ARTICLE IV. - STORMWATER MANAGEMENT

DIVISION 1. - GENERALLY

Sec. 130-176. - Title.

This article shall be known as the official stormwater management ordinance of the city. (ORD. No. 2014-09-063, \S 2, 9-2-2014)

Sec. 130-177. - Statutory authorization.

The legislature of the State of Texas has in the Flood Control Insurance Act, Texas Water Code, § 16.315, delegated to local governmental units the responsibility to adopt regulations designed to minimize flood losses. Therefore, the city has adopted this article as follows.

(ORD. No. 2014-09-063, § 2, 9-2-2014)

Sec. 130-178. - Findings of fact.

- (a) The drainageways, creeks, and flood hazard areas of the city are subject to periodic inundation that 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 affects the public health, safety, and general welfare.
- (b) These flood losses are created by the cumulative effect of obstructions in floodplains that increase flood heights and velocities and by placing structures and other improvements that are vulnerable to floods in flood hazard areas.
- (c) The development of land causes large quantities of soil to be displaced and transported to downstream locations. This soil displacement can create significant soil erosion and sedimentation problems. Erosion is a dangerous activity in that it contaminates water supplies and water resources. A buildup of sediment degrades water quality, destroys valuable environmental resources, and clogs watercourses and storm drains, which can cause flooding, thereby damaging public and private lands and property. These problems result in a serious threat to the health, safety, and general welfare of the city.
- (d) Creek and floodplain areas in the city are valuable resources to the citizens of the city in that they provide recreational opportunities, improve the aesthetics of the community, convey stormwater runoff, and filter out water quality pollutants. As valuable resources, creeks and floodplains warrant protection.
- (e) The development of land can cause significant changes in the manner, quality, frequency, rate, and volume of stormwater runoff entering a stream or lake. Changes in stormwater

runoff can upset the natural balance of erosion and deposition in lakes and streams resulting in increased flooding and loss of bank stability, thus endangering adjacent public and private improvements and causing impacts to lake and stream characteristics that are generally viewed as negative.

(ORD. No. 2014-09-063, § 2, 9-2-2014)

Sec. 130-179. - Statement of purpose.

This article sets forth the minimum requirements necessary to provide and maintain a safe, efficient, and effective drainage system within the city and to establish the various public and private responsibilities for the provision thereof. Further, it is the purpose of this article to:

- (1) Protect human life, health, and property;
- (2) Minimize the expenditure of public money for building and maintaining flood control and storm drainage projects and cleaning sediment out of storm drains, streets, sidewalks, and watercourses;
- (3) Minimize damage due to drainage and erosion to public facilities and utilities, such as water and gas mains, electric service, telephone and sewer lines, streets, and bridges;
- (4) Help maintain a stable tax base and preserve land values;
- (5) Ensure that potential buyers are notified that property is in an area of special flood hazard;
- (6) Ensure that those who occupy the areas of special flood hazard assume responsibility for their actions;
- (7) Preserve the natural beauty and aesthetics of the community;
- (8) Control and manage stormwater runoff, and the sediment load in that runoff, from points and surfaces within subdivisions;
- (9) Establish a reasonable standard of design for development that prevents potential flood and erosion damage; and
- (10) Reduce the pollutant loading to streams, ponds, and other watercourses.

(ORD. No. 2014-09-063, § 2, 9-2-2014)

Sec. 130-180. - Stormwater management policy.

(a) *Purpose.* Stormwater management policies shall govern the planning, design, construction, operation, and maintenance of storm drainage and erosion control facilities within the city. This stormwater management policy is written for purposes of instruction to city staff to give guidance to draft changes to our current stormwater ordinance. For

- this policy to be enforceable, the ordinance must be amended to reflect this policy and approved by the city council through a public hearing process.
- (b) Design standards. It is the policy of the city to adopt and maintain design standards that protect and provide for the safety and general welfare of the community.
- (c) Drainage and erosion control standards. It is the policy of the city to implement drainage and erosion control standards to minimize flood damage and soil erosion to private and public facilities within the community and to protect water quality.
- (d) Review and permit process. The review and permit process established under division 2 of this article shall be utilized by the city to provide control of development activities related to erosion control and stormwater runoff through natural and constructed facilities.
- (e) Implementation. These stormwater management policies are defined by Stormwater Management Ordinance No. 1773, adopted on February 16, 1988, and amendments thereto. All amendments, additions, or modifications to this article are considered effective upon the date of acceptance, in whole or in part by the city. These stormwater management policies shall apply to any stormwater management system improvement not having plans released for construction on or before the date of city council approval of revised ordinance provisions.
- (f) Stormwater management ordinance and Stormwater Design Manual. The stormwater management ordinance and Stormwater Design Manual have been adopted by official action of the City of McKinney City Council. The stormwater management ordinance and Stormwater Design Manual, as they may be amended from time to time, are part of the official stormwater management plan for streams, channels, NRCS dams and lakes, and pipe drainage systems to the limits shown in the Stormwater Design Manual. Deviations will not be permitted unless the following criteria are met:
 - (1) It can be clearly shown by approved procedures that the deviation will not adversely affect conditions either upstream or downstream of the point of deviation;
 - (2) The owners directly affected by the deviation are in agreement; and
 - (3) The deviation is not in conflict with any other plans adopted by the city.
 - Request for deviation shall be approved by the director of engineering.
- (g) Relocation and reclamation. To implement stormwater control measures in existing areas of private ownership, the city may consider the acquisition of private land or the relocation and reclamation of existing developed areas.

Sec. 130-181. - Scope of authority.

Except as exempted by section 130-412, any person, firm, public utility, corporation, or business proposing to develop land or improve property within the jurisdiction of the city is subject to the provisions of this article. This article shall also apply to individual building structures, subdivisions, excavation and fill operations, and similar activities.

(ORD. No. 2014-09-063, § 2, 9-2-2014)

Sec. 130-182. - Lands to which this article applies.

This article shall apply to all areas of land within the incorporated limits and extraterritorial jurisdiction of the city. Certain provisions of this article apply only to special flood hazard areas within the jurisdiction of the city, while other provisions exempt certain other tracts. These limited areas of application are explained in section 130-381 and section 130-412. The erosion control provisions of this article do not apply to land under active agricultural use. As soon as construction or modification to the lands under active agricultural use is proposed so that the use of land will change from agriculture to any other use, then the provisions of this article shall be applicable to the previously-exempted land.

(ORD. No. 2014-09-063, § 2, 9-2-2014)

Sec. 130-183. - Definitions.

The following words, terms, and phrases, when used in this article, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

- (1) Active agricultural use means the raising of crops for harvest that requires the cultivation of soil using appropriate soil conservation procedures.
- (2) Adverse impact means any negative impact including, but not limited to, any of the following impacts associated with the 100-year storm event:
 - a. Any increase in peak discharge beyond the capacity of the affected system, including consideration for appropriate freeboard;
 - b. Any increase in the flood level when rounded to the nearest 0.1 feet; or
 - c. Any increase in the floodplain boundary with respect to subparagraphs a. and b. of this paragraph 2.
- (3) Appeal means a request for review or interpretation of any provision of this article or a request for a variance.
- (4) Applicant means any firm, entity, partnership, company, public utility company, or individual that submits the appropriate application materials to clear, grub, fill, excavate, grade, or otherwise remove the vegetative cover of land, or that submits

- the appropriate application materials to either subdivide land and install the appropriate infrastructure or renovate existing structures.
- (5) Area of shallow flooding means a designated "AO" or "AH" zone on the flood insurance rate map. In such an area, the base flood depths range from one to three feet, a clearly defined channel does not exist, and the path of flooding is unpredictable and indeterminate.
- (6) Area of special flood hazard means the land in the floodplain within a community subject to a one percent or greater chance of flooding in any given year.
- (7) Base flood means the flood having a one percent chance of being equaled or exceeded in any given year, determined based upon FEMA's guidelines and as shown in the current effective flood insurance study. This 100-year mean recurrence interval storm event is based on existing watershed conditions (differs from "design flood").
- (8) Base flood elevation means the elevation shown on the Flood Insurance Rate Map (FIRM) and found in the accompanying Flood Insurance Study (FIS) for Zones A, AE, AH, A1-A30, AR, V1-V30, or V that indicates the water surface elevation resulting from the flood that has a one percent chance of equaling or exceeding that level in any given year (also called the "base flood").
- (9) Builder means a person, partnership, or corporation engaged in clearing, grubbing, filling, excavating, grading, constructing a pad, installing service utility lines, and/or constructing or placing a building or other structure on a lot or other type of tract of land that is owned by the person, partnership, or corporation, and that will not be further subdivided into other lots.
- (10) Capacity means the maximum amount of discharge that can be passed safely in a drainage conveyance system, including consideration for appropriate freeboard.
- (11) Channel means a natural or artificial stream that conveys water. Channels are often further classified by their size and purpose. For example, there are primary and secondary channels based on size, but diversions, waterways, and chutes are also channels.
- (12) Channel improvement means the improvement of the flow characteristics of a channel by clearing, excavating, realigning, lining, or other means in order to increase or maintain its capacity. The term may also be used to mean "channel stabilization."
- (13) Channel stabilization means erosion prevention and stabilization of a channel using various rigid and flexible linings, jetties, grade controls, revetments, vegetation, and other measures.

- (14) Check dam means a small dam constructed in a gulley or other small watercourse to decrease the stream flow velocity, minimize channel scour, and promote deposition of sediment.
- (15) City-maintained land means any land in actual ownership of the city ("fee simple ownership"); it does not include any type of easements where all or any portion of the property rights remain in private ownership.
- (16) *Conduit* means any closed device for conveying flowing water.
- (17) Cover, vegetative, means all plants of all sizes and species found on an area, irrespective of whether they have forage or other value, but especially used to refer to vegetation producing a mat on or immediately above the soil surface. Temporary vegetative cover refers to the use of annual plants for the cover, while permanent vegetative cover refers to the use of perennial plants.
- (18) *Crest* means the top of a dam, dike, spillway, or weir, *frequently* restricted to the overflow portion.
- (19) *Dam* means any barrier or barriers, with any appurtenant structures, constructed for the purpose of either permanently or temporarily impounding water, or for the purpose of diverting water.
- (20) Design flood means, when used in the context of floods, floodplains, or flood hazards, that flood having a one percent chance of being equaled or exceeded in any given year, based upon fully developed watershed conditions (differs from "base flood").
- (21) *Detention basin* means a dry basin or depression constructed for the purpose of temporarily storing stormwater runoff and discharging all of that water over time at a rate reduced from the rate that would have otherwise occurred, but over a longer time period.
- (22) Developer means a person, partnership, or corporation that owns a tract of land and is engaged in clearing, grubbing, filling, mining, excavating, grading, installing streets and utilities to be dedicated to or accepted by the city, and/or otherwise preparing that tract of land for the eventual article of the tract into one or more lots on which buildings or other structures will be constructed or placed.
- (23) *Development* means any manmade change to improved or unimproved real estate, including, but not limited to, adding buildings or other structures, mining, dredging, filling, grading, paving, excavation, drilling operations, grading, clearing, or removing the vegetative cover.
- (24) Discharge (hydraulics) means:
 - a. The rate of flow; specifically, fluid flow; and

- b. A volume of fluid passing a point per unit time, commonly expressed as cubic feet per second.
- (25) *Disturbance* means any operation or activity, such as clearing, grubbing, filling, excavating, mining, cutting, grading, or removing channel linings, which results in the removal or destruction of the protective cover of soil, including vegetative cover, channel linings, retaining walls, and slope protection.
- (26) *Disturbed areas* means any area or tract of land in which a disturbance is occurring or has occurred but that has not been stabilized.
- (27) Drainage area means the land area from which water drains to a given point.
- (28) *Elevated building* means a building elevated by means of fill, so that the lowest finished floor of the building is at least two feet above the water surface elevation of the base flood or design flood, whichever is higher.
- (29) *Emergency spillway* means a spillway built to carry runoff in excess of that carried by the principal spillway. Sometimes referred to as "auxiliary spillway."
- (30) Equal conveyance means the principle of reducing stream conveyance for a proposed alteration with a corresponding reduction in conveyance to the opposite bank of the stream. The right of equal conveyance applies to all owners and uses and may be relinquished only by written agreement.
- (31) Erosion means the wearing away of land by action of wind and water.
- (32) Existing construction means, for the purposes of determining rates, any structure for which the start of construction commenced before January 1, 1975. The term "existing construction" may also be referred to as "existing structures."
- (33) Existing manufactured home park or subdivision means a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including, at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed before the effective date of the floodplain management regulations adopted by a community.
- (34) Expansion to an existing manufactured home park or subdivision means the preparation of additional sites by the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads).
- (35) Federal Emergency Management Agency (FEMA) means the federal agency that administers the National Flood Insurance Program.

- (36) *Flood* or *flooding* means a general and temporary condition of partial or complete inundation of normally dry land areas from:
 - a. The overflow of inland waters; and/or
 - b. The unusual and rapid accumulation or runoff of surface waters from any source.
- (37) Flood insurance rate map (FIRM) means the official map on which the Federal Emergency Management Agency has delineated both the areas of special flood hazard and the risk premium zones applicable to the community.
- (38) Flood insurance study means the official report in which the Federal Emergency Management Agency has provided flood profiles, as well as the flood boundary/floodway map and the water surface elevation of the base flood.
- (39) Flood protection system means those physical structural 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, levees, channel improvements, or dikes. These specialized flood-modifying works are those constructed in conformance with sound engineering standards.
- (40) Floodplain means and includes all areas inundated by the fully developed 100-year flood and special flood hazard areas shown in the flood insurance study and on the FEMA flood insurance rate maps for the county, dated June 2, 2009, and subsequent amendments thereto.
- (41) Flood-prone area means any land area susceptible to being inundated by water from any source (see definition of "Flood" or "Flooding").
- (42) Floodproofing means any combination of structural and nonstructural additions, changes, or adjustments to structures, which reduce or eliminate the risk of flood damage to real estate or improved real property, water, and sanitation facilities, or structures together with their contents.
- (43) Floodway. See the definition for "Regulatory floodway."
- (44) *Flume* means any open conduit on a prepared grade, trestle, or bridge through which stormwater is captured and directed.
- (45) *Freeboard* means the distance between the design flood elevation and the top of an open channel, dam, levee, or detention basin to allow for wave action, floating debris, or any other condition or emergency without overflowing the structure.
- (46) Fully developed flow means the flow from a fully urbanized drainage area.

- (47) *Grading* means any stripping, cutting, filling, stockpiling, or combination thereof that modifies the existing land surface contour.
- (48) *Grass* means any member of the botanical family Gramineae, herbaceous plants with bladelike leaves arranged in two ranks on a round to flattened stem. Common examples are fescue, Bermuda grass, and Bahia grass. The term "grass" is sometimes used to indicate a combination of grass and legumes grown for forage or turf purposes.
- (49) *Highest adjacent grade* means the highest natural elevation of the ground surface prior to construction next to the proposed walls of a structure.
- (50) Historic structure means any structure that is:
 - a. Listed individually in the National Register of Historic Places (a listing maintained by the department of interior) or preliminarily determined by the secretary of the interior (the "secretary") as meeting the requirements for individual listing on the National Register;
 - b. Certified or preliminarily determined by the secretary as contributing to the historical significance of a registered historic district or a district preliminarily determined by the secretary to qualify as a registered historic district;
 - c. Individually listed on a state inventory of historic places in states with historic preservation programs that have been approved by the secretary; or
 - d. Individually listed on a local inventory of historic places in communities with historic preservation programs that have been certified either:
 - By an approved state program as determined by the secretary; or
 - 2. Directly by the secretary in states without approved programs.

(51) *Illicit connection* means:

- a. Any drain or conveyance, whether on the surface or subsurface, that allows an unlawful discharge to enter the storm drain system. Illicit connections include, but are not limited to, conveyances that allow any non-stormwater discharge including sewage, process wastewater, and wash water to enter the storm drain system and any connections to the storm drain 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
- b. Any drain or conveyance connected from a commercial or industrial land use to the storm drain system that has not been documented in plans, maps, or equivalent records and approved by an authorized enforcement agency.

(52) *Inlet (hydraulics)* means:

- a. A surface connection to a closed drain;
- b. A structure at the diversion end of a conduit; or
- c. The upstream end of any structure through which water may flow.
- (53) Levee means a manmade 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.
- (54) Levee system means a flood protection system, which consists of a levee or levees and associated structures, such as closure and drainage devices, which are constructed and operated in accordance with sound engineering practices.
- (55) Lowest floor means the lowest floor of the lowest enclosed area (including basement). An unfinished, or flood-resistant enclosure, usable solely for the parking of vehicles, building access, or storage in an area other than a basement area is not considered a building's lowest floor, provided that such enclosure is not built so as to render the structure in violation of the applicable non-elevation design requirements of FEMA 60.3.
- (56) Manufactured home means 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 insurance purposes, the term "manufactured home" does not include park trailers, travel trailers, and other similar vehicles.
- (57) *Manufactured home park or subdivision* means a parcel or contiguous parcels of land divided into two or more manufactured home lots for rent or sale.
- (58) *Mean sea level* means, for the purposes of the National Flood Insurance Program, the North American Vertical Datum (NAVD) of 1988 or other datum to which base flood elevations shown on a community's flood insurance rate map are referenced.
- (59) MS4 or Municipal Separate Storm Sewer System means a system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains) that discharges to waters of the United States.
- (60) Natural drainage means the dispersal of surface waters through ground absorption and by drainage channels formed by the existing surface topography which exists at the time of adoption of the ordinance from which this article is derived or formed by any manmade change in the surface topography.

- (61) New construction for all purposes except the National Flood Insurance Program portion of this article means structures for which the start of construction commenced on or after February 16, 1988. For the purposes of the National Flood Insurance Program portion of this article, "new construction" means structures for which the start of construction commenced on or after December 31, 1974.
- (62) New manufactured home park or subdivision means a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including, at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed on or after the effective date of the floodplain management regulations adopted by the city.
- (63) Open channel means a channel in which water flows with a free surface.
- (64) Other municipal ordinances means ordinances such as, but not limited to, zoning, subdivision, and construction specifications.
- (65) *Outfall* means the point where water flows from a stream, river, lake, or artificial drain.
- (66) *Peak discharge* means the maximum instantaneous flow from a given storm condition at a specific location.
- (67) Permanent (post-construction) erosion controls means the stabilization of erosive or sediment-producing areas by the use of means or techniques that will provide protection against erosion losses for an indefinite time period. Such controls or techniques may include, but shall not be limited to, permanent seeding, sod, storm drain channels, channel linings, storm drain pipes, storm sewer inlet/outlet structures, storm sewer outlet velocity control structures, and stormwater detention or retention structures.
- (68) *Permanent ground cover* means uniform (that is, evenly distributed, without large bare areas) perennial vegetative cover with a density of at least 70 percent of the native background vegetative cover.
- (69) Positive overflow means a route that stormwater will follow in the event the capacity of the primary system is exceeded. A special positive overflow easement must exist where this flow is intended to go on, upon, over, and/or across private property to reach an appropriate drainage facility. The route must provide capacity within a dedicated drainage, positive overflow, or floodplain easement such that the water depth does not cause injury or damage to property or vehicles and the surface of the easement cannot be altered or blocked.

- (70) *Principal spillway* means a spillway constructed of permanent material and designed to regulate the normal water level, provide flood protection, and reduce the frequency of operation of the emergency (auxiliary) spillway.
- (71) *Probable maximum flood* means the upper limit of a flood likely to occur as determined by the U.S. Army Corps of Engineers' criteria.
- (72) Public nuisance (erosion or sediment) means a situation in which erosion of, or sediment from, one location is causing a bothersome or unsightly condition on another property owned by a different individual or entity or a situation where the movement or loss of sediment has, or is expected to, threaten public or private property. A bothersome or unsightly condition or burden includes silt, mud, or similar debris originating from one property but being deposited onto a second offsite property in which that off-site owner may have to remove or clean up the deposit due to actual or potential liability, statutory, aesthetic, drainage, or property damage concerns. Also, erosion or deposition caused by the actions or inaction of an upstream or downstream property owner, which threatens public or private property, is a nuisance. The adversely affected off-site property owner could be a private citizen, corporation, government, or other entity.
- (73) Recreational vehicle means a vehicle that is:
 - a. Built on a single chassis;
 - b. 400 square feet in area or less when measured at the largest horizontal projection;
 - c. Designed to be self-propelled or permanently towable by a light duty truck; and
 - d. Designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or seasonal use.
- (74) Regulatory floodway means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood, as calculated by the Federal Emergency Management Agency, without cumulatively increasing the water surface elevation more than a designated height. This floodway is used by FEMA to determine compliance with its regulations.
- (75) Retention basins means a pond or other water body that has been designed to have both a conservation pool for holding some water indefinitely and a flood storage pool for storing stormwater runoff on a temporary basis for the purpose of reducing the peak discharge from the basin.
- (76) Runoff means that portion of the excess precipitation that makes its way toward stream channels or lakes as surface or subsurface flow. When the term "runoff' is used alone, surface runoff usually is implied.

- (77) Sediment means solid soil material, both mineral and organic, that is being moved or has been moved from its original site by wind, gravity, flowing water, or ice. Also sometimes referred to as "silt" or "sand."
- (78) Significant rise means an increase, when rounded to the nearest 0.1 feet, in the design flood water surface elevation. When dealing with encroachments within the floodway, significant rise means an increase, when rounded to the nearest 0.01 feet, in the base flood elevation.
- (79) *Site plan* means a plan meeting the requirements of the subdivision regulations of the city that provides a layout of a proposed project.
- (80) Soil means the unconsolidated mineral and organic material on the immediate surface of the earth that serves as a natural medium for the growth of plants.
- (81) Special Flood Hazard Area ("SFHA") means the land in the floodplain within a community that is subject to a one percent, or greater, chance of flooding in any given year. The area may be designated as Zone A on the Flood Hazard Boundary Map ("FHBM"). After detailed ratemaking has been completed in preparation for publication of the FIRM, Zone A is usually refined into Zones A, AO, AH, A1-30, AE, A99, AR, AR/A1-30, AR/AE, AR/AO, AR/AH, AR/A, VO or V1-30, VE, or V. The SFHA is also called the base floodplain, 100-year floodplain, or one percent annual chance floodplain.
- (82) *Stabilized* means to be protected from possible erosion losses, usually by mechanical means or the use of vegetative cover.
- (83) Start of construction means, for a structure, the date the building permit was issued, provided the actual start of construction, repair, reconstruction, placement, or other improvement was within 180 days of the permit date. The term "start of construction" includes substantial improvement. The actual start means either the first placement of permanent construction of a structure on a site, such as the pouring of a slab or footings, the installation of piles, the construction of columns or any work beyond the stage of excavation, or the placement of a manufactured home on a foundation. Permanent construction of a structure does not include land preparation, such as clearing, grading, and filling; nor does it include the installation of streets and/or walkways; nor does it include excavation for a basement, footings, piers, or foundations or the erection of temporary forms; nor does it include 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.
- (84) Storm frequency means an expression or measure of how often a hydrologic event of given size or magnitude should, on an average, be equaled or exceeded.
- (85) Structure means a walled and roofed building, a manufactured home, a substation, or a gas or liquid storage tank that is principally above ground. When used in the

- context of stormwater, the term means a drainage improvement, such as a dam, levee, bridge, culvert, headwall, flume, etc.
- (86) Substantial damage means 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 damage occurred.
- (87) Substantial improvement means
 - a. Any combination of repairs, reconstruction, or improvements of a structure, the cumulative cost of which equals or exceeds 50 percent of the initial market value of the structure either:
 - 1. Before the first improvement or repair is started; or
 - 2. If the structure has been damaged and is being restored, before the damage occurred.
 - b. For the purposes of this definition, substantial improvement is considered to occur when the first alteration of any wall, ceiling, floor, or other structural part of the building commences, whether or not that alteration affects the external dimensions of the structure. Incremental improvements over a period of time, the cumulative cost of which equals or exceeds 50 percent of the market value at the time of the first improvement, shall be considered a substantial improvement. The term does not, however, include either:
 - 1. Any project for the improvement of a structure to comply with existing state or local health, sanitary, or safety code specifications which are solely necessary to ensure safe living conditions; or
 - 2. Any alteration of a structure listed on the National Register of Historic Places or a state inventory of historic places.
- (88) *Temporary erosion control* means the stabilization of erosive or sediment-producing areas for a specific time period, usually during a construction job and until stabilization is restored regardless of whether by mechanical or vegetative means.
- (89) Ten percent rule means the basis for establishing the downstream limit of the zone of influence that a proposed development has on the downstream drainage system, as discussed further in the Stormwater Design Manual. For additional information, refer to the integrated stormwater management (iSWM) manual published by the North Central Texas Council of Governments (NCTCOG).
- (90) Texas Commission on Environmental Quality (TCEQ) means the state coordinating agency for environmental issues.
- (91) Texas Water Development Board (TWDB) means the state coordinating agency for the National Flood Insurance Program.

- (92) *Use* means any purpose for which a building or other structure or a tract of land may be designed, arranged, intended, maintained, or occupied; or any activity, occupation, business, or operation carried on, or intended to be carried on, in a building or other structure or on a tract of land.
- (93) Use permit means the permit required before any use may be commenced.
- (94) *Variance* means a grant of relief to a person from the requirements of this article when specific enforcement would result in unnecessary hardship. A variance, therefore, permits construction or development in a manner otherwise prohibited by this article.
- (95) *Violation* means the failure of a structure or other development to be fully compliant with this article. A structure or other development without the elevation certificate, other certifications, or other evidence, as required by the city engineer, is presumed to be in violation until such time as that documentation is provided.
- (96) Water surface elevation means the height, in relation to the North American Vertical Datum (NAVD) of 1988 (or other datum, where specified), of floods of various magnitudes and frequencies in the floodplains of riverine areas and behind dams.
- (97) Watershed means the area drained by a stream or drainage system.
- (98) Zone of influence means the area downstream of a proposed development where the discharge of the development can have a significant impact upon the receiving stream or storm drainage system, as discussed further in the Stormwater Design Manual. Said another way, it is the area where the effects of a detention pond can be felt. For additional information, refer to the integrated stormwater management (iSWM) manual published by the North Central Texas Council of Governments (NCTCOG).

Sec. 130-184. - Basis for establishing the areas of special flood hazard.

The areas of special flood hazard, identified by the Federal Emergency Management Agency in a scientific and engineering report entitled "Flood Insurance Study, Collin County, Texas and Incorporated Areas," dated June 2, 2009, with accompanying flood insurance rate maps dated June 2, 2009, and any revisions thereto, are hereby adopted by reference and declared to be a part of this article. The flood insurance study is on file in the office of the director of engineering.

(ORD. No. 2014-09-063, § 2, 9-2-2014)

Sec. 130-185. - Abrogation and greater restrictions.

This article is not intended to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where this article and another ordinance, easement,

covenant, or deed restriction conflict or overlap, whichever imposes the more stringent restrictions shall prevail.

(ORD. No. 2014-09-063, § 2, 9-2-2014)

Sec. 130-186. - Interpretation.

In the interpretation and application of this article, all provisions shall be:

- (1) Considered as minimum requirements;
- (2) Liberally construed in favor of the governing body; and
- (3) Deemed neither to limit nor repeal any other powers granted under state statutes.

(ORD. No. 2014-09-063, § 2, 9-2-2014)

Sec. 130-187. - Warning and disclaimer of liability.

The degrees of flood, storm drainage, and erosion protection required by this article are considered reasonable for regulatory purposes and are based on scientific and engineering considerations. Larger floods can and will occur on rare occasions. Flood heights may be increased by manmade or natural causes. This article does not imply that land outside the areas of flood hazard or uses permitted within such areas will be free from flooding or flood damages. In addition, this article does not imply that erosion controls will survive inundation by runoff from storms greater than the design flood for erosion controls. This article shall not create liability on the part of the city, any officer or employee thereof, or FEMA for any flood damages that result from reliance on this article or any administrative decision lawfully made thereunder.

(ORD. No. 2014-09-063, § 2, 9-2-2014)

Sec. 130-188. - Regulatory permits.

It shall be the developer's responsibility to secure all regulatory permits associated with development, construction, and drainage improvements. These permits include but are not limited to U.S. Corps of Engineer 404 permits, TCEQ permits, and U.S. Environmental Protection Agency discharge permits.

(ORD. No. 2014-09-063, § 2, 9-2-2014)

Sec. 130-189. - Maintenance.

Subsurface public drainage improvements dedicated in rights-of-way, subsurface drainage easements, or by fee simple dedication to the public, and accepted by the city shall be maintained and operated by the city as required to maintain flow in the system.

(ORD. No. 2014-09-063, § 2, 9-2-2014)

Sec. 130-190. - Prohibited discharges.

No person may introduce into any lake, pond, stream, or municipal separate storm sewer system (MS4) within the city:

- (1) Any pollutants or materials other than stormwater that may have an adverse effect on the environment; may endanger life, health, or property; or constitute a public nuisance;
- (2) Any discharges that would cause or has the reasonable potential to cause or contribute to a violation of water quality standards or that would fail to protect and maintain existing designated uses;
- (3) Substances specifically prohibited from being discharged into the stormwater system are as follows:
 - a. Polluted wastewater or other liquid wastes containing concrete, building materials, oil, chemicals, or other liquid industrial wastes;
 - b. Any liquids, solids, or gases, including, but not limited to, gasoline, kerosene, naphtha, benzene, toluene, xylene, ethers, alcohols, ketones, aldehydes, peroxides, chlorates, perchlorates, bromates, carbides, hydrides, sulfides, or any other substances that are a fire or other hazard to the system, which by reason of their nature or quantity are, or may be, sufficient either alone or by interaction with other substances to cause fires, explosions, or be injurious in any other way to the facilities or operation of the stormwater system;
 - Any non-stormwater, groundwater, or process water that is mixed or contaminated with gasoline or oil in concentrations exceeding a total BTEX limit of 0.5 ppm with a maximum allowable benzene concentration of 0.05 ppm or TPH limit of 15 ppm, tested on a weekly basis;
 - Any non-stormwater having a pH less than 6.5 or greater than 9.0, or any nonstormwater capable of having any other corrosive property capable of causing damage or hazard to the stormwater system;
 - e. Any free or emulsified fats, waxes, greases, or oils;
 - f. Petroleum oil, non-biodegradable cutting oil, products of mineral oil origin, transmission fluid, hydraulic fluid, brake fluid, power steering fluid, antifreeze, or other household hazardous wastes;
 - g. Solid or liquid substances that may cause obstruction to the flow in storm sewers or other interference with the proper operation of the stormwater system such as, but not limited to: ashes, cinders, sand, mud, straw, shavings, metal, glass, rags, feathers, tar, plastics, wood, whole blood, paunch manure,

- hair and fleshings, entrails, lime slurry, lime residues, slops, chemical residues, paint residues, bulk solids, waste paper, or floatables;
- h. Wastewater or industrial wastes generated or produced outside the city unless approval in writing from the director of engineering has been given to the person discharging the wastes in advance of such discharge;
- Any noxious or malodorous liquids, gases, or solids, which either singly or by interaction with other substances are sufficient to prevent entry into the stormwater system for maintenance and repair;
- Any trucked or hauled pollutants, except at discharge points specifically designated by the city, and subject to any required permits;
- k. Trash, junk, refuse, garbage, grass clippings, tree limbs, tree branches, leaves, brush, or firewood;
- Any non-stormwater containing, but not limited to, detergents, surfactants, phosphates or cleaning residues generated from commercial car washing or cleaning services;
- m. Swimming pool or spa water containing detectable levels of chlorine, acid, or filtering agent; or
- n. Discharges in violation of a TPDES industrial or general construction stormwater permit.
- (4) Any person subject to an industrial or general construction TPDES stormwater permit shall comply with all provisions of such permit. Upon inspection of the facility or site during any enforcement proceeding or action, or for any other reasonable cause, proof of compliance with said permit may be required in a form acceptable to the director of engineering.

Sec. 130-191. - Allowable discharges.

Discharge from the following sources shall not be considered a source of pollutants to the storm sewer system, the waters of the state, or waters of the United States when properly managed to ensure that no potential pollutants are present, unless determined to cause a violation of the provisions of the Clean Water Act or this article:

- (1) Water line flushing, excluding discharges of hyper-chlorinated water, unless the water is first de-chlorinated and discharges are not expected to adversely affect aquatic life;
- (2) Runoff or return flow from landscape irrigation, lawn irrigation, and other irrigation utilizing potable water, groundwater, or surface water sources;

- (3) Discharges from potable water sources that do not violate Texas Surface Water Quality Standards;
- (4) Diverted stream flows;
- (5) Rising ground waters and springs;
- (6) Uncontaminated ground water infiltration;
- (7) Uncontaminated pumped ground water;
- (8) Foundation and footing drains;
- (9) Air conditioning condensation;
- (10) Water from crawl space pumps;
- (11) Individual residential vehicle washing;
- (12) Flows from wetlands and riparian habitats;
- (13) De-chlorinated swimming pool discharges that do not violate Texas Surface Water Quality Standards;
- (14) Street wash water excluding street sweeper waste water;
- (15) Discharges or flows from emergency firefighting activities (firefighting activities do not include washing of trucks, run-off water from training activities, test water from fire suppression systems, and similar activities);
- (16) Other allowable non-stormwater discharges listed in 40 CFR § 122.26(d)(2)(iv)(B)(1);
- (17) Non-stormwater discharges that are specifically listed in the TPDES Multi Sector General Permit (MSGP) TXR050000 or the TPDES Construction General Permit (CGP) TXR150000;
- (18) Discharges that are authorized by a TPDES or NPDES permit or that are not required to be permitted;
- (19) Other similar occasional incidental non-stormwater discharges such as spray park water, unless the TCEQ develops permits or regulations addressing these discharges; and
- (20) Any other non-stormwater discharges that are specifically exempted in writing by the city and which are not a source of pollutants to the municipal separate storm sewer system or the waters of the state.

Sec. 130-192. - Illicit connections.

The construction, use, maintenance, or continued existence of illicit connections to the storm sewer system is prohibited. This prohibition expressly includes, without limitation, any

illicit connections made in the past, regardless of whether the said connection was permissible under law or practices applicable or prevailing at the time of connection.

(ORD. No. 2014-09-063, § 2, 9-2-2014)

Sec. 130-193. - Penalties.

Any person, firm, or corporation violating any of the provisions of this article shall be deemed guilty of a misdemeanor and, upon conviction, shall be punished as provided in section 1-18. Each and every day such offense continues, or is continued, shall constitute a new and separate offense. In addition, the violator shall pay all costs and expenses involved in the case. Nothing herein contained shall prevent the city from taking such other lawful action as is necessary to prevent or remedy any violation. Section 130-266(3) states an additional penalty against persons proceeding with construction without obtaining the necessary permits from the city. Section 130-417 states the possible additional penalty for any private property owner, developer, or builder who is in violation of the erosion control guidelines.

(ORD. No. 2014-09-063, § 2, 9-2-2014)

Secs. 130-194—130-263. - Reserved.

DIVISION 2. - ADMINISTRATION

Sec. 130-264. - Duties of city officials.

The director of engineering or designee is hereby appointed to administer and implement this article and other appropriate sections of 44 CFR (Emergency Management and Assistance National Flood Insurance Program Regulations) pertaining to floodplain management. The duties of the director of engineering shall include, but not be limited to:

- (1) Reviewing and approving or disapproving all development permits to determine that the permit requirements of this article have been met and that all necessary, local, state, and federal permits have been obtained;
- (2) Submitting and enacting the components of the municipal stormwater management program as required by TCEQ;
- (3) Obtaining and recording the actual elevation in relation to mean sea level of the finished pad for all new residential or commercial building sites;
- (4) Maintaining for public inspection all records pertaining to the provisions of this article, including floodproofing certifications;
- (5) Notifying adjacent communities and the state coordinating agency, the Texas Water Development Board (TWDB), and also the Texas Commission on Environmental Quality (TCEQ) prior to any alteration or relocation of a watercourse and submitting evidence of such notification to FEMA;
- (6) Requiring that maintenance is provided within the altered or relocated portion of said watercourse so that the flood-carrying capacity is not diminished;
- (7) Making interpretations, where needed, as to the exact location of the boundaries of the areas of special flood hazard, for example, where there appears to be a conflict between a mapped boundary and actual field conditions;
- (8) Obtaining, reviewing, and reasonably utilizing any base flood elevation data available from a federal, state, or other source in order to administer this article when base flood elevation data has not been provided;
- (9) Inspecting sites to determine compliance with the erosion control guidelines; and
- (10) Reviewing and allowing any appropriate modifications to the residential lot drainage requirements.

(ORD. No. 2014-09-063, § 2, 9-2-2014)

Sec. 130-265. - Responsibilities of owners.

- (a) The owner or developer of a property shall be responsible for all storm drainage flowing through or abutting such property. Construction of stormwater detention facilities only relieves the owner or developer of any responsibility for off-site drainage improvements with the exception of the NRCS lakes provisions of this article and does not relieve an owner or developer of the responsibility for improvements on-site or adjacent to a proposed development. This responsibility also includes drainage directed to that property by ultimate development as well as the drainage naturally flowing through the property by reason of topography.
- (b) The owner, builder, or developer of a property shall be responsible for any silt or soils transported from the property by drainage.
- (c) Where the improvement or construction of a storm drainage facility is required along a property line common to two or more owners, the owner hereafter proposing the development of the property shall be responsible for obtaining the necessary permits, making the required improvements at the time of development, and acquiring or dedicating the necessary rights-of-way or easements to accommodate the improvements. The initial owner or developer may recover a portion of the cost from the adjacent owner or developer in accordance with a predetermined facilities agreement.
- (d) Where an applicant proposes development or use of only a portion of the property, provisions for storm drainage and erosion control shall only be required in that portion of the property proposed for immediate development, except as construction or improvements of a drainage facility or erosion controls outside that designated portion of the property are deemed essential to the development of that designated portion or if the remainder parcel is not large enough to support the required improvements financially.
- (e) Floodplain and surface drainage easements shall be maintained by the property owner; save and except subsurface structure maintenance as provided by section 130-189; or where maintenance is otherwise expressly assumed by the city. Regardless of maintenance responsibility, adequate maintenance easements and physical access alongside and to and from the easements so conveyed shall be provided.
- (f) The owner and developer shall use their best efforts to protect trees and vegetation during and after all development activities. To the extent practicable, trees removed along natural channels by stormwater improvements shall be replaced in accordance with the city's tree preservation ordinance.

(ORD. No. 2014-09-063, § 2, 9-2-2014)

Sec. 130-266. - Plat approval; development permit.

The city has several approval processes and permits related to storm drainage and floodplains. These processes and permits are listed below and explained in detail in the following subsections.

- (1) Platting process. In accordance with the city's subdivision regulations, a construction plan and profile sheets for all public improvements, including drainage facilities, shall be submitted with the record plat. Approval of the record plat is contingent upon city's approval of the construction plans. The required information to be shown on the construction plans for drainage facilities can be found in the Stormwater Design Manual. Platting of public drainage systems, drainage channels, and floodplains require:
 - a. Dedication of drainage easements. Public drainage systems designed to convey the design storm runoff shall be contained within a drainage easement or a floodplain easement or property dedicated to the public for that purpose. Drainage easements shall be established such that no parcel will be landlocked as a result of the platting action.
 - b. Platting of property along drainage channels. Future platting along streams and drainage channels within the 100-year floodplain, based on fully developed watershed conditions, will require dedication of a floodplain easement.
 - The developer platting the property shall enter into a hold-harmless agreement with the city on behalf of the current and future land owners, or shall include language on the record plat, approved by the city, that relieves the city of any responsibility for future channel or bank stabilization or tree protection measures along the channel. The record plat language shall identify and obligate the responsible party(s) to address any sediment, erosion, or flooding related issues emanating from the reach of the creek in question that is adversely affecting private property. The agreement shall be filed for record with Collin County and shall be a covenant running with the land clearly obligating current and/or future owners to the conditions of the agreement.
 - c. Platting of detention/retention facilities. Detention and retention facilities and all associated appurtenances shall be contained within a drainage easement. The record plat shall include language that obligates the property owner to perform all maintenance of stormwater detention and retention facilities consistent with section 130-358(c) and shall hold the city harmless from and against any damages to persons, to the owner's lot, or any other affected lot arising from such maintenance or lack thereof.

Erosion hazard setbacks. Erosion hazard setbacks will be utilized to provide stream bank protection for all streams within the city. In all cases, a buffer shall be created and protected by easement for the determined setbacks. The setback limits may be altered through mechanical stream bank protection if such mechanical stabilization is approved by the director of engineering and record platted consistent with the protected bank area. Where erosion hazard setback easements are established, no building, fence, wall, deck, swimming pool, or other structure shall be located, constructed, or maintained within the area encompassing the setback. The exception to this restriction shall be any hike and bike trail dedicated to the city which may be constructed within the outer ten feet of the determined erosion hazard setback easement or as determined appropriate by the director of engineering. The setback requirement for each stream or channel shall be determined as described in the Stormwater Design Manual and shall be shown on the record plat. The channel and the area adjacent to the channel shall be platted as a common area lot to be owned and maintained by the applicable homeowners' association. This common area lot shall encompass all of the erosion hazard setback easement or 50 feet beyond each side of the channel as measured from the top of bank, whichever area is larger. Commercial developments are exempt from platting the erosion hazard setback easement as a dedicated common area.

- (2) Development permit (floodprone areas). All developers, owners, or builders shall submit a floodplain application and obtain a development permit before beginning any projects in floodplain areas, such as constructing new buildings and infrastructure, filling land, altering waterways, substantially improving existing structures located in flood hazard areas or channelizing, impounding, realigning, deepening or other altering of a natural drainageway. Application forms can be obtained from the director of engineering. The director of engineering uses the application, along with duplicate copies of the accompanying engineering or architectural plans, to identify those construction or renovation projects that would occur in a special flood hazard area. The Stormwater Design Manual identifies the information that must be submitted to the director of engineering as part of the permit application. Construction or renovation projects cannot begin until the city issues the development permit, and building permits cannot be issued before obtaining a development permit.
- (3) Proceeding without applicable permits. Any developer, owner, or builder who fails to obtain a development permit before beginning a project is in violation of this article. In addition to the penalties outlined in section 130-193, no building permit, plat, site plan, certificate of occupancy, or other use permit shall be issued for any construction, reconstruction, or development upon any land where such

construction, reconstruction, or development is not in conformity with the requirements and intent of this article. Anyone who violates any of the terms and provisions of this article shall be denied the use permit until the violation is corrected. The city floodplain administrator shall not approve or forward application materials for altering the federal flood insurance maps to FEMA until the application materials are in compliance with the terms of this article. No land disturbing activity for development purposes may be undertaken on undeveloped land until a site plan has been approved and a development or building permit has been issued. Plans for any associated land disturbing off-site improvements shall be submitted and approved along with the site plan. Any infrastructure construction not related to a site plan shall require approval of construction plans prior to issuance of a development permit.

- (4) Deviations from permit terms. Permits may be revoked by the director of engineering if, upon periodic inspection, it is determined that the work is not progressing in accordance with specifications of the approved plan and permit, or if he determines that erosion from a building or construction site is not being controlled in a satisfactory manner.
- (5) Field changes to storm sewer plans; record of as-built drawings. Field changes to storm sewer plans can be made upon the approval of the director of engineering. Record of as-built drawings of storm sewers shall be submitted to the director of engineering at the completion of the project.

(ORD. No. 2014-09-063, § 2, 9-2-2014)

Sec. 130-267. - Plan requirements.

Application materials and plan requirements for storm sewers or floodplain alterations are listed below. All engineering plans for storm sewers, floodplain alteration projects, and tracts greater than one acre in size shall be sealed by a professional engineer who is registered in the state and experienced in civil engineering work. The total cost for preparing the engineering plans and implementing the plans shall be borne by the applicant.

- (1) Storm drainage plans. As part of the platting process, storm drainage plans shall be prepared. These plans shall include drainage facilities for both off-site and on-site drainage, so that the proper transition between the two can be maintained. Criteria for on-site development shall also apply to off-site improvements. The construction of all improvements shall be in accordance with the current specifications and regulations adopted by the city. Storm drainage plans shall be prepared in accordance with the Stormwater Design Manual.
- (2) Application materials for development permits. Owners or builders who are planning to renovate existing structures or construct new structures shall apply for a building permit. Prior to submitting an application for a building permit the owner or builder

shall determine whether the property on which such existing or proposed structures are situated, or will be situated, is located within a flood-prone area. If the property is located within a flood-prone area the owners or builders shall submit a floodplain permit application. Such floodplain permit application shall be submitted and a floodplain permit issued to the owner or builder by the city prior to the owner's or builder's submission of an application for a building permit. If the owner or builder fails to obtain a floodplain permit before submitting an application for building permit and the city's floodplain administrator and/or city staff determines during the permit review that the proposed project is located in a flood-prone area, then any further review and approval of a building permit shall be suspended and withheld until such time as the building permit applicant applies for and receives a floodplain permit and a development permit through the director of engineering as provided in section 130-266(2). The owner or builder shall submit for review duplicate copies of the appropriate materials as required by the Stormwater Design Manual. Owners or developers who are proposing to build or expand subdivisions shall submit a floodplain application and a development permit application as provided in section 130-266 (2). If the owner or developer proposing to build or expand subdivisions fails to obtain a floodplain permit before submitting an application for a building permit and the city staff determines the proposed work to be in flood hazard areas, then any further review and approval of a building permit shall be suspended and withheld until such time as the applicant applies for and receives a floodplain permit and a development permit through the director of engineering as provided in section 130-266 (2). The owner or developer shall submit for review duplicate copies of the additional appropriate materials outlined in the Stormwater Design Manual. It is recommended that applicants coordinate the application materials listed with those needed with other city permits and with the data requirements of FEMA. Such coordination will facilitate staff review, and drawings could be combined to save the applicant from making multiple drawings.

(3) Water Quality Protection. McKinney's Stormwater Management Program requires that all new development and redevelopment projects provide water quality protection by implementation of post construction, structural, and non-structural best management practices. Prior to the start of construction activities for both new development and redevelopment, developers and/or builders must submit a detailed post construction water quality protection plan, incorporating current and appropriate best management practices to the director of engineering for review and approval. A maintenance plan for the approved water quality BMPs must be included with the plan submittal. Maintenance performance for the approved plan shall be the responsibility of the HOA or property owner and this maintenance performance responsibility must be clearly indicated on the record plat. The specific

requirements for a water quality protection plan and guidelines for water quality protection BMPs can be found in the Stormwater Design Manual.

(ORD. No. 2014-09-063, § 2, 9-2-2014)

Sec. 130-268. - Appeal and variance procedure.

(a) Appeal. Any person aggrieved by a decision of the director of engineering regarding the application of this article may appeal from any order, requirement, decision, or determination of the director of engineering to the city manager. The aggrieved person shall file an appeal in writing with the city manager within ten days from the date of the decision. If no resolution of the appeal can be reached with the city manager, the city council shall hear the appeal within 30 days from the date received by the city manager.

(b) Variance.

- (1) Variances concerning development permits may be issued by the city council for the reconstruction, rehabilitation, or restoration of structures listed on the National Register of Historic Places or the state inventory of historic places, without regard to the procedures set forth in the remainder of this section.
- (2) Variances for any type of permit or storm sewer facilities shall be issued only upon a determination that the variance is the minimum necessary to afford relief considering the flood hazard, drainage problems, and soil loss. The variance shall be issued only upon meeting all three of the criteria listed below:
 - a. A showing of good and sufficient cause;
 - b. A determination that failure to grant the variance would result in exceptional hardship to the applicant; and
 - c. A determination that the granting of a variance will not result in additional threats to public safety or extraordinary public expense, create nuisances, cause fraud on or victimization of the public, or conflict with existing local laws.
- (3) Any applicant to whom a variance for building or renovating in a floodplain is granted shall be given written notice that the structure will be permitted to be built with a lowest floor elevation below the base flood elevation, and that the cost of flood insurance will be commensurate with the increased risk resulting from the reduced lowest floor elevation.
- (4) In considering variance requests, the city council shall consider all technical evaluations, all relevant factors, standards specified in other sections of this article, and the:
 - a. Danger that material may be swept onto other lands to the injury of others;
 - b. Danger to life and property due to drainage, flooding, or erosion damage;

- c. Susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner;
- d. Importance of the services provided by the proposed facility to the community;
- e. Necessity to the facility of a waterfront location, where applicable;
- f. Availability of alternative locations for the proposed use that are not subject to flood damage;
- g. Compatibility of the proposed use with existing and anticipated development;
- h. Relationship of the proposed use to the comprehensive plan and floodplain management program of that area;
- i. Safety of access to the property in times of flood for ordinary and emergency vehicles;
- j. Expected heights, velocity, duration, rate of rise, and sediment transport by the floodwaters and the effects of wave action, if applicable, expected at the site; and
- k. Costs of providing governmental services during and after storm events, including maintenance and repair of public utilities and facilities, such as streets, bridges, and sewer, gas, electrical, and water systems.
- (5) Upon consideration of the factors listed above and the purposes of this article, the city council may attach such conditions to the granting of variances as it deems necessary to further the purposes of this article.
- (6) The director of engineering shall maintain the records of all appeal actions, including technical information, and report any variances of the floodplain management portions of this article to FEMA upon request.

Secs. 130-269—130-299. - Reserved.

DIVISION 3. - DRAINAGE REQUIREMENTS

Sec. 130-300. - Impact of runoff on downstream facilities.

Stormwater runoff, based on fully developed watershed conditions, is allowed from all new developments provided that throughout the downstream zone of influence:

- (a) the receiving drainage facilities and/or natural channels have the capacity to convey the fully developed 100-year storm event with appropriate freeboard,
- (b) the fully developed 100-year storm event is conveyed within public right of way or existing drainage and/or floodplain easements, and
- (c) the increased volume of runoff does not have an adverse impact on downstream properties.

(ORD. No. 2014-09-063, § 2, 9-2-2014)

Sec. 130-301. - Drainage improvements required for development.

- (a) All drainage systems, whether upstream, downstream, or on-site, shall be designed for fully developed watershed conditions, unless directed otherwise by the director of engineering.
- (b) All developments shall provide for any new drainage facilities, the improvement of any existing drainage facilities, channel improvements, grading, driveway adjustments, culvert improvements, or any other improvement, drainage facility, or work that is necessary to provide for the stormwater drainage needs of the development and to protect property situated downstream of the development. At all storm sewer outfall points, discharges shall be limited to non-erosive velocities or the discharge point shall be stabilized by the developer.
- (c) Regarding downstream impacts, the developer shall do the following:
 - (1) Provide on-site detention facilities to limit the peak discharge of the development to pre-project levels for both the 5-year and 100-year storm events at the point(s) of discharge, or;
 - (2) Study downstream facilities throughout the zone of influence to determine if:
 - the receiving drainage facilities and/or natural channels have the capacity to convey the fully developed 100-year storm event with appropriate freeboard, and
 - the fully developed 100-year storm event is conveyed within public right of way or existing drainage and/or floodplain easements.

- (3) If the study determines that the necessary capacity with appropriate freeboard does not exist, the developer must construct the improvements to provide the necessary capacity or provide on-site detention facilities.
- (4) If the study determines that the drainage and/or floodplain easements do not exist, the developer must obtain the necessary easements or provide on-site detention facilities.
- (d) A downstream assessment may be required at the discretion of the director of engineering. On-site detention facilities will not be an acceptable option if it is determined that detention may create an adverse condition, such as an increase in the fully developed 100-year peak flow due to coincidental peaks.

Sec. 130-302. - Drainage of residential lots.

Existing drainage between developed lots will remain the responsibility of the affected property owners. Future developments are required to drain surface runoff from an individual lot to a public right-of-way or to a drainage system contained in a drainage easement. The director of engineering shall have the discretion to allow modifications to the lot-to-lot drainage requirements where adherence to these requirements would be in conflict with the tree preservation ordinance or where the lot size is one-fourth acre or larger, and it is determined by the director of engineering to not pose a burden on a future property owner.

(ORD. No. 2014-09-063, § 2, 9-2-2014)

Secs. 130-303—130-354. - Reserved.

DIVISION 4. - SPECIAL DRAINAGE FACILITIES

Sec. 130-355. - Channels.

- (a) Channel design. Unless approved by the director of engineering, open channels shall not be permitted when the inside pipe diameter required to carry the fully developed 100-year flow is 60 inches or less. Exceptions to this would be residential estate subdivisions and other areas where there are significant natural features, including trees, springs, exposed channels, and other environmental items that would work positively into the aesthetics of a development. Criteria for determining the nature of open channels is found in the Stormwater Design Manual.
- (b) Starting water surface condition. When performing hydraulic analyses for channel or drainageway design, the starting water surface shall be based on the criteria found in the Stormwater Design Manual.

(ORD. No. 2014-09-063, § 2, 9-2-2014)

Sec. 130-356. - Lakes and dams.

- (a) In the event that a property owner or developer desires to modify an existing pond or lake or desires to impound stormwater by filling or constructing an aboveground dam, thereby creating a lake, pond, lagoon, or basin as part of the planned development of that property, the criteria listed below shall be met before city approval of the impoundment can be given. Ponds or lakes created by excavation of a channel area without erecting a dam above natural ground elevation or in-stream low water check dams are also subject to the criteria listed below, with the exception of spillway capacity requirements. The director of engineering has the final authority to determine the design criteria for a proposed dam, check dam, or excavated lake. The requirements of the state must also be met for the construction of dams, lakes, and other impoundments.
- (b) The design criteria for a dam are dependent on the size and hazard classification of the dam. The size and hazard classification will be based on the recommended guidelines adopted by the Texas Commission on Environmental Quality (TCEQ) under V.T.C.A., Water Code § 12.052, which provides for the safe construction, maintenance, repair, and removal of dams located in the state, and will be determined by the director of engineering based on information furnished by the owner. The following criteria will be used to classify a dam:
 - (1) Size. The classification for size is based on the height of the dam and storage capacity, whichever gives the larger size category. The term "height" is defined as the distance between the top of the dam and the existing streambed at the downstream toe. The term "storage" is defined as the maximum water volume impounded at the top of the dam.

- (2) Hazard classification. The hazard classification for a dam is a measure of the potential loss of life, property damage, and/or economic impact of the area downstream of the dam in the event of a failure or malfunction of the dam and/or any appurtenant structures.
- (3) Spillway design flood.
 - a. The classification of a dam based on the above criteria will be used to determine the spillway design flood (SDF). The total capacity of a dam structure, including principal and emergency spillways, shall be adequate to pass the SDF without exceeding the top of dam elevation. The SDFs for various dam classifications are shown in the Stormwater Design Manual.
 - b. In all cases, the minimum principal spillway design capacity is the total 100year inflow design flood assuming fully developed upstream conditions.
 - c. In all cases, a dam breach analysis shall be required to determine the proper hazard classification of the structure. A dam breach analysis is required to determine the downstream consequences of a failure for all dams over six feet in height. If the consequences of a breach failure are determined to pose a significant threat to life or properties, the spillway design flood will be equal to the probable maximum flood (PMF). All dams shall be constructed with a minimum freeboard of two feet above the SDF elevation except in the case of dam designed to pass the PMF, which will have top of dam set at the maximum water surface achieved by the passage of the PMF. See section 130-357 for NRCS dam requirements.
- (c) Maintenance and liability criteria.
 - (1) The owner or developer shall retain their private ownership of the constructed lake, pond, lagoon, or basin and shall assume full responsibility for the protection of the general public from any health or safety hazards related to the lake, pond, lagoon, or basin constructed. For NRCS assisted watershed dams, the land and lakes are in private ownership, with operation and maintenance of the dam and its appurtenances provided by the city or by the county and the County Soil and Water Conservation District.
 - (2) The owner or developer shall assume full responsibility for the maintenance of the lake, pond, lagoon, or basin constructed. The owner or developer shall keep the director of engineering advised of the currently responsible agent for this maintenance.
 - (3) The developer shall develop and submit an Emergency Action Plan (EAP) for any dam associated with the above as required by TCEQ. A copy of the EAP shall also be provided to the director of engineering.

Sec. 130-357. - Natural Resources Conservation Service (NRCS) lakes.

- (a) There are a number of Natural Resources Conservation Service (NRCS) assisted watershed dams and lakes within the city limits and extraterritorial jurisdiction of the city. These dams and lakes were constructed to NRCS (previously Soil Conservation Service) and TCEQ standards. Although the land and lakes are in private ownership, the dams are maintained according to the operations and maintenance agreement pertaining to each dam. NRCS lakes provide stormwater retention and water quality enhancement as a design feature. This retention volume was considered in the design of the structure and shall be maintained with regard to their original design to collect silt from stormwater runoff and to provide regional flood control. The city is responsible for floodplain management of those areas upstream, downstream, and adjacent to the lakes.
- (b) The city shall control future development upstream, downstream, and adjacent to all NRCS dams and lakes. Planning for future development, which impacts on, or is impacted by, NRCS dams shall require a detailed engineering study to provide a technical basis for development. Design for upgrading dams shall comply with other sections of this article and the Stormwater Design Manual. Furthermore, the dam shall be upgraded as follows:
 - (1) Provide principal spillway capacity adequate to discharge the routed 100-year flood event based on fully developed watershed conditions and limited to constraints including both hydraulic capacity and channel stability immediately downstream;
 - (2) Provide total capacity of the dam structure, including principal and auxiliary spillways to accommodate the probable maximum flood (PMF);
 - (3) Maintain existing flood storage and planned sediment storage capacities;
 - (4) Prohibit upstream development within the contour line determined by the auxiliary spillway crest elevation plus two feet, or the routed 100-year flood elevation (based on fully developed watershed conditions and the improved dam) plus two feet, whichever is greater. In addition, the areas required for reasonable maintenance access to the lake, dam, and associated appurtenances and for safe operation of the spillway for the existing and rehabilitated dam shall be preserved and protected from encroachment through easement. These easements shall be described by a metes and bounds survey; and
 - (5) Restrict development and improvements within the floodplain established by a breach flow analysis from the dam to the downstream limit of the dam breach impact. Commercial development may be allowed below NRCS dams that have been rehabilitated to safely pass the PMF, if conditions warrant and with approval of the director of engineering.

- (c) The detailed study of the NRCS floodwater retarding structure shall include an evaluation of the existing lake sediment level.
- (d) At the discretion of the director of engineering, a developer may, in lieu of upgrading an NRCS floodwater retarding structure, offer a contribution toward the future upgrade of the structure. However, easements as described in subsection (b)(4) of this section shall be required.
- (e) A metes and bounds description of an easement with elevation two feet above the emergency spillway elevation or an elevation two feet above the routed 100-year flood elevation, whichever is higher, shall be provided on a plat prior to filing.

Sec. 130-358. - Detention and retention facilities.

- (a) Detention/retention facilities may be required to reduce runoff rates due to inadequate storm drainage facilities or increased zoning resulting in a significant increase in runoff rates, volume or frequency. Where detention is required and practicable, regional detention is encouraged. Calculations to verify downstream adequacy of hydraulic capacity shall be performed in accordance with the ten percent rule as defined in section 130-183. If an approved study demonstrates that the downstream facilities and stream system can adequately convey the fully developed 100-year storm event and required easements exist or can be obtained, then detention is not required.
- (b) Detention/retention facilities shall be designed to safely pass the fully developed 100-year storm event according to criteria in the Stormwater Design Manual.
- (c) Detention/retention facilities shall be required to have a maintenance plan that considers debris removal, mowing, trimming, and a regular inspection schedule. The plan shall be provided to the director of engineering and implemented by the property owner. The minimum maintenance requirements therefor may be found in the Stormwater Design Manual.

(ORD. No. 2014-09-063, § 2, 9-2-2014)

Secs. 130-359—130-380. - Reserved.

DIVISION 5. - FLOODPLAIN GUIDELINES

Sec. 130-381. - Lands to which this article applies.

Floodplain areas shall include all areas inundated by the fully developed 100-year flood and special flood hazard areas shown in the flood insurance study and on the FEMA flood insurance rate maps for the county dated June 2, 2009, and subsequent amendments thereto. Applicants shall comply with the requirements of this article for floodplain areas before making substantial improvements to or increasing the outside dimensions of an existing structure or developing land within the floodplain as defined above.

(ORD. No. 2014-09-063, § 2, 9-2-2014)

Sec. 130-382. - General floodplain regulations.

Utilization of natural floodplains shall be the preferred consideration in providing stormwater management control within the city. Where maintaining natural floodplains is deemed impractical by the city, structural improvements and drainage systems will be designed and constructed to minimize adverse impact on the floodplain.

- (a) Permitted uses of floodplain areas.
 - (1) To minimize possible losses of life and property, the following uses are permitted in a floodplain area, provided such uses are also permitted in the underlying zoning district:
 - a. Farms and ranches;
 - Local utilities, electrical substation, water reservoir or pumping stations, and water treatment plants;
 - Public parks, hike and bike trails and playgrounds, private recreation clubs or areas, private community centers, and golf courses;
 - d. Parking lots in accordance with subsections (g)(5), (g)(6), and (g)(7) of this section;
 - e. Outside commercial amusements, approved by a specific use permit;
 - f. Helistops, approved by a specific use permit;
 - g. Radio, television, or microwave towers and amateur communications towers with a special permit; and
 - h. Water quality enhancement facilities such as ponds, wetlands, etc.

- (2) Structures customarily associated with the above uses may be constructed within a floodplain area only if the proposed structure meets the engineering requirements of subsection (I) of this section.
- (3) Open private recreation clubs or areas and private community centers without exterior walls are permitted in floodplain areas. Private facilities listed above, with enclosed walls that could incur damage, are not permitted in floodplain areas.
- (4) Uses and structures other than those permitted above shall not be permitted in floodplain areas.
- (b) Regional detention/retention of stormwater runoff. Existing NRCS lakes provide for up to 200 acre feet of stormwater retention within the constructed sediment pool as a design feature. This volume was considered in establishment of the design flood and shall be maintained below the level of the designed flood pool, or restored in lakes being improved. In addition, the flood pools of these facilities were sized to accommodate a specific volume of flood storage and this volume shall not be reduced in any case.
- (c) Residential construction.
 - (1) New construction in reclaimed floodplain areas and substantial improvements of any existing residential structure in floodplain areas shall have the lowest floor, including basements or fully enclosed areas, elevated to at least two feet above either the base flood or the fully developed 100-year flood elevation, whichever elevation is greater. Pad elevations for residential lots raised out of the floodplain shall be at least one foot above the elevation of either the base flood or the fully developed 100-year flood elevation, whichever elevation is greater. Incremental improvements, either at one time or over a period of time, the cumulative cost of which equals or exceeds 50 percent of the market value at the time of the first improvement, shall be considered as a substantial improvement. New residential structures on stilts or behind ring levees serving individual lots shall not be permitted.
 - (2) Improvements to an existing residential structure located within a designated floodplain that increase the outside dimensions, but that do not result in making a substantial improvement to that structure, must meet the floodproofing requirements of subsection (I) of this section.
- (d) Nonresidential construction.
 - (1) New construction in reclaimed floodplain areas and substantial improvement of any existing commercial, industrial, or other nonresidential structure in floodplain areas shall either have the lowest floor, including basements, elevated to at least two feet above either the base flood or the fully developed 100-year flood elevation, whichever elevation is greater, or, together with attendant utility and sanitary facilities, shall:

- a. Be floodproofed so that, below two feet above the design flood elevation, the structure is watertight with walls substantially impermeable to the passage of water;
- Have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy;
- c. Be certified by a registered professional engineer or architect that the standards of this subsection are satisfied. Such certifications shall be provided to the director of engineering; and
- d. Meet the requirements of subsection (I) of this section.
- (2) Incremental improvements, either at one time or over a period of time, the cumulative cost of which equals or exceeds 50 percent of the market value at the time of the first improvement, shall be considered as a substantial improvement. Improvements to an existing commercial, industrial, or nonresidential structure that increase the outside dimensions, but do not result in a substantial improvement, must meet the requirements of subsection (I) of this section.
- (e) Manufactured homes.
 - (1) All existing manufactured homes located within either a FEMA or fully developed floodplain shall be anchored to resist flotation, collapse, or lateral movement by providing over-the-top and frame ties to ground anchors. Special requirements shall be that:
 - a. Over-the-top ties be provided at each of the four corners of the manufactured home, with two additional ties per side at intermediate locations, with manufactured homes less than 50 feet long requiring one additional tie per side;
 - b. Frame ties be provided at each corner of the home with five additional ties per side at intermediate points, with manufactured homes less than 50 feet long requiring four additional ties per side;
 - c. All components of the anchoring system be capable of carrying a force of 4,800 pounds; and
 - d. Any additions to the manufactured home be similarly anchored.
 - (2) For all new manufactured home parks and manufactured home subdivisions; for expansions to existing manufactured home parks and manufactured home subdivisions; for existing manufactured home parks and manufactured home subdivisions where the repair, reconstruction, or improvement of the streets, utilities, and pads equals or exceeds 50 percent of the value of the streets, utilities, and pads before the repair, reconstruction, or improvement has commenced; for

manufactured homes not placed in a manufactured home park or manufactured home subdivision; and for new manufactured homes moved into an existing site in an existing manufactured home park, require that:

- a. Stands or lots are elevated on compacted fill, so that the lowest floor of the manufactured home will be at least two feet above the design flood elevation;
- b. Adequate surface drainage and access for a hauler are provided; and
- c. No new manufactured homes shall be placed in a floodplain, except on a pad site created by compacted fill in which the new pad site is elevated so that the lowest finished floor of the manufactured home is elevated at least two feet above the design flood elevation.
- (3) Table 11 summarizes the requirements for manufactured homes in floodplain areas.
- (f) Recreational vehicles. A recreational vehicle placed on a site in an SFHA shall:
 - (1) Meet the elevation and anchoring requirements for manufactured homes; or
 - (2) Be on the site for fewer than 180 consecutive days; or
 - (3) Be fully licensed and ready for highway use. "Ready for highway use" means that it is on its wheels or jacking system is attached to the site only by quick disconnect type utilities and has no permanently attached additions.
- (g) Streets, parking lots, and bridges.
 - (1) The top of the curb or street crown of all new streets to be built in reclaimed floodplain areas shall be at least one foot above the design flood elevation.
 - (2) The low beam of all new bridges to be constructed across floodplains shall be a minimum of one foot above the design flood elevation.
 - (3) All new private bridges to individual homes shall have their low beams at one foot above the design flood elevation.
 - (4) To the extent practicable, street crossings and bridges shall be designed such that, if a larger flood or blockage should occur, they do not cause flood damages of areas that would otherwise not flood (overflow back to the creek).
 - (5) Parking lots associated with residential uses in reclaimed floodplain areas shall be at least at the design flood elevation.
 - (6) Parking lots for commercial and industrial uses may be built at one foot below the design flood elevation.
 - (7) Parking lots for public parks or playgrounds, private recreation clubs or areas, private community centers, and golf courses may be located below the design flood elevation.

- (h) *Utilities.* All new and replacement water supply systems, sanitary sewer facilities, and other public utilities shall be designed to minimize or eliminate infiltration of floodwaters into the system. On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding.
- (i) Fences. In any floodplain or positive overflow areas, fences (private and public screening) shall be constructed such that blockage or diversion of surface water flow does not occur. No fence having openings less than ten feet measured horizontally, by one foot measured vertically, may be constructed within an effective flow area and perpendicular to the direction of flow. Breakaway fences may be approved by the director of engineering.
- (j) Trees. The planting of trees in existing drainage channels, designated floodways, floodway easements, floodplain effective flow areas, positive overflow areas, or on slopes greater than 4:1 is prohibited unless it is for the purpose of replacing trees destroyed by stormwater improvements as cited in section 130-265(f) or if approved by the director of engineering. Trees may be planted outside of these areas, but within the erosion hazard setback, so long as a 15-foot wide maintenance path would not be blocked by the planting of such trees.
- (k) Fill areas. Where fill is proposed for placement to raise the ground surface, design engineers proposing the reclamation shall demonstrate that the fill will not settle below the design elevation of the fill through proper compaction; and that the fill will be adequately protected from erosion, scour, or differential settlement. Fill slopes shall be permanently protected from erosion losses by grassing, establishing vegetative cover approved by the director of engineering, or installing channel linings or stabilization measures when allowed by the other provisions of this article. Additional fill requirements are included in section 130-383.
- (I) Additional construction standards for structures. All substantial improvements and new construction permitted in a floodplain area must comply with the following requirements:
 - (1) Structures must be securely anchored to the foundation to prevent flotation and collapse during inundation and designed to prevent damage to nonstructural elements during inundation.
 - (2) Thermal insulation used below the first floor elevation must be of a type that does not absorb water.
 - (3) Adhesives must have a bonding strength that is unaffected by inundation.
 - (4) Doors and all wood trim must be sealed with a waterproof paint or similar product.
 - (5) Mechanical, electrical and utility equipment shall be located above the fully developed 100-year flood elevation.
 - (6) Water heaters, furnaces, electrical distribution panels and other critical mechanical or electrical installations must not be placed in basements. Electrical circuits for

- basements shall be separate from circuits serving floors above the basement, and circuits for basements shall be installed lowered from above.
- (7) Basements are permitted for nonresidential structures only if they are designed to preclude inundation by the design flood elevation, either by:
 - a. The elimination of exterior openings below the design flood elevation; or
 - b. The use of watertight closures, such as bulkheads and flood shields. However, no basements are permitted in soils whose permeability meets or exceeds the minimum local standards of permeability established for the installation of individual sewer disposal systems.
- (8) Plywood used at or below the lowest floor elevation must be of an exterior or marine grade and of a water-resistant or waterproof variety.
- (9) Wood flooring used at or below the lowest floor elevation must be installed to accommodate a lateral expansion of the flooring, perpendicular to the flooring grain, without incurring structural damage to the building.
- (10) Basement ceilings for nonresidential structures must be of sufficient wet strength and be so installed as to survive inundation.
- (11) Paints or other finishes used at or below the lowest floor elevation must be capable of surviving inundation.
- (12) All air ducts, large pipes and storage tanks located at or below the lowest floor elevation must be firmly anchored to prevent flotation.
- (13) Tanks must be vented at a location above the design flood elevation.

(ORD. No. 2014-09-063, § 2, 9-2-2014)

Sec. 130-383. - Criteria for approval of floodplain alterations.

- (a) No new construction is allowed in floodplain areas, but construction is allowed in those areas that can be reclaimed from the floodplain. Portions of the 100-year floodplain, based on fully developed conditions, may be reclaimed; provided that there is not a significant rise in the water surface elevation, acceptable velocities are maintained, and channel stability is maintained in the reach being reclaimed. Additionally, in any stream with a contributing watershed of 200 acres or more at the point of a proposed development, an equivalent volume of valley storage must be provided in the same reach to offset any fill placed in the floodplain. Arterial roadway and/or pedestrian bridge projects may be exempt from the valley storage requirement. A development permit for floodplain reclamation or alteration for all types of reclamation shall be allowed only if all of the following criteria are met:
 - (1) Alterations shall be in compliance with FEMA guidelines. A portion of the 100-year floodplain may be reclaimed provided there is no upstream or downstream increase

- in the water surface elevation and acceptable channel stability and velocities are maintained.
- (2) Any alteration of floodplain areas shall not cause any additional expense in any current or projected public improvements.
- (3) Maximum slopes of filled areas or excavated areas not in sound rock shall not exceed three to one (three horizontal to one vertical). Any city-maintained land shall be at least on a four-to-one slope regardless of the existence of rock with the following exceptions: When proposed as part of a landscape plan, fill slopes, vertical walls, terracing and other slope treatments may be considered where public safety and maintenance are not jeopardized and where no unbalancing of stream flow or upsetting of the channel's stability results.
- (4) Alterations to the floodplain are permitted without consideration to the water surface elevations when the entire floodplain is on the owner's, builder's or developer's own property. A significant rise in water surface elevations of the fully developed 100-year flood event of the creek is not permitted on adjacent properties without the adjacent property owner's written consent unless the significant rise is fully contained within a floodplain or drainage easement.
- (5) Alterations to the floodplain shall not create an erosive or aggradational flow velocity on either side of a natural channel adjacent to floodplain reclamation, whether on- or off-site, in any flood event up to and including the fully developed 100-year flood event.
- (6) The effects of existing improvements, or public and private improvements for which a future commitment has been made by the city or county, state or federal agencies, shall be used in determining water surface elevations and velocities.
- (7) The floodplain shall be altered only to the extent permitted by equal conveyance on both sides of the natural channel. The right of equal conveyance applies to all owners and uses, including greenbelt, park areas and recreational usages. Owners may relinquish their right to equal conveyance by providing a written agreement to the city.
- (8) When constructing a swale parallel to the main channel, which swale also ties to the main channel, the lowest elevation of excavated areas shall not be lower than one-third of the depth of the main channel, as measured down from the top of bank of the main channel, or the water surface elevation resulting from the one-year flood, whichever is lower. The director of engineering may consider an exception to this provision, depending upon the distance between the swale and the main channel and with the provision of appropriate stabilization of the swale outfall. The upstream end of the excavation area shall not tie into the creek, and no excavation shall be closer than 50 feet to the bank of the natural channel, except as necessary

to drain. Excavation of lakes may exceed the depth indicated above. In any case, excavation in the floodplain shall not cause or allow a diversion of flood flows outside the FEMA floodway.

- (9) Relocation or alteration of natural streams shall not be permitted without:
 - a. An environmental evaluation, the scope of which will be determined by the director of engineering; and
 - b. Appropriate permitting by state and federal regulators.
- (b) The criteria in subsection (a) of this section shall be met before a floodplain, grading and/or development permit can be issued for a proposed project. Typical projects requiring a floodplain permit or a development permit include placing fill, whether or not it actually raises the property out of the floodplain; constructing a dam; straightening channel sections; temporary storage of fill materials, supplies and equipment; creating onor off-line lakes; installing retaining walls or other creek side-slope protection; changing the streambed gradient; constructing a swale parallel to the main channel; and making improvements, substantial or otherwise, to existing structures in a floodplain in which the existing outside dimensions of the structure are increased.
- (c) The required submittals for a floodplain, grading or development permit are listed in section 130-267(2). The flood routing and modeling requirements needed for projects involving floodplain areas can be found in the Stormwater Design Manual. Flood routing information shall be used to ensure that any changes in floodplain valley storage will not cause downstream increases in water surface elevations.
- (d) Applicants can obtain copies of the existing conditions backwater models and flood-routing where available from the director of engineering. These models shall be kept current with modification to the floodplains at the expense of the party making the changes.

(ORD. No. 2014-09-063, § 2, 9-2-2014)

Sec. 130-384. - Verification of floodplain alterations.

- (a) Prior to final city acceptance of utilities and street construction for projects involving floodplain alterations or adjacent to defined floodplains, creeks, channels, and drainageways, a certified statement shall be prepared by a registered professional land surveyor, or a licensed professional engineer, showing that all lot elevations, as developed within the subject project, meet or exceed the required minimum finished pad elevations necessary to create the minimum finished floor elevations as shown on the record plat of the subdivision. This certification shall be filed with the director of engineering.
- (b) In addition, at any time in the future when a building permit is desired for an existing platted property, which is subject to flooding or carries a specified or recorded minimum finished floor elevation, a registered professional land surveyor or a registered

professional engineer shall prepare a certified statement that sites are built to the design elevations. The certified survey data showing the property to be at or above the specified elevation shall be furnished to the chief building official for approval. A certificate of compliance with the provisions of this article, pertaining to specified finished floor elevations, shall be required.

- (c) The applicants shall furnish, at their expense, to the director of engineering the above certifications and any other certified engineering and surveying information requested by the director of engineering to confirm that the required minimum floor and pad elevations have been achieved. Save and except as provided in subsection (d) of this section, building permits will not be issued until:
 - (1) A letter of map revision or amendment has been issued by FEMA; and
 - (2) Lots and/or sites are certified by a registered professional land surveyor or a registered professional engineer that they are elevated from the floodplain according to FEMA-approved revisions to the floodplain and the requirements of this article.
- (d) As an alternative to the above requirements the following procedure may be used to obtain subdivision acceptance, record a final plat which includes a lot, and/or obtain a building permit for a lot within an area shown as flood plain on an existing FEMA map that is proposed to be reclaimed pursuant to, and prior to the approval of a letter of map revision (LOMR) by FEMA:
 - (1) A city reviewed and approved conditional letter of map revision (CLOMR) must have been submitted to and approved by FEMA.
 - (2) The infrastructure must have been constructed in accordance with plans and specifications, accepted by the city, and in substantial conformance with the FEMA-approved CLOMR as determined by the floodplain administrator.
 - (3) A LOMR must have been submitted to and approved by the city, and then submitted to and receipt acknowledged by FEMA.
 - (4) A record plat that includes the lot must have been approved that includes the proposed revised floodplain line (the floodplain line on the then effective FEMA map will not be shown) and the following form of note prominently affixed on the record plat: The floodplain line shown on this plat represents a proposed floodplain line that has been designated on a FEMA-approved CLOMR Number X-XXXX, for which a LOMR has been submitted and after approval of which LOMR, if it is approved by FEMA, will become the effective FEMA floodplain delineation.
 - (5) An elevation certificate must have been issued confirming that the pad elevation for the lot is at or above the proposed adjacent base flood elevation shown on the submitted LOMR.

- (6) The developer must present to the city a signed affidavit affirming that the proposed lot is currently within the flood plain as shown on the effective FEMA FIRM and that flood insurance must be obtained and maintained in order to receive a final green tag or certificate of occupancy prior to the effective date of FEMA approval of the LOMR.
- (7) An agreement must be entered into between the city and the developer that contains the following provisions and attachments:
 - a. An executed engineering contract between the developer and its engineer covering the scope of services required to complete the LOMR process (the "engineering contract"), conditionally assigned to the city;
 - An escrow of funds/bond in an amount equal to 120 percent of the cost of the work remaining under the engineering contract relating to the LOMR process to ensure the completion of the LOMR process; and
 - c. A provision acceptable to the city attorney whereby the developer indemnifies the city from and against any and all claims that might arise out of or be related to this alternative process.
- (8) In order to obtain a final green tag or certificate of occupancy as appropriate for a habitable structure on the lot, the following must be accomplished:
 - a. All other requirements for the final approval have been met;
 - b. The record plat that includes the lot has been filed; and
 - c. Proof that a policy of flood insurance written by an insurance company licensed to do business in the State of Texas and authorized to issue flood insurance policies, prepaid for up to two years as determined by the director of development services, has been issued for all habitable structures on the lot.
- (9) Subsequent to issuance of a green tag or a certificate of occupancy but prior to a property buyer taking ownership of the property, the property buyer shall sign an affidavit that acknowledges the property buyer agrees and understands:
 - a. The improvements on the lot are located in an area shown on the effective FEMA FIRM as being in the floodplain;
 - b. A letter of map revision has been sent to FEMA which, if approved, will modify the FIRM such that the improvements will no longer be shown as being located within the floodplain;
 - c. FEMA may not approve the LOMR;
 - d. If FEMA does not approve the LOMR the improvements will continue to be shown as being in the floodplain and the property buyer's right to use, repair,

- replace, restore, rebuild or expand the improvements may be limited or even prohibited;
- e. The property buyer is assuming the foregoing risks and agrees to indemnify and hold the city harmless from and against any and all claims arising out of the absence of a FEMA approved LOMR; and
- f. The property buyer understands the property buyer will be solely responsible for purchasing flood insurance.

(ORD. No. 2014-09-063, § 2, 9-2-2014; ORD. No. 2015-12-099, § 2, 12-1-2015)

Secs. 130-385—130-411. - Reserved.

DIVISION 6. - EROSION CONTROL GUIDELINES

Sec. 130-412. - Lands to which this article applies.

Private property owners, developers, or builders shall be accountable for the movement of soil from their property or construction site which results in accumulation of sediment in dedicated streets, alleys, lakes, ponds, any waterway, or other private properties. Development activities shall comply with erosion control guidelines established within this article, as well as those required by the EPA and TCEQ. At its discretion, the city may review and enforce a SWP3 required by state or federal permit. Any accumulation or deposit of soil material beyond the limits of the property or in city streets, alleys, or drainage facilities in an amount sufficient to constitute a threat to public health, safety, and comfort as determined by the director of engineering shall constitute a nuisance and violation of this article.

(ORD. No. 2014-09-063, § 2, 9-2-2014)

Sec. 130-413. - General guidelines.

- (a) Erosion and sediment controls must be designed to retain sediment on-site to the extent practicable with consideration for local topography, soil type, and rainfall.
- (b) Control measures must be properly selected, installed, and maintained according to the manufacturer's or designer's specifications.
- (c) Controls must be developed to minimize the offsite transport of litter, construction debris, and construction materials.

(ORD. No. 2014-09-063, § 2, 9-2-2014)

Sec. 130-414. - Required plans and permit.

Application of article. All operators of sites with construction activity, including demolition, clearing, grading, excavation, and landfilling activities, shall be responsible for submitting an erosion control plan for approval by the city. This article shall apply regardless of whether a responsible party is required to obtain a permit from the city in order to conduct such land disturbing or construction activity. Each erosion control plan required by this article shall clearly identify all erosion and sediment control measures to be installed and maintained throughout the duration of the project for which that plan is submitted. For residential lots, the standard city erosion control plan found in the residential builder packet shall apply or the builder/contractor may submit an alternative erosion control plan for consideration and possible approval by the city. The responsible party shall install and maintain erosion control devices in accordance with the city approved erosion control plan.

Concurrently with the approval of a floodplain, building, or development permit by the city and prior to commencement of land disturbing activities, the builder/contractor or other

responsible party shall be responsible for obtaining an approved erosion control plan as the city deems appropriate. The approved erosion control plan shall indicate and apply to all areas within the project controlled by, or coming into the control of, the applicant at the time of issuance. The responsible party shall also be held liable for violations of this article committed by third parties engaging in activities related to the responsible party's project.

Sec. 130-415. - Required erosion control deposit.

Erosion control deposit account. An erosion control deposit shall be posted to ensure implementation and continued maintenance of the city approved erosion control plan. At no time shall the deposit balance fall below an amount as determined from time to time by city council, or the initial deposit amount, whichever is less (the "Required Minimum Balance"). If the fund has less than the Required Minimum Balance, work on the project shall stop until additional funds are deposited to bring the balance above the amount of the Required Minimum Balance as determined from time to time by city council.

(1) Erosion control deposit required. Prior to approval of the development permit for nonresidential or multifamily sites greater than one acre in area or residential subdivisions, the responsible party shall pay an erosion control deposit to the city in the amount as determined from time to time by city council.

(2) Subdivisions.

- a. If a developer has more than one subdivision or multiple phases of a subdivision under construction, a single erosion control deposit account equal to the amount due for the largest of the developer's subdivisions or phases will be adequate (except in the case where a lake is situated within the property being developed where the maximum shall be as determined from time to time by city council).
- b. Subdivisions for which the developer certifies that all houses within the subdivision will be sold at no more than the current housing and urban development home maximum per-unit subsidy for Dallas, Texas, shall be exempt from the initial erosion control deposit requirement. The city housing division shall determine whether the subdivision meets these criteria. Upon two or more violations of the erosion control standards of the stormwater ordinance, within an exempted subdivision, the director of engineering may, at his discretion, require the erosion control deposit to be paid in full, and may withhold inspections or stop work in the exempted subdivision until the erosion control deposit is paid.
- c. If the developer sells all of the lots in a subdivision to one purchaser, that purchaser becomes the responsible party for the subdivision and is liable for any and all violations of this article and shall post an erosion control deposit as required by this article. The balance remaining in the original developer's

account shall be released as provided herein upon the submission of written proof of transfer of all such lots and a new erosion control deposit is submitted by the purchaser.

(3) Deductions.

- a. The city may deduct fees/citations from the responsible party's erosion control deposit account if, after multiple notifications, the erosion control devices at the site have not been brought into compliance with the approved erosion control plan.
- b. The city may, at its sole discretion, cause erosion control devices to be installed or repaired, sediment to be removed, or take other actions necessary to correct the problem. Costs for such work, an administration fee, and reinspection fees may be charged against the erosion control deposit account. Stop work orders may be issued until the total amount of all charges are refunded by the responsible party into the erosion control deposit account. A citation may also be issued for each violation in which the city acts to cure the violation. The responsible party shall have the right of appeal as set forth in section 130-418.
- (4) Refunds. A developer may request the return of the remainder or balance of his deposit by submitting a written request to the director of engineering as follows:
 - a. For single-family residential subdivisions, the request may be submitted after building permits have been issued for 90 percent of the lots within the development and perennial vegetation is fully established along all Rights of Way and common areas. Notwithstanding any partial refund, the developer shall continue to maintain temporary erosion control devices on those remaining lots for which building permits have not been issued and for any other areas upon which permanent erosion control has not been established.
 - b. For multi-family/non-residential subdivisions, the request may be submitted after the project area, including any off-site areas, is fully stabilized, including a perennial vegetative cover, all BMP's are removed, and the NOT has been submitted, if applicable.

In either case a. or b. above, if the developer fails to request the return of the remainder of his deposit, the city may initiate the refund of the balance to the party making such deposit at the address provided to the city by the developer in the same fashion as a refund requested by the developer. The balance of the deposit remaining in an account after deductions for all violations have been made shall be refunded within 30 days of receipt of the written request. The responsible party shall have the right of appeal as set forth in section 130-418.

- (5) Charges. Such charges shall be as specified in appendix A of the Code of Ordinances, which fee amount may be amended from time to time by ordinance.
- (6) *Interest.* Erosion control deposits posted pursuant to the requirements of this article shall not accrue interest.

Sec. 130-416. – Required erosion control implementation, maintenance, and removal.

- (a) Erosion control plan implementation and compliance. Each responsible party shall implement and maintain the erosion control measures shown on its approved erosion control plan in order to minimize the erosion and the transport of silt, earth, topsoil, etc., by water runoff or construction activities, beyond the limits of the responsible party's site onto city streets, drainage easements, drainage facilities, storm drains, or other city property prior to beginning any land disturbing activity. Other than for erosion control, no city inspection of any type may be scheduled or approved on a project or portion thereof until a city approved erosion control plan is implemented by the responsible party.
- (b) Related land areas. The erosion control requirements of this article shall apply to all land areas relating to project construction. This section applies whether or not a building permit is required.
- (c) Removal of erosion control devices. Upon issuance of a certificate of occupancy or upon establishing permanent ground cover on a site or lot, all temporary erosion control devices shall be removed and disposed of legally, and Notice of Termination as applicable shall be submitted to the state and copied to the city.
- (d) Final acceptance. Developers, builders, or owners of property shall install applicable landscape plan and all utilities, including franchise utilities, before final acceptance of a subdivision, property and/or structure. Final acceptance will also be contingent upon having permanent stabilization measures initiated (such as required perennial vegetative cover) and all necessary erosion control measures as approved installed and maintained to minimize off-site sediment deposition. The owner shall continue to maintain the erosion control measures until permanent stabilization measures are fully established. A site may be accepted, at the discretion of the city engineer, without erosion control measures, if perennial vegetative cover is established with > 70% density and actively growing, and if all conditions of any permits (including 404, SWP3, etc.) have been met prior to acceptance. Any and all off-site areas disturbed during construction must be fully vegetated and established with > 70% density and actively growing prior to final acceptance of the project.
 - (1) For subdivisions, the developer shall continue to maintain all temporary erosion control devices until permanent stabilization measures have been established on all those lots within the subdivision for which a building permit has not been issued.
 - (2) For nonresidential or multifamily construction projects requesting phased acceptance, permanent stabilization shall be established prior to the occupancy of

- the requested phase. Phased occupancy will be allowed only when there are no outstanding erosion control violations for the project for which the request is made.
- (e) Notice of Termination. For all projects, residential or non-residential, the owner shall remove all BMPs and submit a Notice of Termination (NOT) as applicable to the state and/or federal agency, and copy the city once permanent stabilization is fully established. It shall be a violation to submit an NOT to either the state or federal agency prior to establishment of permanent stabilization and/or removal of BMPs.

Sec. 130-417. - Enforcement.

- (a) *Violations*. It shall be an offense for a responsible party or a third party performing work on a project to violate any of the requirements of this article, including, but not limited to, the following:
 - (1) Conducting any land disturbing or construction activity without an approved erosion control plan and any state or federal permits for the location where the violation occurred;
 - (2) Failing to install erosion control devices or to maintain erosion control devices throughout the duration of land disturbing activities, in compliance with the approved erosion control plan for the location where the violation occurred;
 - (3) Failing to remove off-site sedimentation that is a direct result of land disturbing activities where such off-site sedimentation results from the failure to implement or maintain erosion control devices as specified in an approved erosion control plan for the location where the violation occurred;
 - (4) Allowing sediment-laden water resulting from belowground installations to flow from a site without being treated through an erosion control device; or
 - (5) Failing to repair damage to existing erosion control devices, including replacement of existing grass or sod.
- (b) Notice of violation. Written notice of violation shall be given to the responsible party or his job site representative as identified in the erosion control plan for a site. Such notice shall identify the nature of the alleged violation and the action required to obtain compliance with the intent of the approved erosion control plan.
- (c) Citation/stop work order. An erosion control inspector shall verify that the erosion control measures are in place prior to and during the permitted activity. If a permittee (which includes the site's owner, his/her contractor, or other agent) does not comply, or is not complying, with any correction notice or erosion control measures, the enforcement process may take the following form in the following order.
 - (1) If a responsible party fails to implement or maintain erosion control devices as specified in the approved erosion control plan, the city shall provide such party with

written notice of noncompliance identifying the nature of such noncompliance. The responsible party shall have 24 hours to bring the erosion control devices into compliance with the approved erosion control plan for the site where the violation occurred.

Modifications to the approved erosion control plan may be required to maintain all sediment on-site. Correction may include any or all of the following: sediment cleanup, erosion control device repair, erosion control device maintenance, and/or installation of additional erosion control devices to prevent reoccurrence of the violation. The 24-hour period may be extended for inclement weather or other factors at the discretion of the director of engineering.

- (2) At the end of the 24-hour period the city may reinspect the site. If at the time of reinspection the erosion control devices at the site have not been brought into compliance with the approved erosion control plan a reinspection fee shall be assessed.
- (3) If an inspector returns to a site for a third or subsequent inspection because erosion control measures have not been brought into compliance, reinspection fees shall be doubled. In addition, a stop work order shall be issued and no department shall proceed with further inspections until the erosion control measures have been brought into compliance. The stop work order may apply to all sites subject to the erosion control permit or may apply to specific sites, at the discretion of the director of engineering. To remove the stop work order the inspection and reinspection fee(s) shall be paid in full and erosion control violations corrected.
- (4) If at any time the erosion control devices at the site have not been brought into compliance with the approved erosion control plan, the city may avail itself of any or all of the following processes, which processes shall not be exclusive:
 - Issue a stop work order;
 - b. Revoke the erosion control permit; or
 - c. Issue a citation for each violation of the city's erosion control requirements.
- (5) If any soil or material is deposited, by natural event or by an actor, on the right-of-way adjacent to a site or upon any adjacent site, in violation of any provision of this article or of any state statute regulating soil erosion, and the identity of the actor (property owner, builder, permittee, or responsible party) cannot be determined, the owner or person in whose name the permit was issued is presumed to be the person who caused or failed to prevent the deposit of soil or material from a site to the adjacent right-of-way or to an adjacent site. This presumption is rebuttable and shall have the effects and consequences set forth in Texas Penal Code § 2.05, and as it may be amended. The city records relative to the permit are prima facie evidence of the contents of the record.

- (6) If the erosion control devices have been properly installed and maintained, but the intent of the approved erosion control plan (maintaining sediment on-site) is not met, the responsible party shall take action within 24 hours to control soil eroding from the site and clean up any sediment and shall have five days to submit for review by the engineering department a revised erosion control plan. Work may continue during the review period. Implementation of this new plan will be required within 24 hours of plan approval by the director of engineering. If no plan is submitted within five days, then a construction activities stop work order may be issued until a revised plan is submitted and approved.
- (7) The city may issue an immediate construction activities stop work order to any applicant, builder, developer, and/or other responsible person or party when the city finds:
 - a. There is an imminent threat to public health or safety or to private property arising out of any action that violates this ordinance; or
 - b. Actions/inactions by a person have contributed to an actual or threatened illicit discharge to the MS4; or
 - c. A person has proceeded with construction activities without an approved erosion control plan or applicable state or federal permits.

In addition to the issuance of a construction activities stop work order, the city may also direct the applicant, builder, developer, and/or any other person or party responsible for the situation or condition giving rise to the issuance of the stop work order to (a) immediately cease and desist all such acts or omissions and (b) clean up, correct, and/or cure said situation or condition.

The city may at its discretion issue a fee assessment and/or a class C misdemeanor violation citation for each such violation. Each and every day, or part of a day, that such situation or condition continues to exist without correction shall be deemed to constitute a separate violation for which the stop work order shall remain in full force and effect and for which an additional fee assessments or citations may be issued.

(d) Class C misdemeanor. Any person, firm, or corporation performing land disturbing activities and violating any of the provisions or terms of this article and not complying within the time periods stated in this article shall be deemed guilty of a class C misdemeanor and, upon conviction thereof, be subject to a fine not exceeding \$500.00 for each offense, and each and every day, such violation shall continue shall be deemed to constitute a separate offense.

Sec. 130-418. - Appeals.

- (a) Appeal to director of development services. Upon notice of noncompliance, a responsible party may appeal the city's decision to take deductions from his erosion control deposit pursuant to section 130-415, by filing a written appeal to the director of development services within seven days of the city's written notice of its intent to make such deduction for assessments, citations, costs for corrective work, administrative fees, and inspection and reinspection fees as allowed herein. An appeal filed pursuant to this section shall specifically state the bases for the aggrieved party's challenge to the city's authority to take deductions under this article.
- (b) Standard for appeals. When reviewing an appeal filed pursuant to this section, the director of development services shall evaluate all evidence submitted. The burden of proving that a violation of this article occurred shall be on the city. The city shall provide evidence sufficient to reasonably support a determination that the responsible party failed to comply with the requirements of this article as alleged by the city.
- (c) Issuance of opinion by director of development services. Decisions of the director of development services shall be issued within 20 days of the city's receipt of the written appeal. Decisions of the director of development services shall be final.

Secs. 130-419-130-440. - Reserved.

DIVISION 7. - FUNDING OF IMPROVEMENTS

Sec. 130-441. - On-site drainage improvements.

The cost of any drainage system improvements required by the proposed development and located completely within the limits of the proposed development shall be financed entirely by the developer.

(ORD. No. 2014-09-063, § 2, 9-2-2014)

Sec. 130-442. - Off-site drainage improvements.

- (a) The initial constructing developer shall fund, at the developer's sole cost and expense, the design cost, construction cost, and the cost of the drainage plan necessitated by the proposed development including the impacts from flows up to and including the 100-year flows generated from future improvements to developed and undeveloped tracts within the watershed and those tracts that lie outside the city limits, and all engineering, construction, and other costs, including drainage studies or portions thereof, related to drainage within the watershed.
- (b) Drainage improvements for streets defined on the thoroughfare plan may be reimbursed with roadway impact fees, following the guidelines established for those fees.
- (c) The developer shall sign an acknowledgement of payment on a form approved by the city as a condition of receipt of payment and developer shall forward a copy of the signed acknowledgment to the director of engineering.

(ORD. No. 2014-09-063, § 2, 9-2-2014)

Secs. 130-443—130-462. - Reserved.

DIVISION 8. - ADOPTION

Sec. 130-463. - Adoption.

- (a) This article will become effective on xxxxxxx, except that documents meeting one of the following conditions shall be exempted from provisions of this article exceeding requirements of the previously adopted stormwater management ordinance:
 - (1) Commercial, residential, or industrial subdivision lots less than 2.5 acres in area where the plat was recorded or where a complete preliminary plat had been submitted and approved prior to July 1, 1999; and
 - (2) All on-site and adjacent infrastructure required by the then-existing ordinance was constructed and accepted prior to July 1, 2001.
- (b) Any lot which is replatted shall meet the requirements of this article unless the resulting lots were contemplated and shown on an approved preliminary plat or conceptual site plan prior to July 1, 1999, which lots shall be exempt.

(ORD. No. 2014-09-063, § 2, 9-2-2014)

Secs. 130-147—130-175. - Reserved.