

# CHAPTER 162: STORMWATER MANAGEMENT

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### § 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) Purpose. The purpose of this chapter is to control the transportation or movement of stormwater and reduce the damage to property and injury to persons and promote the orderly development of land and water resources.

(C) Intent. The intent of this chapter is to require temporary storage of stormwater runoff, to control the rate of release of stormwater runoff, provide for adequate drainage of development sites and surrounding areas, and protect existing agricultural drainage systems. Further, it is intended that this chapter complement the Subdivision Regulations ([Chapter 154](#)) and the Zoning Code ([Chapter 150](#)).

(D) Policy. This chapter establishes a stormwater management policy for the future control of stormwater runoff within the jurisdictional limits of the city. Accordingly, a combination of temporary storage and the controlled release of stormwater runoff shall generally be required for all new commercial and industrial developments, residential subdivisions, planned unit developments, and any redevelopment or other new construction, further defined in §§ [162.02](#) and [162.03](#) of this chapter. It is intended that the maximum controlled stormwater release rate shall not exceed the natural safe stormwater drainage capacity of the downstream stormwater drainage system as defined by this chapter.

(E) It is anticipated in this chapter that a landowner shall be allowed to pass through existing excess stormwater runoff from tributary areas upstream from that owner's land without storage or controlled release of such runoff. It is further anticipated that this chapter will require the controlled release of excess stormwater runoff resulting from development on an owner's land. The controlled release rate of excess stormwater runoff from an owner's land shall not exceed the rate of runoff which would have occurred from that owner's land prior to the subject development or redevelopment of that owner's land. It is presumed that prior to development, the owner's land had a traditional agricultural use. It is further presumed that the maximum safe stormwater drainage capacity for downstream stormwater drainage systems is the capacity required to carry a rate of stormwater runoff from a five-year return period storm prior to the effective date of this chapter.

(Ord. 7642, passed 4-20-93)

#### § 162.02 APPLICABILITY.

(A) This chapter shall apply to the following developments:

(1) All new or expanded subdivisions which require the approval of the city pursuant to the provisions of [Chapter 154](#) "Subdivisions."

(2) Generally, any new construction, within the city's area of zoning jurisdiction pursuant to the provisions of [Chapter 150](#) "Zoning Code," that increases the amount of impervious area of lot or parcel of land upon which it is constructed, or significantly restricts the general imperviousness of the subject development site.

(3) Except as may otherwise be provided herein, all structures erected hereafter, all uses of land or structures established hereafter, all improvements to watercourses, all structural alterations or relocation of existing structures occurring hereafter, and all enlargements of, or additions to, existing uses which increase the amount of impervious area, occurring hereafter, shall be subject to the provisions of this chapter. Therefore, except as provided in § [162.03](#), no building permit may be issued; no subdivision or plat of land may be approved or recorded; no mobile home, independent travel trailer, or recreational travel trailer park permit may be issued; no planned unit development may be approved; no watercourse, stormwater drainage system storm sewer, or control structure may be constructed; and no paved or compacted area designed to be used for loading, open storage, or the parking or movement of vehicles may be constructed without first having complied with the applicable provisions of this chapter.

(B) Whenever storage and controlled release of stormwater is required for existing developed parcels, and where improvements upon such parcel were constructed prior to 1975, such storage

and the required controlled release rate shall apply to the net increase in the amount of runoff since 1974, except as may be required by another governmental agency having jurisdiction.

(C) Any area proposed for development, consisting of a tract of land of five or more acres in common ownership or interest and upon which phased development is proposed, shall be required to provide a combination of storage and controlled release of stormwater runoff for future development.

(1) Where phased development is proposed, the owner may construct, after receiving site specific approval from the administrator, one stormwater detention facility which is designed to be enlarged at later dates as additional portions of the overall site are developed. Phased construction shall include implementation of sufficient and enforceable covenants upon the land. The form of covenant shall be approved by the city's legal advisor, and the substance of the covenant shall reflect the approved overall detention plan for the site.

(2) Where a subdivision plat or a planned business development involves new lots more than one acre in size for commercial or industrial purposes, the developer/owner may provide a combination of storage and controlled release of stormwater runoff for the developed lots by sufficient and enforceable covenant upon the individual lots. The covenant shall require construction of on-site stormwater detention facilities upon each lot at the time of subsequent development of that lot. The form of covenant shall be approved by the city's legal advisor, and the substance of the covenant shall require construction of on-site stormwater runoff storage and controlled release of stormwater runoff from each lot in a manner approved by the administrator, and in accordance with the provisions of this chapter.

(D) Any property or development falling within the scope of the provisions of this chapter shall be subject to review by the administrator in order to establish and determine, in the opinion of the administrator, that no adverse consequences will arise downstream as a result of construction or improvements under the sought-after permit. Any property located within flood areas, as defined in [Chapter 157](#), shall be governed by such ordinance in the event of and to the extent of conflict with the provisions of this chapter.

(E) Along certain state highways, and in other specific circumstances, a detention plan regulated by this chapter, may also come under the jurisdiction of other state and/or federal regulations. When conflict occurs between state, federal, and local regulations, the most restrictive requirement shall apply unless otherwise specifically indicated in writing by the authorities having jurisdiction.

(Ord. 7642, passed 4-20-93)

### § 162.03 EXEMPTIONS.

The provisions of this chapter shall not apply to the following developments:

(A) Any development constructed totally upon a lot or parcel of land, recorded prior to the effective date of this chapter, that contains less than 10,000 square feet of land area, provided the development has less than 50% impervious surface area; or

(B) Any single-family residential (including duplexes) development on any lot or parcel of land, which was recorded prior to the effective date of this chapter; or

(C) Modification of single-family residential (including duplexes) structures which will continue to be used as single-family dwellings; or

(D) Single-family residential development on lots with less than three acres in total lot area, provided they have less than 25% impervious surface area, including the area of adjacent public or private streets; or

(E) Modification of existing structures or appurtenances, other than a single-family dwelling or duplex, which do not increase the amount of impervious area of the lot or parcel upon which it is constructed; or

(F) Modifications to any existing development in which the total increase in impervious area is less than 10%, or 5,000 square feet, whichever is less.

(G) Traditional agricultural land uses; or

(H) Improvement of existing roadways which do not increase the number of traffic lanes in the typical cross-section of the roadway; or

(I) New development in which the total impervious area, including the area of the existing, adjacent public or private streets, is less than 16%.

(Ord. 7642, passed 4-20-93)

#### § 162.04 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 § [162.03](#).

(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.

(Ord. 7642, passed 4-20-93)

#### § 162.05 DEFINITIONS.

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

"ADMINISTRATOR." The person and/or city department specifically designated by the mayor to enforce the provisions of this chapter.

"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. The capacity of a stormwater detention facility is generally determined utilizing stormwater approved flood-routing methods.

"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 "Mannings Equation" or similar approved formula.

"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 definite bed and banks which serve to confine the water.

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

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

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

"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, but not limited to, construction of or substantial improvements to buildings or other areas under predetermined and controlled conditions, with the rate of drainage therefrom regulated by appropriately installed devices.

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

"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.

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

"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.

"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.

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

"IMPERVIOUS." A term applied to material through which water cannot pass, or through which water passes with great difficulty or at a very slow rate.

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

"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.

"NATURAL SAFE STORMWATER DRAINAGE CAPACITY." The quantity of stormwater runoff that can be transported by means of a channel, passage, conduit, tube, duct, or combination thereof, in such a manner that the elevation of the water does not rise significantly above the level of the adjacent soil surface, and cause damage or encroachment upon public or private property. For the purposes of this chapter, it is presumed that the maximum natural safe stormwater drainage capacity for downstream stormwater drainage systems is the capacity required to carry the rate of stormwater runoff from a five-year return period storm prior to the date of adoption of this chapter.

"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.

"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.

"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.

"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 equalled or exceeded once. A flood having a return period of 50 years has a 2% probability of being equalled or exceeded in any one year.

"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.

"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 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.

"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.

"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.

(Ord. 7642, passed 4-20-93)

#### **§ 162.06 DRAINAGE SYSTEM COMPONENTS.**

(A) Minor. The minor drainage component of the drainage system shall consist of storm sewers, street gutters, small open channels, and swales designed to store and convey the peak rate of runoff from the five-year return period precipitation event of critical duration as determined utilizing the Illinois State Water Survey Bulletin 70, and shall generally conform to [Chapter 154](#) of this code of ordinances.

(B) Major. The major drainage components shall be designed to store and convey stormwater flows beyond the capacity of the minor drainage component. Information depicting stormwater flow paths (including cross-sectional data), velocities, rates, and elevations and maps of flooding shall be included in the submittal.

(C) Excess stormwater passageway. An excess stormwater passageway shall be provided for the floodplains of all natural watercourses and such man-made watercourses and storm drainage systems as the administrator may direct, which shall have adequate capacity to convey the excess stormwater from the tributary watershed. The capacity of this excess stormwater passageway shall be adequate to transport the peak rate of runoff from the 50-year return period storm, assuming all upstream areas are fully developed for uses specifically permitted by existing zoning and antecedent rainfall has saturated the tributary watershed. No structures shall be constructed within this passageway; however, streets, parking lots, playgrounds, park areas, pedestrian walkways, open green space, and utility and sewer easements shall be considered compatible uses.

(Ord. 7642, passed 4-20-93)

#### **§ 162.07 APPLICATION FEE.**

An application for the construction of a stormwater detention facility shall be made on forms provided by the administrator, and submitted along with a detention plan at the same time a zoning permit, or building permit of any kind is requested, and be accompanied by an application fee. For minor developments that can, in the opinion of the administrator, be evaluated by the city engineer, the fee shall be \$50. For all other, more complex, developments the minimum fee shall be \$500. No application shall be considered, or construction permit request approved, without prior payment of the application fee.

(Ord. 7642, passed 4-20-93)

#### **§ 162.08 DRAINAGE PLAN SUBMITTAL REQUIREMENTS.**

Once it is determined that a development is subject to the provisions of this chapter, the owner shall submit a drainage plan containing the following information, to ensure that the provisions of this chapter are met. The submittal shall include sufficient information to evaluate the environmental characteristics of the property, the potential adverse impacts of the development on water resources both on-site and downstream, and the effectiveness of the proposed drainage



plan in managing stormwater runoff. The applicant shall certify on the drawings that all clearing, grading, drainage, and construction shall be accomplished in strict conformance with the drainage plan. The administrator may require a performance bond, in an amount determined by the city engineer, in a form and manner as described in [Chapter 154](#) of this code of ordinances, to insure that improvements are completed in a timely manner.

(A) Topographic map. A topographic survey, of the property that slopes less than 1/2%, at one-foot contours under existing and proposed conditions, and areas upstream and downstream, necessary, in the opinion of the administrator to determine off-site impacts of the proposed drainage plan. The map shall be keyed to the U.S. Coast and Geodetic Survey Datum Plane, NAVD-83 or some other acceptable datum, unless specifically indicated otherwise by the administrator. This requirement may be modified by the administrator to allow two- or five-foot contours for development sites that have enough natural topography to be evaluated without having a one-foot contour map.

(B) Drainage system. Mapping and descriptions, where relevant, of existing and proposed drainage system features of the property and immediate vicinity including:

- (1) The banks and centerline of streams and channels;
- (2) Shoreline of lakes, ponds, and detention basins;
- (3) Farm drains and tiles;
- (4) Sub-watershed boundaries within the property controlled by the owner;
- (5) Watershed soils classifications;
- (6) The property's location within the larger watershed;
- (7) Location, size and slope of stormwater conduits and drainage swales;
- (8) Sanitary sewers;
- (9) Depressional storage areas;
- (10) Delineation of upstream and downstream drainage features and watersheds which might be affected by the development;
- (11) Detention facilities;
- (12) Roads and streets and associated stormwater inlets;
- (13) Base flood elevation, and regulatory floodway where identified for the property; and
- (14) Basis of design for the final drainage network components, including design calculations and a summary of design assumptions utilized.

(C) Environmental features. A depiction of environmental features of the property and immediate vicinity including the following:

- (1) The limits of wetland areas, as depicted on the National Wetland Inventory Maps, available at the administrator's office.

(2) Any designated natural areas, such as, but not limited to a public park, wildlife management area, or conservation area; and

(3) Any proposed environmental mitigation features, including permanent and temporary soil erosion control features, such as the "best management practices features," (BMP's) required by the Environmental Protection Agency.

(D) Additional requirements. The following additional information for the minor drainage system's design runoff event and the 50-year runoff event of critical duration:

(1) Elevations and maps of 50-year flooding;

(2) Cross-section data for open channel flow paths and designated overland flow paths;

(3) Direction of storm flows;

(4) Flow rates and velocities at representative points in the drainage system; and

(5) A statement by the design engineer of the drainage system's provisions for handling events greater than the 50-year runoff.

(E) Engineer's certificate. All design work must be signed and sealed by an Illinois registered professional engineer.

(Ord. 7642, passed 4-20-93)

## § 162.09 DESIGN REQUIREMENTS.

(A) General design methods and standards.

(1) Calculation of drainage capacity. The rational method may be used to size the minor components for any development.

(2) 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. 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. In determining the maximum allowable release rate for the 50-year event a runoff coefficient (C value) of 0.25 shall be used for assumed land cover conditions. Roughness coefficients most closely matching those of the TR-55 method shall be used to determine time of concentration.

(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 Conservation Service TR-55" methodology for development watersheds less than or equal to 2000 acres in area. In determining the maximum allowable release rate for the 50-year 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. 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.

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

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

(B) Design event.

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

(2) A 50-year return period storm with a 24-hour duration shall be used.

(3) 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 for design event. Outlet structure maximum release rate for the 50-year precipitation event shall be equal to the rate of discharge from the development area assuming row crop agricultural land cover and a five-year return frequency precipitation event. See division (A) above for the required assumptions for the row crop agricultural conditions.

(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.

(3) Emergency overflow. Each stormwater storage facility shall be provided with a means of overflow. 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) Flood elevations. The entire stormwater storage facility shall be designed and constructed to fully protect the public health, safety, and welfare. 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.

(5) 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.

(6) 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.

(7) Storage duration. The storage of excess stormwater runoff from a 50-year return period storm having a duration of 24 hours, released at the allowable rate, shall not result in a storage duration in excess of 24 hours. Storage duration may be longer due to unique site conditions upon site-specific approval of the administrator.

(D) Dry bottom stormwater storage areas.

(1) Dry bottom stormwater storage facilities should be designed where possible to 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) Minimum grades for turf areas within the basin shall be 2% (50 units horizontal to one unit vertical) except that the minimum grade shall be 1/2% (200 units horizontal to one unit vertical) if tile underdrains are adequately installed underneath the turf areas. Storage facility side slopes shall not exceed 3:1 (three units horizontal to one unit vertical), and shall provide for the reasonably safe approach of persons and reasonably safe maintenance practices. Side slopes steeper than 3:1, or 33% may be allowed upon a determination by the administrator that adequate precautions are taken to avoid unreasonable hazard. Storage basin excavations shall follow the natural land contours as closely as practicable. The geometry of dry bottom stormwater storage basins shall be approved by the administrator.

(3) The outlet control structure shall be provided with an interceptor for trash and debris, and it shall be designed and constructed to minimize soil erosion and not to require manual adjustments for its proper operation. The control structure shall be designed to operate properly with minimal maintenance or attention. The control structure shall be provided with safety screens for any pipe or opening, other than a weir, to prevent children or large animals from crawling into structures. The control structure shall be constructed to allow access to it at all times, including times of flood flow.

(4) Paved low flow conduits or channels shall be provided in stormwater storage basins. These conduits or channels shall be so constructed that they will not unnecessarily interfere with any secondary use of the storage area and will 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. Low flow conduits shall facilitate complete interior drainage of the stormwater storage area. Tile underdrain systems may be required in combination with the low flow conduits or channel systems.

(5) When required by the administrator, tile underdrains shall be constructed such that they will not interfere with any secondary usage of the storage area. Tile underdrains shall be so constructed so that they shall facilitate dewatering of the soils in the stormwater storage area to avoid marshy or saturated soil conditions.

(6) Pipe outlets of less than eight inches in diameter shall not be allowed unless specifically approved by the reviewing authority. Multiple outlet pipes from a stormwater storage area shall be avoided if they are designed to be less than 12 inches in diameter.

(7) Temporary seeding or other soil stabilization measures shall be established in the stormwater storage area and excess stormwater passageway immediately following the construction. During the construction of the overall development, it is recognized that a limited amount of sediment buildup may occur in the stormwater storage area due to erosion. In no case shall the volume of the storage area be reduced to less than 90% of the required volume during the construction phase of the development. All sediment shall be removed before construction is completed. (Also see § [162.11](#).)

(8) Permanent erosion control measures such as mulching, hydroseeding, conventional seeding, nurse crops, fertilizing, or sod installation 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 "Procedures and Standards for Urban Soil Erosion and Sedimentation Control in Illinois". The installation of these permanent measures shall take place only after the majority of construction and other silt and sediment producing activities have been completed. Prior to the establishment of the permanent erosion control measures, the required capacity of the stormwater storage area and the excess stormwater passageway shall be restored by removal of any deposited sediment.

(9) 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 practical and the regime of the downstream drainage facility is not disturbed.

(10) The maximum planned depth of stormwater stored shall not exceed six feet.

(11) Warning signs shall be placed at appropriate locations to warn of deep water, possible flood conditions during storm periods, and of other dangers that exist to pedestrian and vehicular traffic.

(E) Wet bottom stormwater storage areas.

(1) Wet bottom stormwater storage facilities shall be designed in compliance with all the applicable regulations which govern the construction of dry bottom stormwater storage facilities, in addition to the following regulations:

(a) The water surface area of the permanent pool shall not exceed one-fifth of the area of the tributary watershed, or as approved by the reviewing authority.

(b) Minimum normal water depth (excluding safety ledges and side slopes) shall be six feet provided, however, that if fish are to be maintained in the pond at least one-quarter of the pond area shall be a minimum of ten feet deep.

(c) Measures shall be included in the design to minimize pond stagnation and to help ensure adequate aerobic pond conditions.

(d) Storage facility side slopes shall provide a safety ledge below the normal water elevation which shall not exceed a slope of 6:1 (six horizontal units to one vertical unit) to a point at which the normal water depth is no less than five feet. 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.

(2) Facilities shall be provided to lower the pond elevation for cleaning purposes and shoreline maintenance.

(3) Warning signs shall be placed at appropriate locations to warn of deep water, possible flood conditions during storm periods, and of other dangers that exist to pedestrian and vehicular traffic.

(F) Alternative stormwater storage areas. The use of stormwater storage facilities as described in divisions (D) and (E) of this section are the preferred means of stormwater storage. The following alternative means of stormwater storage may be used on development sites under two acres in area or where practical necessity makes the use of stormwater storage facilities infeasible. The use of such alternative stormwater storage areas is only permitted upon the approval of the administrator.

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

(2) Street pavement surface ponding. Street pavement surface ponding shall not exceed nine inches in depth in the gutter line, nor over the roadway crown if no gutter is present, under all rainfall conditions up to and including the 50-year storm event. Open waterways such as surface overflow swales shall be designed into the grading plan to receive all excess stormwater runoff. Depressing sidewalks across such overflow swales to meet this requirement shall be acceptable. Street ponding shall be allowed only for the conveyance of stormwater runoff and will be subject to approval by the public body accepting dedication of the street. In developments that directly affect highways controlled by IDOT, state regulations may apply.

(3) Rooftop stormwater storage. Rooftop storage of excess stormwater shall be designed and constructed to provide permanent control inlets and parapet walls to contain excess stormwater. 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. Overflow areas must be provided to ensure that the weight of stormwater will never exceed the structural capacity of the roof. 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.

(4) Automobile parking lot storage areas. Automobile parking lots may be designed to provide temporary detention storage on a portion of their surfaces. Automobile parking facilities used to store excess stormwater may be constructed having a maximum depth of stored stormwater of 0.6 feet; and these areas shall be located in the most remote, least used areas of the parking facility. Design and construction of automobile parking in stormwater areas must insure that there is minimal damage to the parking facility due to flooding, including minimal damage to the subbase. Warning signs shall be mounted at appropriate locations to warn of possible flood conditions during storm periods.

(5) Underground stormwater storage. Underground stormwater storage facilities must be designed for easy access in order to remove accumulated sediment and debris. These facilities must be provided with a positive gravity outlet unless otherwise approved by the administrator.

(Ord. 7642, passed 4-20-93)

#### **§ 162.10 JOINT CONSTRUCTION.**

Stormwater storage areas may be planned and constructed jointly by two or more landowners provided the provisions of this chapter are met.

(Ord. 7642, passed 4-20-93)

#### **§ 162.11 EARLY COMPLETION OF DETENTION FACILITIES.**

(A) 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 a developer 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.

(B) 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.

(Ord. 7642, passed 4-20-93)

#### **§ 162.12 MAINTENANCE RESPONSIBILITY.**

(A) Maintenance of stormwater drainage facilities located on private property shall be the responsibility of the owner of that property. Before a permit is obtained from the city, the applicant shall execute a maintenance agreement with the city, guaranteeing that the applicant and all future owners of the property will maintain its stormwater drainage system. The maintenance agreement shall also specifically authorize representatives of the city to enter onto the property for the purpose of inspections and maintenance of the drainage system. Such agreement shall be recorded with the Recorder of Deeds of Vermilion County. The maintenance agreement shall include a schedule for regular maintenance of each aspect of the property's stormwater drainage system and shall provide for access to the system for inspection by authorized personnel of the city. The maintenance agreement shall also stipulate that the administrator notify the property owner in writing of maintenance problems which require correction. The property owner shall make such corrections within 30 calendar days of such

notification. If the corrections are not made within this time period, the city may have the necessary work completed and assess the cost to the property owner, in a manner approved by the city's legal advisor.

(B) The private property owner may, after approval by the administrator, assign the owner's maintenance responsibilities and duties under the terms of the maintenance agreement to a third party, such as a property owner's association, park district, or other competent agency. When such an assignment is made, the entity undertaking the maintenance responsibility shall show evidence of financial ability to provide any maintenance required.

(C) The administrator, at his/her option, may require a maintenance bond to be filed by the property owner to cover maintenance and remediation of any latent defects discovered with the stormwater drainage system for a period not to exceed two years after the date the improvements are approved by the administrator. The amount of the bond shall be set by the administrator in an amount equal to 15% of the cost of construction of the detention system, but in no event less than \$10,000.

(Ord. 7642, passed 4-20-93)

### § 162.13 INSPECTIONS.

(A) Inspections during construction. Construction of impervious surfaces shall not begin until the developer's engineer has certified in writing to the administrator that any necessary detention facilities are in place and are operational unless otherwise required by applicable state or federal regulations. This requirement may also be waived by the administrator in order to provide for adequate and safe ingress and egress to the construction site or as may be necessary to enhance and construct the required detention facilities. The administrator or his representative may conduct periodic inspections of the work in progress to be certain that the drainage system is being built as designed. If any violations of the provisions or requirements of this chapter are noted during such inspections, the administrator shall notify the property owner in writing of the items needing correction. The property owner shall have 30 calendar days to make such corrections unless given a specific extension of time in writing by the administrator. Failure to complete such corrections within the specified time period shall constitute a violation of this chapter.

(B) 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 shall make a final inspection and notify the property owner of any necessary corrections. The property owner shall correct any such deficiencies within 30 calendar days unless given a specific extension of time in writing by the administrator. Failure to make necessary corrections within the specified time period shall constitute a violation of this chapter. Upon finding that the drainage system meets the provisions and requirements of this chapter, the administrator shall issue a written notice to the property owner certifying that the drainage system is complete.

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

(Ord. 7642, passed 4-20-93)

### § 162.14 THIRD PARTY ENGINEERING INVOLVEMENT.



The administrator has the authority to retain the services of an independent third party engineer to review and make recommendations relative to the review and approval process of a stormwater detention system 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 \$1,000.

(Ord. 7642, passed 4-20-93)

#### **§ 162.15 ENFORCEMENT.**

(A) The administration and enforcement of this chapter shall be the responsibility of the administrator, as designated by the mayor, or his/her assigns.

(B) 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.

(C) 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.

(Ord. 7642, passed 4-20-93)

#### **§ 162.16 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.

(Ord. 7642, passed 4-20-93)

#### **§ 162.17 APPEALS.**

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:

- (A) The determination made by the administrator that is being appealed;
- (B) The basis for the appeal;
- (C) The position of the party appealing;
- (D) Any supportive information for the position of the party appealing; and
- (E) Such additional information as the party may wish to submit.

(Ord. 7642, passed 4-20-93)

#### **§ 162.18 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, absent resubmittal of applications or the submittal of proposed amendments to permits or applications and the full and complete review, as herein provided, for determination of the application of the provisions within this chapter. All work being performed under previously issued permits must be performed in conformance with the terms and provisions of each permit; and failure to so perform shall continue to give cause for the initiation of enforcement, prosecution or other pursuit of remedy against persons responsible for the violation of the provisions of the permit; notwithstanding the adoption of these provisions and enforcement and such other actions as may be necessary in order to compel compliance with the permit provisions are hereby directed and authorized, and the ordinance upon which such actions are based are continued in full force and effect as applied upon the provisions of any heretofore issued permit.

(Ord. 7642, passed 4-20-93)

 **§ 162.99 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 \$50 and not more than \$500 for each violation. Each day the violation continues shall be deemed a separate offense.

(B) 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.

(Ord. 7642, passed 4-20-93)