

# STORM WATER ORDINANCE

ORDINANCE NO.95-32

AN ORDINANCE ESTABLISHING A STORMWATER MANAGEMENT SYSTEM FOR THE CITY OF EMPORIA , KANSAS ; INCLUDING AREAS OF APPLICABILITY, OBJECTIVES, STORMWATER DETENTION SYSTEMS AND CRITERIA: AND AMENDING THE CODE OF THE CITY OF EMPORIA , KANSAS , 1983, BY ADDING ARTICLE III, CHAPTER 10 THERETO.

BE IT ORDAINED by the Governing Body of the City of Emporia , Kansas :

SECTION I. The Code of the City of Emporia, Kansas, 1983 is hereby amended by adding an Article III to Chapter 10, which said Article reads as follows:

## ARTICLE III. STORMWATER MANAGEMENT SYSTEMS

Section 10-70. Applicability. The provisions of this Article shall extend and apply to all land within the corporate limits of the city. Except as hereinafter provided, any person firm, corporation or business proposing to construct buildings or develop land within the above described areas shall make application to the city engineer for approval of a stormwater management plan which controls and/or detains stormwater. The provisions of this Article shall be known, cited and referred to as the Stormwater Management Ordinance of the City.

Section 10-71. Interpretation. The provisions of this Article are intended to supplement existing zoning and land use ordinances and regulations of the city. In their interpretation and application, the provisions herein shall be held to be the minimum requirements for the promotion of the public health, safety, and general welfare. Additionally, the provisions of this Article should be read in conjunction and not in conflict with any applicable State or Federal statute, law, rule or regulation.

Section 10-72. Objectives. To promote the public health, safety, and general welfare of the citizens of Emporia , this Stormwater Management Ordinance is enacted for the general purpose of assuring the proper balance between the use of land and the environment. Specifically, the provisions of this Article are intended to reduce property damage and to minimize the hazards of

personal injury and loss of life due to flooding through the establishment of a stormwater management system and the establishment of methods and guidelines for attenuating or avoiding flooding within the city from the cumulative effects of increased volume and peak discharge of surface water runoff,

Section 10-73. Disclaimer of Liability. The performance standards and design criteria set forth herein establish minimum requirements which must be implemented with good engineering practice and workmanship. Use of the requirements contained herein shall not constitute a representation, guarantee or warranty of any kind by the city, or its officers and employees. The approval of a stormwater management plan shall not imply that the land uses permitted will be free from damages caused by stormwater runoff. The requirements of this Article were established to consider historical records of average rainfall and engineering and scientific methods. However, larger storms may occur or stormwater runoff heights may be increased by man-made or natural causes. The provisions of this Article, therefore, shall not be deemed to create liability on the part of the city or any officer or employee thereof with respect to any legislative or administrative decision lawfully made hereunder.

Section 10-74. Stormwater Management Plan Required. It shall be the developer's responsibility to submit a stormwater management plan, prepared by a licensed professional engineer or architect, to the city engineer in those cases as hereinafter required. The plan shall show that there will not be an increase in the quantity and rates of stormwater emanating from the development area except in accordance with an approved stormwater management plan as provided in this Article.

A stormwater management plan shall be submitted in the following instances, unless specially excepted by Section 10-75:

- A. All new subdivision plats or replats.
- B. Development in all commercial districts-
- C. Development in all industrial districts.
- D. As part of a preliminary plan for a Planned Unit Development.
- E. Building permit applications of more than one-half (1/2) acre.

No building permits shall be issued and no final subdivision plat shall be approved by the planning commission prior to the approval of the stormwater management plan by the city engineer.

Section 10-75. Exceptions. Exceptions to the requirement for submittal of a stormwater management plan required in Section 10-74 are as follows:

A. New construction of only one single family, or two family dwelling unit regardless of the site area which the structure is to occupy.

B. Additions, improvements or repair of existing single family or two family dwelling unit structures.

C. Construction of any buildings or future improvements on a site, which has been previously provided with approved stormwater management control facilities as a part of a larger unit of development.

D. Improvement on a site having a gross land area of one-half (1/2) acre or less, regardless of the land use.

E. Remodeling, repair, replacement, and improvements to any existing structure or facility and appurtenances that does not cause an increase in the rate of discharge from the site in excess of ten percent (10%) of the previously existing condition. Incremental development of a single tract of land will require a stormwater management plan when the development exceeds an increase of 10 percent of the predeveloped condition for the entire development or tract of land.

F. If the developer can show through an engineering study that the detention of stormwater runoff will be detrimental to the drainage basin or that there is no benefit to development downstream.

Section 10-76. Methods of Determining Stormwater Runoff. In determining the amount of stormwater runoff from a development, the *RATIONAL METHOD* shall be used where the area contributing runoff is twenty-five (25) acres or less. Where the contributing runoff area is over twenty-five (25) acres, the development shall be designed using the *UNIT HYDROGRAPH METHOD*. The preferred method of hydrograph development shall be as described in the Soil Conservation Service publication "Urban Hydrology For Small Watersheds" (Technical Release No. 55-January, 1975). Use of methods other than those described above shall be only upon prior approval of the city engineer.

Section 10-77. Volume of Stormwater Detention. The required volume for stormwater detention shall be calculated on a minimum basis of the runoff from a ten (10) year frequency rainfall with an intensity of not less than the values listed in' the report developed for the KTRAN Research Program for KDOT entitled "Rainfall Intensity Tables for counties in Kansas" taken from Lyon County rainfall data, and a minimum storm duration of 15 minutes.

Routing calculations must be used to demonstrate that the storage volume is adequate. If sedimentation during construction causes loss of detention volume, design dimensions shall be restored before completion of the project. The detention volume shall be drained within a 72-hour period.

Section 10-78. Method of Stormwater Detention. The methods of stormwater detention shall be at the discretion of the developer, subject to final approval by the city engineer. Detention may be underground or on the surface. Methods which are normally acceptable include the following: dry bottom storage, wet bottom storage, paved area storage (limited to a maximum depth of seven [7] inches), and rooftop storage. The ability to retain and maximize the ground water recharge rapacity of the area being developed is encouraged. Design of the stormwater runoff control system shall give consideration to providing ground water recharge to compensate for the reduction in the percolation that occurs when the ground surface is paved and roofed. The use of natural gravel deposits for the lower portions of stormwater runoff storage areas, the flattening of drainage slopes, and the retention of existing topography are examples of possible recharge methods.

Section 10-79. Design Criteria. All calculations relating to runoff analysis shall be based upon the proposed land use and shall take under consideration any contributing runoff from areas adjacent to or upstream to the development site. Stormwater runoff analysis from adjacent existing developed areas shall be based upon current land usage and topographical features. The most likely flow pattern to be utilized for an undeveloped area shall be based upon existing natural topographical features.

The design criteria for storage facilities should include: release rate, storage volume, grading and depth requirements, outlet works and location.

Section 10-80. Release. The release from the detention facility shall be limited to the rate of runoff from the site using a runoff coefficient of 0.30.

Section 10-81. Rational Method-Runoff Coefficients. The basic formula  $Q = CiA$  is the rational method for estimating rainfall runoff when:

Q = Rate of runoff in cfs

i = Average rainfall  
intensity

C = Runoff coefficient

A = Drainage area in acres

The following runoff coefficients shall be used:

<u>Land Use/Zoning</u>	<u>C</u>
Commercial	.8 0
Residential <i>One and Two Family Areas</i>	.5 0
<i>Multi-family Areas</i>	.6 5
Churches - Schools	.7 5
Light Industrial	.6 5
Heavy Industrial	.8 0
Parks	.3 5
Permanent unimproved areas greenbelts, etc.	.3 0

As an alternate to the above coefficients or for areas not specifically listed above (planned unit developments, shopping centers, mobile home parks, etc.), a composite runoff coefficient based on the percentage of the different types of surfaces involved may be used.

Coefficients with respect to surface type shall not be less than .90 for impervious surfaces (asphalt, concrete, or roofs) or less than .30 for pervious surfaces such as turf. ( $C = 0.75 - 0.80$  for Gravel/AB3)

Section 10-82. Construction Timing. The construction of the stormwater control system shall be completed prior to occupancy of any development. If the amount of storage capacity can be increased to provide benefit to the city, negotiations for public participation in the cost of development may be feasible.

Section 10-83. Certification Upon Completion. Upon completion of construction and prior to occupancy of the development, the owner of each development shall furnish certification by a licensed professional engineer or architect to the city engineer that the detention system has full storage capacity and all inlet and outlet structures are fully functional.

Section 10-84. Maintenance. The city reserves the right to inspect and require the owner to perform maintenance on private detention facilities. Maintenance of private detention facilities shall be the responsibility of the property owner and shall include all necessary and proper maintenance including without limitations:

- A. Debris removal and cleaning.
- B. Cutting of vegetation.
- C. Repair of erosion.
- D. Removal of silt,
- E. Maintenance of structural facilities.

Wet detention facilities shall have an outlet works consisting of valves, grates, pipes or other devices as necessary to completely drain the facility when required for cleaning.

Section 10-85. City Engineer. The reference in this Article to city engineer refers to the duly appointed and acting city engineer of the city or a licensed professional engineer appointed by the city manager.

Section 10-86. Administrative Appeals. All rulings, requirements, decisions, or interpretations of the city engineer shall be final and binding upon all parties thereto unless appealed to the city Commission. Any person aggrieved thereby shall perfect an appeal by filing a written notice of appeal in the office of the city clerk within ten (10) calendar days from the date of the action complained of; all notice of appeal shall specify the grounds for the appeal and contain a brief summary of all facts which the aggrieved party deems material to the appeal. A hearing on the appeal shall be heard by the city commission not later than thirty (30) days from the date of filing the notice or appeal.

Section 10-87. Violation.

A. Any person violating any provision of this chapter, or commencing, constructing, causing, or permitting the commencement of the construction of any stormwater detention facility without the prior written approval of the city engineer shall, upon conviction, be deemed guilty of a public offense, and shall be fined the sum of not less than two hundred (\$200) dollars nor more than five hundred (\$500) dollars. Everyday that the violation continues shall constitute a separate offense.

B. In addition to the provision of subparagraph (a) any person violating a provision of this chapter is subject to revocation of any issued building permit, and the city reserves the right to institute civil actions or proceedings for the enforcement of the provisions of this ordinance.

Section 10-88. Severance. If any provision of this Article or the application thereof to any person or circumstances is held unconstitutional or otherwise invalid, such constitutionality or invalidity shall not affect other provisions or applications of this Article which can be given effect without the unconstitutional or invalid provision or application, and, to this end, the provisions of this Article are severable.

SECTION 2. This ordinance shall take effect upon its publication in the official city newspaper.

SECTION 3. The provisions of this ordinance shall be included and incorporated in the Code of Ordinances of the City of Emporia, Kansas, 1983, as an addition or amendment thereto and shall be appropriately renumbered to conform to the uniform numbering system of the Code.

PASSED AND APPROVED this \_\_\_\_\_ day of \_\_\_\_\_, 1995.

Tom Myers, Mayor

ATTEST:

Susan Mendoza, City Clerk

ORDINANCE NUMBER 99-16

AN ORDINANCE OF THE CITY OF EMPORIA, KANSAS, PERTAINING TO STORMWATER DETENTION PROVIDING THAT THE CODE OF THE CITY OF EMPORIA, KS, 1983, BE AMENDED BY AMENDING SECTION 10-77, VOLUME OF STORMWATER DETENTION AND REPEALING SAID SECTION AS IT EXISTED PRIOR TO THE ADOPTION OF THIS ORDINANCE AND ADDING SECTION 10-78.1 METHOD OF EROSION CONTROL.

BE IT ORDAINED by the Governing Body of the City of Emporia , Kansas .

SECTION 1. That Section 10-77 of the Code of the City of Emporia KS, 1983, is hereby amended to read as follows:

SECTION 10-77. Volume of Stormwater Detention: The required volume for stormwater detention shall be calculated on a minimum basis of the runoff for the following areas of development:

½ to 2 acres: 10 -year frequency rainfall, erosion control not required.

2 acres to 5 acres: 25 -year frequency rainfall, erosion control not required

Over 5 acres: Drainage impact study and detention for a 100-year frequency rainfall event is required and an erosion control plan is required.

The rainfall intensity will not be less than the values listed in the report developed for the KTRAN Research Program for KDOT entitled "Rainfall Intensity Tables for Counties in Kansas" taken from the Lyon County rainfall data and a minimum storm duration of 15 minutes.

SECTION 2: The Code of the City of Emporia, KS, 1983, is hereby amended by adding Section 10-78.1 to Chapter 10, Article III , which said section reads as follows:

SECTION 10-78.1. Method of Erosion Control. The methods of erosion control shall be at the discretion of the developer subject to final approval by the City Engineer. Methods which are normally acceptable include the following: silt fencing, rip-rap, seeding, placement of hay bales and siltation ponds.

SECTION 3: Section 10-77 of the Code of the City of Emporia, KS, 1983, as established prior to this ordinance is repealed upon the effective date of this ordinance.

SECTION 4: The provisions of this ordinance shall become effective upon its publication in the official City newspaper.

SECTION 5: The provisions of this ordinance shall be included and incorporated in the Code of Ordinances of the City of Emporia, KS, 1983, as an amendment and addition thereto and shall be appropriately renumbered to conform to the uniform numbering system of the Code.

PASSED AND APPROVED this \_\_\_\_\_ day of \_\_\_\_\_ , 1999.

Raymond A Toso, Mayor

ATTEST:

Susan Mendoza, City Clerk