

**AN ORDINANCE AMENDING SECTION 50-151  
THROUGH SECTION 50-157 OF THE CODE OF  
ORDINANCES OF THE CITY OF PADUCAH**

BE IT ORDAINED BY THE CITY OF PADUCAH, KENTUCKY:

SECTION 1. That Article III, Stormwater Conveyance and Management, of Chapter 50, Floods, of the Code of Ordinances of the City of Paducah, Kentucky, is hereby amended to read as follows:

**“ARTICLE III. STORMWATER CONVEYANCE AND MANAGEMENT**

**Sec. 50-151. Purpose and scope of article.**

Stormwater management is vital in promoting the health, safety and general welfare of the public. It is the intent of this article, in an effort to minimize the dangers of flooding to life and property and to protect local water quality and maintain the integrity of stream channels, that certain runoff control devices be provided as land areas are developed or redeveloped. The design criteria for stormwater conveyance structures are outlined in this article.”

**“Sec. 50-152. Definitions.**

For the purpose of this article, the following definitions shall apply unless the context clearly indicates or requires a different meaning.

*City plan review staff.* The City Engineer and/or other designated officials.

*Controlled release structure.* A facility constructed to regulate the volume of stormwater runoff that is conveyed during a specific length of time.

*Conveyance structures.* Water-carrying devices or improvements such as channels, ditches, storm sewers, culverts, inlets, and the like.

*Detention or retention.* Restraining the rate of stormwater runoff with some natural or manmade devices.

*Developed.* Conditions after construction or other manmade change to improved or unimproved land, including, but not limited to, buildings or other structures, mining, dredging, filling, grading, paving, excavation, or drilling operations.

*Excess stormwater.* The calculated runoff produced under a natural or pre-developed condition versus the calculated runoff produced under an altered or post-developed condition, or that portion of stormwater runoff which exceeds the capacity of the storm sewers or natural drainage channels serving a specific watershed.

*Impervious surface.* Asphalt, concrete or any other surface which does not allow measurable infiltration.

Larger common plan of development or sale means a contiguous area where multiple separate and distinct construction activities are planned to occur at different times on different schedules under one plan, e.g., a housing development of five 1/4 acre lots.

*Natural drainage.* Water which flows by gravity in channels formed by the surface topography of the earth prior to changes made by the efforts of humans.

*Off-site.* External to the boundary of a development.

*On-site.* Internal to the boundary of a development.

*Point discharge.* Release of stormwater at a specific location.

*Runoff.* Rainfall excess after natural losses from infiltration, evaporation, transportation or incidental poundage.

*Stormwater runoff release rate.* The rate at which stormwater runoff is released from dominant to servient land.

*Stormwater storage area.* An area designed to temporarily accumulate excess stormwater.

*Swale.* Surface-type conveyance for stormwater, usually designated to carry incidental, localized runoff.”

**“Sec. 50-153. Stormwater conveyance and management facilities required.**

The requirements in this ordinance shall apply to:

- (a) all land disturbing activities and all development or re-development activities that disturb an area greater than or equal to one (1) acre.
- (b) sites that are smaller than one (1) acre may also be covered by these regulations if they are a part of a larger common plan of development or sale.
- (c) any nonresidential development for which the area paved and under roof is equal to or greater than 10,000 square feet.

These regulations shall apply to land disturbing activities in the area designated by the Kentucky Division of Water for coverage under the KPDES SMS4 Permit.

Unless included in exemptions listed in section 50-155 or a waiver granted, all development occurring within the city and subject to this ordinance shall provide for properly sized stormwater conveyance facilities and shall contain on-site, or provide off-site, stormwater management facilities capable of controlling increased runoff ~~relative to equal to but not greater than~~ its predeveloped condition. ~~Unless included in exemptions listed in section 50-155, no application for a preliminary or final plan of subdivision shall be approved unless it includes either a plan describing the manner in which stormwater erosion and sediment resulting from the development will be controlled or managed or a documented request for a waiver thereof. Similarly, unless exempt, no building permit shall be issued for any parcel or lot until either an adequate stormwater management plan addressing erosion, sediment and stormwater, or a documented request for a waiver thereof, has been approved.~~

The use of other methods of controlling peak discharge rates and pollutant removal, such as bio-retention swales, infiltration ditches, hydrodynamic separators, and created wetlands may be required by the City, in its sole discretion, for some large developments. Additionally, the City will promote conservation measures such as buffer strips and greenways as acceptable techniques toward the protection and improvement of local waterways.”

**“Sec. 50-154. Stormwater conveyance facilities design criteria.**

The following criteria shall control when designing stormwater conveyance facilities:

- (1) *Open channels and roadside ditches.* The design storm for the design of open channels and roadside ditches shall be a storm with a recurrence frequency of ten years. The time of concentration for open channel and roadside ditch design should be assumed to be 20 minutes.
- (2) *Storm sewers and inlets.* The design storm for the design of storm sewers and inlets shall be the five-year storm. Storm sewers and inlets shall be checked under ten-year storm loading conditions for ponding limits. The ponding limit for streets with curb and gutter shall be an eight-foot spread measured from gutter to driving lane. Spread calculations shall be based upon an intensity of four inches per hour. Pipes should be sized based upon the actual time of concentration. The minimum time of concentration should be assumed to be eight minutes.
- (3) *Entrance pipes and cross drains.* The design storm for the design of entrance pipes and cross drains shall be the ten-year storm. The duration of the design storm shall be assumed to be equal to the calculated time of concentration. The minimum time of concentration shall be assumed to be eight minutes. Entrance pipes and cross drains shall be checked under 25-year storm conditions to ensure against overtopping of roadways and flood damage to affected areas. Situations requiring pipes larger than 36 inches shall be designed using the culvert criteria in subsection (4) of this section.
- (4) *Culverts.* The design storm for the calculation of runoff for culvert design shall be the 25-year storm. The duration of the design storm shall be assumed to be equal to the calculated time of concentration. The recommended check storm is the 100-year storm. The maximum headwater under 100-year storm conditions should not be allowed to overtop roads or increase the flooding potential in the affected areas.

- (5) *Erosion control.* Plans for stormwater conveyance systems shall include ~~appropriately designed temporary and permanent erosion control measures both for the open channel conduits and all denuded land draining to both open and closed conduits within the system. (Best Management Practices for Construction Activities prepared by the Kentucky Natural Resources and Environmental Protection Cabinet should be used as a design manual for erosion and sediment control.)~~ the applicable provisions identified under Article IV, Erosion Prevention and Sediment Control, of this chapter.
- (6) *Design certification.* Design of all stormwater conveyance facilities shall be prepared and stamped by a licensed professional engineer (Kentucky registration required). Design methods shall be in accordance with the Kentucky Department of Highways' Manual of Instructions for Drainage Design, latest edition."

**“Sec. 50-155. Stormwater management facilities design criteria.**

As a minimum, the following criteria shall be followed when designing a stormwater management facility:

- (1) *Design storm.* Stormwater management facilities shall be designed to retain the difference in the pre-development and post-development ten-year, 24-hour storm event.
- (2) *Emergency spillways.* Emergency spillways shall be designed to pass the 100-year storm. The effect of the 100-year storm must be considered and documented in the design of all stormwater management facilities.
- (3) *Design calculations.* Design calculations submitted must include, but are not limited to, the following:
- a. Contributing drainage area, in acres. Indicate if pre-development and post-development areas differ.
  - b. A breakdown of surface type for pre-development and post-development conditions (such as grassed, paved, roofed, and the like).
  - c. Stage-storage curve for the proposed stormwater management facility.
  - d. Stage-discharge curve for the outlet structure of the proposed stormwater management facility.
  - e. Inflow and outflow hydrographs for pre-development and post-development conditions.
  - f. Emergency spillway design calculations.
  - g. Embankment design criteria as it relates to slope stability and compaction requirements during construction.
- (4) *Gradiant.* All detention basins having a vegetative cover shall be designed, constructed, and maintained equal to or greater than one percent (1%) throughout to the point of discharge.
- (4)(5) *Stormwater Management Plan.* The final stormwater management plan for the entire development shall include, but not be limited to, the following:
- a. All calculations, assumptions and criteria used in the design of the stormwater management facility.
  - b. All plans and profiles of proposed storm sewers and open channels including horizontal and vertical controls, elevations, sizes, slopes and materials.
  - c. Location, dimensions and design details required for the construction of all facilities.
  - d. A description of the operation and maintenance needs for the stormwater management facilities.
  - e. All information relative to the design and operation of emergency spillways.
  - f. Project specifications relative to erosion and sedimentation control. ~~(Refer to Best Management Practice for Construction Activities prepared by the Kentucky Natural Resources and Environmental Protection Cabinet for design guidelines associated with erosion and sediment control.)~~
  - g. All deed restrictions, easements and rights-of-way.

- h. The ownership and maintenance responsibilities for all stormwater management control structures during and after development. The identity of the responsible individual, corporation, association or other specific entity and the specific maintenance must be outlined on the plan.
- ~~(5)~~(6) *Exemptions.* Exemptions from the stormwater management requirements contained herein shall be granted to the following:
- a. ~~All existing residentially subdivided property, developments excluding five units or more.~~ Land disturbing activities on property used for agricultural, horticultural or botanical production of plants and animals useful to man, including but not limited to: forages and sod crops, grains and feed crops, tobacco, cotton and peanuts; dairy animals and dairy products; poultry and poultry products; livestock, including beef cattle, sheep, swine, horses, ponies, mules or goats, including the breeding and grazing of these animals; bees; fur animals and aquaculture, except that the construction of a structure used for agricultural purposes of one or more acres, such as broiler houses, machine sheds, repair shops and other major buildings and which require the issuance of a building permit shall require the submittal and approval of a storm water management plan prior to the start of the land disturbing activity.
  - b. ~~Residential subdivisions or residential planned unit developments where minimum lot size is greater than two acres.~~ Land disturbing activities undertaken on forestland for the production and harvesting of timber and timber products.
  - c. Minor land disturbing activities such as residential gardens, individual residential or commercial landscaping, minor home repairs, or maintenance work, and construction or maintenance of individual underground utility connections.
  - d. Activities undertaken by local governments or special purpose or public service districts relating to the emergency repair and maintenance of existing facilities and structures. These activities will be carried out using appropriate best management practices to minimize the impact on the environment and surrounding properties.
  - ~~e.e.~~ Any nonresidential development for which the area paved and under roof is less than 10,000 square feet.
  - ~~d.f.~~ Waivers may also be granted if, in other cases, the developer can provide sufficient documentation that the proposed development will not result in an adverse impact either upstream or downstream of the proposed site. Waivers shall be granted solely at the discretion of the ~~city plan review staff~~ City Engineer, based upon interpretation of the documentation presented by the developer in conjunction with ~~staff~~ his or her knowledge of the relationship of the proposed development to the adjacent property.
- ~~(6)~~(7) *Design certification.* Design of all stormwater management and conveyance facilities shall be prepared and stamped by a licensed professional engineer (Kentucky registration required).
- ~~(7)~~(8) *Construction certification.* Prior to final approval of the development, the licensed professional engineer must submit certification that the stormwater management and conveyance facilities were constructed in accordance with the approved plan. Final approval shall also provide evidence of the recording of all stormwater conveyance and management facilities deed restrictions, easements and rights-of-way. Any request for deviation from the approved plan during construction shall be submitted to the ~~city plan review staff~~ City Engineer in writing for approval.
- ~~(8)~~(9) *Ownership, operation and maintenance of ~~detention systems~~ stormwater control facilities.* For all developments requiring stormwater control facilities, ownership and maintenance responsibilities remain with the property owner/developer.
- a. ~~For commercial, industrial and multifamily residential developments, ownership and maintenance responsibilities remain with the property owner/developer.~~
  - b. ~~For single family residential subdivisions, the city may accept ownership and maintenance responsibilities; provided that:~~

- ~~1.—Construction and certification is in accordance to the approved plan;  
and~~
- ~~2.—Appropriate land dedication and easements are provided, including  
adequate public ingress and egress from the facility to a public  
street.”~~

**“Sec. 50-156. Issuance of certificate of occupancy.**

No certificate of occupancy shall be issued for any development which is subject to the regulations of this article unless and until all requirements and criteria of this article are fully complied with.

**Sec. 50-157. Penalty.**

~~Any person who is subject to the regulations of this article shall be liable to the city for a civil penalty of \$250.00 per violation per day for as long as the violation continues. In addition to such penalty, the city may recover from the person its reasonable attorney fees, court costs and other expenses incurred in any enforcement proceedings. firm, corporation or agency acting as principal, agent, employee or otherwise, who fails to comply with the provisions of this Ordinance shall be guilty of a misdemeanor and upon conviction thereof shall be punishable by a fine of not less than one hundred dollars (\$100.00)/day and not more than five hundred dollars (\$500.00)/day, or by imprisonment for not more than ninety (90) days, or both, for each separate offense. Each day there is a violation of any part of this Ordinance shall constitute a separate offense.~~

SECTION 2. This ordinance shall be read on two separate days and will become effective upon summary publication pursuant to KRS Chapter 424.

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Mayor

ATTEST:

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Tammara S. Brock, City Clerk

Introduced by the Board of Commissioners, December 13, 2005  
Adopted by the Board of Commissioners, December 20, 2005  
Recorded by Tammara S. Brock, City Clerk, December 20, 2005  
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