ORDINANCE NO. 9097

AN ORDINANCE AMENDING CHAPTER 162 OF THE CITY CODE PERTAINING TO STORMWATER MANAGEMENT

WHEREAS, Chapter 162 contains regulations governing stormwater management; and,

WHEREAS, Chapter 162 needs to be updated to meet the current regulations and standards regarding stormwater management.

NOW, THEREFORE, BE IT ORDAINED, by the City Council of the City of Danville, Illinois as follows:

SECTION 1: Chapter 162 of the City Code shall be deleted in its entirety and replaced with the following:

STORMWATER MANAGEMENT

162.01 TITLE; PURPOSE; INTENT; AND POLICY

(A) Title. This chapter shall be known, cited and referred to as the "Stormwater Management Chapter of the City of Danville, Vermilion County, Illinois."

(B) The purpose of this ordinance is to diminish threats to property, public health and safety, and welfare caused by increases in stormwater runoff from development. Excessive stormwater could result in the inundation of properties, erosion and destabilization of downstream channels, the threat to public health and safety, and pollution and degradation of valuable stream and lake resources. Increases in stormwater runoff quantity and rate, as well as the impairment of quality, are caused by development and land improvement and, as such, this ordinance regulates these activities to prevent adverse impacts caused by stormwater runoff created by such actions. This ordinance is adopted to accomplish the following objectives:
   (1) Prevent flood and drainage hazards resulting from development;
   (2) Protect the hydrologic, hydraulic, and other beneficial functions of streams, lakes, wetlands, floodplains and flood-prone areas;
   (3) Preserve stream corridors to moderate flooding and stormwater impacts, improve water quality, reduce soil erosion, protect aquatic and riparian habitat, provide recreational opportunities, provide aesthetic benefits, and enhance community health.
   (4) Prevent additional disruption of governmental services and the economy due to flooding and drainage problems;
   (5) Establish requirements and promote regular, planned maintenance of stormwater management facilities.

(C) Policy. This chapter establishes a stormwater management policy for the future control of stormwater runoff within the jurisdictional limits of the city.

162.02 DEFINITIONS

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

"ADMINISTRATOR." The Director of Urban Services or his/her designee.

"APPLICANT." Any person, firm, corporation, or agency that submits an application for a stormwater permit. The applicant is the current owner of the property or a representative for the owner.

"BASE FLOOD." The flood having a 1% chance of being equaled or exceeded in any given year. The base flood is also known as the 100-year frequency flood event.

"BASE FLOOD ELEVATION (BFE)." Base flood elevation.

"BEST MANAGEMENT PRACTICE (BMP)." A measure used to control the adverse stormwater-related effects of development, and includes structural devices (for example: swales, filter strips, infiltration trenches, and site runoff storage basins designed to remove pollutants, reduce runoff rates and volumes, and protect aquatic habitats) and nonstructural approaches (for example: public education efforts to prevent the dumping of household chemicals into storm drains.)

"BUFFER." An area of predominantly deeply rooted native vegetated land adjacent to channels, wetlands, lakes, or ponds for the purpose of stabilizing banks and reducing contaminants, including sediments, in stormwater that flows to such areas.

"BUILDING." A walled and roofed structure, storage tanks, that is principally above ground, including manufactured homes, prefabricated buildings, and gas or liquid storage tank(s). The term also includes recreational vehicles and travel trailers installed on a site for more than 180 days per year.

"BULLETIN 70." Frequency Distributions and Hydro-climatic Characteristics of Heavy Rainstorms in Illinois, by Floyd Huff and James Angel of the Illinois State Water Survey (1989).

"CAPACITY OF A STORMWATER DETENTION FACILITY." This is the maximum volume that can be stored by a stormwater detention facility without causing damage to the public or encroachment upon private property.

"CAPACITY OF A STORMWATER DRAINAGE FACILITY." This is the maximum flow at atmospheric pressure that can be conveyed by the facility without causing damage to the public or encroachment upon private property.

"CHANNEL." A natural or artificial watercourse of perceptible extent which periodically or continuously contains moving water, or which forms a connecting line between two bodies of water. It has a defined bed and banks which serve to confine the water.

"CHANNEL MODIFICATION." Alteration of a channel by changing the physical dimensions, slopes, or materials of its bed or banks. Channel modification includes damming, riprapping (or other armoring), widening, deepening, straightening, relocating, lining, and significant removal of native vegetation from the bottom or banks. Channel

modification does not include the clearing of dead or dying vegetation, debris, or trash from the channel. Channelization is a severe form of channel modification involving a significant change in the channel cross-section typically involving relocation of the exiting channel (e.g., straightening).

"CITY." The City of Danville, Vermilion County, Illinois.

"COMPENSATORY STORAGE." An artificially excavated, hydraulically equivalent volume of storage within the floodplain used to balance the loss of natural flood storage and flow conveyance capacity when artificial fill or structures are placed within the floodplain. The uncompensated loss of natural floodplain storage and conveyance capacity can increase off-site floodwater elevations and flows.

"CONDUIT." Any channel, pipe, sewer, or culvert used for the conveyance or movement of water, whether open or closed.

"CONSTRUCTION." The placement, erection, or reconstruction of any building or structure, any filling or excavation, the installation of any utility, or the storage of construction materials. Construction includes, but is not limited to, modifications to any land, modifications to an existing building that would change the building's outside dimensions, channel modifications and enclosures, roads, bridges, culverts, levees, bank protection, walls, fences, and any other man-made activity. Construction does not include normal maintenance and repair activities or farming operations such as disking and plowing.

"CONTROL STRUCTURE." A facility constructed to regulate the volume of stormwater that is released during a specific length of time.

"CRITICAL DURATION STORM." The design storm which provides the highest flood discharges/water surface elevation for the flooding source.

"CULVERT." A closed conduit for the passage of surface drainage water under a roadway, railroad, canal, or other impediment.

"DEPRESSIONAL STORAGE." The volume contained below a closed contour, the upper elevation of which is determined by the invert of a surface gravity outlet.

"DESIGN STORM EVENT." The runoff, rainfall or flood event with a defined likelihood of occurring in any given year that is used for designing the capacity of an element in the stormwater management system.

"DETENTION STORAGE." Temporary detention or storage of stormwater in storage basins, on rooftops, in streets, parking lots, school yards, parks, open space, or other areas under predetermined and controlled conditions, with the rate of drainage therefrom regulated by appropriately installed devices.

"DEVELOPMENT" Any man-made change to improved or unimproved real estate, including construction, reconstruction, or placement of a building or any addition to a building, installing a manufactured home on a site, preparing a site for a manufactured home; redevelopment of a site; clearing of land as an adjunct of construction; construction or erection of levees, walls, fences, dams, or culverts, channel modification; filling, dredging, grading, excavating, paving, or other non-agricultural alterations of the ground surface; storage of materials; deposit of solid or liquid waste, any other activity of man that might change the direction, height, or velocity of flood or surface water, including extensive vegetation removal; and substantial improvement of an existing building. Development does not include routine maintenance of existing buildings and facilities such as

reroofing or re-surfacing of roads when there is no increase in elevation, or gardening, plowing, and similar agricultural practices that do not involve filling, grading, or construction of levees.

"DISCHARGE." The rate of outflow of water from a stormwater detention facility.

"DISTURBED AREA." The part of the project site that will be hydrologically disturbed during the construction or demolition of any facility. The disturbed area shall include all area required for site access, equipment storage and movement and the limits of the facility itself.

"DRAINAGE AREA." The area from which water is carried off by a drainage system; a watershed or catchment area above a given point.

"DRAINAGE EASEMENT." Authorization by a property owner allowing use of a designated portion of his/her property by others for drainage purposes.

"DRY BOTTOM STORMWATER DETENTION BASIN." A facility that is designed to be normally dry and which accumulates stormwater runoff only during periods when the restricted stormwater runoff release rate is less than the stormwater inflow rate.

"EXCESS STORMWATER PASSAGEWAY." A channel formed on the surface of the soil to carry excess stormwater runoff through a specific area from dominant to servient land areas.

"EASEMENT." Grant or reservation by the owner of land for the use of such land by others for a specific purpose or purposes, and which must be included in the conveyance of land affected by such easement.

"EROSION." The general process whereby soils are moved by wind, water, wave, or ice action.

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

"EXEMPTION." Land development activities that are not subject to the stormwater management permit requirements contained in this ordinance.

"FIELD TILE." An agricultural drainage system to remove excess water from soil subsurface through perforated pipes in the ground.

"FIVE-YEAR (5-YR) EVENT" A runoff, rainfall, or flood event having a 1 in 5 (20%) chance of occurring in any given year.

"FLOOD ELEVATION." The elevation of all locations delineating the maximum level of high waters for a flood of given return period.

"FLOODPLAIN." The special flood hazard lands adjoining a watercourse, the surface elevation of which is lower than the flood elevation and which are subject to periodic inundation during floods.

"FLOODWAY." A channel of a watercourse and those portions of the adjoining floodplain which are reasonably required to carry and discharge the design flood.

"FREEBOARD." An increment of height added to the base flood elevation (BFE), groundwater table, or 100-year

design water surface elevation to provide a factor of safety for uncertainties in calculations, unknown local conditions, wave action, nonstationary climate, and unpredictable effects such as those caused by ice or debris jams.

"GRADE." The inclination or slope of a channel, canal, conduit, etc., or natural ground surface, usually expressed in terms of percentage the vertical rise (or fall) bears to the corresponding horizontal distance.

"GREEN INFRASTRUCTURE." Any stormwater management technique or practice that reduces runoff volume through preserving, restoring, utilizing, or enhancing the processes of infiltration, evapotranspiration, and water reuse. These may include green roofs, naturalized detention facilities, trees and tree boxes, rain gardens, bio-retention areas, vegetated swales, vegetated buffer, wetlands, infiltration planters, porous and permeable pavements, porous piping systems, dry wells, vegetated median strips, reforestation/revegetation, rain barrels and cisterns, and protection and enhancement of riparian buffers and floodplains.

"GROUNDWATER." Water that is located beneath the ground or pavement surface.

"HYDROGRAPH." A graph showing the flowrate for a given location on a stream or conduit with respect to time.

"HYDROLOGICALLY DISTURBED." An area where the land surface or existing impervious area has been cleared, grubbed, compacted or otherwise modified, or when stormwater runoff, volumes, rates, flow direction or inundation durations are altered."

"IMPERMEABLE." A term applied to material through which water cannot pass.

"IMPERVIOUS AREA." Land cover such as, but not limited to, nonporous asphalt or asphalt sealants, non-porous concrete, roofing materials except planted rooftops designed to reduce runoff, and gravel surfaces used as roadways or parking lots, that prevent infiltration.

(A) "EXISTING IMPERVIOUS AREA." The difference between the net new impervious area and the impervious area on the overall site that is present at the time of application for a SWM Permit

(B) "NET NEW IMPERVIOUS AREA." The difference of impervious area on the overall site that is present at the time of application for a SWM Permit and the amount of impervious area after improvements are made.

"INFILTRATION." The passage or movement of water into the soil horizon.

"INLET." An opening into a storm sewer system for the entrance of surface storm runoff, more completely described as a storm sewer inlet.

"MAJOR DRAINAGE SYSTEM" That portion of a drainage system needed to store and convey flows beyond the capacity of the minor drainage system

“MINOR DRAINAGE SYSTEM” All infrastructure including curb, gutter, culverts, roadside ditches and swales, and storm sewers and subsurface drainage systems intended to convey stormwater runoff less than or equal to the design storm event required by the ordinance.

"NATURAL DRAINAGE." Water flow by gravity in channels formed by the true surface topography of the earth prior to changes made by the efforts of man.

"NATURAL DRAINAGE CONDITION." The situation whereby water flows by gravity in channels formed by the true surface topography of the earth prior to changes made by the efforts of man.

“NEW IMPERVIOUS AREA.” The area on a site that was pervious at the time of application for SWM Permit and will be impervious after improvements are made.

“ONE HUNDRED-YEAR (100-YR) EVENT.” A rainfall, runoff, or flood event having a 1 in 100 (1%) chance of occurring in any given year.

“OPEN CHANNEL.” A conveyance system with a definable bed and banks carrying the discharge from field tiles, surface drainage, and/or storm sewer system, but does not include grassed swales within farm fields under agricultural production which are ephemeral.

"OWNER." The record title holder or a beneficiary of a land trust which is the record title holder, and includes singular or plural; if the owner is other than an individual, the term includes beneficiaries, agents, shareholders, officers and directors, partnerships, associations, firms, trusts, clubs, companies, or corporations.

“OVERALL SITE.” The entire area included in the legal description of the land upon which the land disturbing or land development activity is proposed.

“OVERLAND FLOW PATH.” A design feature of the major stormwater system which carries flows in excess of the minor stormwater system design capacity in an open channel or swale, or as sheet flow or weir flow over a feature designed to withstand the particular erosive forces involved.

"PEAK FLOW." The maximum rate of flow of water at a given point in a channel or conduit resulting from a predetermined storm or flood.

"PERSON." An individual, public or private corporation, government, partnership, or unincorporated association.

"POSITIVE GRAVITY OUTLET." A term used to describe the drainage of an area in a manner that will ensure complete removal of all surface water by means of gravity

“PROPERTY.” A parcel of real estate.

"RECOGNIZED AGENCY." A governmental unit or agency which has statistically and consistently examined local, climatic, and geologic conditions and maintained records as they apply to stormwater runoff, e.g. U.S. Weather Bureau, University of Illinois Engineering Experiment Station, and the Illinois State Water Survey.

"RECORD." This includes "recorded", and "lot of record", and shall mean a lot or parcel of land which has been recorded in the office of the County Recorder of Vermilion County, Illinois, the deed to which was of record as

of the effective date of this chapter.

“REDEVELOPED IMPERVIOUS AREA.” The area on a site that was impervious at the time of application for SWM Permit and will be replaced with new impervious area after improvements are made.

"RETENTION BASIN." A structure or feature designed to retain stormwater over a period of time, with its release being positively controlled over a longer period of time than a typical "detention" storage facility.

"RETURN PERIOD." The average interval of time within which a given rainfall event will be equaled or exceeded once. See also, “FIVE YEAR EVENT, ONE HUNDRED YEAR EVENT, TEN YEAR EVENT, and TWO YEAR EVENT.

"RUNOFF COEFFICIENT." A decimal fraction relating the amount of rain which appears as runoff and reaches the storm sewer system to the total amount of rain falling. A coefficient of 0.5 implies that 50% of the rain falling on a given surface appears as stormwater runoff.

“SEDIMENTATION.” The process that deposits soils, debris, and other materials either on other ground surfaces or in bodies of water or watercourses or stormwater drainage systems.

“SITE.” All of the land contemplated to be part of a coordinated development of one or more parcels.

"STORM SEWER." A closed conduit for conveying collected stormwater.

"STORMWATER DRAINAGE SYSTEM." All means, natural or man-made, used for conducting stormwater to, through or from a drainage area to the point of final outlet, including but not limited to any of the following: conduits, appurtenant features, canals, channels, ditches, streams, culverts, streets and pumping stations.

“STORMWATER MANAGEMENT FACILITY.” Something designed, built and installed to reduce the stormwater runoff flow or volume from a site or to improve the water quality of the stormwater runoff leaving the site.

“STORMWATER MANAGEMENT (SWM).” A system of vegetative, structural, non-structural, and educational measures that control the volume, rate, and pollutants of stormwater.

“STORMWATER MANAGEMENT PERMIT (SWM PERMIT).” An approval shall be issued by the administrator prior to the approval of a building permit. Issuance of a stormwater management permit signifies conformance with the approved stormwater plan.

“STORMWATER MANAGEMENT PLAN.” A plan submitted by the applicant that demonstrates that a development meets the design requirements of this ordinance. The stormwater management plan shall meet the requirements of Section 162.06 of this chapter.

"STORMWATER RUNOFF." The water that results from precipitation which is not absorbed by soil or plant material, which does not evaporate and which flows over the surface of the ground or is collected in channels, conduits or ponds.

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

"STORMWATER STORAGE AREA." An area designated to temporarily accumulate excess stormwater.

"STRUCTURE." Anything which is constructed or erected with a fixed location on the ground or attached to something having a fixed location on the ground. Among other things, structures include buildings, fences, signs, mobile homes, swimming pools, and walls.

"TRADITIONAL AGRICULTURAL USES." Uses commonly classed as agricultural or horticultural, including forestry, crop farming, truck gardening, wholesale nursery operations, animal husbandry, the operation of any machinery or vehicles incidental to said uses, and the construction of a single-family dwelling and other farm structures incidental to and typically associated with said uses.

"TRIBUTARY WATERSHED." The entire catchment area that contributes stormwater runoff to a given point.

"TEN-YEAR (10-YR) EVENT." A runoff, rainfall, or flood event having a 1 in 10 (10%) chance of occurring in any given year.

"TWO-YEAR (2-YR) EVENT." A runoff, rainfall, or flood event having a 1 in 2 (50%) chance of occurring in any given year.

"WATERCOURSE." Any stream, creek, brook, branch, natural or artificial depression, slough, gulch, reservoir, lake, pond or natural or man-made drainageway in or into which stormwater runoff and flood waters flow either regularly or intermittently.

"WATERSHED." All land drained by, or contributing water to the same stream, lake, stormwater facility, or draining to a point.

"WATER QUALITY." The biological, chemical, and physical conditions of water. It is a measure of water's ability to support beneficial uses. The United State Environmental Protection Agency sets water quality standards for all contaminants in surface waters.

"WET BOTTOM STORMWATER STORAGE AREA." A facility that contains a body of water and which accumulates excess stormwater during periods when the restricted stormwater runoff release rate is less than the stormwater inflow rate.

"WETLAND." Areas which are inundated or saturated by surface or ground water (hydrology) at a frequency and duration sufficient to support, under normal circumstances, a prevalence of vegetation (hydrophytes) typically adapted for life in saturated soil conditions (hydric soils). Wetlands generally include swamps, marshes, bogs, and similar areas.

162.03 AUTHORITY AND APPROVALS

(A) The administration and enforcement of this chapter shall be the responsibility of the administrator.

(B) One of the primary duties of the administrator shall be to review all stormwater management applications and issue permits for projects that are in compliance with the provisions of this ordinance. The administrator shall be responsible for the administration and enforcement of this ordinance.

(C) In carrying out the responsibilities of administering this chapter, the administrator may establish rules and procedures to assist in his/her efforts, provided said rules and procedures conform to the intent and purpose of this chapter.

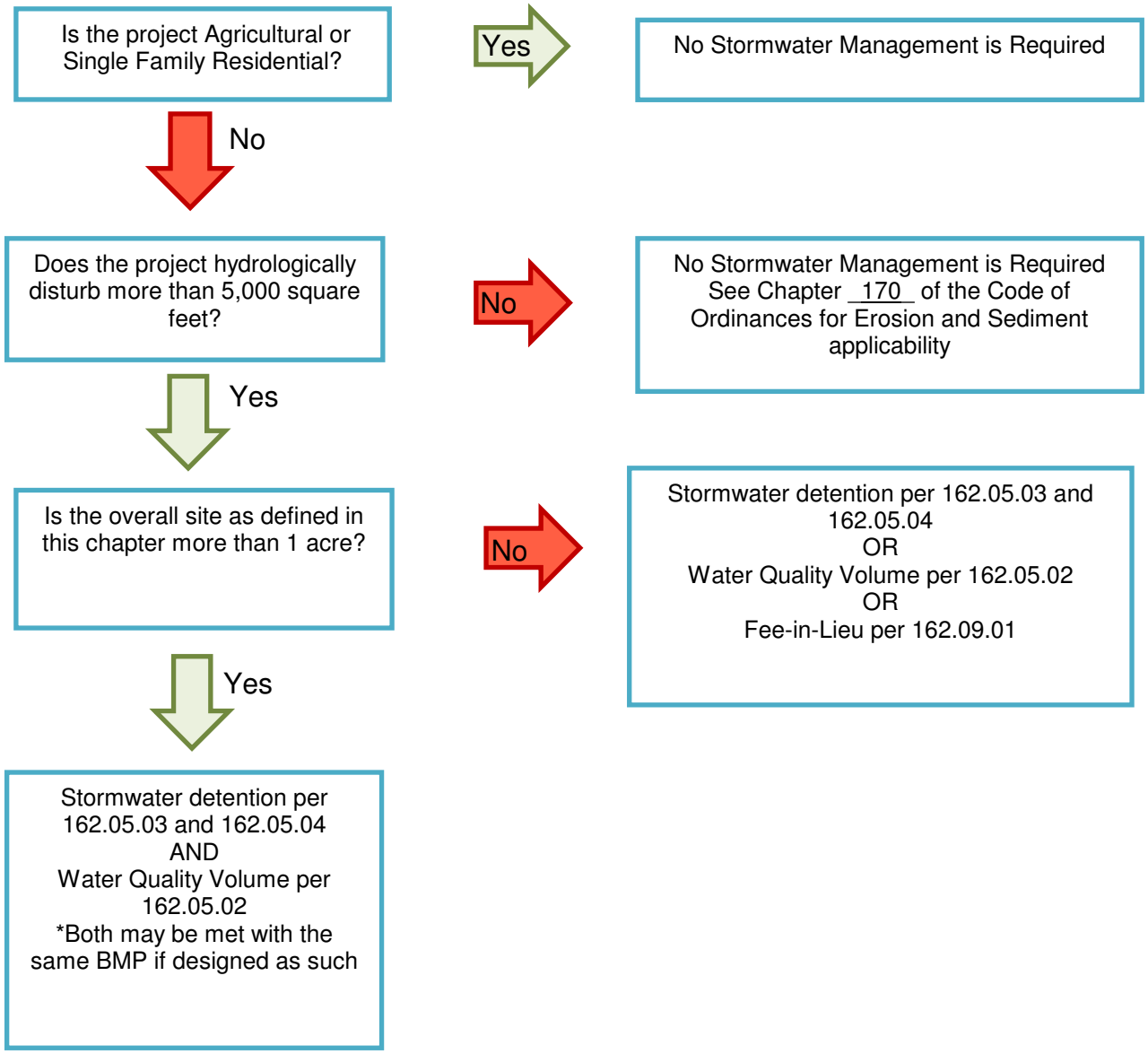
(D) If, as part of his/her responsibilities of administering this chapter, the administrator identifies ambiguities relative to the provisions of this chapter, the administrator may independently, or after consultation with others, issue a written interpretation clarifying the meaning of any ambiguous provision. Said written interpretation shall guide future administrative activities by the administrator.

162.04 GENERAL PROVISIONS AND JURISDICTION

162.04.01 APPLICABILITY

These regulations shall apply to all development within the City and within the City's zoning jurisdiction to the extent permitted under the City's authority granted in its subdivision regulations and under state law for annexation agreements.

No person, firm, corporation, or governmental agency, unless specifically exempted, shall commence any regulated development on any lot or parcel of land without first obtaining a stormwater management permit (SWM permit) from the administrator. A stormwater management permit is required for development as defined in this chapter, including finalization of a plat, replat, planned unit development (PUD) or manufactured home park site plan. Stormwater management regulations are applicable if conditions are met in the following flowchart.


Is the project Agricultural or Single Family Residential?
Yes
No Stormwater Management is Required
No
Does the project hydrologically disturb more than 5,000 square feet?
No
No Stormwater Management is Required See Chapter _170_ of the Code of Ordinances for Erosion and Sediment applicability
Yes
Is the overall site as defined in this chapter more than 1 acre?
No
Stormwater detention per 162.05.03 and 162.05.04 OR Water Quality Volume per 162.05.02 OR Fee-in-Lieu per 162.09.01
Yes
Stormwater detention per 162.05.03 and 162.05.04 AND Water Quality Volume per 162.05.02 *Both may be met with the same BMP if designed as such

162.04.03 AFFIDAVIT OF APPLICABILITY; PERMITS

(A) At the time the owner of any land requests a zoning permit, or submits a preliminary subdivision plat application, he/she shall execute and file an affidavit of applicability with the administrator. In this affidavit, the owner will state either that the provisions of this chapter apply to the subject property or that the chapter does not apply because it is exempt under the provisions of section 162.04.01

(B) Before starting any of the work regulated by this chapter, an owner or his/her agent shall comply with the requirements set forth in other applicable city ordinances with respect to the submission and approval of subdivision plats, improvement plans, building and zoning permits, inspections, appeals and similar matters, along with those set forth in this chapter, in addition to any other applicable regulations contained in state or federal law. Generally, where conflict exists between various applicable regulations, the most restrictive shall apply.

162.04.04 RETROACTIVITY

The adoption of this chapter, as herein provided, shall not operate to amend, modify or otherwise alter any current development or previously approved permits for development. All work being performed under previously issued permits must be performed in conformance with the terms and provisions of each permit. Resubmittal of applications or the submittal of proposed amendments to existing permits will be required for developments wishing to be permitted under the requirements of this chapter. Failure to so perform will result in enforcement activities to be taken in accordance with section 162.12 of this chapter.

162.05 STORMWATER MANAGEMENT STANDARDS

162.05.01 GENERAL REQUIREMENTS

(A) A SWM permit is required for all regulated development, unless preparation and submission of the SWM Permit is specifically exempted according to Section 162.04.01. No regulated activities shall commence until the City issues written approval of a SWM Permit, see section 162.06 for further information.

(B) For all regulated activities, pre- and post-construction erosion and sediment control measures and stormwater management BMPs shall be designed, implemented, operated, and maintained to meet the purposes and requirements of this ordinance. Various BMPs and their design standards are listed in the Illinois Urban Manual. See sections, 162.05.02, 162.05.03, 162.05.04, 162.05.05, 162.05.06 and Chapter 170 for further detail requirements.

(C) Unless prohibited by the City zoning ordinance or any ordinance which regulates construction and development within the areas of the City, stormwater management facilities located in the floodplain are permitted when designed and constructed in accordance with the floodplain management ordinance and the requirements of this ordinance.

(D) Impervious areas:

(1) The measurement of an impervious area shall include all of the impervious areas in the total proposed development, even if development is to take place in stages or phases.

(2) For development taking place in stages or phases, the entire development plan must be used in determining conformance with this ordinance.

(3) Any areas designed to initially be gravel or crushed stone shall be assumed to be impervious and compacted to support vehicular traffic.

(4) For new permeable pavement, designers should use one-half of the measured infiltration rate during design to approximate long-term infiltration rates or similar design standards based on the specifications of pavement used in the design.

(E) A planting plan is required for all vegetated stormwater BMPs. Refer to section 162.05.05.G for further information.

(F) Prior to construction, a tree protection zone shall be delineated at the dripline of the tree canopy. All trees scheduled to remain during construction shall be marked; however, where groups of trees exist, only the trees on the outside edge need to be marked. A 48-inch high snow fence or 48-inch high construction fence mounted on steel posts located 8 feet on center shall be placed along the tree protection boundary. No construction, storage of material, temporary parking, pollution of soil, or regrading shall occur within the tree protection zone.

(G) Drainage easements shall be provided where the conveyance, treatment, or storage of stormwater, either existing or proposed, is identified on the SWM permit. Drainage easements shall be provided to contain and convey the 100-year frequency flood.

(H) A plan for the ongoing maintenance of all stormwater management system components, including wetlands and buffer areas, is required prior to plan approval. See section 162.07 for specific requirements.

162.05.02 WATER QUALITY & VOLUME CONTROL

The standards of this section shall apply to all development meeting the conditions for water quality and volume control, as stated in Section 162.04.01.

The development shall provide water quality treatment for runoff from impervious areas to minimize impacts of post-development stormwater runoff on water quality. The development shall provide volume control for runoff to meet the requirements of Section 162.05.03. The SWM plan shall include a description of the water quality protection and volume control measures incorporated into the site design. Volume control practices may be incorporated into the water quality control practices.

(A) The first inch of runoff from the new impervious area and the first 0.5 inch of runoff from the redeveloped impervious area of development on the site shall be the water quality control storage.

(B) Volume control practices shall provide water quality treatment of the water quality control storage. Water quality and volume control practices shall be designed according to the following hierarchy. Appendix A outlines design specifications for the following control practices for water quality.

(1) Preservation of natural resource features of the development site (e.g., floodplains, wetlands, prairies, and woodlands);

(2) Preservation of the existing natural streams, channels, and drainageways;

(3) Minimizing impervious surfaces (e.g., narrowing road width, minimizing driveway length and width, clustering homes and shared driveways) created at the site, while maintaining compliancy with other community ordinances (i.e., fire vehicle access, etc.);

(4) The use of native, deep-rooted landscaping as an alternative to turf grass;

(5) The use of open vegetated channels, filter strips, and infiltration (basins, trenches, floodplain restoration, etc.) to convey, filter, and infiltrate stormwater runoff and minimize the usage of minor stormwater systems. Design requirements for non-structural BMPs are found in Section 162.05.05;

(6) Preservation of the natural infiltration and storage characteristics of the site (e.g., disconnection of impervious cover, on-lot bio-retention facilities, rooftop detention, parking lot detention);

(7) Structural measures that provide water quality and volume control (stormwater wetlands, wet detention facilities, sedimentation traps, etc.);

(8) Structural measures that provide only quantity control and conveyance;

(9) Other methods as may be found in the Illinois Urban Manual.

(C) All volume reductions plus volume control practices from proposed BMP's shall equal or exceed the required control volume (1" x new impervious area).

162.05.03 SITE RUNOFF CONTROLS

Site runoff control for large storms, up to the 100-year event, is essential to protect against immediate downstream impacts, flooding, and erosion.

(A) General design methods and standards.

(1) Calculation of required storage. The volume of required stormwater storage shall be calculated on the basis of the maximum value achieved from the runoff of a design event less the volume of water released through the outlet structure. The following standards shall apply to watersheds of various sizes:

(a) Development watershed area less than or equal to 10 acres. The Modified Rational Method shall be acceptable for development watersheds equal to or less than 10 acres in area.

(1) In determining the volume of storage required when using the Modified Rational Method, the release rate of the outlet structure shall be assumed to be constant and equal to the release rate through the outlet structure, when one-half of the storage volume is filled.

(2) In determining the maximum allowable release rate for the post-development event a runoff coefficient (C value) of 0.25 shall be used for assumed land cover conditions.

(3) Roughness coefficients most closely matching those of the TR-55 method shall be used to determine time of concentration. When applying Soil Conservation Service (SCS) methods an SCS Type II rainfall distribution shall be assumed.

(b) Development watershed area less than or equal to 2000 acres. The method utilized for calculation of required volume of storage shall be the "Soil Conversation Service TR-55" methodology for development watersheds less than or equal to 2000 acres in area.

(1) In determining the maximum allowable release rate for the post-development event a curve number shall be used corresponding to the actual soil types found on the development site provided, however, that the land cover row crops, "SR + CR" in "Good" hydrologic conditions are assumed.

(2) A roughness coefficient of 0.17 and a ponding adjustment factor of 0.87 shall also be assumed in calculating the maximum allowable release rate.

(c) Development watershed area greater than 2000 acres. Developments and drainage designs for development watersheds larger than 2000 acres shall use the Soil Conservation Service TR-20 methodology.

(1) Other routing techniques may be used in determining required storage volume upon the approval of the administrator.

(2) When applying Soil Conservation Service (SCS) methods an SCS Type II rainfall distribution shall be assumed

(B) Design Storm event.

(1) Precipitation values for all return period storms shall be determined utilizing the Illinois State Water Bulletin 70.

(a) A 100-year return period storm with a 24-hour duration shall be used for detention design.

(1) When using the Modified Rational Method the critical storm duration (that requiring the largest detention volume) for any design event shall be identified and used in determining storage volume.

(C) Release rates.

(1) Release rate shall be determined using one of the following methods:

(a) Method 1

(1) Release rate for 100 year, 24 hour design event shall not exceed 0.20 cfs/acre

(2) Release rate for the 2 year, 24 hour design event shall not exceed 0.04 cfs/acre

(b) Method 2

(1) For the 100-year precipitation, the rate shall not exceed the rate of discharge from the development area for the five-year return frequency precipitation event with the conditions defined in 162.05.03.A.1.

(2) Effective discharge for frequent storm events. The outlet structure maximum discharge for

each of the one-year, two-year, and five-year precipitation events shall be no greater than the rate of discharge from the development area assuming row crop agricultural land cover with the required assumptions described in division (A) above.

(2) Emergency overflow. Each stormwater storage facility shall be provided with a means of overflow during any event greater than the 100 year design event.

(3) Flood elevations. The entire stormwater storage facility shall be designed and constructed to fully protect the health, safety, and welfare of the public. The minimum building site elevation adjacent to wet or dry basins shall be set at a minimum of one foot above the maximum created head. The maximum created head will include the energy head at the emergency overflow structure.

(4) Off-site tributary areas.

(a) Stormwater storage facilities shall not receive runoff from tributary areas outside the development site unless the administrator determines that runoff from such areas can be accommodated in the storage area in a manner that will protect immediate downstream properties and unless required by other state or federal regulations.

(b) When stormwater runoff from tributary areas outside of the development cannot reasonably be directed around the stormwater storage area, the administrator may allow use of staged release outlet structures, which allow stormwater runoff from off-site areas to pass through the stormwater storage area undetained, while simultaneously detaining and providing controlled release for the volume of excess stormwater runoff from the site.

(5) Compensatory storage. Where portions of the owner's land are tributary to the same drain for an outlet, but which are within two or more tributary areas to that drain, the owner may construct, upon site-specific approval by the administrator, compensatory stormwater detention facilities within one tributary area which offset the lack of construction of stormwater detention facilities in another tributary area. Such compensatory storage shall be designed and constructed so that runoff is released into the drain to that rate which would have occurred had stormwater detention facilities been constructed for all the tributary areas. Any site developed using the provisions of this division must also conform to Illinois Department of Transportation (IDOT) regulations where applicable.

(6) Storage duration. The storage of excess stormwater runoff from a 100-year return period storm having a duration of 48 hours, released at the allowable rate, shall not result in a storage duration in excess of 48 hours. Storage duration may be longer due to unique site conditions upon site-specific approval of the administrator.

162.05.04 DETENTION FACILITIES

All regulated development shall provide a detention facility unless the overall site is less than one acre.

(A) Design Requirements

(1) Side slopes

(a) Maximum slope of 4:1

(b) Side slopes between 3:1 and 4:1 may be allowed with approval by the administrator.

(2) Outlet Control Structure
  (a) Debris catcher required for pipes 12 in or greater
  (b) Minimum design and construction standards:
    (1) Catcher shall minimize soil erosion.
    (2) Catcher shall not require manual adjustments for its proper operation.
    (3) Catcher shall operate properly with minimal maintenance or attention.
    (4) Catcher shall be provided with safety screens for any pipe or opening, other than a weir
    (5) Catcher shall be accessible at all times, including times of flood flow.

(3) Emergency overflow
  (a) Each stormwater storage facility shall be provided with a means of overflow.
  (b) This overflow structure shall be constructed to function without special maintenance attention and can become a part of the excess stormwater passageway for the entire development.

(4) Pipe outlets
  (a) Minimum size of 6" diameter.
  (b) Multiple outlet pipes of 12 inches or less are to be avoided.

(5) Adequate impact stilling basins shall be provided at the downstream side of any outlet structure to ensure that downstream soil erosion is mitigated as much as practicable.
(6) Warning signs shall be placed at appropriate locations to warn of deep water, possible flood conditions during storm periods, and of dangers that exist to pedestrian and vehicular traffic.

(B) Dry bottom stormwater storage areas

(1) Where possible, dry detention ponds shall serve a secondary purpose for recreation, open space, or similar types of uses which will not be adversely affected by occasional intermittent flooding and will not interfere with stormwater management.

(2) The maximum planned depth stored stormwater shall be 6'

(3) Minimum basin bottom slopes
  (a) 2% for Turf grass
  (b) Between 0.5% and 2% if tile underdrains are provided
  (c) Alternative designs using green infrastructure will be considered by the administrator.

(4) The required freeboard for detention facilities shall be one-foot or one-half the depth of the required volume storage, whichever is less.

(5) Paved low flow conduits or channels shall be provided when bottom grade is less than 0.5%.
  (a) Channels shall be constructed so that they:
    (1) Will not unnecessarily interfere with any secondary use of the storage area.
    (2) Reduce the frequency of time that storage area will be covered with water and facilitate dewatering of the soils in the stormwater storage area to avoid saturated soil conditions.
    (3) Low flow conduits shall facilitate complete interior drainage of the stormwater storage area.

(b) Tile underdrain systems may be required in combination with the low flow conduits or channel systems.
(c) Alternative designs using green infrastructure will be considered by the administrator.

(6) Tile underdrains shall be constructed such that they:
(1) Will not interfere with any secondary usage of the storage area.
(2) Facilitate dewatering of the soils in the stormwater storage area to avoid marshy or saturated soil conditions.

(7) Permanent erosion control measures shall be utilized to control soil movement and erosion within the storage area and excess stormwater passageway. These measures shall meet or exceed the standards established in the most current edition of the Illinois Urban Manual. The installation of these permanent measures shall take place after silt and sediment producing activities have been substantially complete and any sediment from construction activities has been removed from the stormwater facility.

(8) Temporary erosion and sediment control measures shall meet the requirements of Chapter 170 of the Code of Ordinances.

(C) Wet bottom stormwater storage areas.
(1) Minimum normal water depth (excluding safety ledges and side slopes)
(a) 6 feet
(b) At least one-quarter of the pond area shall be a minimum of ten feet deep if fish are to be maintained in the pond.

(2) Side Slope
(a) Safety ledge: from the normal water elevation to at a minimum 5 feet below the normal water elevation the side slope shall not exceed 6:1.
(b) Below a normal depth of five-foot, side slopes shall not exceed the stable angle of repose under saturated conditions of the soil material of the basin.

(3) Measures shall be included in the design to minimize pond stagnation and to help ensure adequate aerobic pond conditions.
(a) Facilities shall be provided to lower the pond elevation for cleaning purposes and shoreline maintenance.

(4) Permanent erosion control measures shall be utilized to protect the shoreline and control soil movement and erosion within the storage area and excess stormwater passageway. These measures shall meet or exceed the standards established in the most current edition of the Illinois Urban Manual. The installation of these permanent measures shall take placed after silt and sediment producing activities have been substantially complete and any sediment from construction activities has been removed from the stormwater facility.

(5) Erosion and Sediment Control shall meet the requirements of Chapter 170.

(D) Alternative stormwater storage areas. With approval from the administrator, the following storage facilities may be used.

(1) Paved stormwater storage.
   (a) Design and construction of the pavement base must ensure that there is minimal pavement damage due to flooding.
   (b) Control structures in paved areas must be readily accessible for maintenance and cleaning.
   (c) Flow control devices will be required unless otherwise approved by the administrator.

(2) Rooftop stormwater storage.
   (a) Rooftop storage of excess stormwater shall be designed and constructed to provide permanent control inlets and parapet walls to contain excess stormwater.
   (b) Adequate structural roof design must be provided to ensure that roof deflection does not occur which could cause the roofing material to fail and result in leakage.
   (c) Overflow areas must be provided to ensure that the weight of stormwater will never exceed the structural capacity of the roof.
   (d) Any rooftop storage of excess stormwater shall be approved only upon submission of building plans signed and sealed by a licensed structural engineer or architect attesting to the structural adequacy of the design.

(3) Automobile parking lot storage areas.
   (a) Depth of stored stormwater shall be 0.6 feet.
   (b) Storage areas shall be located in the most remote, least used areas of the parking facility.
   (c) Design and construction of automobile parking in stormwater areas must ensure that there is minimal damage to the parking facility due to flooding, including minimal damage to the subbase.
   (d) Warning signs shall be mounted at appropriate locations to warn of possible flood conditions during storm periods.

(4) Underground stormwater storage:
   (a) Shall be designed for easy access in order to remove accumulated sediment and debris.
   (b) Shall be provided with a positive gravity outlet unless otherwise approved by the administrator.

(E) Joint Construction: Stormwater storage areas may be planned and constructed jointly by two or more landowners provided the provisions of this chapter are met.

(F) Early Completion of Detention Facilities

(1) Where detention, retention, or depressional storage areas are to be used as part of the drainage system for a property, they shall be constructed as the first element of the initial earthwork program. This shall not prohibit an Applicant from proceeding with footings and foundations also, once the necessary stormwater control facilities are functional. Any eroded sediment captured in these facilities shall be removed by the applicant before project completion in order to maintain the design volume of the facilities.

(2) As-built drawings must be prepared and submitted by a registered professional engineer stating conformance with the design plans before final approval of the constructed improvements by the administrator.

162.05.05 NON-STRUCTURAL BMP DESIGN REQUIREMENTS

(A) Infiltration BMPs shall be spread out, made as shallow as practicable, and located to maximize use of natural on-site infiltration features while still meeting the other requirements of this ordinance.

(B) Infiltration BMPs intended to receive runoff from developed areas shall be selected based on suitability of soils and development site conditions and shall be constructed on soils that have the following characteristics:

(1) A minimum depth of 24 inches between the bottom of the facility and the infiltration horizon, unless it is demonstrated to the satisfaction of the administrator that the selected BMP has design criteria which allow for a smaller separation.
(2) A stabilized infiltration rate sufficient to accept the additional stormwater load and drain completely as determined by field tests conducted by the applicant's professional designer. The stabilized infiltration rate is to be determined in the same location and within the same soil horizon as the bottom of the infiltration facility.

(C) Areas proposed for infiltration BMPs shall be protected from sedimentation and compaction during the construction phase to maintain maximum infiltration capacity. Staging of earthmoving activities and selection of construction equipment should consider this protection.

(D) Infiltration BMPs shall not be constructed nor receive runoff from disturbed areas until the entire contributory drainage area to the infiltration BMP has achieved final stabilization.

(E) Roof drains and sump pumps shall be tributary to infiltration or vegetative BMPs. Use of catchment facilities for the purpose of reuse is also permitted.

(F) Infiltration practices should not be implemented in any of the following circumstances:

(1) Areas/sites where vehicle fueling and/or maintenance occurs;

(2) Areas/sites with shallow bedrock which allow movement of pollutants into the groundwater;

(3) Areas/sites where contaminants in soil or groundwater could be mobilized by infiltration of storm water;

(4) Areas/sites within a delineated source water protection area for a public drinking water supply where the potential for an introduction of pollutants into the groundwater exists. Information on groundwater protection may be found at http://www.epa.state.il.us/water/groundwater/index.html

(5) Areas/sites within 400 feet of a community water supply well if there is not a wellhead protection delineation area, or within 200 feet of a private water supply well. Information on wellhead protection may be found at http://www.epa.state.il.us/water/groundwater/index.html

(G) A planting plan is required for all vegetated stormwater BMPs.

(1) Native or naturalized / non-invasive vegetation suitable to the soil and hydrologic conditions of the

development site shall be used.

(2) Invasive vegetation may not be included in any planting schedule.

(3) Prior to construction, a tree protection zone shall be delineated at the dripline of the tree canopy. All trees scheduled to remain during construction shall be marked; however, where groups of trees exist, only the trees on the outside edge need to be marked. A 48-inch high snow fence or 48-inch high construction fence mounted on steel posts located 8 feet on center shall be placed along the tree protection boundary. No construction, storage of material, temporary parking, pollution of soil, or regrading shall occur within the tree protection zone.

(4) All planting shall be performed in conformance with good nursery and landscape practice. Plant materials shall conform to the standards recommended by the American Association of Nurseryman, Inc. in the American Standard of Nursery Stock.

162.05.06 STORMWATER CONVEYENCE SYSTEM DESIGN REQUIREMENTS

(A) Private Storm sewers and swales

(1) The 5-year critical duration storm shall be used as a minimum for the design of storm sewers, storm inlets, and minor swales from site runoff controls. Storm sewer design shall be sized on the assumption that they will flow full or practically full under the design discharge but will not be placed under the pressure head. Hydraulic grade line calculations shall be performed that demonstrate that sewer rims are not inundated at the design storm.

(2) Sites shall be designed to allow for flow from storms greater than 5-year critical duration storm to minimally pond water entering any stormwater management facilities.

(3) Storm sewers and swales shall not connect to sanitary sewers.

(4) Storm sewers and swales may connect to existing drain tiles or storm sewers only if the applicant submits a maintenance agreement, recorded easements, and a report that indicates the existing system from the connection to the discharge point in an open channel has adequate hydraulic capacity and structural integrity. The recorded easement and maintenance agreement must extend from the connection to the discharge point in an open channel. The recorded easement and maintenance agreement must be approved by the (administrator) prior to issuance of a stormwater management permit.

(5) Field tile systems disturbed during development must be reconnected by those responsible for their disturbance unless the approved drainage plan includes provisions for the system. All abandoned field tiles on the site shall be removed in their entirety.

(6) All storm sewers and minor swales shall be located in a public road right-of-way, a maintenance easement, or a covenant running with the land of sufficient size to maintain and reconstruct the conveyance system.

(7) Design practices intended to minimize erosion shall be provided at the inlets and outlets for all pipes, transitions, and channels.

(8) The minimum storm sewer size shall be 8 inches for the first pipe reach (except when using pipe as a releasing control device for upstream pipe detention) and greater than or equal to the preceding reach for all subsequent reaches unless approved by the (administrator).

(9) The minimum design velocity for a storm sewer shall be 2.5 feet per second. The maximum design velocity for a storm sewer shall be 8.0 feet per second.

(B) Overland Flow Paths

(1) All areas of development must provide an overland flow path that will pass the 100-year flood flow (including offsite tributary flow) without damage to structures or property. If the drainage area is less than 20 acres, the storm sewer pipe and inlet may be sized for the 100-year flow instead of providing an overland flow path.

(2) The overland flow path shall be protected from any development, such as fencing, landscaping, storage sheds, or other obstructions which could impair its function by impeding flow. This protection shall be established through a properly recorded covenant running with the land, restricting the use of the overland flow path area.

(3) The overland flow path shall be placed over natural grade, not overtop a pipe.

(4) Structures adjacent to an overland flow path shall have the following lowest opening elevation for the following tributary areas:
(a) One-half (1/2) foot above the BFE for tributary areas of 20 acres or less.
(b) One (1) foot above the BFE for tributary areas of 20 acres or greater.

(C) Streams and Channels

(1) If the proposed activity involves a channel modification, it shall be demonstrated that the proposed modifications meet all design requirements of this chapter with respect to stormwater runoff flow, volume, and quantity.

(2) All proposed modifications shall meet the requirements of all State and Federal design requirements.

(3) A copy of all required State and Federal permits shall be furnished to the City of Danville prior to any construction occurring within the channel.

162.06 STORMWATER MANAGEMENT PLANS

162.06.01 APPLICATION FEE

(A) An application for the review and approval of a stormwater management plan shall be made on the ~~Stormwater Management Application~~ applicable Land Disturbance Permit Form. The stormwater

management plan and ~~application~~ applicable Land Disturbance Permit Form shall be submitted at the same time of zoning permit or building permit application. ~~A Land Disturbance Permit may also be required.~~ See Chapter 170 of the Code of Ordinances for further information.

(B) No application shall be considered without prior payment ~~of~~ of a ~~the~~ separate ~~application~~ stormwater management review fee. The ~~application~~ review fees are:
(1) $200 initial review fee, which shall include the first and second review.
(2) $100 for each review after the second review.

(C) Third Party Engineering Involvement
For more complex developments, the administrator or applicant may retain the services of an independent third party review engineer. Said engineer will be chosen by the administrator to review and make recommendations relative to the review and approval process of a stormwater management plan developed under the provisions of this chapter. If the costs of such services exceed the value of the application fee, the administrator may require the owner to pay for additional expenses incurred by the city, but in no case shall these costs exceed a total of $1,500.

162.06.02 REVIEW AND APPROVAL OF STORMWATER MANAGEMENT PLANS

(A) The administrator shall review the plan to determine compliance with the requirements of this ordinance prior to approval. The plan shall serve as the basis for all subsequent construction.

(B) Notification of approval or reasons for disapproval or modification shall be given to the applicant within 15 working days after submission of the completed stormwater plan. If a decision is not made within 15 working days, the applicant shall be informed of the status of the review process and the anticipated completion date. The stormwater management plan shall not be considered approved without a letter of approval from the administrator.

162.06.03 CONTENTS OF THE STORMWATER MANAGEMENT PLAN

(A) The Applicant is responsible for submitting a stormwater management plan that meets the design requirements of this ordinance. The stormwater management plan shall contain supporting computations, drawings, and sufficient information describing the manner, location, and type of measures in which stormwater runoff will be managed from the entire development. The minimum information submitted for support of a stormwater management plan shall be as follows:

(1) A Report(s) that includes sufficient information to evaluate the environmental characteristics of affected areas, the potential impacts of the proposed development on water resources, and the effectiveness and acceptability of measures proposed for managing stormwater runoff. Reports submitted for stormwater management plan approval shall include: as applicable
(a) A brief narrative description of the project;
(b) Geotechnical investigations including soil maps, borings, site-specific recommendations, and any additional information necessary for the proposed stormwater management design;
(c) Descriptions of all water courses, impoundments, and wetlands on or adjacent to the site or into which stormwater directly flows;

(d) Hydrologic computations, including drainage area maps depicting pre-development and post-development runoff flow path segmentation and land use;
(e) Hydraulic computations for all stormwater management facilities including detention ponds, storm sewers, and overland flow paths;
(f) Hydraulic computations for non-structural BMPs ;
(g) Structural computations ;
(h) Volume computations ;
(i) Water quality computations; and
(j) Operations and Maintenance Plan (see Section 162.07)
(k) The report shall be signed and sealed by an Illinois registered Professional Engineer.

(2) Construction drawings submitted for stormwater management plan approval shall include the following:
(a) A vicinity map;
(b) Topography survey showing existing and proposed 1-foot contours, including the area necessary to determine downstream analysis for proposed stormwater management facilities;
(c) The location of all existing drainage system features, including banks and centerline of streams and channels, shoreline of lake, pond and detention basins; farm drains and tile; storm sewers.
(d) Any proposed improvements including location of buildings or other structures, impervious surfaces, storm drainage facilities, sanitary sewers, and all grading;
(e) The location of existing and proposed structures and utilities;
(f) Any easements and rights-of-way;
(g) The delineation, if applicable, of the regulatory and proposed (if applicable) 100-year floodplain and any on-site wetlands;
(h) Structural and construction details for all components of the proposed drainage system or systems, and stormwater management facilities;
(i) All necessary construction specifications;
(j) A sequence of construction;
(k) Data for total site area, disturbed area, new impervious area, and total impervious area;
(l) A table of materials to be used for stormwater management planting;
(m) All soil boring logs and locations;
(n) A maintenance schedule;
(o) Certification by the owner/applicant that all stormwater management construction will be done according to this plan; and
(p) An as-built certification signature block to be executed after project completion.
(q) An erosion and sediment control plan in accordance with Chapter 170.
(r) All construction drawings submitted shall be signed and sealed by an Illinois registered Professional Engineer.

(3) Additional Submittals
(a) Approval of a stormwater management plan does not create or affect any right to direct runoff onto adjacent property without that property owner's permission. If a stormwater management plan involves direction of some or all runoff of the site, it is the responsibility of the Applicant to obtain from adjacent property owners any easements or necessary property interests concerning flowage of water. Executed copies of all required easements shall be submitted at the time of stormwater management plan submitted.

(b) Any and all State or Federal permits that are required for the proposed development shall be submitted at the time of application.

162.07 OPERATIONS AND MAINTENANCE

162.07.01 MAINTENANCE RESPONSIBILITY

(A) The owner shall maintain all stormwater management facilities in good working order in accordance with the approved Operations and Maintenance (O&M) Plan.

(B) The owner shall convey to the municipality easements to assure access for inspections and maintenance, if required.

(C) The owner shall keep on file with the municipality the name, address, and telephone number of the person or company responsible for maintenance activities; in the event of a change, new information will be submitted to the municipality within ten (10) days of the change.

(D) Enumerate permanent SWM facilities as permanent real estate appurtenances and record as deed restrictions or easements that run with the land.

(E) The record owner of the development site shall sign and record an Operation and Maintenance (O&M) Agreement covering all SWM facilities, including riparian buffers and riparian forest buffers, which are to be privately owned.

(F) The O&M Plan and Agreement shall be recorded with the Recorder of Deeds of Vermilion County as a restrictive covenant agreement that runs with the land.

162.07.02 OPERATION AND MAINTENANCE PLAN

(A) The Operation and Maintenance Agreement includes the Operation and Maintenance Plan and shall be subject to the review and approval of the administrator.

(B) The O&M Plan shall clearly establish the operation and maintenance necessary to ensure the proper functioning of all temporary and permanent stormwater management facilities and erosion and sedimentation control facilities, if applicable. See Chapter 170 of the Code of Ordinances for further information. The O&M Plan shall be submitted with the stormwater management ~~permit application~~plan to the administrator.

(1) O&M Plans shall be kept on file by the municipality for all stormwater management systems.

(2) The following shall be addressed in the O&M Plan:
(a) Description of maintenance requirements, including, but not limited to, the following:

(1) Regular inspection of the SWM facilities. To assure proper implementation of stormwater volume and stormwater quality BMP maintenance and care, BMPs should be inspected by a qualified person, which may include the landowner, or the owner's designee (including the municipality for dedicated and owned facilities), according to the following minimum frequencies:
   (a) The first year of operation.
   (b) Once every 3 years thereafter
(2) All pipes, swales, and detention facilities shall be kept free of any debris or other obstruction and in original design condition.
(3) Removal of silt from all permanent structures which trap silt or sediment in order to keep the material from building up in grass waterways, pipes, detention or retention basins, infiltration structures, or BMPs, and thus reducing their capacity to convey or store water.
(4) Re-establishment of vegetation of scoured areas or areas where vegetation has not been successfully established. Selection of seed mixtures shall be subject to approval by the municipality.

(b) After notification is provided to the owner of any deficiencies discovered from an inspection of a stormwater management system, the owner shall have 30 days to correct the deficiencies. The municipality may then conduct a subsequent inspection to ensure completion of the repairs.

(c) If, after an inspection by the municipality, the condition of a stormwater management facility presents an immediate danger to the public health or safety because of an unsafe condition or improper maintenance, the municipality shall take such action as may be necessary to protect the public and make the facility safe. Any cost incurred by the municipality shall be assessed against the owner(s).

162.08 INSPECTIONS

(A) Inspection Requirements during Construction

(1) The SWM Permit approved by the administrator is required to be on site throughout the duration of the regulated activity.

(2) The Applicant shall notify the municipality at least 48 hours before commencing any work in conjunction with the stormwater management plan and upon completion of the project when a final inspection will be conducted.

(3) The administrator or his representative may conduct periodic inspections of the work in progress to be certain that the stormwater management systems are being built as designed.

(4) The owner/applicant and on-site personnel shall be notified in writing when violations are observed. Written notification shall describe the nature of the violation and the required corrective action and date.

(5) At a minimum, regular inspections shall be made and documented by the applicant, and the city shall be notified before the following specified stages of construction:
   (a) Placement of structural fill, concrete, and installation of piping and catch basins;

(b) Placement of backfill of underdrain systems and observation wells;
(c) Placement of geotextiles and all filter media;
(d) Installation of green infrastructure;
(e) Upon completion of final grading and establishment of permanent stabilization,

(B) Inspections Requirements after construction

(1) Final Inspection: Upon notification by the owner that the drainage system is completed and upon receipt of as-built plans, the administrator or his representative may make a final inspection. The property owner shall correct any such deficiencies before the Certificate of Occupancy is released.

(2) Routine inspections. All privately owned drainage systems may be inspected by representatives of the administrator at any reasonable time.

162.09 VARIANCES AND APPEALS

162.09.01 FEE IN LIEU OF STORMWATER MANAGEMENT REQUIREMENTS

A) For the purpose of this section stormwater management can also mean water quality requirements.
B) For overall sites that are under 1 acre and for which stormwater management was not previously provided, a fee in lieu of stormwater management may be allowed by the Administrator when it is demonstrated that the requirements of this Chapter are not practical.
C) When it is demonstrated that waiving stormwater management requirements will not cause harm to downstream property owners, the Administrator will then determine to what extent, if any, a fee-in-lieu may be applied.
D) The fee in lieu of stormwater management shall be calculated as $0.75 per a square foot of the overall site for all sites except those zoned B4 whose fee-in-lieu of stormwater management shall be calculated as $0.25 per square foot of the overall site.
E) The fee in lieu will be assessed against the development prior to the issuance of a Stormwater Management Permit.
F) All funds generated by the fees collected pursuant to this section shall be deposited into the City's Storm Sewer Maintenance Line Items.

162.09.02 OTHER VARIANCES AND APPEALS

(A) The administrator upon application, and subject to the process and standards that follow, may grant variances to the provisions of this ordinance as will not cause detriment to the public good, safety, or welfare nor be contrary to the spirit, purpose, and intent of this ordinance where, by reason of unique and exceptional physical circumstances or condition of a particular property, the literal enforcement of the provisions of this ordinance would result in an unreasonable hardship.

(B) Any person wishing to appeal, or seeking a variance in, a determination made by the administrator under the provisions of this chapter may do so to the board of appeals by following the procedures set forth in § 150.146 of this code of ordinances. Failure to file said appeal within the required time shall preclude further

review. The appeal must state specifically:

(1) The determination made by the administrator that is being appealed;
(2) The basis for the appeal;
(3) The position of the party appealing;
(4) Any supportive information for the position of the party appealing; and
(5) Such additional information as the party may wish to submit.

Any person aggrieved by a decision, requirements, ruling, or interpretation of this ordinance by the administrator may appeal it to the municipality by written notice filed with the Zoning Board of Appeals within ten (10) days of the determination.

162.10 VIOLATION AND PENALTY

(A) Any person or owner determined by the administrator, or a court having jurisdiction, to be in violation of any of the provisions of this chapter, except as required or mandated by any state and/or federal agency having concurrent or superior regulatory jurisdiction, shall be fined not less than $100 and not more than $1,000 for each violation. Each day the violation continues shall be deemed a separate offense.

(B) Procedures for the enforcement and penalty for failure to comply with this Chapter shall be in accordance with Chapter 166 of the City Code of the City of Danville, Il.

(C) The city reserves the right to seek any and all additional legal remedies allowed by the state statutes and other city codes, against an owner deemed to be in violation of this chapter, including but not limited to personal judgments, and the recovery of all administrative costs incurred as part of the enforcement proceedings.

162.11 DISCLAIMER OF LIABILITY

It is recognized that the degree of flood protection required by this ordinance is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. However, on occasion, greater floods than the base flood will occur and will result in greater flood heights and flood damage. Furthermore, flood heights may be increased by other man-made or natural causes. These provisions do not imply that land outside the floodplain or flood-prone areas or that uses permitted within such areas will be free from flooding or flood damages. These provisions shall not create liability on the part of the City of Danville nor any officer or employee thereof for any flood damages that result from reliance on this ordinance or any administrative decision lawfully made there under.

162.12 SEVERABILITY

If any section, clause, provision or portion of this chapter is judged unconstitutional or invalid by a court of competent jurisdiction, the remainder of this chapter shall remain in force and not be affected by such judgment.

APPENDIX A: WATER QUALITY VOLUME CONTROL PRACTICES DESIGN SPECIFICATIONS

The following information is from the Department of Environmental Protection, Bureau of Watershed Management. Pennsylvania Stormwater Best Management Practices Manual, Chapter 5: Non-Structural BMPs and Chapter 8: Stormwater Calculations and Methodology. December, 2006.

PRESERVATION OF NATURAL RESOURCE FEATURES OF THE DEVELOPMENT SITE (e.g., FLOODPLAINS, WETLANDS, PRAIRIES, AND WOODLANDS)

Preserved natural resource features are not to be included in the Runoff Volume calculation

Stormwater Management Area = (Total Area – Preserved Area)

Runoff from the Preserved Areas may be excluded from peak rate calculations for runoff control, provided that the runoff from the Preserved Area is not conveyed to and/or through stormwater management control structures. If necessary, runoff from Preserved Areas should be directed around BMPs and stormwater pipes and inlets by means of vegetated swales or low berms that direct flow to natural drainage ways.

PRESERVATION OF THE EXISTING NATURAL STREAMS, CHANNELS, AND DRAINAGE WAYS

A volume reduction may be credited based upon the area of the natural drainage feature that is vegetated.

Volume Reduction (ft3) = Area x ¼" runoff

= Vegetated Area of Natural Drainage Feature (ft2) x ¼"/12

The peak rate is reduced by a longer travel time of runoff through natural drainage features. The time of travel (Tt) after development may be considered the same as the Tt before development for flows through natural drainage features. When calculating flow rates:

Tt_before = Tt_after

MINIMIZING IMPERVIOUS SURFACES

Minimizing impervious surfaces is "self-crediting" in that the use of this BMP automatically provides a reduction in impervious area and a corresponding reduction in stormwater impacts.

THE USE OF NATURAL LANDSCAPING AS AN ALTERNATIVE TO TURF GRASS

A volume reduction may be credited in the same manner as for preservation:

Volume Reduction (ft3) = Area x ¼" runoff
= Vegetated Area of Natural Landscaping (ft2) x ¼"/12

The peak rate for runoff will be reduced by using the reduced volume as calculated above.

THE USE OF OPEN VEGETATED CHANNELS, FILTER STRIPS, AND INFILTRATION (BASINS, TRENCHES, FLOODPLAIN RESTORATION, ETC.) TO CONVEY, FILTER, AND INFILTRATE STORMWATER RUNOFF

Storage volume equals the amount of runoff the facility can hold.

PRESERVATION OF THE NATURAL INFILTRATION AND STORAGE CHARACTERISTICS OF THE SITE (E.G. DISCONNECTION OF IMPERVIOUS COVER, ON-LOT BIORETENTION FACILITIES, ROOFTOP DETENTION, PARKING LOT DETENTION)

A volume reduction may be credited based upon the area that will be disconnected from a storm sewer or other structural facility and drain into an infiltrating area instead.

Volume Reduction (ft3) = Disconnected area (ft2) x ¼"/12

The peak rate for runoff will be reduced by using the reduced volume as calculated above.

STRUCTURAL MEASURES THAT PROVIDE WATER QUALITY AND QUANTITY CONTROL (STORMWATER WETLANDS, WET DETENTION FACILITIES, SEDIMENTATION TRAPS, ETC.);

Storage volume equals the amount of runoff the facility can hold.

STRUCTURAL MEASURES THAT PROVIDE ONLY QUANTITY CONTROL AND CONVEYANCE.

Storage volume equals the amount of runoff the facility can hold.

~~**APPENDIX B: Stormwater Management Application**~~

SECTION 2: This amendatory Ordinance shall be effective ten (10) days after its passage, approval and publication in pamphlet form.

PASSED this 16th day of May, 2017, by 13 ayes, 0 nays and 1 absent.

APPROVED:

By:_____
Mayor

ATTEST:

By:_____
City Clerk