

CHAPTER 156: DRAINAGE CONTROL

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§ 156.01 PURPOSE.

The purpose of this chapter is to reduce or eliminate the hazards to public health and safety caused by excessive stormwater runoff, reduce economic losses to individuals and the community at large, and protect, conserve, and promote the orderly development of land and water resources.

The provisions of this chapter further supplement ordinances regulating:

(A) The subdivision, layout, and improvement of lands located within the corporate limits of the city.

(B) The excavation, filling, and grading of lots and other parcels or areas.



(C) The construction of buildings and the drainage of the sites on which these structures are located, to include parking and other paved areas.

(D) The design, construction, and maintenance of stormwater drainage facilities and systems.

(Ord. 432, passed 5-16-90; Am. Ord. B2006-8, passed 5-23-06)

#### § 156.02 INTERPRETATION.

In the interpretation and application of this chapter, the provisions expressed herein shall be held to be the minimum requirements and shall be liberally construed in favor of the city and shall not be deemed a limitation or repeal of any other powers granted by state statutes or exercised by home rule units.

(Ord. 432, passed 5-16-90; Am. Ord. B2006-8, passed 5-23-06)

#### § 156.03 DEFINITIONS.

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

"BANKFUL ELEVATION." The water level, or stage, at which the stream, river, or lake is at the top of its banks and any further rise would result in water moving into the floodplain.

"BEST MANAGEMENT PRACTICES (BMP)." A schedule of activities, prohibitions of practices, maintenance procedures, and other management practices, which are proven to be effective in preventing or reducing runoff, erosion, and sedimentation.

"BUFFER ZONE." The are defined from the bankful elevation extending toward a construction activity that shall be protected from disturbance.

"DETENTION FACILITY." Any structure which is designed to collect and store surface water for subsequent gradual discharge.

"DRAINAGE FACILITY." Any component of the drainage system.

"EXCESS STORMWATER RUNOFF." That portion of stormwater which exceeds the safe storm drainage capacity of storm sewers or natural drainage channels serving a specific watershed.

"IMPERVIOUS AREAS." The horizontal-projected plain area of roof and paved areas of all permanently constructed roofs of houses, garages, mobile homes, businesses, industries, paved driveways, patios and parking lots, but does not include no-permanent structures such as temporary

buildings and tents. Also excluded are impervious areas of stored materials and equipment, swimming pools, ponds and lakes, and storm water retention and detention basins. Gravel or rock roads and gravel or rock parking areas are not considered as impervious areas.

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“LAND DISTURBANCE ACTIVITY.” Any change that may result in soil erosion from wind, water and/or ice and the movement of sediments into or upon waters, lands, or right-of-way within the city, including, but not limited to, building demolition, clearing and grubbing, grading, excavating, transporting and filling of land. It can also include unintentional acts such as natural weathering and intentional acts such as vandalism. It does NOT include minor land disturbances activities such as underground utility repairs, replacement of services, gardens, and maintenance work. Nor does it include installation of fence, signs, utility poles or posts. Emergency work to protect life, limb, or property and emergency repairs are not included in “LAND DISTURBANCE ACTIVITIES”.

“LAND DISTURBANCE PERMIT.” A permit is required by this chapter for land disturbance activities.

“PROTECTED CHANNEL.” A channel which receives stormwater discharge and which is paved, rip-rapped, or otherwise improved by addition of man-made materials so as to reduce the potential for erosion.

“SAFE STORM DRAINAGE CAPACITY.” The quantity of stormwater runoff that can be transported by a channel or conduit without having the water surface rise above the top of the channel or conduit.

“STORMWATER CHANNEL.” A natural or man-made open watercourse with definite bed and banks which periodically or continuously contains moving water, or which forms a connecting link between two bodies of water.

“STORMWATER RUNOFF.” Water that results from precipitation which is not absorbed by the soil or vegetation or evaporated and which flows over the ground surface or is collected in channels or conduits.

“STORMWATER RUNOFF RELEASE RATE.” The rate at which stormwater runoff is released from dominant to servient land.

“TWENTY-FIVE-YEAR, 24-HOUR FREQUENCY RAINFALL.” A precipitation event of 24-hours' duration, having a 4% chance of occurring in any one year.

(Ord. 432, passed 5-16-90; Am. Ord. B2006-8, passed 5-23-06; Am. Ord. B2011-19, passed 9-27-11)

#### § 156.04 COMPLIANCE WITH OTHER REQUIREMENTS.

Before starting any activities regulated by this chapter, an applicant shall comply with the requirements set forth in other applicable ordinances with respect to the submission and approval of preliminary and final subdivision plats, improvement plans, building and zoning permits, inspections, appeals, and similar matters, along with those set forth in this chapter and as may be required by state

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statutes and the regulations of any department of the Commonwealth of Kentucky.

(Ord. 432, passed 5-16-90; Am. Ord. B2006-8, passed 5-23-06) Penalty, see § 156.99

#### DESIGN CRITERIA; PERFORMANCE STANDARDS

##### § 156.15 STORMWATER MANAGEMENT PLAN.

(A) A stormwater management plan shall be required for any new single-family residential developments having a gross aggregate area, including roads, utility rights-of-way, and any other dedicated lands of five or more acres, and having a density of greater than one dwelling unit per acre or for any new commercial, multi-family residential, industrial, institutional, or utility development having a gross aggregate area of 0.5 acres or more; provided that all such development is located in areas designated as "severe" or "high" on the watershed drainage map. A plan shall also be required for any new development or redevelopment of fully developed areas as designated on the watershed drainage map. The official watershed drainage map shall be kept in the office of the City Civil Engineer. No final subdivision plat shall be approved and no building permits shall be issued until and unless the stormwater management plan has been reviewed and approved by the City Civil Engineer. Owners of residential property within subdivisions for which final subdivision plats have been approved prior to the date of the approval of this chapter shall not be required to comply with this chapter. The City Civil Engineer or his or her duly authorized designees may also require stormwater management plans for any drainage area if adverse impacts are anticipated. A stormwater management plan may also be required prior to any grading or excavation which would fill, obstruct, or otherwise alter any creek, stormwater channel, or drainage facility.

(B) The required stormwater management plan shall identify means for controlling the stormwater runoff release rate from the development and providing storage potential for the excess stormwater runoff (where required). All computations, plans and specifications related to the implementation of this chapter must be prepared and sealed by a professional engineer registered in the state.

(1) Requirements for controls of runoff for projects under construction/new construction. The following best management practices, which address the problem of urban runoff, shall apply to all projects undergoing construction in the city. The best management practices list set forth below is the minimum required by the city. Any BMP or BMP Plan utilized shall be equal to or more effective than the BMPs contained in the Kentucky Erosion Prevention and Sediment Control Manual and Field Guide. The requirements set forth below shall apply at the time of demolition of an existing structure or commencement of construction and until receipt of a certificate of occupancy:

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(a) Runoff sediment and construction waste from construction sites and parking areas shall not leave the site;

(b) Any sediments or other materials which are tracked off the site shall be removed the same day as they are tracked off the site. Where determined by the City Civil Engineer or his or her designated representative, a temporary sediment barrier shall be installed;

(c) On an emergency basis only, plastic covering may be utilized to prevent erosion of an otherwise unprotected area, along with runoff devices to intercept and safely convey the runoff.

(d) Excavated soil shall be located on the site in a manner that eliminates the possibility of sediments running into the street or adjoining properties. Soil piles shall be covered until the soil is either used or removed. A plastic or micromesh fabric should be used;

(e) No washing of construction or other industrial vehicles shall be allowed adjacent to a construction site. No runoff from washing vehicles on a construction site is allowed to leave the site;

(f) Drainage controls shall be utilized as needed, depending on the extent of proposed grading and topography of the site, including but limited to the following:

1. Detention ponds, sediment ponds, or infiltration pits;
2. Dikes, filter berms, silt fences, or ditches;
3. Down drains, chutes or flumes.

(2) Observe basic principles such as:

- (a) Preserve existing vegetation as much as possible;
- (b) Mulch or seed bare soil immediately for the best and cheapest erosion protection;
- (c) Use silt fences, brush barriers, or other approaches to pond and filter sediment from runoff;
- (d) Install silt check dams made of rock, brush, or other products to prevent ditch erosion and remove sediment;
- (e) Protect inlets and outlets; and

(f) Settle out soil particles in sediment traps and basins.

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(C) The stormwater management plan shall contain, but not be limited to, the following information unless specifically excluded by the City Civil Engineer.

(1) A topographic map of the project site and adjacent areas, of suitable scale and contour interval, which shall define the location of streams, the extent of flood plains and calculated high water elevations, the shoreline of lakes, ponds, swamps and detention basins including their inflow and outflow structures, if any.

(2) The location and flowline elevation of all existing sanitary, storm, or combined sewers.

(3) Detailed determination of runoff anticipated for the entire project site following development indicating design volumes and rates of proposed runoff for each portion of the watershed tributary to the storm drainage system, the calculations used to determine said runoff volumes and rates and restatement of the criteria which have been used by the project engineer throughout calculations.

(4) A layout of the proposed stormwater management system including the location and size of all drainage structures, storm sewers, channels and channel sections, detention basins, and analyses regarding the effect said improvements will have upon the receiving channel and its high water elevation.

(5) The slope, type, and size of all existing and proposed storm sewers and other waterways impacting or impacted by the proposed development on the site.

(6) For all detention basins, a plot or tabulation of storage volumes with corresponding water surface elevations and of the basin outflow rates for those water surface elevations.

(7) For all detention basins, design hydrographs of inflow and outflow for the two, ten, and 25-year events for the site under existing and developed conditions.

(8) A profile and one or more cross sections of all existing and proposed channels or other open drainage facilities, showing existing conditions and the proposed changes thereto, together with the high water elevations expected from stormwater runoff under the controlled conditions called for by these regulations and the relationship of structures, streets, and other utilities to such channels.

(9) Show specific erosion control methods to be utilized during construction.

(10) Total area of the site and total area of disturbance.

To find out further about required information, obtain checklists and

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other technical and guidance documents from the City Engineering Department further required information.

(D) Stormwater Pollution Prevention Plan (SWPPP). Any land disturbing activity that disturbs 0.5 acres of land or more is required to submit a SWPPP to the Office of the City Civil Engineer. For all sites that disturb one acre or more, a notice of intent (NOI) must be filed with the Kentucky Division of Water as well as the SWPPP prior to any disturbance. The NOI and SWPPP shall be submitted with the design plans and stormwater management plan to the Office of the City Civil Engineer. The SWPPP shall include sufficient information to evaluate the environmental characteristics of the affected areas, the potential impacts of the proposed grading on water resources, and measure proposed to minimize soil erosion and off-site sedimentation. The owner/developer, contractor shall perform all clearing, grading, drainage, construction, and development in strict accordance with the approved plan and this chapter.

(1) The SWPPP shall include all items required in this chapter and as defined in the KPDES No. KYR100000, latest revision. A checklist may be obtained from the Office of the City Civil Engineer. Information can also be obtained from EPA's website.

(2) All items within the SWPPP shall be site specific.

(3) The SWPPP shall be signed and certified in accordance with the signatory requirements in 401 KAR 5:065, Section 1(11).

(4) A current copy of the SWPPP shall be readily available on the construction site from the date of project initiation (NOI) to the date of termination (NOT, notice of termination). The NOT shall be sent to the Kentucky Division of Water.

(Ord. 432, passed 5-16-90; Am. Ord. B2006-8, passed 5-23-06; Am. Ord. B2011-19, passed 9-27-11) Penalty, see § 156.99

#### § 156.16 DESIGN CRITERIA.

(A) The city reserves the right to develop or adopt other guidance documents to serve as design and implementation standards. Other guidance documents distributed by the city should be reviewed and considered when preparing design and maintenance plans. Checklists, technical manuals, administrative, or procedural matters may be modified as needed to meet the objectives of the stormwater ordinance, provided said modifications are consistent with the intent of this chapter and the requirements of the State.

(B) The following criteria, along with accompanying technical manuals and/or guidance documents as mentioned above, shall be implemented when designing improvements with respect to managing storm

water runoff:

(1) Methods of determining storm water runoff discharge rate and volume. The volume of required storm water storage and discharge

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rate for drainage areas totaling 100 acres or less, shall be calculated on the basis of the runoff from a 2, 10, 25-year frequency storm event with a 24 hour duration for pre and post development conditions. The calculations can be made in accordance with the instantaneous runoff factor method, the rational method, soil conservation service (SCS) method or other methods that may be deemed appropriate by the City Civil Engineer. The Intensity Duration Curves for Louisville MSP may be used for Bardstown. For larger drainage systems, the SCS hydrologic methods or the "Regional Method" of the Kentucky Transportation Cabinet, Department of Highways shall be used to determine peak runoff rates.

(B) Release rate.

(1) All developments undertaken as outlined in that chapter shall be done in such a way as to insure that stormwater falling on a given site shall be absorbed or detained on site to the extent that the controlled release rate of stormwater runoff from all developments described in § 156.15(A) shall not exceed the pre-development stormwater runoff rate, unless it can be shown that no significant adverse downstream impacts will result from higher rates. The rate at which stormwater runoff is delivered to a designated stormwater storage area shall be unrestricted.

(2) In the event that the City Civil Engineer determines that the natural downstream channel or storm sewer system is inadequate to accommodate the release rate provided above, then the allowable release rate shall be reduced to that rate permitted by the capacity of the downstream channel or storm sewer system.

(C) Development design.

(1) Where it can be demonstrated by the developer that a higher stormwater release rate will not be contrary to the purpose and intent of this chapter and where such proposed release rate will not adversely affect properties in the downstream portion of the watershed, the City Civil Engineer may permit such release to be used as deemed appropriate.

(2) Streets, blocks, lots, parks, and other public grounds shall be located and laid out in such a manner as to minimize the velocity of overland flow and allow maximum opportunity for infiltration of stormwater into the ground, and to preserve and utilize existing and planned streams, channels, and detention basins, and include, whenever possible, streams, and floodplain within parks and other public grounds.

(D) Excess stormwater passage.

(1) An excess stormwater passage shall be provided for all stormwater areas. Such passage shall have the capacity to convey through the proposed development the excess stormwater. The capacity

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for a passage shall be such that it will be able to transport the peak rate of run-off from a 100-year, 24-hour return frequency storm.

(2) There shall be no buildings or structures constructed within excess stormwater passage or within the elevation of the flood of record. Parking lots, playgrounds and park areas, which shall not impair or endanger the water holding capability of a development shall be considered compatible uses.

(3) Appropriate land planning shall be undertaken to preserve the existing natural drainage of a proposed development as part of the excess stormwater passage.

(4) Open channels shall be protected from erosion by appropriate vegetative cover, lining or other treatment and earthen channel side slopes shall be no steeper than three to one (3:1). Open channels with lining shall have a maximum gradient on side slopes of 67% and channel side slopes steeper than 67% shall be designed as structural retaining walls. Refer to the Kentucky Transportation Center's BMP Manual for controlling erosion, sediment, and pollutant runoff to protect channels with steep side slopes or set on a steep gradient.

(E) Stormwater storage/detention areas. The increased stormwater runoff resulting from the proposed development may be accommodated by the provision of appropriate detention facilities including wet or dry bottom reservoirs, flat roofs, parking lots, or streets. Storage areas shall be designed to the satisfaction of the City Civil Engineer and if possible to provide secondary purposes for recreation, open spaces, parking lot or other types of use that will not be adversely affected by intermittent flooding. The following shall govern the design of detention facilities:

(1) Storage volume.

(a) All stormwater storage areas must be designed to contain and safely pass stormwater runoff. The combined capacity of these storage areas shall be sufficient to contain the stormwater from the development. The detention facility must be designed for periodic maintenance and energy dissipators shall be provided at points necessary.

(b) The ponding of stormwater runoff shall not exceed a depth of one foot on a pedestrian mall area or 1-1/2 feet maximum in parking lots. Where these areas are used for ponding the maximum depth should occur in the most remote and least used areas.

(c) The drainage and grading design shall be prepared to insure that in a 100-year storm the depth of water run-off in any street, alley, or pedestrian mall will not exceed the level of the first floor of any building. The finished floor elevation shall be set two

(2) feet above the 100-year flood elevation for all new development

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and the minimum finished floor elevations for homes shall be stated on the record plat.

(d) For wet pond storage areas when calculating the storage capacity, only the volume available to store excess stormwater shall be considered. Permanent water storage does not constitute control of excess storm runoff.

(2) Release rate. At no time during the design storm shall the stormwater runoff release rate exceed the allowable release rate as set forth in division (B) of this section. Detention basins shall be fully discharged within 36 hours of the end of the storm event.

(3) Release velocity. Detention facilities shall release stormwater at a nonerosive velocity. The protected channel receiving the detention discharge shall incorporate features to reduce velocity to nonerosive levels at the point where such discharge enters the unprotected channel. If release is into a subsurface conduit the energy gradient in the receiving facility shall not be increased beyond the slope of the conduit.

(4) Spillway.

(a) Overflow for each stormwater storage area shall be provided in the event a storm in excess of the design capacity occurs. Such overflows shall be constructed to function without specific attention and shall become part of the excess stormwater passage.

(b) Emergency spillways shall be provided to permit the safe passage of runoff generated from a 100-year, 24-hour storm, or greater if required by state law. The spillway dimensions shall be clearly dimensioned and protected from erosion.

(c) Where rooftop storage or excess stormwater is provided, the building shall be provided with adequate structural design to insure that roof failure does not occur. Overflow areas shall be provided so that the weight of stored stormwater will not exceed the structural capacity of the roof.

(5) Freeboard. Detention facilities shall have adequate capacity to contain the storage volume of tributary stormwater runoff with at least one foot of freeboard above the water surface of flow in the emergency spillway in a 100-year, 24-hour storm or as required by state law.

(6) Dam. The dam slopes shall not exceed three to one (3:1) on the interior of the pond. The minimum width of the top of dam shall be two (2) feet, and the back side of the dam shall not exceed a slope of two to one (2:1). Detention/retention pond dams built with the maximum

allowable slope may be required to utilize erosion control blankets or other means beyond seed straw to stabilize the slopes.

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(7) Basin slope. Dry basins shall have a minimum 1% bottom drainage slope to allow for positive drainage during and immediately following a rain event. For dry basins with bottom slopes less than 2%, a paved channel is required.

(F) Sinkholes and subterranean water channels.

(1) The use of sinkholes or subterranean water channels for direct drainage of excess stormwater shall not be permitted although they may be used to drain a stormwater storage area. The introduction of any foreign matter or the filling, clogging or interfering with the natural drainage capabilities of the sinkholes shall not be permitted.

(2) Any person, firm or corporation proposing alterations, improvements or other disturbances of any sinkholes or known subterranean water channel must submit plans to the City Civil Engineer showing that said alterations, improvements or disturbance would not interfere with the drainage capability. Also, erosion control methods must be shown for any activities which might create erosion or sedimentation and must be included in the plans.

(3) Sinkholes shall not be altered in any way which would negatively affect the drainage capabilities of the sinkhole. Development within the 100-year floodplain of a sinkhole shall not be permitted.

(Ord. 432, passed 5-16-90; Am. Ord. B2006-8, passed 5-23-06; Am. Ord. B2011-19, passed 9-27-11) Penalty, see § 156.99

§ 156.17 PERFORMANCE STANDARDS.

(A) Stormwater channel location. Generally acceptable locations of stormwater channels in the design of a subdivision may include but are not limited to the following:

(1) Adjacent to roadways.

(2) In a depressed median of a divided roadway, provided the median is wide enough to permit slopes of one foot drop in six feet horizontal or flatter.

(3) Centered on lot lines or entirely within the rear yards of a single row of lots or parcels.

(4) In each of the foregoing cases, a drainage easement with sufficient width to facilitate maintenance and design flow shall be provided and shown on the plat.

(B) Storm sewer outfall. The storm sewer outfall shall be designed to provide adequate protection against downstream erosion and scouring.

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(C) Lot lines. Whenever the plans call for the passage and/or storage of stormwater runoff along lot lines, the grading of all such lots shall be prescribed and established for the passage and/or storage of waters, and no structure or vegetation which would obstruct the flow of stormwater shall be allowed, nor shall any change be made to the prescribed grades and contours of the specified stormwater channels.

(D) Manholes. All utility sewer manholes constructed in an area designed for the storage or passage of stormwater, shall be provided with either a watertight manhole cover or be constructed with a rim elevation of a minimum of one foot above the high water elevation of the design storm.

(E) Easements. Permanent easements for the detention and conveyance of stormwater, including easements of access to structures and facilities, shall be dedicated to the city.

(F) Drainage obstruction. The keeping or disposal of grass clippings, trash, debris, obstructions or unwanted materials into the storm sewers or within or along stormwater channels or in adjacent flood plain areas which may wash into sewers and channels, is prohibited.

(G) Maintenance. Required maintenance for detention basins or other structures shall be permanently provided by the developer with responsibility becoming that of the private landowner after complete development, subject to inspection by the City Civil Engineer or duly authorized representative. Every detention basin or structure shall be legally defined on both deed and plat and the maintenance entity shall be specified. Refer to § 156.31 Maintenance Requirements.

(Ord. 432, passed 5-16-90; Am. Ord. B2006-8, passed 5-23-06; Am. Ord. B2011-19, passed 9-27-11) Penalty, see § 156.99

#### § 156.18 POST-CONSTRUCTION STORMWATER MANAGEMENT PLAN.

(A) Purpose. Land development projects and associated increases in impervious cover alter the hydrologic response of local watersheds and increase stormwater runoff rates and volumes, flooding, stream channel erosion, and sediment transport and deposition; Stormwater runoff contributes to increased quantities of water-borne pollutants. Stormwater runoff, soil erosion and nonpoint source pollution can be controlled and minimized through the regulation of stormwater runoff from development sites. The purpose of this chapter is to establish minimum post stormwater management requirements and controls to protect and safeguard the general health, safety, and welfare of the public residing in watersheds within the City of Bardstown. The goal is to maintain or improve the quality of all streams within the Municipal Separate Storm Sewer System (MS4) boundaries and corporate limits, to meet their designated use. This chapter seeks to meet that purpose through the following objectives:

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(1) Minimize increases in stormwater runoff from any development in order to reduce flooding, siltation and streambank erosion and maintain the integrity of stream channels;

(2) Minimize increases in nonpoint source pollution caused by stormwater runoff from development which would otherwise degrade local water quality;

(3) Minimize the total annual volume of surface water runoff which flows from any specific site during and following development to not exceed the pre-development hydrologic regime to the maximum extent practicable; and

(4) Reduce stormwater runoff rates and volumes, soil erosion and nonpoint source pollution, wherever possible, through stormwater management controls and to ensure that these management controls are properly maintained and pose no threat to public safety.

(B) General.

(1) (a) Depositing of material in public or private systems. It shall be unlawful for any person to do, or fail to do when required, the following: anything that covers, alters, redirects, obstructs, impairs or encroaches in a drainage system, whether it be in the public right-of-way, or within a drainage easement on private property. This includes the construction of any building, shed, fence, pool, landscaping berm, trees, or depositing of any yard debris, fill material, pollutants, sewage, solid waste, dumping of concrete, etc. or excavate without a permit. Actions that can cause flooding, ponding, excess erosion or sedimentation that result in property damage, or otherwise cause a health or safety risk to the public are in violation of the rules and regulations established in this section. Such areas that this applies are as follows:

1. Right-of-way ditches;
2. Street curb and gutter;
3. Drainage swales;
4. Open ditches;
5. Stormwater inlets, manholes, and catch basins;
6. Stormwater management facilities such as detention ponds and water quality BMPs;
7. Natural streams, creeks, rivers, ponds, lakes, and the like.

(b) See also the ordinance for streets, curbs and sidewalks, § 96.15 for additional regulations and restrictions on obstructing natural or constructed drainage facilities.

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(2) Grading/regrading private property. It shall be unlawful for any person to, or direct another person to, grade or regrade any private property in such a manner as to obstruct, divert, or impede the natural flow of stormwater across said person's property or adjoining properties. Within residential neighborhoods, a drainage swale within the designated general utility easement along the side and rear property lines should be utilized when applicable to promote the positive drainage of stormwater runoff without adversely impacting adjoining properties.

(3) Construction of private storm sewer systems. All private storm sewer systems shall be in place, operational, and certified by a licensed professional engineer prior to receiving certificate of occupancy. It shall be unlawful for any person to refuse to construct any part of a private storm sewer system that has been approved and permitted as part of a development or site plan, without approval in advance by the City Civil Engineer. Any changes to the approved and permitted plans must be resubmitted for review.

(C) Post-construction stormwater management plan (PC-SWMP).

(1) A post-construction stormwater management plan (PC-SWMP) shall be submitted for all subdivisions that discharge to MS4 high quality waters. This includes residential, commercial, and industrial developments. The PC-SWMP is required for all sites one acre and larger in size, and all sites part of a greater common development.

(2) The city reserves the right to develop or adopt other guidance documents to serve as design and implementation standards. Other guidance documents distributed by the city should be reviewed and considered when preparing the PC-SWMP. These documents may be applied as standards by which designs are to be prepared and controls implemented.

(3) The city shall have the authority to implement this chapter by appropriate regulations, guidance or other related materials. In this regard, technical, administrative, or procedural matters may be modified as needed to meet the objectives herein.

(Ord. B2011-19, passed 9-27-11) Penalty, see § 156.99

§ 156.19 POST-CONSTRUCTION PERFORMANCE STANDARDS.

(A) The city reserves the right to develop or adopt guidance documents to serve as design and implementation standards. Other guidance documents distributed by the city should be reviewed and considered when preparing the post-construction SWMP. Technical, administrative, or procedural matters may be modified as needed to meet the objectives defined in this chapter so long as they are not contrary or beyond the intent of the objectives listed above. Such documents given authority by this chapter include best management practice (BMP) manuals, design regulations and requirements, checklists that address

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submittals, plan review, and inspections, certifications, stormwater manuals, and operation and maintenance manuals. The documents may be updated periodically to reflect the most current and effective design and construction practices and be made available to the public. Failure to update the manual does not relieve the applicant from complying with this chapter.

(B) Post-construction stormwater BMPs shall be designed in accordance with the most current manual or requirements to achieve the following performance standards:

(1) Water quality of stormwater produced from the 80th percentile rain event shall be addressed with best management measures that are built and maintained to treat, filter, flocculate, infiltrate, screen, evapo-transpire, harvest and reuse stormwater runoff, or otherwise manage the runoff for all new and redeveloped sites. (The 80% rain event is based on past rainfall data and will continually change with future rain events, however, it is not anticipated to vary drastically from one year to another).

(2) BMPs shall be designed to remove pollutants and reduce runoff volume. The designated use and any existing in-stream use of the stream being discharged to shall be protected. Some land uses produce higher concentrations of certain pollutants such as hydrocarbons or heavy metals, than those normally found in urban areas. These areas will be reviewed for effective removal of the particular pollutant which they discharge. Effective removal will be that which existed prior to development. Examples of land uses that produce higher levels of pollutants are:

- (a) Gas/fueling Stations;
- (b) Restaurant dumpster areas;
- (c) Vehicle repair facilities;
- (d) Vehicle washing/steam cleaning facilities;
- (e) Auto recycling facilities;
- (f) Outdoor material storage areas;
- (g) Loading and transfer areas;
- (h) Landfills; and
- (i) Industrial sites.

(3) BMPs shall reduce or buffer increases in stormwater runoff

temperature caused by contact with impervious surfaces as well as minimize increases in stormwater runoff volume and flow rate caused by increases in impervious surfaces.

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(4) The PC-SWMP shall include provisions for buffer zones. A buffer zone shall be defined as:

(a) Area contained within a boundary established by the FEMA floodplain boundary; or

(b) Where a floodplain is not defined or calculated, the buffer will be 25 feet on each side from the top of waterway bank as defined by geomorphic shape (not by current water surface elevation).

1. Buffers shall be provided to all blue-line streams as shown on the USGS map.

2. Buffer areas and floodplain may be used for stormwater quality devices provided erosion prevention, sediment control, cut-fill practices are addressed appropriately as determined by the city to meet this chapter.

3. Exemptions can be granted to buffers so long as erosion and sediment control, water quality are addressed. Exemptions for building in the buffer area shall be granted for:

a. Roads and utilities crossing waterways.

b. Pedestrian trails and walkways adjacent to waterways.

c. Other exemptions may be made at the discretion of the City Civil Engineer.

(5) (a) Redevelopment not previously addressing water quantity or quality control shall reduce the discharge from their site according to the formula below:

$$\frac{Q(\text{redeveloped}) = Q(\text{existing}) + Q(\text{undeveloped})}{2}$$

Q(redeveloped) = maximum discharge rate for the re-development

Q(existing) = current discharge rate of the developed parcel

Q(undeveloped) = discharge rate of the parcel prior to any development

(b) The reduction of allowable flow rate for redeveloped areas shall not exceed more than 30% of the existing developed flow rate. These flow rates are based on redevelopment sites that disturb one acre or more.

(6) The City of Bardstown reserves the right to require additional treatment criteria or objectives for specific pollutant(s)

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as necessary to meet overall stormwater quality management program objectives or directives under a watershed improvement or Total Maximum Daily Load (TMDL) program as administered by the USEPA and/or the Kentucky Division of Water.

(7) For projects that cannot meet the above quality criteria, they may choose either of the following options:

(a) Off-site mitigation option: entails infiltration/evapotranspiration/reuse measures that may be implemented at another location within the same watershed as the original project approved by the city. The city shall identify priority areas within the watershed in which mitigation projects can be completed.

(b) Payment-in-lieu option: allows the owner of a project that falls within the quality criteria, to make a payment to the city in lieu of implementing post-construction BMPs. The city will apply the in-lieu funds to a public stormwater project. The fee shall be used for acquisition, design, construction, or maintenance of one or more such facilities in the same watershed in which the development is located.

(8) Permanent easements for all stormwater drainage ways, quality and quantity facilities shall be dedicated to the city and recorded in the Nelson County Clerk's Office. There shall also be dedicated easements for access to all stormwater management facilities. (Ord. B2011-19, passed 9-27-11)

#### BONDS, MAINTENANCE, ASSURANCES, AND FEES

#### § 156.30 PERFORMANCE BONDS AND OTHER ASSURANCE FOR COMPLETION AND OPERATION OF STORMWATER MANAGEMENT IMPROVEMENTS.

Upon approval of the stormwater management plan and post-construction stormwater management plan, but before the issuance of a building permit or subdivision plat approval, the city shall require the applicant to either complete all required improvements or the applicant shall post a performance bond, cash escrow, certified check, letter of credit, or other acceptable form of performance security in an amount sufficient to ensure the execution of the plan. After determination by the City Civil Engineer or designee that all facilities are constructed in compliance with the approved plan, the performance bond or other securities shall be released.

(Ord. 432, passed 5-16-90; Am. Ord. B2006-8, passed 5-23-06; Am. Ord. B2011-19, passed 9-27-11)

#### § 156.31 MAINTENANCE AGREEMENT.

(A) General. Individual property owners, whether residential or

commercial, shall be responsible for the general and overall maintenance of the drainage easements and the street right-of-way ditch. Such maintenance includes mowing, keeping the drainway free of

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leaves and debris, and following the guidelines within this chapter. Property owners shall install and maintain their permitted entrance pipe. The pipe shall be kept free of debris, and excess sediment that builds up over time, which constricts the flow of the street runoff. No one shall "fill-in" the right-of-way ditch or any drainage way without first obtaining a land disturbance permit. All proposed piping of ditches shall be appropriately sized and may be required to have a catch basin to allow for intake of surface water. The property owner shall ensure that adequate vegetation remains in the drainway and provide a hardened surface where applicable to prevent erosion.

(B) Stormwater maintenance agreement. A stormwater maintenance agreement, approved by the City Civil Engineer, assuring perpetual maintenance of storm water management improvements, including post-construction BMPs, shall be executed by the applicants to the City of Bardstown. The agreement shall be recorded among the deed records in the Nelson County Clerk's office upon final plan approval. The agreement shall be a covenant running with the land and shall be binding on the landowner, its administrators, executors, heirs, assigns and any other successors of interest, including any homeowners association. A copy of an appropriate maintenance agreement can be obtained from the City Engineering Department.

(1) Operation and maintenance of all stormwater quality and quantity devices, BMPs, and drainage ways shall be the responsibility of the property owner. Operation and maintenance shall be required sufficient to maintain proper function and water quality at the discharge point.

(2) (a) Routine inspections are the responsibility of property owner to ensure the stormwater facilities/BMPs are operating and functioning as designed and that required maintenance activities have occurred. The property owner must submit an inspection report annually to the city. The report shall include any action taken, who took it, when the action was done, how it was done, and any problems encountered or follow-up actions recommended. Maintenance problems shall be inspected monthly or more frequently as necessary to assure safe and proper functioning of the facilities.

(b) Example post-construction stormwater facility/BMP maintenance inspection checklists are available at the Office of the City Civil Engineer.

(3) The city and its agents shall have the right of entry to inspect, observe, test or perform any other related activity to the operation, maintenance, and function of the stormwater infrastructure. The city has the right to perform inspections and emergency maintenance on the facilities; however, it is not the city's obligation to maintain the stormwater quality/quantity facility.

(Ord. 432, passed 5-16-90; Am. Ord. B2006-8, passed 5-23-06; Am. Ord. B2011-19, passed 9-27-11)

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§ 156.32 FEES AND SECURITY.

## (A) Land disturbance permit.

(1) A minimum performance bond of \$500 shall accompany the submittal of each land disturbance permit as required. This bond is fully refundable provided the entrance and all improvements are constructed as specified on the permit and the approved improvement plans. All areas within the public right-of-way and stormwater facilities must have vegetation established and functioning as designed before releasing the bond. This includes certifications for detention ponds and other control facilities as required. If installation of sidewalk along the public street is required, the bond amount shall include the value of the sidewalk at a minimum of \$10 per linear foot of walk. All sidewalks must meet ADA requirements.

(2) The permit holder shall have 12 months (one year) time from date of permit issue to construct the entrance and/or land disturbing activities in accordance with the permit. Failure to complete the work properly within this one-year time frame shall be reasons for forfeiture of the \$500 bond. If the work is not completed properly within the one-year time frame, no further permits will be issued to the permit holder until the property comes into compliance with this ordinance.

(3) All land disturbance permits shall have an Administrative Fee as follows with a minimum fee of \$10:

- |   |       |
|---|-------|
| (a) Non-living/Non-commercial areas<br>(i.e. Decks, garages, storage bldgs.<br>and the like) - no bond required | \$10  |
| (b) Mobile home/Residential/living area<br>additions/commercial (up to 5,000 sq. ft)                            | \$50  |
| (c) Residential/Commercial (greater than<br>5,000 sq. ft.)  | \$100 |

(B) Encroachment permits. An encroachment permit must be obtained when any work is to be performed in the city right-of-way from the Office of the City Engineer. The permit shall cover only one specified piece of work. A drawing, sketch, and/or description of the work shall be provided. The applicant must provide security in the form of a bond, or certified check for the work in the amount not less than \$2,000 and shall cover the cost to put the right-of-way and/or street and its appurtenances back to its original condition. A representative from the city shall inspect the completed work and accept it prior to returning the indemnity. All work must be done in accordance with all city ordinances, regulations, and standards. Future maintenance of the encroachment is the responsibility of the permit holder.

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(C) Establishment of storm water management fund.

(1) The storm water management program is established and the storm water system is provided to protect the waterways and land in the city by managing flooding and to benefit the natural environment. The costs of designing, developing, improving, operating, maintaining, and monitoring the storm water system required in the city should, therefore, be allocated, to the extent as practicable, to all property owners. In order to provide revenue to fund those costs and to fairly allocate those costs, a Storm Water Management Fund ("the Fund") is established.

(2) All revenues collected from the storm water management fee from grants, permit fees, and other charges collected under the Storm Water Management Program, shall be deposited to the Fund. The City Council may make additional appropriations to the Fund. All disbursements from the Fund shall be for the purposes of the Fund as set forth in division (D).

(D) Purposes of the Fund. The Fund shall be used for the following purposes:

(1) The acquisition by gift, purchase, or condemnation of real and personal property, and interests therein, necessary to construct, operate, and maintain storm water management facilities.

(2) All costs of administration and implementation of the Storm Water Management Program, including the establishment of reasonable operating and capital reserves to meet unanticipated or emergency storm water management requirements.

(3) Engineering and design, debt service and related financing expenses, construction costs for new facilities, and enlargement or improvement of existing facilities.

(4) Operation and maintenance of the storm water system.

(5) Monitoring, surveillance, and inspection of storm water control devices.

(6) Water quality monitoring and water quality programs.

(7) Retrofitting developed areas for pollution control.

(8) Inspection and enforcement activities.

(9) Costs of public education relating to storm water and related issues.

(10) Billing and administrative costs.

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(11) Other activities which are reasonably required.

(Ord. 432, passed 5-16-90; Am. Ord. B2006-8, passed 5-23-06; Am. Ord. B2011-19, passed 9-27-11)

#### ADMINISTRATION AND ENFORCEMENT

##### § 156.45 CITY CIVIL ENGINEER; RESPONSIBILITY.

The administration of this chapter shall be the responsibility of the Offices of the designated City Civil Engineer.

(Ord. 432, passed 5-16-90; Am. Ord. B2006-8, passed 5-23-06; Am. Ord. B2011-19, passed 9-27-11)

##### § 156.46 VARIANCES.

(A) Standards. Variances from these standards, provisions, and specifications may be granted when it is demonstrated to the satisfaction of the City Council that, owing to special conditions, a strict adherence to the provisions of this chapter will result in unnecessary hardship and that the spirit and intent of the chapter will be observed.

(B) Procedure. A written request for variance shall be filed by the owner, seeking to develop or change the use of his property, or his agent with the City Civil Engineer and shall state specifically what variance is sought and the public's interest in granting the variance. The applicant must specify hardships to result in following the prescribed regulations. The City Civil Engineer must then examine and decide the validity of the proposed hardships. This request is then submitted to the City Council by the City Civil Engineer along with a recommendation about granting the variance.

(1) The variance will be granted only upon showing that there is good and sufficient cause and that the failure to grant a variance would result in exceptional hardship to the applicant. Financial hardship to the property owners not constitute operator appropriate grounds for a variance under this chapter.

(2) A record of all variance actions shall be maintained by the Engineering Department including the justification for issuance.

(3) Variances may be considered for the reconstruction, abilitation or restoration of structures listed on the State Inventory of Historic Places.

(Ord. 432, passed 5-16-90; Am. Ord. B2006-8, passed 5-23-06; Am. Ord. B2011-19, passed 9-27-11)

##### § 156.47 OFFICIAL MAPS AND PROFILES.

Responsibility for all changes to official maps and profiles remains

with the Engineering Department.

(Ord. 432, passed 5-16-90; Am. Ord. B2006-8, passed 5-23-06; Am. Ord. B2011-19, passed 9-27-11)

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§ 156.48 INSPECTIONS.

## (A) City of Bardstown.

(1) The City Civil Engineer shall be responsible for determining whether the stormwater management plan is in conformance with requirements specified in §§ 156.15 through 156.17, and whether development is proceeding in accordance with the approved stormwater management plan. Periodic inspection of the development site shall be made by the City Civil Engineer or authorized representative to ensure that the stormwater management plan is properly implemented.

(2) The City Civil Engineer, the Zoning Enforcement Officer, and other duly authorized employees bearing proper credentials and identification shall be permitted to enter upon all properties for the purpose of inspection, observation, and measurement, in accordance with the provisions of this chapter.

(3) Authorized inspectors from the city shall have the power to inspect any land disturbing activity and to review the records of all inspections, repairs and modifications made by the permit holder in order to ensure compliance with the approved SWPPP and to examine field practices to determine if control measures are adequate.

(4) The inspector with the city shall complete a report after each inspection and keep it on file in the Engineering Department Office.

(5) Inspections will be made a minimum of every thirty (30) days until all land disturbing activities have been completed and permanently stabilized or until the NOT with the Kentucky Division of Water has been issued. If deficiencies are noted, more frequent inspections will be made. See § 156.50 Enforcement Procedure.

## (B) Permit holder.

(1) The permit holder must have a qualified inspector making inspections weekly. Bi-weekly inspections are allowed if inspections are also performed within 24 hours after 1/2-inch rain events or larger.

(2) Inspectors shall have training in stormwater construction management as recognized by the current KYR1000000 permit requirements.

(3) The permit holder's qualified inspector shall prepare an inspection report that shall include, at a minimum, the following information:

(a) Date;

(b) Time of day;

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- (c) Name of person performing the inspection and qualification I.D. number;
- (d) Company represented;
- (e) Scope of inspection;
- (f) Duration and approximate amount of rainfall for each storm event (in inches);
- (g) Observations of the SWPPP and BMPs installed;
- (h) Any changes in SWPPP or BMP;
- (i) Recommendations for correction of deficiencies; and
- (j) Signed in accordance with the signatory requirements in 401 KAR 5:065, Section 1(11).

(4) Refer to the KY KPDES permit, KYR100000, Part II, Section 7, entitled Inspections for further information on inspection requirements.  
(Ord. 432, passed 5-16-90; Am. Ord. B2011-19, passed 9-27-11)

#### § 156.49 CERTIFICATION.

At the completion of the improvements approved in the stormwater management plan, the applicant shall provide to the Flood Safety Officer a certification by a professional engineer that the improvements have been built in conformance with the plan. No Certificate of Occupancy will be issued or performance bond released prior to receipt of certification. A set of As-built drawings shall also be provided within 30 days of completion of the project. In instances where there are improvements that are to become part of the public infrastructure system, digital copies shall also be provided.  
(Ord. 432, passed 5-16-90; Am. Ord. B2006-8, passed 5-23-06; Am. Ord. B2011-19, passed 9-27-11)

#### § 156.50 ENFORCEMENT PROCEDURE.

The City Civil Engineering Department in conjunction with Bardstown Public Works and Code Enforcement shall be responsible for the enforcement of this chapter. Duly authorized representatives have the authority to issue notices of violation, stop work orders, and levy fines. Enforcement actions shall be served to the property owner as listed on the permit or most current property owner as held by the PVA office.

(A) Notice of deficiency (NOD). If any site violates the conditions of this chapter when inspected by the city's authorized representative,

a NOD shall be issued to the violator. The NOD may be verbal or written to either NOI holder or the property owner. The

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violator shall be given seven (7) calendar days, or as directed by the City Civil Engineer or designee, to correct the deficiency per the details as specified in the NOD.

(B) Notice of violation (NOV). A written NOV shall be issued to either the holder of the NOI or the owner(s) of the site, when previously sited, does not comply with the terms of the NOD within the time period given. The violator shall be given five (5) calendar days to correct the deficiency per the details as specified in the NOV. The city's authorized representative has the right to modify the timeframe for corrections based on his/her judgment, due to project conditions.

(C) Stop work order (SWO). A stop work order shall be issued to anyone previously cited with an NOV that does not comply with the terms or the violation within the time frame given. All work on the site shall stop except for activities necessary to correct the violation. The violator shall be given seven (7) days, or as directed, to correct the deficiency per the details of stop work order. Upon completion of remediated actions as inspected the city, then the stop work order shall be rescinded, and work can continue on the site.

(1) If the holder of the NOI or property owner does not comply with the stop work order conditions within the time period specified the violator will be penalized as specified in § 156.99 Penalty. The city may also perform the remedial work and make claim against the permit holder to recover its expenses and costs.

(2) For violations where no permit has been issued, the Office of the City Civil Engineer will notify the property owner and cooperate for resolution prior to enforcement. Should the owner not cease the land disturbing activities or demonstrate a history of non-compliance of the same nature, the City Civil Engineer may request the City Attorney to seek injunctive relief as described in § 156.99 Penalty.

(3) The city may deny the issuance of any permits for any project or property to an applicant when it determines that the applicant is not in compliance with the provisions of any land disturbance permit or approved stormwater management or erosion and sediment control plan, or has failed to comply with any other provisions of this chapter.

(4) The City Civil Engineering Department is authorized to require immediate abatement of any violation of this chapter that constitutes an immediate threat to the health, safety, or well-being of the public. If any violation is not abated immediately, the city is authorized to enter onto private or public property and to take any and all measures required to remediate the violation. Any expense related to such remediation undertaken by the city shall be fully reimbursed by the property owner and/or responsible party. The cost of remediation plus any administrative and attorney fees shall be billed to the owner.

Failure to reimburse the city within thirty (30) days will result in a lien being placed on the property.

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(D) Appeals. A permit holder or property owner may appeal an enforcements action to the City Council within 15 days of the date of notification. The appeal shall be made in writing to the Mayor. The Mayor may then allot time at a regular council meeting or call a special meeting where the owner or permit holder shall be given an opportunity to be heard and he may call witnesses and present evidence on his behalf. After such meeting, if the City Council concludes that the issuance of additional correction notices would be futile, any bonds or cash deposits posted with the city shall be forfeited, whereupon said security shall be used for completion of the storm water management plan as approved.

(E) Post-construction stormwater management facilities/BMPs.

(1) When deficiencies are noted upon inspection by the city, the city shall provide the property owner copies of the inspection report with findings and evaluations. The owner then has thirty (30) days to get the stormwater facilities in working order as per its original design function.

(2) In the event the property owner neglects to make repairs upon notification, and/or fails to maintain the stormwater management facilities in good working condition acceptable to the city, the city may enter upon the property and take whatever steps it deems necessary to maintain said stormwater management/BMP facilities and to charge the costs of the repairs to the landowner, its successors and assigns. This provision shall not be construed to allow the City of Bardstown to erect any structure of a permanent nature on the property of the landowner, outside of an easement for stormwater management/BMP facilities. It is expressly understood and agreed that the city is under no obligation to maintain or repair the facilities.

(3) In the event the city performs work of any nature or expends any funds in performance of the work for labor, use of equipment supplies, materials, and the like on account of the landowner, its successors and assigns, the landowner shall reimburse the city upon demand, within thirty (30) days of receipt thereof for all costs incurred by the city.

(Ord. 432, passed 5-16-90; Am. Ord. B2006-8, passed 5-23-06; Am. Ord. B2011-19, passed 9-27-11)

§ 156.99 PENALTY.

Any person, firm, or corporation who violates or fails to comply with any of the provisions of this chapter shall be guilty of a misdemeanor, and upon conviction, shall be subject to a fine of not less than \$25, nor more than \$250, and in addition shall pay all costs and expenses involved in the case. In lieu of penalties provided herein, when the civil citation/notification is issued as described under

§ 156.50 Enforcement Procedure, the City Civil Engineer may

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assess a civil penalty or fine of not less than \$25 and not more than \$250. All civil penalties shall be paid to the City of Bardstown. A separate offense shall be deemed committed upon each day during or on which a violation occurs or continues.

(Ord. 432, passed 5-16-90; Am. Ord. B2006-8, passed 5-23-06; Am. Ord. B2011-19, passed 9-27-11)

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