

ORDINANCE NO. XXXX

**AN ORDINANCE AMENDING CHAPTER 25, STORMWATER MANAGEMENT OF THE
BROKEN ARROW CODE OF ORDINANCES; REPEALING ALL ORDINANCES TO THE
CONTRARY; AND DECLARING AND EMERGENCY**

BE IT ORDAINED BY THE COUNCIL OF THE CITY OF BROKEN ARROW:

Chapter 25 STORMWATER MANAGEMENT

ARTICLE I. STORMWATER MANAGEMENT PROGRAM

Sec. 25-1. Findings of fact.

The City of Broken Arrow makes the following findings of fact:

- (1) Because of its physical terrain and geographical location, the city is particularly subject to damage from stormwaters, which, from time to time, overflow from existing watercourses and drainage facilities;
- (2) Floodplain areas of the city are subject to periodic inundation which may result in the loss of life and property, health and safety hazards, disruption of commerce and governmental services, and extraordinary public expenditures for flood protection and relief, all of which adversely affect the public health, safety and general welfare;
- (3) The flood losses are created by the cumulative effect of obstructions in floodplains and increase of impervious areas which cause an increase in flood heights and velocities, and by the occupancy of floodplain areas by uses vulnerable to floods and hazardous to other lands because they are inadequately elevated, flood-proofed, or otherwise protected from flood damage;
- (4) Previous regulations addressing drainage requirements for new land development must be replaced by a comprehensive approach in order to prevent or minimize damage to property and to reduce the potential for loss of life;
- (5) A comprehensive approach to managing stormwater runoff and floodplain management is required to address existing and future needs;
- (6) The presently existing stormwater drainage facilities of the city require continuous operation, maintenance, renewal and replacement;
- (7) While the city does not own all drainage facilities within its jurisdiction, it does own or control a sufficiently comprehensive system in each of the major drainage basins so as to make a unified approach to flood issues a desirable and administratively achievable goal;
- (8) The stormwater management program should be funded in the manner of a public utility.

(Code 1977, § 25-1; Ord. No. 2443, § I, 4-25-2002)

Sec. 25-2. Purpose.

It is the purpose of this chapter to improve the promotion of public health, safety and welfare by providing for, acquiring, constructing, operating, equipping, and maintaining within the city, the stormwater management program and to provide a source of funding for the system. Management of the stormwater management program is intended to:

- (1) Protect human life, health, and property;
- (2) Minimize public and private storm and flood losses from stormwater runoff in the city;
- (3) Minimize expenditure of public money for costly flood control projects;
- (4) Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
- (5) Assure that the movement of emergency vehicles is not prohibited nor inhibited during storm or flood events;
- (6) Minimize prolonged business interruptions;
- (7) Minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets and bridges located in floodplains;
- (8) Support a stable tax base by providing for the sound use and development of flood-prone areas in such a manner as to minimize future flood blight areas;
- (9) Ensure that information is available to potential buyers and developers that property may be located in a flood area;
- (10) Assure that each lot be provided with a reasonably safe building site with adequate access and that facilities be installed with protection against drainage or flood damage at the time of initial construction;
- (11) Provide a drainage system and open areas for new developments which are capable of passing the regulatory flood without flooding structures designed for residential, commercial, industrial, and other uses;
- (12) Control filling, grading, dredging and other development which may increase erosion or flood damages;
- (13) Regulate the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards to other lands;
- (14) Preserve the quality of the city's watercourses, minimize water quality degradation, and otherwise facilitate urban water resource management techniques, including the reduction of pollution and the enhancement of the urban environment;
- (15) Protect the natural areas required to convey flood flows, and protect and preserve the water-carrying and water-retention characteristics and capacities of the floodplain used for conveying and retaining floodwaters;
- (16) Comply with the regulations of the National Flood Insurance Program as established by the Federal Insurance Administration including but not limited to the minimum criteria identified in 44 CFR Chapter 1, Parts 59 and 60.1 through 60.13;
- (17) Design and implementation of larger regional detention facilities having greater efficiency than smaller on-site detention facilities;
- (18) Assure that no new structures are constructed without compliance with this chapter;

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- (19) Ensure that those who occupy the regulatory flood area assume responsibility for their actions;
 - (20) Maintain the ultimate urbanized regulatory floodplain, without significant change, by avoiding activities that have caused the floodplain to grow in size in other cities;
 - (21) Reinforce the floodplain and stormwater guidelines from the City of Broken Arrow Comprehensive Plan;
 - (22) Aid properties in which structures were built in areas of special flood hazard through human error or prior to regulatory controls being effective;
 - (23) Provide a penalty for violation of established policies and regulations.

(Code 1977, § 25-2; Ord. No. 2443, § I, 4-25-2002)

Sec. 25-3. Definitions.

Unless otherwise provided in this chapter, the following words and phrases shall have the meanings given herein:

Adverse effects. Increased flood elevations, increased velocity of floodwaters, and erosion are adverse effects resulting from stormwater runoff.

Appeal. A request for a review of the City of Broken Arrow's interpretation of any provision of articles III, IV, V, VI of this chapter, or a request for a variance.

Area of special flood hazard. The land in the base flood area identified by the Federal Emergency Management Agency (FEMA) in the numerous flood insurance studies, including the Flood Insurance Rate Maps (FIRM). These maps were based on lands having a one percent chance of being flooded in any given year as identified by FEMA. The term "special flood hazard area" is synonymous in meaning with the phrase "area of special flood hazard."

Backwater curve. A rise in water surface elevation as a stream moves from a less constricted area to either a ponding area or more constricted area.

Broken Arrow Regulatory Floodplain Map (RFMBA). See Regulatory Floodplain Map, Broken Arrow.

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

Base flood area. The areas of flood hazard identified by the Federal Emergency Management Agency (FEMA) in the numerous flood insurance studies, including the Flood Insurance Rate Maps (FIRM). These maps were based on lands having a one percent chance of being flooded in any given year as identified by FEMA.

Base flood elevation (BFE). The elevation for which there is a one percent chance in any given year that flood levels will equal or exceed it. The BFE is determined by statistical analysis for each local area and designated on the Flood Insurance Rate Maps. It is also known as the FEMA one percent chance (100-year) flood elevation. The BFE is used to determine the base flood area.

Bridge. A structure consisting of abutments, load bearing beams and/or deck, whose main function is to carry vehicular or pedestrian traffic across a depression.

Channel. A natural or artificial watercourse with a defined bed and banks to confine and convey flowing water.

Channel capacity. The maximum flow that can pass through a channel without overflowing the banks.

Channel improvements. Widening, straightening, clearing, grade alterations, paving or concrete lining, or any construction, which will increase the carrying capacity of a channel.

Compensatory flood storage. The volume of storage provided to replace any measurable loss of flood storage capacity within floodplain areas, or to eliminate the increases in velocity or flood height, which would otherwise occur as a result of construction.

Critical feature. An integral and readily identifiable part of a flood-protection system, without which the flood protection provided by the entire system would be compromised.

Culvert. A circular, rectangular, arch, elliptical or other enclosed conduit constructed of various materials whose purpose is to convey stormwater from one side of a travelway (driveway, street, trail, sidewalk) to the other side of the travelway.

Detention facility. A type of flood control system which delays the downstream progress of floodwaters in a controlled manner, generally through the combined use of a temporary storage area and a metered outlet device that causes a lengthening of the duration of flow, and thereby reduces downstream flood peaks. Detention facilities are either on-site which serve individual developments or subdivisions; or regional, which serve existing and future developments within a specified topographic region.

Development. Any human-made change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation, drilling operations, or storage of equipment or materials.

Drainage basin. The total area from which surface runoff is carried away by a drainage system or channel. Other comparable terms are "drainage area", "catchment area", or "watershed."

Drainage basin plan. The plan adopted by the city for managing surface and stormwater facilities within an individual drainage basin.

Drainage course. The natural or improved land area required for transportation of stormwater.

Earth change. Excavating, grading, regrading, landfilling, berming, or diking of land within the City of Broken Arrow. Earth change will also include the clearing or removal of more than six healthy trees on a parcel, or activities commonly called clearing and grubbing within the boundaries of the regulatory floodplain.

Elevated building. A nonbasement building built, in the case of a building in Zones A1-30, AE, A, A99, AO, B, C, X and D, to have the top of the floor elevated above the ground level by means of foundation walls, pilings, columns (post and piers), or shear walls parallel to the level of the water and adequately anchored so as not to impair the structural integrity of the building during a flood of up to the magnitude of the base flood. "Elevated building" also includes a building elevated by means of fill or solid foundation perimeter walls with openings sufficient to facilitate the unimpeded movement of floodwaters.

Encroachment. Any physical object placed in a stormwater drainage system or floodplain that hinders the passage of water or otherwise affects flood flows.

Engineering Design Criteria Manual (EDCM). A set of minimum design criteria established for the City of Broken Arrow.
Equal degree of encroachment. The delineation of floodway limits so that floodplain lands on both sides of a stream are capable of conveying a proportionate share of flood flows. This is determined by considering the hydraulic conveyance of the floodplain along both sides of a stream for a significant reach.

Equivalent service unit (ESU). Two thousand six hundred fifty square feet of impervious surface.

Existing construction. 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 impervious area. For the purpose of calculating equivalent service units, existing impervious area is defined as areas of impervious surface that appear on the 1999 aerial topography photographs.

Expansion to an existing manufactured home park or mobile home subdivision. The preparation of additional sites by the construction of facilities servicing the lots on which the mobile homes are to be affixed (including the installation of utilities, either final site grading or pouring of concrete pads, or the construction of streets).

Federal Emergency Management Agency (FEMA). The Federal agency responsible for administering the National Flood Insurance Program.

Flood or flooding. A general and temporary condition of partial or complete inundation of normally dry land areas from:

- (1) The overflow of inland waters; or
- (2) The unusual and rapid accumulation of surface waters from any source.

Flood frequency. A statistical expression of the average time period between floods equaling or exceeding a given magnitude. For example, a 100-year flood has a one percent chance of being equaled or exceeded in any given year. Often used interchangeably with recurrence interval.

Flood hazard boundary map (FHBM). An official map of a community, approved by the Federal Insurance Administration, where the areas within the boundaries of special flood hazards have been designated as Zone A.

Flood insurance rate map (FIRM). An official map of a community, on which the Federal Insurance Administration has delineated both the areas of special flood hazards and the risk premium zones applicable to the community.

Flood insurance study (FIS). A compilation and presentation of flood risk data for specific watercourses, lakes, and coastal flood hazard areas within a community. When a flood study is completed for the NFIP, the information and maps are assembled into an FIS. The FIS report contains detailed flood elevation data in flood profiles and data tables.

Floodplain. Any land area susceptible to being inundated by water from any source (see definition of *flood*).

Floodplain administrator. The designated official responsible for the operation of the City of Broken Arrow's Floodplain Management Program centered on the City's participation in the National Floodplain Insurance Program (NFIP) coupled with the implementation of corrective and preventive measures for the protection of lives and the reduction of flood damage, including but not limited to emergency preparedness and mitigation plans, flood control works and floodplain regulations. This official is the City Manager or his/her designee. This individual shall comply with the certification requirements as set forth by the State of Oklahoma's Water Resources Board (OWRB) for local floodplain administrators (FPA). The floodplain administrator may also be referred to the local administrator and floodplain manager.

Floodplain management. The operation of an overall program of corrective and preventative measures for reducing flood damage, including but not limited to emergency preparedness plans, flood control works and floodplain management regulations.

Flood profile. A graph showing the relationship of water surface elevation to a specific location, the latter generally expressed as distance above the mouth of a stream of water flowing in an open channel.

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

Flood protection system. Those physical structure works, for which funds have been authorized, appropriated and expended and which have been constructed specifically to modify flooding in order to reduce the extent of the areas within a community subject to a "special flood hazard" and the extent of the depths of associated flooding. Such a system typically includes dams, reservoirs, channels, storm sewers, levees or dikes. These specialized flood-modifying works are those constructed in conformance with sound engineering standards.

Floodway. 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 a designated height (one foot or less by current FEMA requirements). NFIP communities that have an identified floodway must not allow any development in the floodway unless it can be shown that the development will not cause an increase in flood heights. See City of Broken Arrow Engineering Design Criteria Manual.

Flood zones. Zone areas indicated on the flood insurance rate map (FIRM). Each flood zone describes the flood risk for a particular area, and those flood zones are used to determine insurance requirements and cost.

Functionally dependent use. A use, which cannot perform its intended purpose unless it is located or carried out in close proximity to water. The term includes docking facilities, port facilities that are necessary for the loading and unloading of cargo or passengers, and ship building and ship repair facilities, but does not include long-term storage or related manufacturing facilities.

Habitable floor. Any floor usable for living purposes, which includes working, sleeping, eating, cooking or recreation or a combination thereof. A floor used for storage purposes only is not a "habitable floor".

Highest adjacent grade. The highest natural elevation of the ground surface prior to construction next to the proposed walls of a structure.

Hydraulics. The science that deals with practical applications of liquid or water in motion.

Hydrology. The science of the behavior of water in the atmosphere, on the earth's surface, and underground.

Impervious surface. Any hard surfaced area which prevents or retards the entry of water into the soil in the manner and to the extent that such water entered the soil under natural conditions, causing water to run off the surface in greater quantities or at an increased rate of flow than was present under natural conditions. Examples include but are not limited to rooftops, asphalt or concrete sidewalks, pavement, driveways and parking lots, walkways, patio areas, storage areas, gravel areas, and oiled macadam or other surfaces which similarly affect the natural infiltration or runoff patterns of real property in its natural state.

Levee. A human-made structure, usually an earthen embankment, designed and constructed in accordance with sound engineering practices to contain, control or divert the flow of water so as to provide protection from temporary flooding.

Levee system. A flood protection system which consists of a levee, or levees, and associated structures, such as closure and drainage devices, which are designed, constructed and operated in accordance with sound engineering practices.

Manufactured home. A structure, transportable in one or more sections, which is built on a permanent chassis and is designed for use with or without a permanent foundation when connected to the required utilities. For floodplain management purposes, the term "manufactured home" also includes park trailers, travel trailers, and other similar vehicles placed on a site for greater than 180 consecutive days. For flood insurance purposes, the term "manufactured home" does not include park trailers, travel trailers and other similar vehicles.

Manufactured home park or manufactured home subdivision (existing). A parcel (or contiguous parcels) of land divided into two or more mobile home lots for rent or sale which the construction of facilities for servicing the lot on which the manufactured home is to be affixed (including, at a minimum, the installation of utilities, either final site grading or the pouring of concrete pads, and the construction of streets) is completed before the effective date of this chapter.

Manufactured home park or manufactured home subdivision (new). A parcel (or contiguous parcels) of land divided into two or more manufactured home lots for rent or sale for which the construction of facilities for servicing the lot on which the manufactured home is to be affixed (including, at a minimum, the installation of utilities, either final or site grading or the pouring of concrete pads, and the construction of streets) is completed on or after the effective date of this chapter.

Master drainage plan. An officially adopted plan which, by engineering design and study, describes storm drainage system improvements which will most adequately, feasibly and economically control stormwater runoff to minimize or eliminate future danger to people and property because of floodwaters.

Mean sea level. The average height of the sea for all stages of the tide. For the purposes of floodplain management, the National Geodetic Vertical Datum (NGVD) of 1929 or other datum, to which base flood elevations are referenced.

Minimum house flood elevation. An elevation of a basement floor or lowest floor which is 28 inches above the maximum high water elevation of the regulatory flood. If such a floor is placed on top of or above a pad in accordance with the applicable building codes, that pad must be at the regulatory flood protection elevation.

Mobile home. See the definition for manufactured home.

Natural conditions. The cover and topography of the land before any human-made changes; in areas where there have already been human-made changes the effective date shall be 1999. Natural conditions shall mean the state of cover and topography of the land existing upon the effective date 1999. Requiring land to be maintained as "natural condition" does not forbid the removal of debris or the cutting and removal of dead or diseased trees or similar vegetation.

New construction. For floodplain management purposes, structures for which the "start of construction" commenced on or after the effective date of this chapter, provided that if construction began in violation of previous floodplain management ordinances it may be treated as new construction under the ordinance to the extent of the prior violation.

100-year flood. The flood elevation that has a one percent chance of being equaled or exceeded in any given year. It is also known as the base flood or one percent chance flood.

One percent chance storm. The rainfall event that has a one percent chance of being equaled or exceeded in any given year. It is also known as the 100 year storm.

Overland flow. That portion of stormwater flow which is conveyed as a shallow sheet flow across land rather than concentrated in a channel or storm sewer system.

Reach. A hydraulic engineering term used to describe longitudinal segments of a channel or river.

Regulatory flood. A flood that is reasonably characteristic of what can be expected to occur on a particular stream as a result of urbanization. The regulatory flood has a one percent chance of occurring in any one year, as determined from analysis of expected rainfalls in the general region. Runoff and water surface elevations for the regulatory flood shall be based on ultimate urbanization upstream.

Regulatory Floodplain Map, Broken Arrow (RFMBA) a/k/a local regulatory floodplain map (LRFM). Official maps of a community, on which the regulatory flood area is depicted, using the regulatory flood elevations. The LRFM shall represent the regulatory flood area (RFA) when determined by previous engineering studies, and the base flood area (BFA). In areas of no detailed engineering studies and or BFEs, the FIRM flood elevations shall be shown until more detailed studies are available.

Regulatory flood area (RFA). The area which is subject to inundation by the regulatory flood; that is, in lands having a one percent chance or greater of being flooded in any given year based upon projected, ultimate urbanized conditions. This includes areas of shallow flooding which occur where a clearly defined channel does not exist, where the path of flooding is unpredictable and indeterminate, and where velocity flow may be evident. This also includes human-made sumps and streets as well as areas, which, although not presently in the flood area, may be flooded in the future by increased runoff due to actual urbanization. The regulatory flood area is designated on the Broken Arrow Regulatory Floodplain Map (RFMBA). The regulatory flood area extends to an upstream cutoff point of approximately 40 acres of contributing watershed area.

Regulatory flood elevation (RFE). The elevation for which there is a one percent chance in any given year that flood levels will equal or exceed it. The RFE is determined by statistical analysis for each local area and designated on the Broken Arrow Regulatory Floodplain Map (RFMBA).

Regulatory flood fringe area. That portion of the regulatory flood area outside of the floodway. Also known as floodway fringe.

Residential property. Any property designed and used principally for residential single-family or duplex purposes and developed according to and meeting the bulk and area requirements for residential single-family or duplex zoned property as set forth in the Broken Arrow Zoning Code at the time of development of such property.

Retention facility. A type of flood control system (typically a reservoir) that stops the downstream progress of floodwaters by employing methods of total containment. Runoff is usually removed from storage by infiltration, evaporation, pumping, or at a release rate smaller than historic flow value.

Runoff. That portion of precipitation that is not intercepted by vegetation, absorbed by the land surface, or evaporated, and thus flows overland into the stormwater drainage system.

Start of construction. Includes substantial improvement and means the date the building permit was issued, provided the actual start of construction, repair, reconstruction, replacement or other improvement was within 180 days of the permit date. The actual start means either the 1) first placement of permanent construction of a structure on a site, such as the pouring of slab or footings, the installation of piles, the construction of columns, or any work beyond the stage of excavation; or 2) the placement of a manufactured home on a foundation. Permanent construction does not include a) land preparation, such as clearing, grading and filling; nor b) excavation for basement, footings, piers or foundations or the erection of temporary forms; nor c) the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main structure.

Stormwater and drainage utility system. Any facility, structure, improvement, development, equipment, property or interest therein, including structural and nonstructural elements, which are made, constructed, used or acquired for the purpose of collecting, containing, storing, conveying and controlling stormwater wherever; this is located including, but not limited to, storm sewers, conduits, natural and human-made channels, roadways, pipes, culverts, detention facilities and floodplains whether publicly or privately owned.

Stormwater and drainage utility system service charge. The fee levied within the City of Broken Arrow for the use of any portion of the city's stormwater drainage system.

Stormwater Manager. The official responsible for the operation of an overall stormwater management program as identified by municipal ordinances, regulations, policies, criteria, and standards of practice, as well as compliancy to state statutes, administrative codes, and general permits plus federal laws and rules.

Stream. A body of water flowing in a surface channel. Flow may be continuous or only during wet periods. Streams that flow only during wet periods are termed "intermittent streams."

Substantial damage. 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.

Substantial improvement. Any repair, reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the "start of construction" of the improvement. This term includes structures which have incurred "substantial damage", regardless of the actual repair work performed. The term does not, however, include either:

- (1) Any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code specifications which have been identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions; or

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- (2) Any alteration of a structure listed on the National Register of Historic Places or a state inventory of historic places provided that the alteration will not preclude the structure's continued designation as a "historic structure".

Ten percent chance storm. The rainfall event that has a ten percent chance of being equaled or exceeded in any given year. It is also known as the ten-year storm.

20 percent chance storm. The rainfall event that has a 20 percent chance of being equaled or exceeded in any given year. It is also known as the five year storm.

Two percent chance storm. The rainfall event that has a two percent chance of being equaled or exceeded in any given year. It is also known as the 50 year storm.

Ultimate urbanization. Ultimate urbanization shall be determined by projecting future land uses throughout the entire drainage basin as defined by the City of Broken Arrow Comprehensive Plan.

Variance. A grant of relief to a person from the requirements of this chapter when specific enforcement would result in unnecessary hardship. A variance, therefore, permits construction or development in a matter otherwise prohibited by this chapter.

Violation. 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 in 44 CFR Chapter 1, Parts 59 and 60.1 through 60.13 of the National Flood Insurance Program Regulations and this chapter is presumed to be in violation until such time as that documentation is provided.

Watercourse. A natural or human-made channel that gives direction to stormwater runoff.

Waters of the State. All streams, lakes, ponds, marshes, watercourses, waterways, wells, springs, irrigation systems, drainage systems, storm sewers and all other bodies or accumulations of water, surface and underground, natural or artificial, public or private, which are contained within, flow through, or border upon this state or any portion thereof, and shall include under all circumstances the waters of the United States which are contained within the boundaries of, flow through, or border upon this state or any portion thereof. Provided waste treatment systems, including treatment ponds or lagoons designed to meet federal and state requirement other than cooling ponds as defined in the CWA or rules promulgated thereto, and prior converted cropland are not waters of the state.

Water surface elevation. 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 floodplains of riverine areas. (Code 1977, § 25-3; Ord. No. 2443, § I, 4-25-2002; Ord. No. 2530, § I, 4-7-2003)

Sec. 25-4. Stormwater manager.

The stormwater manager shall exercise all lawful powers necessary and appropriate under the City of Broken Arrow's Stormwater Management Program and shall have the authority as granted by the city manager to:

- (1) Develop and administer all phases of a comprehensive program of stormwater management including planning, designing, establishing, acquiring, constructing, developing, installing, maintaining, operating, improving, repairing, replacing, and reconstructing the stormwater drainage system of the city;
- (2) Administer the recordkeeping and support personnel and recommend the budget necessary for the efficient operation of the stormwater management program;
- (3) Enforce the requirements contained in this chapter, including coordination with other departments and agencies;

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- (4) Perform studies and analyses required to establish or modify the stormwater management program;
 - (5) Provide for public information and awareness that will improve stormwater management and reduce hazards to life and property;
 - (6) Oversee the implementation of the state of Oklahoma's General Permits regulating stormwater activity and management within the city's jurisdiction:
 - (a) Oklahoma General Permit OKR04 – Phase II Small Municipal Separate Storm Sewer System Discharges within the State of Oklahoma, latest effective date;
 - (b) Oklahoma Pollutant Discharge Eliminate System (OPDES) Multi-Sector General Permit OKR05 – Stormwater Discharges from Industrial Activity with the State of Oklahoma, latest effective date; and
 - (c) Oklahoma General Permit OKR10 –Stormwater Discharges from Construction Activities within the State of Oklahoma, latest effective date;
 - (7) Administer the implementation of the regulations defined in the Earthwork Operations and Pollution Prevention Measures chapter and the Stormwater Management chapter of the City of Broken Arrow's Engineering Design Criteria Manual, latest effective date;
 - (8) Administer and manage the implementation of the stormwater and drainage utility system charge requirements aspect of the overall stormwater management program as defined in this chapter;
 - (9) Administer and manage the implementation of the General Watershed Development requirements aspect of the overall stormwater management program as defined in this chapter;
 - (10) Administer and manage the implementation of the Drainage System Service Charge aspect of the overall stormwater management program as defined in this chapter;
 - (11) Administer and manage the implementation of the environmental impacts aspect of the overall stormwater management program as defined in this chapter; and
 - (12) Review, approve or deny all applications for stormwater development permits required by this chapter with the exception that stormwater development permits may be reviewed, approved, or denied by the city manager's designee.

(Code 1977, § 25-4; Ord. No. 2443, § I, 4-25-2002; Ord. No. 3680, § I, 4-6-2021)

Sec. 25-5. Floodplain administrator.

The **floodplain administrator** shall be appointed by the city manager. The floodplain administrator shall exercise all lawful powers necessary and appropriate with the concurrence of the city manager under the City of Broken Arrow's stormwater management program and shall have the authority to:

- (1) Develop and administer all phases of a comprehensive program of **floodplain** management including planning, designing, establishing, acquiring, constructing, developing, installing, maintaining, operating, improving, repairing, replacing, and reconstructing the stormwater drainage system of the city;
- (2) Administer the recordkeeping and support personnel and recommend the budget necessary for the efficient operation of the **floodplain** management program;
- (3) Enforce the requirements directly associated with floodplain management contained in this chapter, specifically Section 25-300, and including coordination with other departments and agencies;
- (4) Perform studies and analyses required to establish or modify the **floodplain** management program;

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- (5) Provide for public information and awareness that will improve floodplain management and reduce hazards to life and property;
 - (6) Establish a flood alert and early warning system in cooperation with emergency response agencies;
 - (7) Seek the cooperation of counties, other municipalities, and the development community within the area in minimizing the contribution of all storm drainage systems to flooding and, in particular, to cooperate with other affected political jurisdictions in preparing and implementing master drainage plans;
 - (8) Act as floodplain administrator for the city to implement the provisions of this chapter and other appropriate sections of the National Flood Insurance Program Regulations pertaining to floodplain management; and
 - (9) Review, approve or deny all applications for floodplain development permits required by this chapter with the exception that stormwater development permits may be reviewed, approved, or denied by the city manager's designee.

(Code 1977, § 25-4; Ord. No. 2443, § I, 4-25-2002; Ord. No. 3680, § I, 4-6-2021)

Sec. 25-6. Stormwater drainage board.

There is hereby created a stormwater drainage board for the purpose of providing policy guidance to the city manager and stormwater manager. The board shall be comprised of the members of the Broken Arrow Municipal Authority (BAMA). The purposes and duties of the stormwater drainage board shall be:

- (a) To provide an exchange of information between the public and city officers on stormwater drainage problems in the city;
- (b) To hear and consider applications for variances and appeals from decisions of the stormwater manager and/or floodplain administrator.

(Code 1977, § 25-5; Ord. No. 2443, § I, 4-25-2002; Ord. No. 3090, § I, 1-19-2010)

Sec. 25-7. Master drainage plans.

The floodplain administrator in concert with the stormwater manager shall develop a citywide master drainage plan which will include a drainage basin plan for each major drainage basin throughout the city. The objectives of the master drainage plan are described as follows:

- (1) Define the hydrologic characteristics of the basins for existing development and ultimate urbanized development;
- (2) Simulate the stormwater runoff within the basin and determine the hydraulic capabilities of the existing stormwater drainage system;
- (3) Provide floodplain delineation to depict the extent of flooding along the basin's watercourses;
- (4) Develop viable flood control plans to control flooding and drainage problems within the basin;
- (5) Provide cost/benefit analysis of the proposed flood control plans to be used as a tool in determining funding and scheduling of future drainage improvements;
- (6) Identify the areas in which the city can accept a fee-in-lieu of on-site detention;
- (7) Propose areas for future regional stormwater detention facilities.

(Code 1977, § 25-6; Ord. No. 2443, § I, 4-25-2002)

Secs. 25-9—25-100. Reserved.

ARTICLE II. STORMWATER AND DRAINAGE UTILITY SYSTEM SERVICE CHARGE

Sec. 25-101. Introduction and exemptions.

There is hereby established a service charge for the use of the city's stormwater and drainage utility system at rates hereinafter established; provided, however, that the stormwater drainage system service charge shall not be imposed on the following types of property:

- (a) Government-owned highways, streets, rights-of-way, parks and open space;
- (b) Privately-owned residential streets and rights-of-way, other than driveways;
- (c) Oklahoma Highway Commission highways and Oklahoma Transportation Authority rights-of-way;
- (d) Railroad rights-of-way;
- (e) Undeveloped parcels of agricultural use consisting of five or more acres and containing no habitable structures.

(Code 1977, § 25-101; Ord. No. 2443, § I, 4-25-2002)

Sec. 25-102. Rate structure.

The monthly stormwater and drainage utility system service charge for all tracts with impervious area is determined as follows:

- (a) Single-family, residentially used property within the corporate limits of the city is hereby assigned one (1) equivalent service unit for each developed lot, tract, or parcel of record with the county clerk. For purposes of this section, agricultural property that includes a single habitable structure shall be considered residential property, and agricultural property that includes more than one (1) habitable structure shall be assigned one equivalent service unit for each structure. Provided further, in case of duplex through quadplex developments with two or more dwelling units on the same lot, tract or parcel, one equivalent service Unit shall be applied to each dwelling unit.
- (b) The impervious surface of all other lots, tracts, or parcels of developed real estate within the corporate limits of the city shall be measured to determine the equivalent service units to be assigned to such lots, tracts or parcels. The developer shall calculate and report the proposed impervious area to the Stormwater Manager for each new development. The current stormwater drainage system service charge will be applied to each equivalent service unit or portion thereof.
- (c) The rates established herein shall become effective on July 1, 2009, for all areas within the city on that date. For areas annexed thereafter, the rates shall become operative within 30 days following annexation by the city council.
- (d) Any property that is directly served by an approved private detention or retention facility may apply for an adjustment in the stormwater drainage system service charge. The Stormwater Manager may, with the concurrence of the city manager, adjust the stormwater drainage system service charge for such properties using the following criteria:

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- (1) The credit on the monthly stormwater drainage system service charge shall not exceed a maximum of five percent for capital contributions of detention facilities;
 - (2) The credit on the monthly stormwater drainage system service charge shall not exceed a maximum of five percent for maintenance contributions of detention facilities. The property owner performing the maintenance is eligible for the maintenance credit, but only for so long as the maintenance actually and effectively continues. The maintenance credit applies provided that:
 - (A) The owner remains responsible for all costs of structural and nonstructural maintenance of the facility;
 - (B) The facility was constructed and continues to be maintained in compliance with the city drainage standards and specifications;
 - (C) The owner obtained the proper permits from the city prior to construction;
 - (D) The maintenance credit cannot reduce the stormwater drainage system service charge below one (1) ESU per lot or parcel;
 - (E) The Stormwater Manager has the right to inspect the detention facility at any reasonable time to determine if it is in compliance with the approved design and continues to function properly (i.e., if the facility's performance fails to meet proper operating standards, or the facility has been altered or is otherwise in disrepair, the property owner shall pay the monthly stormwater drainage system service charge at the normal rate until such time as the facility is restored to total compliance);
 - (F) Any property served by a regional detention facility that is maintained by the city, shall be charged at the normal rate as this relates to the maintenance credits.
 - (e) The Stormwater Manager may, with the concurrence of the city manager, adjust and credit the stormwater drainage system service charge for any nonresidential properties that directly contributed to the construction and/or maintenance of a privately owned and maintained regional detention facility, at a rate as outlined below. The regional detention facility must be designed to detain ultimate urbanized stormwater flows for a portion of the entire geographic watershed contributing to the facility. The amount of the credit shall be a ten percent reduction in the calculated ESU.
 - (f) The combination of one or more multiple credits outlined above shall not reduce the total ESU for any property, tract or lot below one (1) ESU.

(Code 1977, § 25-102; Ord. No. 2443, § I, 4-25-2002; Ord. No. 3033, § I, 5-5-2009)

Sec. 25-103. Adjustment of the service charge.

If any person considers the stormwater and drainage utility system service charges under section 25-102 above, to be inaccurate or erroneous, the owner of the parcel may request a review of the charges by the Stormwater Manager within 30 days of the bill or statement in question. The Stormwater Manager shall respond to the request within 15 days. The property owner shall have ten days to challenge the Stormwater Manager's decision to the city manager. All requests must be in written form, and no notice of review shall delay payment by the due date. Any adjustments found needed by the Stormwater Manager or the city manager shall be accounted for on the next billing cycle.

(Code 1977, § 25-103; Ord. No. 2443, § I, 4-25-2002)

Sec. 25-104. Collection.

- (a) The service charges herein established for use of the city's stormwater and drainage utility system shall be billed to each user monthly, along with any bill for water, sanitary sewer, solid waste collection, or other utility services provided by the city, and such penalties as are now or may hereafter be established for the city's utility service bills. All collecting agencies authorized by the city to accept payment of any city utility bills are hereby directed to advise customers of the provisions of this section. In the event that any person, firm or corporation shall tender as payment of water service, sanitary sewer service, solid waste service, and/or stormwater drainage system service charge an amount insufficient to pay in full all of the charges so billed, credit shall be given first to the service charge for the use of the city's stormwater and drainage utility system, second to the charges for collection of solid waste, third to the charge for sanitary sewer service and last to the charges for water service.
- (b) In the event that any utility account shall become delinquent, water services or any other city utility service may be terminated until all delinquent charges for the use of the city's stormwater drainage system, solid waste service, sanitary sewer service and water service shall have been paid in full. The provisions for collection provided herein shall be cumulative to any rights or remedies, which the city may have under the laws of the State of Oklahoma.
- (c) In the case of users of real estate who are not billed for water, sanitary sewer or collection of solid waste by the city, the owner of the real estate or agent of the owner shall be billed monthly for the stormwater and drainage utility system service charges herein established.
- (d) The city may enter into contracts with other public, quasi public, or private utility companies for the cooperative collection of any or all of the city's service charges.
- (e) All of the proceeds of this stormwater and drainage utility system service charge are deemed to be in payment for use of, and in receipt of benefits from, the city stormwater management program by the real property on, and with respect to which, the charge is imposed to the owners.

(Code 1977, § 25-104; Ord. No. 2443, § I, 4-25-2002)

Secs. 25-105—25-200. Reserved.***ARTICLE III. GENERAL WATERSHED DEVELOPMENT REQUIREMENTS*****Sec. 25-201. Stormwater drainage system.**

- (a) Stormwater drainage systems shall consist of five (5) major components, both public and private. These components are defined herein this chapter as follows:
 - (1) Stormwater transmission system – this component shall include all elements that generate stormwater runoff and transmit said runoff to a point of collection on a conveyance system, which include but are not limited to the following:
 - (a) Overland sheet and channel flow from on grade surfaces in a basin that generate stormwater runoff,
 - (b) Below grade groundwater flow, and
 - (c) Other sources of stormwater, water and/or drainage runoff generators;

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- (2) Stormwater collection system – this component consists of any and all individual elements that gathers, accept and/or collects stormwater runoff at a specific point and connects it to a conveyance system, which include but are not limited to the following:
- (a) Street inlets,
 - (b) Area drains,
 - (c) Median drains,
 - (d) Side culverts,
 - (e) Other points of direct stormwater collection,
- (3) Stormwater conveyance system – this component consists of the individual elements that convey stormwater to a discharge point or a storage facility, which include but are not limited to the following:
- (a) Roadway/street surface drainage systems,
 - (b) Enclosed storm sewer pipe networks,
 - (c) Enclosed concrete box networks,
 - (d) Open channel systems:
 - (a) Unimproved, natural drainage ways, such as rivers, creeks, streams, etc.
 - (b) Improved (man-made) channels,
 - (c) Borrow ditches and swales,
 - (e) Connection networks:
 - (a) Junction boxes,
 - (b) Stormwater manholes,
- (4) Stormwater storage system – this component consists of the individual elements, whether on-line, off-line, and/or below grade facilities, that store stormwater runoff prior to its discharge to a receiving body, which include but are not limited to the following facilities:
- (a) Detention facilities – provide a designed and managed reduction in the peak stormwater runoff and offset the stormwater runoff volume in a holding facility. These facilities may be publicly- or privately-owned but must be maintained by the property owner of record.
 - (1) Open detention facilities – facilities that are open to the atmosphere.
 - (2) Closed detention facilities – facilities that are not open to the atmosphere.
 - (b) Retention facilities – typically captures all the stormwater runoff and volume in a total retaining facility such that the water is only released through means of evaporation and/or infiltration. These facilities may be publicly or privately owned but must be maintained by the property owner of record.
- (5) Discharge system – this component releases the stormwater runoff in a controlled manner from a specific point within the drainage system to a receiving body of water. Discharge elements shall include all outlet control structures, as well as the corresponding energy dissipators. These include, but are not limited to, the following:
- (a) Outlet control structures:
 - (1) Weir structures,

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- (2) Orifice flow device structures.
 - (3) Flume structures,
 - (4) Open channel flow structures,
 - (5) Pressurized flow structures,
 - (6) Spillway structures,
 - (b) Energy dissipators:
 - (1) Riprap,
 - (2) Pre-manufactured revetment systems,
 - (3) Stilling basins,
 - (4) Concrete energy dissipation systems,
 - (5) Concrete armored system.

(b) General Requirements of the Stormwater Drainage System:

- (1) All stormwater drainage systems shall be subject to review and approval by the city with regard to analysis, design and construction of drainage facilities. The appropriate public authority shall have the right to maintain, or cause to be maintained, the drainage system for its intended purposes. If a basin master drainage plan is adopted for the area under consideration, then the provisions of the plan shall be adhered to unless amended.
- (2) Every development shall be provided with a stormwater drainage system designed by an engineer registered in the State of Oklahoma, adequate to serve the development, and otherwise shall meet the approval requirements of the officials having jurisdiction.
- (3) The stormwater drainage system shall be designed so that property owners located downstream from and upstream from the development shall not be injuriously affected by the construction, operation, or maintenance of such system.
- (4) The stormwater drainage system plans prepared and sealed by a professional engineer shall show both plan and profile views of the proposed improvements. Any manhole or access point to the system that is buried out of sight shall be dimensioned to permanent objects in the vicinity.
- (5)
- ~~(5) A minimum of the 20 percent chance and one percent chance storms shall be evaluated when designing the stormwater drainage systems.~~

(Code 1977, § 25-201; Ord. No. 2443, § I, 4-25-2002)

- ~~(b) The stormwater drainage system, both public and private, may consist of (1) roadways, storm sewers, detention facilities, retention facilities, improved channels; (2) unimproved drainage ways left in their natural condition; (3) the areas covered by drainage way easements for the purpose of providing overland flow; and (4) all appurtenances to the above including inlets, manholes, junction boxes, headwalls, dissipaters, culverts, etc. All portions of the drainage system that exist on or in dedicated street rights-of-way or property owned by the city in fee shall be owned and maintained by the city, unless provided otherwise by agreement or covenant. Improved and natural channels on private property shall be maintained by the property owners. In this context, the removal of dead or dying trees or storm debris shall not be considered to alter the channel so as to make it no longer a natural channel.~~

~~(c) —~~

Sec. 25-202. Stormwater collection system.

- (a) The stormwater collection system shall be designed ~~either~~ in accordance with the criteria set forth in the Engineering Design Criteria Manual, latest edition.
- (b) The publicly-owned portions of the overland flow sections of the collection system shall be confined to dedicated rights-of-way and/or drainage easements to assure the stormwater can pass through the development without inundating the lowest level of any building, dwelling, or structure. All drainage easements shall be shown on the plat or filed by separate instrument if the plat is already filed at the courthouse.
- (c) The distance between inlets, as well as the distance to the first inlet on a street shall be determined by the lesser of the following:
- (1) For the one percent chance storm, water depth shall not exceed the top of curb, or
 - (2) Six hundred feet.
- (d) At sump locations, the water depth shall not exceed six inches above the top of curb, or 12 inches above the top of grate, whichever is less, for the one per cent chance storm. Where sump collection systems are used, an overflow route shall be provided in the event of a complete blockage of the inlet of pipe. If the inlets and pipe are sized for the one per cent chance storm, a sod overflow can be used. If a 20 percent chance storm inlet and pipe system is designed, the overflow area shall be concrete lined. When a sod overflow structure is constructed, it shall be lined with Bermuda grass or approved equal and shall contain energy dissipaters, if required at the outflow point.
- (e) Driveway approaches shall be designed and constructed so that the runoff from the one percent chance storm shall not leave the roadway except in locations where the driveway is designed as part of the drainage system.
- (f) Runoff from areas greater than one-half acre outside the roadway of arterial and collector streets shall be collected before it reaches the roadway. In no circumstance shall concentrated flows be allowed to discharge into arterial streets. Parking lots shall have internal drainage systems so as to reduce concentrated flow onto streets. This requirement shall not apply to residential lots used as single-family residences. The local administrator may approve sheet flows to the subject streets when connecting to an underground storm sewer system is not economical. In sheet flow instances, the developer must prove no adverse impact to the traveling public, and that the street drainage system is capable of conveying the increased flows.
- (g) Site grading shall provide surface water drainage directly into a storm sewer, natural drainage course, improved channel, or paved street without crossing more than four adjacent lots.
- (h) No inlets shall be designed for placement within driveways or entries unless individually approved by the local administrator.
- (i) Drainage or utility easements of satisfactory width to provide working room for construction and maintenance shall be provided for all stormwater collection systems and designed in accordance with the Engineering Design Criteria Manual, latest edition.
- (j) All improved open drainage courses shall be maintained by the owner of the land upon which they are located and by the person or entity actually occupying the land upon which the improved open drainage courses are located. Maintenance called for by this section shall be performed as often as necessary to keep

the drainage course free of debris and any wild growth above the height of 18 inches above the finished grade of the improved drainage course. Maintenance as necessary to keep sedimentation from exceeding 12 inches in depth above the finished grade will also be performed. In the event that a person or entity charged with the maintenance of an improved open drainage course allows sedimentation in excess of the limits prescribed above, or allows wild growth or debris in excess of the limits prescribed above, to accumulate within the improved open drainage course, and the premises upon which the sedimentation, wild growth, or debris is allowed to accumulate is hereby expressly declared to be a nuisance. In addition to any other remedies available to the city, such nuisances may be abated in the manner provided under the Broken Arrow Code for any other nuisance.

(Code 1977, § 25-202; Ord. No. 2443, § I, 4-25-2002; Ord. No. 2793, § I, 5-15-2006)

Sec. 25-203. Stormwater conveyance system requirements.

- (a) The stormwater conveyance system, whether considered as an opened, closed, or combined system, shall be designed in accordance with the criteria set forth in the Engineering Design Criteria Manual, latest edition.
- (b) All Stormwater conveyance facilities shall be located in public right-of-way or public easements unless the conveyance is privately owned and does not connect to the public system.

(Code 1977, § 25-203; Ord. No. 2443, § I, 4-25-2002; Ord. No. 2793, § II, 5-15-2006)

Sec. 25-204. Stormwater storage system requirements.

- (a) The stormwater storage system shall be designed in accordance with the criteria set forth in the Engineering Design Criteria Manual, latest edition.

~~Detention storage shall be required to accommodate excess runoff from all storms from the 20 percent chance storm up to the one percent chance storm. Excess runoff is that runoff generated due to urbanization which is greater than the runoff historically generated under existing conditions, for a given frequency storm. Detention facilities shall be designed so that the peak rate of discharge does not exceed that of the existing conditions.~~

- ~~(b) Peak release rates from private developments shall not exceed the existing runoff that occurred before development for all storm frequencies up to and including the one percent chance storm. The 20 percent~~

~~chance, ten per cent chance, two percent chance, and one percent chance storms shall be investigated at a minimum.~~

- ~~(c) Public regional detention facilities may be designed with one percent chance storm outflow rates equal to or lower than pre-development values with possible increased flow rates for the 20 percent chance, ten percent chance, and two percent chance storms from pre-development flow rates under those conditions where downstream areas are not adversely impacted.~~

- ~~(d) If the development is situated in such a manner that the stormwater is discharged into a stormwater system which the local administrator determines will not be adversely affected, the developer may make a monetary payment or some other form of valuable consideration to the city in accordance with section 25-207 of this chapter, in lieu of constructing an onsite detention facility.~~

- ~~(e) Changes may be made to streams or channels within the regulatory flood fringe area; subject to approval of the local administrator, provided that:~~

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- ~~(1) The volume of floodwater storage is not reduced;~~
~~(2) Neither downstream or upstream water surface elevations are adversely increased; and~~
~~(3) All required permits are obtained prior to starting work.~~
- (b) Stormwater detention or other storage facilities shall not be located in street rights-of-way or easements unless it is placed in an enclosed storm sewer system.
- (c) Acceptable types of stormwater storage systems include the following facilities:
- (1) Open detention facilities:
- (a) *Dry detention facilities:* Such facilities must be provided with underground drainage or a concrete trickle channel to eliminate standing water after storm periods. This type of facility may be used for recreational purposes and other approved uses to the maximum extent possible when not functioning as a detention facility.
- (b) *Wet detention facilities:* Such facilities will be used on a limited basis and will be approved only when the pond inflow is sufficient to maintain pond water surface levels and to preclude the water from stagnating.
- (c) *Parking lot detention:* This type of facility may be used provided the maximum one percent chance storm ponding depth is 12 inches or less. Any repaving of the parking lot shall be evaluated for impact on volume and release rates and are subject to approval by the local administrator. All parking lot detention areas shall have a minimum of two signs posted identifying the detention pond area. The signs shall have a minimum of one and one-half (1.5) square feet and contain the following message:
- "WARNING: This area is a stormwater detention facility and is subject to periodic flooding to a depth of (provide one percent chance storm design depth)."
- Any suitable materials and geometry of the sign is permissible, subject to approval by the local administrator.
- (2) Closed detention facilities:
- (a) *Underground detention facilities:* This type of facility may consist of basins, tanks, and or oversized storm sewers.
- (3) *Retention facilities:* Such facilities may be used when the existing conditions runoff from a watershed would exceed the capacities of downstream facilities. ~~The retention facility shall contain the one percent chance stormwater runoff and release shall be by evaporation, infiltration, or slow release at outflow rates less than existing levels.~~

(Code 1977, § 25-205; Ord. No. 2443, § I, 4-25-2002; Ord. No. 2793, § III, 5-15-2006)

Sec. 25-205. Stormwater discharge system requirements.

- (a) The stormwater discharge system shall be designed in accordance with the criteria set forth in the Engineering Design Criteria Manual, latest edition.
- (b) . All stormwater discharge systems and facilities shall be located in public right-of-way or public easements unless the conveyance is privately owned and does not connect to the public system.

Sec. 25-206. Stormwater drainage system special element requirements.

- (a) All special stormwater drainage system special elements shall be designed in accordance with the criteria set forth in the Engineering Design Criteria Manual, latest edition.
- (b) Cross street drainage structures are considered special elements and shall include the following items:
 - (1) Bridges
 - (2) Culverts
- (c) Stub streets that are not connected to an existing street network shall contain the following minimum provisions for drainage:
 - (1) Stub streets which drain into the development under design will not require special drainage structures.
 - (2) Stub streets which drain away from the development will require a drainage easement on the adjoining property with a one percent chance storm flow capacity ditch to a point of natural drainage or concrete curb and gutter across the end of the street, with storm inlets tied to an operational storm sewer system.

(Code 1977, § 25-206; Ord. No. 2443, § I, 4-25-2002)

Sec. 25-207. Fee-in-lieu of detention.

When approved or required by the stormwater manager, a developer shall make a monetary payment or some other form of valuable consideration in lieu of building a detention facility. The Stormwater Manager shall make the determination of whether fee-in-lieu of detention will be allowed or required based upon capacity of the receiving stormwater drainage system and whether regional detention facilities are either proposed or in place. The amount of the fee shall be based on the number of square feet of impervious area added to the property. The developer shall provide the Stormwater Manager calculations of the number of square feet of increased impervious area and the Stormwater Manager shall prepare a bill for payment of in-lieu of detention. The fee shall be paid at the time the final plat is released for residential developments. The fee shall be paid prior to issuance of any building permit for non-residential developments. When these fees are collected, they shall be deposited into a stormwater capital improvements fund, which will be used for future or ongoing stormwater improvement and regional detention projects.

(Code 1977, § 25-207; Ord. No. 2443, § I, 4-25-2002; Ord. No. 2675, § I, 12-20-2004)

Sec. 25-208. Stormwater development permit.

A stormwater development permit shall be obtained prior to any development on projects which require platting, site plan approval or alterations to existing public stormwater drainage systems. The minimum submittal requirements shall be as defined in the latest version of the Engineering Design Criteria Manual.

The city manager or the city manager's designee shall have the right to waive sections of the permit requirements, subject to the developer providing adequate proof, to the city manager or city manager's designee, the development does not cause adverse impacts to the community.

(Code 1977, § 25-208; Ord. No. 2443, § I, 4-25-2002; Ord. No. 3680, § II, 4-6-2021)

Secs. 25-209—25-300. Reserved.

ARTICLE IV. FLOODPLAIN DEVELOPMENT REQUIREMENTS

Sec. 25-301. Statutory authorization.

The legislature of the State of Oklahoma has in 82 O.S. §§ 1601—1619 delegated the responsibility to local government units to adopt regulations designed to minimize flood losses. The following is an exercise of such authority.

(Code 1977, § 25-301; Ord. No. 2443, § I, 4-25-2002)

Sec. 25-302. Methods of reducing flood losses.

In order to accomplish its purposes, this chapter uses the following methods:

- (1) Restrict or prohibit uses that are dangerous to health, safety or property in times of flood, or cause measurable increases of flood heights or velocities, or which result in damaging increases in erosion or produce a net decrease in storage of stormwater in floodplain areas.
- (2) Require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction.
- (3) Control the alteration of natural floodplains, stream channels, and natural protective barriers, which are involved in the accommodation of floodwaters.
- (4) Control excavation, grading, re-grading, paving, filling, dredging, berming, diking and other development which may increase flood damage.
- (5) Prevent or regulate the construction of flood barriers which will increase flood hazards to other properties or people.
- (6) Regulate the connection to and use of the stormwater drainage system.
- (7) Provide a means for maintenance of the stormwater drainage system.

(Code 1977, § 25-302; Ord. No. 2443, § I, 4-25-2002)

Sec. 25-303. General provisions.

- (a) This chapter shall apply to all land within the jurisdiction of the City of Broken Arrow, Oklahoma.
- (b) No structure or land shall hereafter be located, altered, or have its use changed without full compliance with the terms of this chapter and other applicable regulations.
- (c) It is not intended by this chapter to repeal, abrogate, or impair any existing easements, covenants or deed restrictions. However, where this chapter imposes greater restrictions, the provisions of this chapter shall prevail. All other ordinances inconsistent with this chapter are hereby repealed to the extent of their inconsistency only.
- (d) In the interpretation and application, the provisions of this chapter shall be considered as minimum requirements as determined by the city and deemed neither to limit nor repeal any other powers granted under state statutes.

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- (e) If any section, clause, provision or portion of this chapter is adjudged unconstitutional or invalid by a court of competent jurisdiction, the remainder of this chapter shall not be affected thereby.
 - (f) All requirements of this chapter meet or exceed the minimum state and federal floodplain regulations including the minimum criteria identified in 44 CFR Chapter 1, Parts 59 and 60.1 through 60.13.
 - (g) All plans submitted by any person proposing development shall be signed and sealed by a registered professional engineer, registered in the State of Oklahoma.

(Code 1977, § 25-303; Ord. No. 2443, § I, 4-25-2002)

Sec. 25-304. Basis for establishing the regulatory flood area.

- (a) The lands covered by the regulatory flood area are identified on a composite map or maps, known as the Regulatory Floodplain Map of Broken Arrow (RFMBA), prepared by the floodplain administrator. The RFMBA utilizes the best available information for flood areas in each drainage basin. The RFMBA identifies both the base flood area as identified by FEMA and regulatory flood area. The regulatory flood area will be identified as the following:

- (1) The areas of special flood hazard identified by FEMA in the scientific and engineering report entitled, "Flood Insurance Study for Tulsa County, Oklahoma and Incorporated Areas" dated October 16, 2012, with the accompanying flood insurance rate map (FIRM) including the following FIRM panels:

40143C0378L, 40143C0379L, , 40143C0387L, 40143C0389L, , 40143C0452L, are hereby adopted by reference and declared to be a part of these regulations effective September 30, 2016.

The areas of special flood hazard identified by FEMA in the scientific and engineering report entitled, "Flood Insurance Study for Tulsa County, Oklahoma and Incorporated Areas" dated September 30, 2016, with the accompanying flood insurance rate map (FIRM) including the following FIRM panels:

40143C0385M, , 40143C0391L, 40143C0392L, 40143C0393M, 40143C0394M, 40143C0456M, 40143C0457M, 40143C0458L, 40143C0459L are hereby adopted by reference and declared to be a part of these regulations effective September 30, 2016.

The areas of special flood hazard identified by FEMA in the scientific and engineering report entitled, "The Flood Insurance Study for Tulsa County, Oklahoma and Incorporated Areas" dated September 12, 2024, with the accompanying Flood Insurance Map (FIRM) including the following FIRM panels:

40143CIND0F, 40143C0377M, 40143C0386M, 40143C0388M, 40143C0389M, 40143C0451M 40143C0452M, 40143C0453M, 40143C0454M are hereby adopted by reference and declared to be a part of these regulations effective September 12, 2024.

The areas of special flood hazard identified by FEMA in the scientific and engineering report entitled, "The Flood Insurance Study for Wagoner County, Oklahoma and Incorporated Areas" dated April 17, 2012, with the accompanying Flood Insurance Rate Map (FIRM) including the following FIRM Panels:

40145C0120H, 40145C0275H are hereby adopted by reference and declared to be part of these regulations effective September 30, 2016.

The areas of special flood hazard identified by FEMA in the scientific and engineering report entitled, "The Flood Insurance Study for Wagoner County, Oklahoma and Incorporated Areas" dated September 30, 2016, with the accompanying flood insurance rate map (FIRM) including the following FIRM panels:

40145CIND0B, 40145C0085J, 40145C0095J, 40145C0105J, 40145C0110J, 40145C0115J, , 40145C0235J, are hereby adopted by reference and declared to be a part of these regulations effective September 30, 2016.

- (2) The areas identified by the city as regulatory ultimate urbanized floodplain in a scientific and engineering "master drainage plan" with accompanying maps and any revisions thereto. The above documents are hereby adopted and declared to be part of this chapter and are on file at the city engineer's office.
- (3) The most restrictive floodplain will be used in identifying the regulatory flood area.
- (b) The regulatory flood area, at locations where the point in question has a drainage area of over one square mile upstream, may be divided into the base flood area and the regulatory flood area. The regulatory flood area shall extend up to an approximate 40-acre contributing watershed cutoff point. The regulatory flood area shall be reserved for flood-tolerant uses as defined in section 25-317. Encroachments may be permitted in the regulatory flood fringe area, provided a floodplain development permit is obtained in accordance with section 25-307.
- (c) Any property owner or developer seeking a floodplain development permit in accordance with section 25-307 in areas where the regulatory flood area has not been established by governmental entity or is in FEMA Zone A, shall provide regulatory flood elevations and associated engineering data calculated by a licensed professional engineer as required by the floodplain administrator.
- (d) All studies performed under the direction of an owner or developer shall make use of the best available data, and shall specifically include:
 - (1) A determination of all elevations referenced to the North American Datum of 1983 for horizontal control and to the North American Vertical Datum of 1988 for vertical control;
 - (2) A determination of the elevation of historic flooding, if such a historic flooding is in excess of the regulatory flood area.

(Code 1977, § 25-304; Ord. No. 2443, § I, 4-25-2002; Ord. No. 2530, § II, 4-7-2003; Ord. No. 3045, § I, 7-21-2009; Ord. No. 3201, § I, 4-17-2012; Ord. No. 3211, § I, 9-18-2012; Ord. No. 3211(Corr.), § I, 10-2-2012; Ord. No. 3370, § I, 11-17-2015; Ord. No. 3451, § I, 9-20-2016)

Sec. 25-305. Use of other flood data.

When regulatory flood elevation data are not available, the floodplain administrator may use flood information from any other authoritative source, such as historical data or studies from other private or governmental sources, to establish flood elevations within the regulatory flood area, for the purposes of this chapter.

(Code 1977, § 25-305; Ord. No. 2443, § I, 4-25-2002)

Sec. 25-306. Compliance.

No structure, substantial improvement, development, or land shall hereafter be located, altered, or have its use changed within the regulatory flood area without full compliance with the terms of this chapter and all other city ordinances, codes, and regulations.

(Code 1977, § 25-306; Ord. No. 2443, § I, 4-25-2002)

Sec. 25-307. Floodplain development permit.

A floodplain development permit shall be required to assure conformity with the provisions of this chapter and to insure that new development is constructed in a manner that minimizes exposure to flooding. A floodplain development permit shall be obtained before construction or development begins in any area in the regulatory flood area established in section 25-304. Application for a floodplain development permit shall be made on forms furnished by the floodplain administrator.

(Code 1977, § 25-307; Ord. No. 2443, § I, 4-25-2002)

Sec. 25-308. Floodplain development permit application requirements.

The applicant shall provide at least the following information: in areas of historic problems or where atypical conditions exist, additional information may be required on the permit application form.

- (1) All floodplain development permit applications may include, but not be limited to, plans drawn to scale showing the nature, location, dimensions and elevations of the area in question; and the nature, location, dimensions and elevations of existing or proposed development, structures, fill, storage of materials, and drainage facilities. The floodplain administrator may require hydrologic and hydraulic studies as required. The applicant is responsible for any other permits required to fulfill local, state, and federal regulatory requirements and;
- (2) Elevation in relation to mean sea level of the lowest point on the top of a pad, and the lowest point on the top of the floor surface of the lowest floor or basement, whichever is applicable, of all proposed structures. Upon completion of the structure, the permit holder shall submit to the floodplain administrator the as-built elevation, certified by a licensed professional engineer or registered land surveyor;
- (3) Elevation in relation to mean sea level to which any nonresidential structure shall be floodproofed. Upon completion of the floodproofed portion of the structure, the permit holder shall submit to the floodplain administrator the as-built floodproofed elevation certified by a licensed professional engineer or surveyor;
- (4) A certificate from a licensed professional engineer or architect that the nonresidential floodproofed structure will meet the floodproofing criteria of sections 25-310 and 25-312;
- (5) A certificate from a licensed professional engineer or architect that any utility floodproofing will meet the criteria of section 25-315;
- (6) All requirements of Broken Arrow earth change ordinances shall be met to obtain a floodplain development permit.
- (7) Modification to the regulatory flood area cannot increase velocities or volumes of water to the extent that significant erosion of floodplain soils would occur either on the subject property, or on some other property upstream or downstream; or does not provide compensatory storage for any measurable loss of flood storage capacity within the applicable system as compared to natural conditions. Computations by a licensed professional engineer must be submitted that verify compliance with these requirements.
- (8) A description of the extent to which any watercourse will be altered or relocated as a result of proposed development. Computations by a licensed professional engineer must be submitted that demonstrate that the altered or relocated segment will provide equal or greater conveyance than the

original channel segment, and address floodplain storage as required by the floodplain administrator. The applicant must submit any maps, computations, or any other materials required by the Federal Emergency Management Agency (FEMA) to revise the documents enumerated in section 25-304, when notified by the floodplain administrator, and must pay any fees or other costs assessed by FEMA for this purpose. The applicant must also provide assurances that the conveyance capacity of the altered or relocated channel segment will be maintained.

- (9) In FEMA Zone A, when neither base flood elevation nor regulatory flood elevation data are available, the applicant shall provide regulatory flood elevation and floodplain delineation calculated by a registered professional engineer for the proposed development
- (10) A technical analysis, by a licensed professional engineer, which shows whether proposed development to be located in the regulatory flood area may result in physical damage.
- (11) The floodplain administrator shall have the right to waive sections of the permit requirements, subject to the developer providing adequate proof, to the floodplain administrator, the development does not cause adverse impacts to the community.

(Code 1977, § 25-308; Ord. No. 2443, § I, 4-25-2002)

Sec. 25-309. Floodplain development permit application review.

The floodplain administrator shall conduct the following permit application review before issuing a floodplain development permit. Approval or denial of a permit shall be based on all the provisions of this chapter and should also consider the following guidelines:

- (1) The completeness of the application, particularly with the requirements of section 25-308, and for compliance with the provisions and standards of this chapter;
- (2) The susceptibility of the proposed development and its contents to flood damage and the effect of such damage on the individual owner shall be reviewed. If a proposed structure is located in the regulatory flood area, all new construction and substantial improvements shall meet the applicable construction standards;
- (3) Determination of whether any proposed development in the regulatory flood area may result in physical damage to any other property. The floodplain administrator may require the applicant to submit additional technical analyses and data necessary to complete the determination. If the proposed development may result in physical damage to any other property, no permit shall be issued. The applicant may revise the application to include measures to mitigate or eliminate the adverse effects and re-submit the application;
- (4) The danger to life due to flooding or erosion damage;
- (5) The danger that materials may be swept onto other lands to the injury of others;
- (6) The safety of access to the property in times of flooding for ordinary and emergency vehicles;
- (7) The increased costs of providing governmental services during and after flood conditions, including maintenance and repair of streets and bridges, and public utilities and facilities such as sanitary sewer, gas, electrical, communications and water systems;
- (8) The expected heights, velocity, duration, rate of rise and sediment transport of the floodwaters and the effects of wave action, if applicable, expected at the site;
- (9) The availability of alternative locations, not subject to flooding or erosion damage, for the proposed use;

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- (10) The relationship of the proposed use to the City of Broken Arrow comprehensive plan for that area;
 - (11) A determination that all necessary permits have been received from those governmental agencies from which approval is required by state or federal law.

(Code 1977, § 25-309; Ord. No. 2443, § I, 4-25-2002)

Sec. 25-310. General construction standards.

The following standards apply to new development, including new and substantially improved structures, adjacent to the regulatory flood area as designated in section 25-304.

- (1) No new habitable structures shall be constructed or placed within the regulatory floodplain.
- (2) No habitable structures within the regulatory floodplain will be substantially improved.
- (3) All structures shall be constructed with materials and utility equipment resistant to flood damage.
- (4) All structures shall be constructed using methods and practices that minimize flood damage.
- (5) Monetary value of floodproofing shall not be considered in calculations of substantial improvement for purposes of this chapter.
- (6) New construction and substantial improvements, with fully enclosed areas below the lowest floor that are usable solely for parking of vehicles, building access or storage in an area other than a basement and which are subject to flooding, shall be designed and constructed 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 licensed professional engineer or architect or meet or exceed the following minimum criteria:
 - (a) A minimum of two openings, having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding, shall be provided.
 - (b) The bottoms of all openings shall be no higher than one foot above the lowest adjacent finished grade.
 - (c) Openings may be equipped with screens, louvers, valves, or other coverings or devices, provided they permit the automatic entry and exit of floodwaters.
- (7) All structures within the regulatory floodplain shall be anchored to prevent flotation, collapse or lateral movement.

(Code 1977, § 25-310; Ord. No. 2443, § I, 4-25-2002)

Sec. 25-311. Residential construction.

Adjacent to all regulatory flood areas, the following provisions are required:

- (1) New construction or substantial improvement of any residential structure which lacks a basement shall have the lowest floor placed on or above a pad in conformity with the building code, which pad is elevated to the regulatory flood protection elevation; the construction of such a floor in accordance with the building code above the pad here required shall have the lowest point on the floor surface placed 28 inches above the elevation of the regulatory flood.
- (2) New construction or substantial improvement of any residential structure having a basement shall have the lowest point on the floor surface of the basement placed 28 inches above the elevation of the regulatory flood.

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- (3) A licensed professional engineer, architect, or land surveyor shall submit a certification to the floodplain administrator that the standard of this chapter is satisfied. As-built grading and drainage plans shall be furnished by the engineer.

(Code 1977, § 25-311; Ord. No. 2443, § I, 4-25-2002)

Sec. 25-312. Non-residential construction.

Adjacent to all regulatory flood areas, the following provisions are required:

- (1) New construction or substantial improvement of any commercial, industrial or other non-residential structure shall either (1) have the lowest floor, including basement, elevated to regulatory flood protection elevation (regulatory flood elevation plus one foot) or, (2) together with attendant utility and sanitary facilities, be floodproofed so that below the regulatory flood level 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.
- (2) A licensed professional engineer or architect shall submit a certification to the floodplain administrator that the standards of this subsection are satisfied including the specific elevation (in relation to mean sea level) to which the structure is to be floodproofed.

(Code 1977, § 25-312; Ord. No. 2443, § I, 4-25-2002)

Sec. 25-313. Subdivisions and development.

The following standards apply to all new subdivision proposals adjacent to all regulatory flood areas:

- (1) All subdivision proposals shall be consistent with sections 25-310 and 25-311 of this chapter.
- (2) Regulatory flood elevation data shall be provided with the subdivision proposal if not otherwise provided pursuant to section 25-304 of this chapter.
- (3) All subdivision proposals shall have adequate drainage provided to reduce exposure to flood hazards.
- (4) All subdivisions shall have public utilities and facilities such as sewer, gas, electrical, cable, and water systems located and constructed to minimize flood damage.
- (5) Adequate overflow and access routes to floodplains will be provided in subdivision layouts. Paving of overflow and access routes may be required by the floodplain administrator.
- (6) The final plat of any development requiring a FEMA LOMR will not be accepted until such LOMR is approved in writing by FEMA. Building permits will not be issued on any lots in developments awaiting LOMR approval.
- (7) All subdivisions will meet the stormwater and detention requirements of the city.
- (8) All regulatory flood areas shall be designated on the final plat.

(Code 1977, § 25-313; Ord. No. 2443, § I, 4-25-2002; Ord. No. 2793, § IV, 5-15-2006)

Sec. 25-314. Manufactured homes.

In all regulatory flood areas, no manufactured homes shall be placed in the regulatory flood area. All existing manufactured homes shall be anchored to resist flotation, collapse, or lateral movement, per the city building code.

(Code 1977, § 25-314; Ord. No. 2443, § I, 4-25-2002)

Sec. 25-315. Utilities.

In all regulatory flood areas, the following provisions are required:

- (1) Machinery and equipment servicing new construction or substantial improvement of a residential building must either be elevated to or above one foot above the regulatory flood elevation. This includes heating, ventilating, and air conditioning equipment, hot water heaters, appliances, elevator lift machinery, and electrical junction and circuit breaker boxes;
- (2) Machinery and equipment servicing a non-residential building must either be elevated to or above the regulatory flood elevation, or designed to prevent water from entering or accumulating within the components during a flood. This includes heating, ventilating, and air conditioning equipment, hot water heaters, appliances, elevator lift machinery, and electrical junction and circuit breaker boxes. When located below the regulatory flood elevation, a licensed professional engineer's or architect's certification of the design is required;
- (3) New and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system;
- (4) New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of floodwaters into the system and discharges from the system into floodwaters. Sanitary sewer and storm drainage systems for buildings that have openings below the regulatory flood elevation shall be provided with automatic backflow valves or other automatic backflow devices that are installed in each discharge line passing through a building's exterior wall;
- (5) On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding; and
- (6) Any utilities and or equipment within the floodplain must be anchored down.

(Code 1977, § 25-315; Ord. No. 2443, § I, 4-25-2002)

Sec. 25-316. FEMA elevation certificate.

When any portion of a lot or parcel of land contains an area of special flood hazard, the owner of the property and/or the general contractor shall provide to the city inspector a completed Federal Emergency Management Agency elevation certificate on all buildings constructed at the time of the finished floor inspection described in Broken Arrow Code section 6-19. Delivery of the certificate to the floodplain administrator shall be a warranty by the property owner and by the general contractor that the information contained within the certificate is accurate. City employees may use the information contained within the certificate unless they have affirmative knowledge that this information is inaccurate. The certificate shall be a public document. Any building which is remodeled to a point in excess of 25 percent of the fair market value shall be considered new construction for purposes of compliance in the supplying of FEMA elevation certificates.

(Code 1977, § 25-316; Ord. No. 2443, § I, 4-25-2002)

Sec. 25-317. Flood-tolerant land uses.

Regulatory flood areas may be utilized for, but not limited to, the following uses:

- (1) Recreational parks.
- (2) Linear parks or tree belt.
- (3) School playground.
- (4) Common area or open space.
- (5) Golf course or driving range.
- (6) Nature areas.
- (7) Back yards.
- (8) Parking lots.
- (9) Agricultural uses.
- (10) Landscape nursery or nursery stock production.
- (11) Regional detention facilities.

(Code 1977, § 25-317; Ord. No. 2443, § I, 4-25-2002)

Sec. 25-318. Area of special flood hazard notice for tenants.

- (a) Every owner of real property, any part of which is located in an area of special flood hazard as depicted and shown on a flood insurance rate map adopted by the city, is hereby required to notify in writing every tenant of the real property of the location of the property in an area of special flood hazard and to obtain and keep for inspection upon request by the floodplain administrator or his authorized representative written acknowledgement of the receipt of the notice signed by each of the tenants.
- (b) The notice shall be given and the acknowledgement thereof obtained prior to any of the tenants taking possession of or occupying the real property or, in the case of property already rented or leased prior to the effective date of this provision, within 60 days after its adoption and publication. The notice and acknowledgement shall be in a separate document and not contained within any other document, such as a lease.

(Code 1977, § 25-318; Ord. No. 2443, § I, 4-25-2002)

Sec. 25-319. Warning and disclaimer of liability.

The degree of flood protection required by this chapter is considered reasonable for regulatory purposes and is based on engineering and scientific methods of study and computations. However, larger floods may occur. Flood depths may be increased by human-made or natural causes, such as brush obstructed channels and bridge openings restricted by debris. This chapter does not imply that areas outside the projected regulatory flood or land uses permitted within such areas will be free from flooding or flood damages. This chapter and any amendment thereto shall not create liability on the part of the City of Broken Arrow, Oklahoma or any of its trusts or any officer or employee thereof for any flood damages that result from reliance on this chapter or any administrative decision lawfully made thereunder. Private developers, builders and contractors remain responsible for any errors or omissions as to work performed in an attempt to comply with this chapter, and the city is not liable because one or

more inspections or reviews did not detect the problems of the private entities, even if the city undertakes portions of the maintenance of the problem facilities.

(Code 1977, § 25-319; Ord. No. 2443, § I, 4-25-2002)

Secs. 25-320—25-400. Reserved.

ARTICLE V. ENVIRONMENTAL IMPACTS¹

Sec. 25-401. Introduction.

The requirements of this chapter shall not supersede any applicable local, state, or federal environmental requirements, including those involving wetlands, riparian habitat, water quality, or endangered species.

(Code 1977, § 25-401; Ord. No. 3090, § I, 1-19-2010)

Sec. 25-402. Erosion, siltation, and pollution control.

Erosion, siltation, and pollution control shall be provided during the construction phase on all construction sites as necessary to prevent impacts to off-site areas and/or public rights-of-way. The primary goal of erosion, siltation, and pollution controls and best management practices is to minimize erosion, sedimentation, and pollution during construction activities until final grading, landscaping, and storm sewer structures are in place. Best management practices include, but are not limited to, seeding, sodding, sprigging, silt fences, earth dikes or swales, temporary stream crossings, storm sewer inlet protection, temporary sediment basins, and stabilized construction entrances. Failure to provide erosion, siltation, and pollution control protection can result in suspension of the earth change, stormwater development, floodplain development, and building permits. A violation of this section by failure to comply with any of its requirements shall constitute a class A offense. Provided, that each lot upon which such violation occurs shall constitute a separate offense, and each day on which a violation occurs or is allowed to remain shall constitute a separate offense. The imposition of criminal sections shall not prevent Broken Arrow from taking any lawful action as is necessary to prevent or remedy a violation.

(Code 1977, § 25-402; Ord. No. 3090, § I, 1-19-2010)

Sec. 25-403. Stormwater illicit discharges purpose and intent.

The purpose of this section is to regulate non-stormwater discharges to the City of Broken Arrow stormwater drainage system to the maximum extent practicable as required by federal and state law. This chapter establishes methods for controlling the introduction of pollutants into the municipal separate storm sewer system (MS4) in order to comply with requirements of the National Pollutant Discharge Elimination System (NPDES) and the Oklahoma Pollutant Discharge Elimination System (OPDES) permit requirements. The objectives of this section are:

¹Editor's note(s)—Section I of Ord. No. 3090, adopted Jan. 19, 2010, amended art. V in its entirety to read as herein set out. Former art. V consisted of §§ 25-401—25-403, pertained to the same subject matter and derived from Ord. No. 2443, adopted Apr. 25, 2002; and Ord. No. 2522, adopted Mar. 3, 2003.

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- (a) To regulate the contribution of pollutants to the municipal separate storm sewer system by stormwater discharges by any person;
 - (b) To control the introduction to the municipal separate storm sewer system of spills, dumping, or the disposal of materials other than stormwater;
 - (c) To prohibit illicit connections and illicit discharges to the municipal separate storm sewer system;
 - (d) To establish legal authority to carry out all inspection, surveillance and monitoring procedures necessary to determine compliance and noncompliance with this section;
 - (e) To establish procedures for enforcement of this section;
 - (f) To establish abatement and remediation procedures for this section; and
 - (g) To establish penalties for noncompliance with this section.

(Code 1977, § 25-403; Ord. No. 3090, § I, 1-19-2010)

Sec. 25-404. Definitions and abbreviations.

The following definitions shall apply to this article:

Accidental discharge: A discharge prohibited by section 25-410 of the Broken Arrow Municipal Code into the municipal separate storm sewer system, the watercourses of the city, or waters of the state or United States which occurs by chance or mishap and without planning or consideration prior to occurrence.

Authorized enforcement agency: The City of Broken Arrow or its designated representative.

Best management practices (BMPs): Schedules of activities, prohibitions of practices, general good housekeeping practices, pollution prevention and educational practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants directly or indirectly to stormwater, receiving waters, or stormwater conveyance systems. BMPs also include treatment practices, operating procedures, and practices to control site runoff, spillage or leaks, sludge or water disposal, or drainage from raw materials storage.

Channel: A natural or artificial watercourse with a definite bed and banks that conducts continuously or periodically flowing water.

Construction activity: Activities include, but are not limited to, clearing, grubbing, grading, regrading, landfilling, excavating, berming, and diking of land, and includes land disturbance activities for the purpose of constructing a structure at some time.

Construction site: A site where construction activities occur.

Contamination: The introduction of materials including, but not limited to, pesticides, herbicides, septic leaks, or other pollutants, which may or may not be toxic, into a natural system.

Discharge: To cause or allow to throw, drain, release, dump, spill, empty, emit, or pour any liquids, pollutants or other materials into the municipal separate storm sewer system.

EPA: The United States Environmental Protection Agency.

Erosion: The mobilization of soil as a result of loss of vegetative cover, scouring by runoff, or associated with slope instability. Erosion can be caused by water, wind, snow and ice.

Grading: Excavation or fill of material, including the resulting conditions thereof.

Hazardous materials: Any material, including any substance, waste, or combination thereof, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may cause, or significantly

contribute to, a substantial present or potential hazard to human health, safety, property, or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

Illicit discharge: Any discharge, except those defined as accidental discharges, to the municipal separate storm sewer system, any watercourse of the city, or any water of the state or United States that is not composed entirely of stormwater, except discharges pursuant to any OPDES or NPDES permit and discharges allowed per this chapter.

Illicit connections: An illicit connection is defined as either of the following: any drain or conveyance, whether on the surface or subsurface, which allows an illicit discharge to enter the stormwater drainage system including, but not limited to, any conveyances which allow any non-stormwater discharge including sewage, process wastewater, and wash water to enter the stormwater drainage system and any connections to the stormwater drainage system from indoor drains and sinks, regardless of whether said drain or connection had been previously allowed, permitted, or approved by an authorized enforcement agency or, any drain or conveyance connected from a commercial or industrial land use to the stormwater drainage system which has not been documented in plans, maps, or equivalent records and approved by an authorized enforcement agency.

Industrial activity: Activities subject to NPDES industrial permits as defined in 40 CFR, § 122.26(b)(14).

Infiltration: The process of percolating stormwater into the subsoil.

Municipal separate storm sewer system (MS4): A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains) that are owned or operated by the city and are designed or used for collecting or conveying stormwater.

National Pollutant Discharge Elimination System (NPDES) stormwater discharge permit: A permit issued by the EPA (or by a state under authority delegated pursuant to 33 USC § 1342(b)) that authorizes the discharge of pollutants to waters of the United States, whether the permit is applicable on an individual, group, or general area-wide basis.

Nonpoint Source Pollution: Runoff from rain and snowmelt that carries pollutants into the stormwater drainage system.

Non-stormwater discharge: Any discharge to the stormwater drainage system that is not composed entirely of stormwater.

ODEQ: The Oklahoma Department of Environmental Quality.

OPDES: Oklahoma Pollutant Discharge Elimination System.

Owner: The legal or beneficial owner of land, including those holding the right to purchase or lease the land, or any other person holding proprietary rights in the land.

Pollutant: Any substance which causes or contributes to pollution. Pollutants may include, but are not limited to: paints, varnishes, and solvents; oil and other automotive fluids; liquid and solid wastes; yard wastes; refuse, rubbish, garbage, litter, floatables, and discarded or abandoned equipment; chlorinated or salt water from swimming pools; hazardous materials; medical waste; biological materials; chemical waste; sediment; concrete wash-out; heat; sewage; fecal coliform; pathogens; dissolved and particulate metals; animal or agricultural wastes; wastes and residues that result from constructing a building or structure and/or altering premises; and noxious or offensive matter of any kind.

Sediment: The soil particles (such as clay, sand, silt and gravel) and organic particulates transported by storm runoff and streamflow. Also, solid material, both mineral and organic, that is in suspension, is being transported or has been moved from its site of origin by air, water, gravity or ice and has come to rest on the earth's surface either above or below water level.

Stormwater: Any surface flow, runoff, and drainage consisting entirely of water from any form of natural precipitation and resulting from such precipitation.

Stormwater manager: The person responsible for the implementation of the City of Broken Arrow Phase II MS4 stormwater management program or his/her designee(s).

Summary abatement: Action taken by the City of Broken Arrow or its agents to abate a violation without prior notice to the property owner or other interested parties.

Wastewater: Any water or other liquid, other than uncontaminated stormwater, discharged from a facility.

Watercourse: A natural or artificial channel or conduit through which water flows.

Watershed: The land area that drains water, sediment, dissolved materials and other matter to a common receiving body or outlet such as a stream, river or lake. The term is not restricted to surface water runoff and includes interactions with subsurface water.

(Code 1977, § 25-404; Ord. No. 3090, § I, 1-19-2010)

Sec. 25-405. Applicability.

This chapter shall apply to all water entering the stormwater drainage system generated on any developed and undeveloped lands unless explicitly exempted by an authorized enforcement agency.

(Code 1977, § 25-405; Ord. No. 3090, § I, 1-19-2010)

Sec. 25-406. Responsibility for administration.

The stormwater manager shall administer, implement, and enforce the provisions of this chapter.

(Code 1977, § 25-406; Ord. No. 3090, § I, 1-19-2010)

Sec. 25-407. Ultimate responsibility.

The standards set forth herein and promulgated pursuant to this chapter are minimum standards; therefore, this chapter does not intend nor imply that compliance by any person will ensure that there will be no contamination, pollution, or unauthorized discharge of pollutants.

(Code 1977, § 25-407; Ord. No. 3090, § I, 1-19-2010)

Sec. 25-408. Watercourse protection.

Every person owning property through which a watercourse passes, or such person's lessee, shall keep and maintain that part of the watercourse within the property free of trash, debris, excessive vegetation, and other obstacles that would pollute, contaminate, or significantly retard the flow of water through the watercourse. In addition, the owner or lessee shall maintain existing privately owned structures, within or adjacent to a watercourse, so that such structures will not become a hazard to the use, function, or physical integrity of the watercourse.

(Code 1977, § 25-408; Ord. No. 3090, § I, 1-19-2010)

Sec. 25-409. Accidental discharges.

- (a) Notwithstanding other requirements of law, as soon as any person has information of any known or suspected release of any discharge or hazardous substance in amounts which could constitute a threat to

human health or the environment, the owner, operator, or responsible party shall give notice to the City of Broken Arrow's stormwater manager and the Oklahoma Department of Environmental Quality's Environmental Hotline as soon as practicable, but in no event later than the close of business on the day following the accidental discharge or the day the discharger becomes aware of the circumstances.

- (b) If emergency response by governmental agencies is needed, the owner, operator, or responsible party shall call 911 immediately to report the discharge. A written report must be provided to the City of Broken Arrow's stormwater manager within ten (10) days of the time the discharger becomes aware of the circumstances.
- (c) If the discharge of prohibited materials emanates from a private property, commercial establishment, or industrial establishment, the owner or operator shall also retain an on-site written record of the discharge and the actions taken to prevent its recurrence. Such records shall be retained for at least three years.

(Code 1977, § 25-409; Ord. No. 3090, § I, 1-19-2010)

Sec. 25-410. Illicit discharge prohibitions.

- (a) No person shall discharge or cause to be discharged into the municipal stormwater drainage system or watercourses any materials, including, but not limited to, pollutants or waters containing any pollutants. The commencement, conduct or continuance of any unlawful discharge is prohibited.
- (b) It is unlawful for any residence or business to allow drainage of a polluting substance or to allow drainage of water which may become a hazard into any street, alley, sidewalk, or drainage system.
- (c) The following discharges are exempt from discharge prohibitions established by this section unless the stormwater manager determines that the type of discharge, whether singly or in combination with others, is causing contamination of surface water, stormwater or groundwater; causes overload or damage to the municipal separate storm sewer system or has the potential to endanger public health and safety; or is causing the City of Broken Arrow to violate its NPDES or OPDES permit for stormwater discharges:
 - (1) Waterline flushing or other potable water sources, landscape irrigation or lawn watering, diverted stream flows, rising groundwater, groundwater infiltration to storm drains, uncontaminated pumped groundwater, foundation or footing drains (not including active groundwater dewatering systems), crawl space pumps, air conditioning condensation, springs, individual residential car washing, noncommercial or charity washing of vehicles, natural riparian habitat or wetland flows, swimming pool water (if dechlorinated), fire hydrant flushings, firefighting activities, and any other water source not containing pollutants;
 - (2) Discharges specified in writing by the stormwater manager as being necessary to protect public health and safety;
 - (3) Dye testing (using nontoxic dye) is an allowable discharge, but requires a verbal or written notification to the stormwater manager prior to the time of the test; and
 - (4) The prohibition shall not apply to any non-stormwater discharge permitted under a NPDES permit, waiver, or waste discharge order issued to the discharger and administered under the authority of the United States Environmental Protection Agency, provided that the discharger is in full compliance with all requirements of the permit, waiver, or order and other applicable laws and regulations, and provided that written approval has been granted for any discharge to the stormwater drainage system.

(Code 1977, § 25-410; Ord. No. 3090, § I, 1-19-2010)

Sec. 25-411. Prohibition of illicit connections.

- (a) The construction, use, maintenance or continued existence of illicit connections to the stormwater drainage system is prohibited. This prohibition expressly includes, without limitation, illicit connections made in the past, regardless of whether the connection was permissible under law or practices applicable or prevailing at the time of connection.
- (b) A person is considered to be in violation of this section if the person connects a line conveying sewage to the MS4 or allows such a connection to continue.

(Code 1977, § 25-411; Ord. No. 3090, § I, 1-19-2010)

Sec. 25-412. Monitoring of discharges.

- (a) The stormwater manager shall be permitted to enter facilities, premises, and watercourses subject to regulation under this chapter for the purpose of observations, measurements, sampling, testing and inspections as often as may be necessary to determine compliance with this chapter. If a discharger has security measures in force, which require proper identification and clearance before entry into its premises, the discharger shall make the necessary arrangements to allow access to representatives of the authorized enforcement agency.
- (b) Facility operators shall allow the stormwater manager ready access to all parts of the premises for the purposes of inspection, sampling, examination and copying of records that must be kept under the conditions of a NPDES or OPDES permit to discharge stormwater, and the performance of any additional duties as defined by state and federal law. Any permits, pollution prevention plans, or other documents regarding a facility's stormwater discharge shall be made available to the stormwater manager when requested.
- (c) The stormwater manager shall have the right to set up on any permitted facility such devices as are necessary in the opinion of the authorized enforcement agency to conduct monitoring and/or sampling of the facility's stormwater discharge.
- (d) The stormwater manager has the right to require the permitted discharger to install monitoring equipment as necessary. The facility's sampling and monitoring equipment shall be maintained at all times in a safe and proper operating condition by the discharger at its own expense. All devices used to measure stormwater flow and quality shall be calibrated to ensure their accuracy.
- (e) Any temporary or permanent obstruction to safe and easy access to the facility to be inspected and/or sampled shall be promptly removed by the operator at the written or oral request of the stormwater manager and shall not be replaced. The costs of clearing such access shall be borne by the operator.
- (f) Unreasonable delays in allowing the stormwater manager access to a permitted facility is a violation of a stormwater discharge permit and of this chapter. A person who is the operator of a facility with a NPDES permit to discharge stormwater associated with industrial activity commits an offense if the person denies the authorized enforcement agency reasonable access to the permitted facility for the purpose of conducting any activity authorized or required by this chapter.
- (g) If the stormwater manager has been refused access to any part of the premises from which stormwater is discharged, and the City of Broken Arrow is able to demonstrate probable cause to believe that there may be a violation of this chapter, or that there is a need to inspect and/or sample as part of a routine inspection and sampling program designed to verify compliance with this chapter or any order issued hereunder, or to protect the overall public health, safety, and welfare of the community, then the City of Broken Arrow may seek issuance of a search warrant from any court of competent jurisdiction.

Sec. 25-413. Penalties and administrative remedies.

(1) *Notice of violation.*

- (a) Whenever the City of Broken Arrow finds that a person has violated a prohibition or failed to meet a requirement of this chapter, the stormwater manager may order compliance by written notice of violation to the responsible person. Such notice may require without limitation:
1. The performance of monitoring, analyses, and reporting;
 2. The elimination of illicit connections or discharges;
 3. That violating discharges, practices, or operations shall cease and desist;
 4. The abatement or remediation of stormwater pollution or contamination hazards and the restoration of any affected property;
 5. Payment of fines, abatement and remediation costs; and
 6. The implementation of source control or treatment BMPs.
- (b) The notice of violation shall set forth a notification and compliance period of a maximum of 15 calendar days for the violator to comply with the requirements of the notice or submit in writing to the stormwater manager an explanation of the violation and a satisfactory plan for the correction and prevention of the violation, except that when an imminent hazard exists the stormwater manager may require that corrective work begin immediately. The notification and compliance period will begin on the day the notice is mailed to the violator or the day the notice is posted on the property having the violation, except that when an imminent hazard exists the stormwater manager may order an immediate summary abatement action to abate the violation. At the time of mailing of notice, the city shall obtain a receipt of mailing from the postal service, which receipt shall indicate the date of mailing and the name and address of the recipient. Said notice shall further advise that, should the violator fail to comply with the requirements of the notice by the established deadline, the work necessary to achieve compliance may be done by the City of Broken Arrow or a designated contractor and the costs thereof shall be charged to the violator. Submission of a satisfactory plan for the correction and prevention of the violation in no way relieves the person of liability for any violation(s) occurring before or after receipt of the notice of violation. Issuance of a notice of violation shall not be a prerequisite to taking any other enforcement action.

- (2) *Penalty.* A violation of any provision of this chapter by failure to comply with any of its requirements shall constitute a class A offense, and any person or entity convicted thereof shall be punishable as set forth in Broken Arrow Code. Provided that each lot upon which such violation occurs shall constitute a separate offense; and each day on which a violation occurs or is allowed to remain shall constitute a separate offense. The imposition of criminal sections shall not prevent Broken Arrow from taking any lawful action as is necessary to prevent or remedy a violation.

(3) *Abatement, remediation and restoration.*

- (a) Prior to commencement by the City of Broken Arrow of any abatement, restoration, remediation, or other ordered work, the City of Broken Arrow shall file a notice of lien with the county clerk describing the property and stating that the city claims a lien on the property for the abatement, restoration, or remediation costs and that such costs are the personal obligation of the property owner, except that when an imminent hazard exists the stormwater manager may file a notice of lien as soon as practicable after the initiation of any summary abatement action.

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- (b) If the violation has not been corrected pursuant to the requirements and within the time period set forth in the notice of violation, then agents of the City of Broken Arrow or a designated contractor are authorized to enter upon the subject property to perform the required abatement, restoration, remediation, or other ordered work.
 - (c) It shall be unlawful for any person, owner, agent or person in possession of any premises to refuse to allow the authorized enforcement agency or designated contractor to enter upon the premises for the purposes set forth above.
- (4) *Demand for payment, liens, and certified statements of cost.* After abatement, restoration, or remediation of a violation has occurred, the stormwater manager shall determine the actual cost of the abatement, restoration, or remediation and any other expenses as may be necessary in connection therewith, including, but not limited to, sampling and field testing costs, laboratory costs, and the cost of the notice and mailing. The City of Broken Arrow shall forward by mail to the property owner a statement of the actual cost and demanding payment. At the time of mailing of notice, the city shall obtain a receipt of mailing from the postal service, which receipt shall indicate the date of mailing and the name and address of the recipient. If the amount due is not paid within 30 days from the date of mailing of the statement, the City of Broken Arrow shall forward a certified statement of the amount of cost to the county treasurer of the county in which the property is located, and the same shall be levied on the property and collected by the county treasurer as other taxes authorized by law. The cost and the interest thereon shall be a lien against the property from the date the cost is certified to the county treasurer and shall continue until the cost shall be fully paid. Any person violating any of the provisions of this chapter shall become liable to the city by reason of such violation. At any time prior to the collection as provided herein the city may pursue any civil remedy for collection of the amount owing and interest thereon.
- (5) *Suspension of MS4 connection.*
- (a) The stormwater manager may suspend an MS4 discharge connection to a property when such suspension is necessary to stop an actual or threatened discharge which presents or may present imminent and substantial danger to the environment, or to the health or welfare of persons, or to the MS4 or waters of Oklahoma. If the violator fails to comply with a suspension order issued in an emergency, the stormwater manager may take such steps as deemed necessary to prevent or minimize damage to the MS4 or waters of Oklahoma, or to minimize danger to persons.
 - (b) A person commits an offense if the person reinstates [the] MS4 connection to premises terminated pursuant to this chapter, without the prior approval of the stormwater manager.
- (6) *Water supply severance.* Whenever a person or industry has violated or continues to violate the provisions of this chapter or orders issued hereunder, the stormwater manager may authorize the water service to be severed. Service will only recommence, at the violator's expense, after the violator has satisfactorily demonstrated an ability to comply, and actual compliance.
- (7) *Restoration of lands.* Any violator may be required to restore land to its undisturbed condition. In the event that restoration is not undertaken within a reasonable time after notice, the City of Broken Arrow may take necessary corrective action, the cost of which shall become a lien upon the property until paid.
- (8) *Violations deemed a public nuisance.* In addition to the enforcement processes and penalties provided, any condition caused or permitted to exist in violation of any of the provisions of this chapter is a threat to public health, safety, and welfare, and is declared and deemed a nuisance, and may be summarily abated or restored at the violator's expense, and/or a civil action to abate, enjoin, or otherwise compel the cessation of such nuisance may be taken. The stormwater manager may authorize summary abatement actions to protect public health, safety, and welfare. Authorization of a summary abatement action shall grant agents of the City of Broken Arrow or a designated contractor the right to enter upon the subject property to perform the required summary abatement work.

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- (9) *Injunctive relief.* It shall be unlawful for any person to violate any provision or fail to comply with any of the requirements of this chapter. If a person has violated or continues to violate the provisions of this chapter, the City of Broken Arrow may petition for a preliminary or permanent injunction restraining the person from activities which would create further violations or compelling the person to perform abatement or remediation of the violation.
- (10) *Remedies not exclusive.* The remedies listed in this chapter are not exclusive of any other remedies available under any applicable federal, state or local law and it is within the discretion of the City of Broken Arrow to seek cumulative remedies.

(Code 1977, § 25-413; Ord. No. 3090, § I, 1-19-2010)

Sec. 25-414. Low impact development.

Low impact development (LID) is an innovative, ecosystem-based approach to land development and stormwater management that works with nature to manage stormwater as close to its source as possible. The goal of LID design is to maintain the integrity of each watershed by maintaining the natural predeveloped hydrology on each development site as best possible. LID employs principles that consider stormwater as a resource rather than a waste product. LID is a blend of measures that includes conservation, minimization of impacts, maintaining existing hydrology patterns, integrated management practices, and pollution prevention techniques. Examples of commonly used LID practices include bio-retention and infiltration basins, such as inverted vegetated islands within parking lots, rain gardens, reduced impervious areas, vegetated swales, rain barrels and cisterns, and pervious pavements.

The city encourages use of low impact development and recommends that such practices be incorporated into existing and proposed site development. The science, engineering, methodologies, and technologies associated with LID are continually being developed and updated. For the current best management practices (BMPs) suggested for consideration, refer to the United States Environmental Protection Agency web site, the design criteria and engineering construction standards of other communities, and recent publications by the City of Broken Arrow, trade organizations, and others.

Proposed developments designed to achieve low impact development goals and LID certification from the City of Broken Arrow shall meet design and best management practices as set forth in the Broken Arrow Low Impact Development Recommended Practices for Certification Manual. This manual shall be prepared and updated by the stormwater manager and approved by the Broken Arrow City Council.

(Code 1977, § 25-414; Ord. No. 3090, § I, 1-19-2010)

Sec. 25-415. Post-construction stormwater impacts.

- (a) The purpose of this section is to address the operation, and maintenance requirements of post-construction best management practices and stormwater drainage systems within the City of Broken Arrow to reduce or eliminate post-construction adverse stormwater quality and quantity impacts to the municipal separate storm sewer system, any watercourse of the city, or any waters of the state or United States.
- (b) For the purposes of this section, the following shall mean:
- Post-construction:* The general time period referenced in perpetuity after the final acceptance of the construction phase of any construction activity identified in subsection (c) below.
- (c) This section shall be applicable to all post-construction best management practices and stormwater drainage systems on developments which require or required platting, site plan approval, or alterations to existing public stormwater drainage systems. Post-construction operation and maintenance of private best

management practices and private drainage systems on single-family residential properties are exempt from the requirements of this section.

- (d) Operations and maintenance of post-construction best management practices and stormwater drainage systems shall be performed in such a manner so that adverse stormwater quality and quantity impacts to stormwater drainage systems and receiving streams both on the subject property and on off-site properties are avoided, reduced, or eliminated. Adverse stormwater quality and quantity effects for the purposes of this section include: increased flood elevations, erosion, siltation, sedimentation; reduced base flow; pollution; and degradation of water quality.
- (e) Stormwater drainage systems for the purposes of this section include any facility, structure, improvement, development, equipment, property or interest therein, including structural and nonstructural elements, which are made, constructed, used or acquired for the purpose of collecting, containing, storing, conveying, filtering, treating, infiltrating and controlling stormwater. This includes, but is not limited to, detention facilities, retention facilities, sediment basins, ponds, lakes, engineered open channels, natural channels, floodplains, creeks, storm sewers, conduits, pipes, borrow ditches, swales, roadways, infiltration systems, rain gardens, and bio-retention filters.
- (f) Post-construction best management practices and stormwater drainage systems shall be operated and maintained so that property owners located downstream from and upstream from the development shall not be injuriously affected.
- (g) Operations responsibility of post-construction best management practices and stormwater drainage systems shall be borne by the property owner.
- (h) Maintenance responsibility of post-construction best management practices and stormwater drainage systems shall be borne by the property owner.
- (i) In the event that the owner fails to properly operate or maintain the post-construction best management practices and stormwater drainage systems such that negative stormwater quality or quantity impacts to the municipal separate storm sewer system, any watercourse of the city, or any waters of the state or United States or stormwater drainage systems and or receiving streams either on the subject property or on off-site properties occurs or is imminent, the City of Broken Arrow, Oklahoma, may order compliance with this section by written notice of violation (NOV) to the owner. Such notice may require without limitation:
 - (1) The performance of monitoring, analysis, and reporting;
 - (2) The elimination of illicit discharges or connections;
 - (3) That violating discharges, practices, or operations shall cease and desist;
 - (4) The abatement or remediation of stormwater pollutants and restoration of any affected property;
 - (5) The implementation of source control or treatment best management practices; and
 - (6) Payment of penalties as set forth as a class A offense per Broken Arrow Code.

If abatement of a violation or the restoration of affected property is required, the notice of violation shall set forth a deadline that such remediation or restoration must be completed. Said notice of violation shall further advise that should the violator fail to complete the remediation or restoration within the established deadline, the work may be performed by the City of Broken Arrow, or its designated contractor, and the cost shall be paid by the owner.

(Code 1977, § 25-415; Ord. No. 3090, § I, 1-19-2010)

Sec. 25-416. Environmental impacts appeals and variance process.

Appeals and variances of decisions of the stormwater manager as provided herein shall be heard by the stormwater drainage board as established in section 25-5.

(Code 1977, § 25-416; Ord. No. 3090, § I, 1-19-2010)

Secs. 25-417—25-500. Reserved.***ARTICLE VI. FLOODPLAIN DEVELOPMENT ADMINISTRATION*****Sec. 25-501. Floodplain appeals board.**

There is hereby created a floodplain appeals board for the purpose of providing policy guidance to the city manager and the floodplain administrator. The Broken Arrow Municipal Authority (BAMA) shall serve as the Flood Plain Appeals Board. The purposes and duties of the floodplain appeals board shall be:

- (a) To provide an exchange of information between the public and city officers on flooding problems in the city;
- (b) To hear and rule upon applications for variances and appeals from decisions of the floodplain administrator as provided herein;
- (c) To hear and rule on appeals from the floodplain administrator's decisions on applications for credit on the monthly stormwater drainage system service charge.

(Code 1977, § 25-501; Ord. No. 2443, § I, 4-25-2002; Ord. No. 2483, § II, 9-3-2002; Ord. No. 3033, § II, 5-5-2009; Ord. No. 3291, § I, 9-2-2014)

Sec. 25-502. Amendments.

This chapter may be amended only after a public hearing at which the citizens have an opportunity to be heard. The floodplain administrator or any affected person may petition for an amendment to this chapter and shall initiate such proceeding by filing with the floodplain appeals board a proper and complete petition for such change on the form or forms provided by the floodplain appeals board.

Upon receipt of such petition, the floodplain administrator with the assistance, advice and counsel of the engineering and other applicable city departments, shall make a study and report the findings to the floodplain appeals board. The report shall be made available to the applicant and other interested parties at least 30 days before the date of any public hearing for the respective petition.

Upon the receipt of the floodplain administrator's report and recommendation, the floodplain appeals board shall hold a public hearing thereon at which the petitioner and other interested parties have an opportunity to be heard. Public notice of the time and place of the hearing shall be posted. Said public hearing may be incorporated into the regular agenda of the BAMA. Any amendment recommended by the floodplain appeals board shall be submitted to the City of Broken Arrow Council for consideration under council policies.

(Code 1977, § 25-502; Ord. No. 2443, § I, 4-25-2002)

Sec. 25-503. Appeals.

Any property owner appealing any written decision concerning the interpretation or administration of articles III, IV, V, and VI of this chapter shall first appeal in writing to the floodplain administrator, who shall make a written response within 15 working days of receipt of the appeal. Within the 15-day period, the floodplain administrator may hold hearings and request such additional information as deemed necessary in order to render a written decision. Any property owner that alleges there is an error in any requirement, decision, or determination made by the floodplain administrator in the enforcement or administration of this chapter may file with the city manager a written appeal for review by the floodplain appeals board.

(Code 1977, § 25-503; Ord. No. 2443, § I, 4-25-2002)

Sec. 25-504. Public hearing procedures.

The floodplain appeals board shall hold a public hearing concerning the appeal within 45 days after the written appeal is received by the city manager, unless the record reveals non-compliance by the applicant with the requirements of section 25-503. The appeal shall contain a detailed explanation of all matters in dispute, and the floodplain appeals board, through the floodplain administrator, may require the submission of such additional information, as it deems necessary. The matter may be continued to one or more dates certain to allow such addition of information to be submitted. The public hearing may be incorporated into the regular BAMA meeting.

The floodplain appeals board shall render its decision within 30 days of the close of the hearing.

(Code 1977, § 25-504; Ord. No. 2443, § I, 4-25-2002)

Sec. 25-505. Variance procedures.

- (a) A property owner requesting a variance from the requirements of this chapter shall submit in writing to the floodplain administrator a written variance request which shall be heard by the floodplain appeals board.

The floodplain appeals board shall hold a public hearing concerning the variance request within 45 days after the written request is received and any additional information requested. Said public hearing may be incorporated into the regular BAMA meeting. The variance request shall contain a detailed explanation of all conditions of the request, and the floodplain appeals board, through the floodplain administrator, may require the submission of such additional information, as it deems necessary.

- (b) The floodplain appeals board shall consider all technical evaluations, relevant factors, and standards specified in other sections of this chapter and also evaluate:
- (1) The danger that materials may be swept onto other lands to the injury of others;
 - (2) The danger to life and property due to flooding or erosion damage;
 - (3) The susceptibility of the proposed facility and its contents to flood damage and the effect of 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 for the proposed use which are not subject to flooding or erosion damage;
 - (7) The compatibility of the proposed use with existing and anticipated development;

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- (8) The relationship of the proposed use to the city's comprehensive plan, master drainage plan, and floodplain management program of that area;
 - (9) The safety of access to the property in times of flood for ordinary and emergency vehicles;
 - (10) The costs to local governments and the dangers associated with conducting search and rescue operations during periods of flooding;
 - (11) The expected heights, velocity, duration, rate of rise and sediment transport of the flood waters and the effects of wave action, if applicable, expected at the site; and
 - (12) The costs of providing governmental services during and after flood conditions, including search and rescue operations, maintenance and repair of public utilities and facilities such as sanitary sewer, gas, electrical, communications, water systems and streets and bridges.
- (c) Upon consideration of all applicable factors of section 25-505(b)(1)–(12) and the purposes of this chapter, the floodplain appeals board may attach such conditions to the granting of variances, as it deems necessary to preserve the purposes of this chapter. The floodplain appeals board shall render its decision within 30 days of the close of the hearing.
 - (d) Any applicant to whom a variance is granted for a building with the lowest floor below the regulatory flood elevation shall be given written notice over the signature of a community official advising that the cost of flood insurance will be commensurate with the increased risk resulting from the lowest floor elevation.
 - (e) The floodplain administrator shall maintain the records of all variance requests including technical information, forms, reports etc. for a period of not less than ten years and report any variances to the Federal Emergency Management Agency upon request.

(Code 1977, § 25-505; Ord. No. 2443, § I, 4-25-2002)

Sec. 25-506. Conditions for variances.

Conditions for variances to this chapter are as follows:

- (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 items in subsections 25-505(b)(1)–(12) have been fully considered. As the lot size increases beyond one-half acre, the technical justification required for issuing the variance increases.
- (2) Variances may be issued for the repair or rehabilitation of historic structures upon determination that:
 - a. The proposed repair or rehabilitation will not preclude the structure's continued designation as a "historic structure";
 - b. The variance is the minimum necessary to preserve the historic character and design of the structure.
- (3) Variances may be issued by a community for new construction and substantial improvements and for further development necessary for the conduct of a functionally dependent use provided that:
 - a. The criteria of subsections 25-506(a), (d), (e), and (f) are met; and
 - b. The structure or other development is protected by methods that minimize flood damages during the regulatory flood and create no additional threat to public safety.
- (4) Variances shall not be issued within any designated floodway if any increase in flood levels during the regulatory flood discharge would result.

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- (5) Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.
 - (6) Variances shall only be issued upon receiving written justification to establish 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 Broken Arrow ordinances or regulations.

(Code 1977, § 25-506; Ord. No. 2443, § I, 4-25-2002)

Sec. 25-507. Inspections.

The floodplain administrator and/or the developer's engineer shall make periodic inspections at appropriate times throughout the period of construction in order to monitor compliance with permit conditions and enable said inspector to certify, if requested, that the development is in compliance with the requirements of the floodplain development permit and/or any variance provisions.

(Code 1977, § 25-507; Ord. No. 2443, § I, 4-25-2002)

Sec. 25-508. Stop work order.

Upon the suspension or revocation of a floodplain development permit by the floodplain administrator, the floodplain administrator shall issue a stop work order on all construction activity on the subject property, which may be directly or indirectly related to site drainage and which is being performed pursuant to any permits, licenses, franchises or contracts issued or approved by the city. Such stop work order may order a work stoppage on all construction activity on buildings or structures and appurtenances thereto, including building, electrical, plumbing, mechanical and street work, storm sewers, sanitary sewers, gas lines, and all utilities including gas, electric, telephone and cable television.

(Code 1977, § 25-508; Ord. No. 2443, § I, 4-25-2002)

Sec. 25-509. Certificate of compliance.

- (a) In the regulatory flood area, as determined by documents enumerated in section 25-304, it shall be unlawful to occupy or to permit the use or occupancy of any building or premises, or both, or part thereof hereafter created, erected, changed, converted or wholly or partly altered or enlarged in its use or structure until a certificate of compliance has been issued by the floodplain administrator stating that the building or land conforms to the requirements of this chapter.
- (b) A certificate of compliance shall be issued by the floodplain administrator upon satisfactory completion of all development in the regulatory flood area.
- (c) Issuance of the certificate shall be based upon the inspections conducted as prescribed in section 25-507, and/or any certified elevations, hydraulic data, floodproofing, anchoring requirements or encroachment analysis which may have been required as a condition of the approved permit.

(Code 1977, § 25-509; Ord. No. 2443, § I, 4-25-2002)

Sec. 25-510. Information to be retained.

The floodplain administrator shall retain, and make available for inspection, copies of the following:

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- (1) Floodplain development permits and certificates of compliance;
 - (2) Variances issued pursuant to section 25-505, variance procedures; and
 - (3) Elevation certificates.

(Code 1977, § 25-510; Ord. No. 2443, § I, 4-25-2002)

Sec. 25-511. Violations/penalties.

Any property owner, builder, or developer, who fails to comply with any requirements of this chapter (including violation of conditions and safeguards established in connection with variances) shall be guilty of a class A offense, unless a different penalty is specified herein. Provided that each lot upon which such a violation occurs shall constitute a separate offense; and each day on which violation occurs or continues shall constitute a separate offense. The imposition of criminal sections shall not prevent Broken Arrow from taking any lawful action as is necessary to prevent, abate or remedy a violation; including any civil action or special proceeding.

(Code 1977, § 25-511; Ord. No. 2443, § I, 4-25-2002; Ord. No. 2522, § I, 3-3-2003)

Secs. 25-512—25-600. Reserved.

ARTICLE VII. STORMWATER AND FLOODPLAIN FEE SCHEDULES

Sec. 25-601. Stormwater drainage system service charge.

A monthly stormwater drainage system service charge for each equivalent service unit assigned to a lot, tract or parcel of real estate as detailed in section 25-102 shall be charged to all customers in an amount as set forth in the Manual of Fees as adopted by the Broken Arrow City Council.

(Code 1977, § 25-601; Ord. No. 2443, § I, 4-25-2002; Ord. No. 3033, § II, 5-5-2009; Ord. No. 3184, § I, 10-4-2011; Ord. No. 3282, § I, 6-16-2014)

Sec. 25-602. Fee-in-lieu of detention rate.

A fee-in-lieu of detention rate is hereby established by the Broken Arrow City Council. The fee shall be in an amount set forth in the Manual of Fees. The rate shall be established per square foot of increased impervious area added to the property as detailed in section 25-207.

(Code 1977, § 25-602; Ord. No. 2443, § I, 4-25-2002; Ord. No. 3184, § II, 10-4-2011; Ord. No. 3282, § I, 6-16-2014)

Sec. 25-603. Stormwater development permit fee.

A stormwater development permit fee is hereby established by the Broken Arrow City Council. The fee shall be in an amount set forth in the Manual of Fees. A fee shall be paid for each stormwater development permit application.

(Code 1977, § 25-603; Ord. No. 2443, § I, 4-25-2002; Ord. No. 3282, § I, 6-16-2014)

Sec. 25-604. Floodplain development permit fee.

A floodplain development permit fee is hereby established by the Broken Arrow City Council. The fee shall be in an amount set forth in the Manual of Fees. A fee shall be paid for each floodplain development permit application.

(Code 1977, § 25-604; Ord. No. 2443, § I, 4-25-2002; Ord. No. 3282, § I, 6-16-2014)