habitat of protected or endangered species.
- B. The intent of the Groundwater Recharge Protection Area District is to limit the introduction of pollutants in vulnerable areas from the impacts of increased human development through:
 - 1. Identification of vulnerable areas where increased protection measures are warranted.
 - 2. Application of development standards and requirements within these areas which are intended to reduce the risk of contamination.

Section 2. Recognition of Community Comprehensive Plans and Groundwater Recharge Protection Areas

- A. The Christian County Commission recognizes the adopted Comprehensive Plans that have been approved by the various incorporated communities within Christian County. Therefore, where the cooperation between Christian County and its incorporated communities is authorized by the constitution and laws of the State of Missouri, it is determined by the Christian County Commission that for the purposes of:
 - 1. Managing land development in defined areas which are known to be environmentally sensitive.
 - 2. Anticipating and avoiding the introduction of contaminants into the County's groundwater resources in areas where the risk is greatest.
 - 3. Coordinating with incorporated communities to assure that reasonable standards for development are observed.

Section 3. Definitions

Best Management Practices (BMPs)

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).

Buffer

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.

Development

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.

Erosion And Sediment Control Plan

A set of plans prepared by or under the direction of a professional engineer, land surveyor, landscape architect or geologist licensed in the State of Missouri or by a Certified Professional in Erosion and Sediment Control (CPESC) indicating the specific measures and sequence to be used to control erosion and sediment on a development site before, during and after construction.

Groundwater Recharge

The hydrologic process where rainwater moves downward from the surface into subsurface areas and aquifers where groundwater is naturally stored.

Hydrogeological Assessments

A study to determine the vulnerability of a specific area, these assessments consider factors such as the geological characteristics of the subsurface, soil properties, depth to the water table, and potential contaminant sources.

Land Disturbance

Any activity that exposes soil including clearing, grubbing, grading, excavating, filling and other related activities.

Losing Stream

A losing stream is a stream or part of a stream where a significant amount of its water (at least 30% during dry conditions) flows underground into a bedrock aquifer.

Indigenous Vegetation

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.

Managed Lawn Areas

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.

Ordinary High-Water Mark

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.

Pollution

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.

Soil Erosion & Control Permit

The document issued by the County approving the Stormwater Management Plan and authorizing land disturbance activity in accordance with the Storm Water Pollution Prevention Plan (SWPPP).

Streams

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.

United States Geological Survey (USGS) Blue Line Stream

A stream that appears as a broken or solid blue line (or a purple line) on a USGS topographic map.

Section 4. Establishment of a Groundwater Recharge Protection Area Overlay District

- A. The County or an incorporated community within Christian County may propose the creation of a GRPA in accordance with the following requirements:
 - 1. The area being considered must be at increased risk for groundwater contamination due to the presence of the following factors:
 - a. The potential for residential development at densities greater than one dwelling per three acres within the defined recharge area.
 - b. The area must contain significant areas of karst features such as mapped sinkholes or losing streams.
 - 2. The entity proposing the establishment of a GRPA shall submit a map identifying the geographic boundary of the proposed recharge area to be protected and have enacted or be prepared to enact regulations similar in nature to those which have been adopted by the County which are intended to provide increased protection from pollution within the proposed GRPA.
 - 3. Submit any hydrogeological assessments or related information which demonstrates the presence of existing pollutants or degradation of natural habitat for protected or endangered species.
 - 4. Seek a [recommendation for approval of an amendment to the Zoning Regulations, adding the GRPA boundary as a new overlay district to be approved](#) by the County Commission. ~~as part of a public hearing where property owners within the proposed boundary have been given notice via certified mail at least 15 days prior to the public hearing.~~
 - 5. [As with any other amendment to the Zoning Regulations, the procedure for adopting a new GRPA shall follow the process delineated in Article 49, Sections 3 and 4 as established and created under the authority of Sections 64.211 through 64.295 of the Revised Statutes of Missouri.](#)

Section 5. Change in Zoning Designation

- A. Changes in zoning to Commercial and Manufacturing zoning districts shall not be allowed within a designated GRPA.
- B. Following the date of adoption of any GRPA overlay district, parcels 20 acres or greater, located entirely or partially within the GRPA boundary shall be considered immediately eligible and recommended by the Planning and Zoning Commission to the County Commission for rezoning to Conservation Development District –

CD, as detailed in Article 48. For these purposes, a 20 acre or greater parcel may be created by assemblage of contiguous smaller parcels.

1. Property owners must initiate this request for zoning change through the Planning and Development Office.
2. The setbacks detailed in Section 6 of this Article shall be observed along with all other development standards listed in Article 48.

Section 6. Standards for Development Within a Groundwater Recharge Protection Area

A. Setbacks

1. In order to reduce the risk for pollutants entering and potentially contaminating the County's natural water resources, the following increased setbacks shall be observed:
 - a. Sinkholes – No new development shall be permitted closer than 50 linear feet from the mapped rim of a sinkhole.
 - b. USGS Blue Line Streams – No new development shall be permitted within 50 feet of the ordinary high-water mark of a mapped stream.

B. Erosion and Sediment Control

The following requirements related to soil erosion control shall be observed within the GRPA:

1. In General – the preserved setback/buffer areas surrounding sinkholes and streams are best preserved in their natural condition which includes indigenous vegetation, native warm season grasses and the preservation of existing trees. Areas outside the required setback/buffer may be managed lawn areas.
2. Where land disturbance requires the issuance of a Soil Erosion Control Permit – Notwithstanding the normal stormwater management plan requirements, permitted projects must also adhere to the following higher standards:
 - a. A minimum of 85% of proposed disturbed areas must be routed into properly sized sediment basins.
 - b. All disturbed areas discharging directly to a stream or sinkhole must be routed to a sediment basin.
 - c. Sediment basins shall have perforated risers wrapped in filter fabric and be sized for a 10-year storm.
 - d. Silt fence is not to be allowed as a BMP unless specifically approved for use by the County Engineer.
 - e. Work stoppage will be required if large amounts of sediment are found to be bypassing erosion control measures.

Section 7. Permitted Uses Within the Buffer Areas

- A. The following uses/activities are allowed:
 - 1. Structures or other developments in place prior to the adoption of the GRPA.
 - 2. Development which is covered by a plat recorded prior to the adoption of the GRPA.
 - 3. Permeable surfaced foot and bicycle paths
 - 4. Fencing which may also serve as protection of the buffered area
 - 5. Road and Bridge crossings
 - 6. Utilities where no practical alternatives exist as determined by the director.
 - 7. Stream restoration, stream bank restoration or restoration of indigenous vegetation in accordance with an approved plan.
 - 8. Roads, that exist on or before the date of adoption of the GRPA regulations, and associated maintenance activities.
 - 9. 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.

Section 8. Exceptions

- A. A developer may provide alternative Enhanced Environmental Protection Area regulation(s) when one or more of the following conditions apply:
 - 1. Topography, streams, natural rock formations, sod, vegetation or other site conditions are such that full compliance is impossible or impractical; or
 - 2. The applicability of this Article would cause safety concerns to persons or property.
- B. The County Engineer, or their designee, shall have authority to review and approve any alternative Best Management Practice.