CHAPTER 153: STORM WATER

Section

AUTHORITY AND PURPOSE; OTHER RELEVANT PERMITTING; APPLICABILITY; EXEMPTIONS; EXCEPTIONS; SEPARABILITY, AND RESPONSIBILITY

§ 153.001 AUTHORITY AND PURPOSE.

(A) This chapter is enacted pursuant to the police powers granted to the county by the Illinois State Statutes.

(B) The purpose of this chapter is to diminish threats to public health and safety, protect property, prevent damage to the environment and promote public welfare by guiding, regulating and controlling the design, construction, use and maintenance of any new development or redevelopment or other activity which disturbs or breaks the topsoil or otherwise results in the movement of earth, and/or changes the storm water drainage pattern and/or storm water flows from that which would have occurred if the land had been left in its natural state. This storm water runoff and resulting soil erosion could result in the inundation of damageable properties, the erosion and destabilization of downstream channels and the pollution of valuable stream and lake resources. This chapter regulates these activities to minimize adverse impacts. The purpose of this chapter is also to comply with the general national pollutant discharge elimination system (NPDES) Permit No. ILR40 regulations, the notice of intent (NOI) submitted to the IEPA in 2003.

(C) This chapter is adopted to accomplish the following objectives:

(1) To assure that new development or redevelopment does not increase the drainage or flood hazards, or create unstable conditions susceptible to soil erosion;

(2) To protect new buildings and major improvements to buildings from flood damage due to increased storm water runoff and soil erosion;

(3) To protect human life and health from the hazards of increased flooding and soil erosion on a watershed basis;

(4) To lessen the burden on the taxpayer for flood control projects, repairs to flood damaged public facilities and utilities, correction of channel erosion problems, and flood rescue and relief operations caused by storm water runoff and soil erosion quantities from new development or redevelopment;

(5) To protect, conserve and promote the orderly development of land and soil, water, air, animal and plant resources;

(6) To preserve the natural hydrologic and hydraulic functions of watercourses and floodplains and to protect water quality and aquatic habitats; and

(7) To preserve the natural characteristics of stream corridors in order to manage flood and storm water impacts, improve water and groundwater quality, reduce soil erosion, protect aquatic and riparian habitat, maintain quality forest resources, provide recreation opportunities, provide aesthetic benefits and enhance community and economic development.

(Ord. passed 9-8-2009)

§ 153.002 OTHER RELEVANT PERMITTING.

Before a development permit under this chapter becomes effective, all required federal, state and local permits will have been officially approved. The acquisition of these permits shall be the sole responsibility of the applicant. These may include, but are not limited to, § 404 of the Clean Waters Act, being 33 U.S.C. § 1344, § 106 of the National Historic Preservation Act, being 54 U.S.C. §§ 300101 et seq., § 10 of the Rivers and Harbors Act, being 33 U.S.C. § 403, or permitting required by the State Department of Natural Resources, Office of Water Resources in accordance with the Rivers, Lakes and Streams Act, 615 ILCS, the Soil and Water Conservation Districts Act, 70 ILCS and the national pollutant discharge elimination system permit (NPDES) through the Illinois Environmental Protection Agency, Division of Water Pollution Control. Compliance is also required with, but not limited to, the Development Code of the county, including the subdivision regulations, as codified in Chapter 156 of this code of ordinances.

(Ord. passed 9-8-2009)

§ 153.003 APPLICABILITY.

(A) This chapter applies to all new development or redevelopment in the unincorporated areas of the county.

(B) Except as otherwise provided in this chapter, no person, firm or corporation, public or private, the state and its agencies or political subdivisions, the United States of America, and its agencies or political subdivisions, any agent, servant, officer or employee of any of the foregoing which meets the following provisions or is otherwise exempted in this chapter, shall commence any development activities without first having obtained a development permit from the Code

Administrator of the county:

(1) Any new development or redevelopment contains an area 10,000 or more square feet of total impervious surface (i.e., streets, roof, patio or parking area or any combination thereof);

(2) Any land disturbing activity (i.e., clearing, grading, stripping, excavation, fill or any combination thereof) that affects an area of 10,000 or more square feet, or that will exceed 100 cubic yards;

(3) Any land disturbing activity if the activity is within 100 feet of a river, lake, pond, stream, sinkhole or wetland; and is done in conjunction with divisions (B)(1) and (B)(2) above; and

(4) Any land disturbing activity on the sloping side of the slope disturbance line and is in conjunction with divisions (B)(1), (B)(2) and (B)(3) above.

(Ord. passed 9-8-2009)

§ 153.004 EXEMPTIONS.

(A) A development permit shall not be required for the following:

(1) Any new development, redevelopment or other activity falling below the minimum standards as set forth in § 153.003;

(2) The agricultural use of land, including the implementation of conservation measures included in a farm conservation plan approved by the Soil and Water Conservation District, and including the construction of agricultural structures;

(3) The maintenance of any existing storm water drainage/detention component or structure or any existing soil erosion/sediment control component or structure; including dredging, levee restoration, tree removal or other function which maintains the original design capacities of the above; and

(4) The construction of, improvements to or the maintenance of any street, road, highway or interstate highway performed by any unit of government whose powers grant such authority.

(B) (1) A development permit is required for these uses but shall not be subject to the provisions of §§153.035 through 153.040; and

(2) Any land disturbing activity that is one acre (43,560 square feet) or less; or development of tracts of land where not more than one single-family dwelling is being erected; or, any lots in a new subdivision of land where the lots front and have their sole access on an existing street or roadway.

(Ord. passed 9-8-2009)

§ 153.005 EXCEPTIONS.

(A) The Subdivision and Land Use Committee may, in accordance with the following procedures, authorize exceptions to any of the requirements and regulations set forth in this chapter that:

(1) The land is of such shape or size or is affected by such physical conditions or is subject to such title limitations or record, that it is impossible for the applicant to comply with all of the requirements of this chapter;

(2) The exception is necessary for the preservation and enjoyment of a substantial property right of the applicant; and

(3) The granting of the exception will not be detrimental to the public welfare, environment or injurious to other property in the vicinity of the subjects property.

(B) Each application for an exception shall be made to the Code Administrator. The Administrator will review and transmit recommendations to the Subdivision and Land Use Committee, which shall review such recommendations prior to granting or denying the exception.

(C) The Subdivision and Land Use Committee shall hold a public hearing on each application for exception, within 30 days after receiving the application, in the manner by ordinance. Within 30 days after public hearing, the Subdivision and Land Use Committee shall either approve the site development permit application with the exceptions and conditions it deems necessary or it shall disapprove such development permit application and exception application, or it shall take other such action as appropriate.

(Ord. passed 9-8-2009)

§ 153.006 SEPARABILITY.

The provisions and sections of this chapter shall be deemed to be separable, and the invalidity of any portion of this chapter shall not affect the validity of the remainder.

(Ord. passed 9-8-2009)

§ 153.007 RESPONSIBILITY.

The applicant shall not be relieved of responsibility for damage to persons or properly otherwise imposed by law, and the

county or its officers or agents will not be made liable for such damage, by:

(A) The issuance of a development permit under this chapter;

(B) Compliance with the provisions of that development permit or conditions attached to it by the Code Administrator;

(C) Failure of county officials to observe or recognize hazardous or unsightly conditions;

(D) Failure of county officials to recommend denial or to deny a development permit; or

(E) Exemptions from development permit requirements of this chapter.

(Ord. passed 9-8-2009)

§ 153.008 NPDES COMPLIANCE.

(A) *General.* New and redevelopment that is applicable to this chapter (per §153.003) must comply with the NPDES regulations (the General NPDES Permit No. ILR40 and the NOI). NPDES compliance is obtained by adhering to this chapter, ILR10 permits, the general NPDES for the county and the NOI submitted for each individual community and all future steps taken by the individual communities to implement the NOI.

(B) *Public education and outreach on storm water impacts.* In accordance with the General NPDES Permit No. ILR40 and the NOI, the county will comply and implement activities as outlined in the public education and outreach on storm water Impacts.

(C) *Public involvement/participation.* In accordance with the General NPDES Permit No. ILR40 and the NOI, the county will comply and implement activities as outlined in the public involvement/participation.

(D) *Illicit discharge detection and elimination.* In accordance with the General NPDES Permit No. ILR40 and the NOI, the county will comply and implement activities as outlined in the illicit discharge detection and elimination.

(E) *Construction site storm water runoff control.* In accordance with the General NPDES Permit No. ILR40 and the NOI, the county will comply and implement activities as outlined in the construction site storm water runoff control.

(F) *Post-construction storm water management in new development and redevelopment.*In accordance with the General NPDES Permit No. ILR40 and the NOI, the county will comply and implement activities as outlined in the post-construction storm water management in new development and redevelopment.

(G) *Pollution prevention/good housekeeping.* In accordance with the General NPDES Permit No. ILR40 and the NOI, the county will comply and implement activities as outlined in the pollution prevention/good housekeeping.

(Ord. passed 9-8-2009)

§ 153.009 INFORMATION ACCESSIBILITY TO THE PUBLIC.

Documents relating to the adherence to this chapter are available for review by request at City Hall.

(Ord. passed 9-8-2009)

DEFINITIONS

§ 153.020 DEFINITIONS.

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

ADVERSE IMPACTS. Any negative impact on plant, soil, air or water resources affecting their beneficial uses including recreation, aesthetics, aquatic habitat, quality and quantity.

APPLICANT. Any person, firm or governmental agency who executes the necessary forms to produce official approval of a development or permit to carry out construction of a new development or redevelopment from the county.

BASE FLOOD ELEVATION. The elevation at all locations delineating the level of flooding resulting from the 100- year frequency flood event, which has 1% chance of occurring in any given year.

BUILDING PERMIT. A permit issued by the county for the construction, erection or alteration of a structure or building and the related ground and surface preparation prior to and after completion of construction, erection or alteration of a structure or building.

BYPASS FLOWS. Storm water runoff from upstream properties tributary to a property's drainage system but not under its control.

CERTIFY or ***CERTIFICATION.*** Formally attesting that the specific inspections and tests were performed, and that such inspections and tests comply with the applicable requirements of this chapter.

CHANNEL. Any defined river, stream, creek, brook, branch, natural or artificial depression, ponded area, on-stream lake or impoundment, karst area (sinkhole), flowage, slough, ditch, conduit, culvert, gully, ravine, wash or natural or human-made drainage way, which has a definite bed and bank or shoreline, in or into which surface or groundwater flows, either

perennially or intermittently.

CHANNEL MODIFICATION. Alteration of a channel by changing the physical dimensions or materials of its bed or banks. ***CHANNEL MODIFICATION*** includes damming, riprapping (or other armoring), filling, widening, deepening, straightening, relocating, lining and significant removal of bottom or woody rooted vegetation. ***CHANNEL MODIFICATION*** does not include the human-made clearing of debris or removal of trash.

CLEARING. Any activity which removes the natural vegetative ground cover.

COMPENSATORY STORAGE. An artificially excavated, hydraulically equivalent volume of storage within the floodplain used to balance the loss of natural food storage capacity when fill or structures are placed within the floodplain.

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

CUBIC YARD. A one yard by yard by one yard amount of material in excavation and or fill.

DETENTION BASIN. A facility constructed or modified to provide for the temporary storage of storm water runoff and the controlled release by gravity of this runoff at a prescribed rate during and after a flood or storm.

DETENTION TIME. The amount of time storm water is held within a detention basin.

DEVELOPMENT. Any human-made change to real estate property, including:

(1) The division or subdivision of any duly recorded parcel of property;

(2) Construction of roads, bridges or similar projects;

(3) Installation of a manufactured home on a site, preparing a site for manufactured home or installing a travel trailer on a site for more than 180 days per year;

(4) Construction of roads, bridges or similar projects;

(5) Redevelopment of a site;

(6) Filling, dredging, grading, clearing, excavating, paving or other non-agricultural alterations of a ground surface;

(7) Storage of materials or deposit of solid or liquid waste; and

(8) Any other activity that might alter the magnitude, frequency, direction or velocity of storm water flows from a property.

DRAINAGE PLAN. A plan, including engineering drawings and supporting calculations, which describes the existing storm water drainage system and environmental features, including grading, as well as proposed alterations or changes to the drainage system and environment of a property.

DRY BASIN. A detention basin designed to drain after temporary storage of storm water flows and to normally be dry over much of its bottom area.

EROSION. The general process whereby soil or earth is moved by rainfall, flowing water, wind or wave action.

EXCAVATION. Any act by which organic matter, earth, sand, gravel, rock or any other similar material, is cut into, dug quarried, uncovered, removed, displaced, relocated or bulldozed and shall include the conditions resulting from such actions.

EXCESS STORM WATER RUNOFF. The volume and rate of flow of storm water discharged from a new development or redevelopment which is or will be in excess of that volume and rate which existed before development or redevelopment.

EXISTING GRADE. The vertical location of the existing ground surface prior to excavation or filling.

FILL. Any cut which earth, sand, gravel, rock, or any other material, is deposited, placed, replaced, pushed, dumped, pulled, transported or moved by humans to a new location and shall include the conditions resulting there from.

FINAL GRADE. The vertical location of the ground surface after grading work is completed in accordance with the engineering plans.

FLOOD FRINGE. The area as designated by the Federal Emergency Management Agency (FEMA) on either side of the floodway. This area is subject to inundation from the base flood but conveys little or no flow.

FLOOD HAZARD BOUNDARY MAP (FHBM). A much generalized map prepared by the Federal Emergency Management Agency (FEMA) which shows only where floodplains are located based on very basic data. ***FHBMs*** do not include base flood elevations.

FLOOD INSURANCE RATE MAP (FIRM). A map prepared by the Federal Emergency Management Agency (FEMA) that depicts the special flood hazard area (SFHA) within a community. This map includes insurance rate zones and regulatory floodplains and may or may not depict regulatory floodways.

FLOODPLAIN. The land adjacent to a body of water with ground surface elevations at or below the base flood or the 100-year frequency flood elevation which is subject to inundation. The ***FLOODPLAIN*** as designated by the Federal Emergency Management Agency (FEMA) is also known as the special flood hazard area (SFHA). These areas can be found on the

FIRM, flood boundary and floodway map or the flood hazard boundary map (FHBM) of the community. This area is the collective combination of the regulatory floodway and the flood fringe.

FLOODWAY. The channel and that portion of the floodplain, including on-stream lakes, adjacent to a stream or watercourse which is needed to store and convey the anticipated existing and future 100- year frequency flood discharge with no more than a one-tenth-foot increase in stage due to any loss of flood conveyance or storage and no more than a 10% increase in velocities. ***FLOODWAYS*** are designated by FEMA on some flood insurance rate maps and flood boundary and floodway maps. However, there are floodways on all streams whether mapped by FEMA or not.

GRADING. The excavation or fill or any combination thereof and shall include the conditions resulting from any excavation or fill.

HYDROGRAPH. A graph showing for a given location on a stream or conduit, the flow rate with respect to time.

HYDROGRAPH METHOD. This method estimates runoff volume and runoff hydrographs for the point of interest by generating hydrographs for individual subareas, combining them and routing them through stream lengths and reservoir structures. Factors such as rainfall amount and distribution, runoff curve number, time of concentration and travel time are included.

IMPERVIOUS SURFACE. The area of property that is covered by materials other than soil and vegetation and that has no intended capacity to absorb water, such as parking lots, driveways, sidewalks, patios, tennis courts, roofs and other structures.

INFILTRATION. The passage or movement of water into the soil surfaces.

LOESSAL SOIL. A sediment, commonly non-stratified and un-consolidated, composed predominately of silt sized particles with accessory clay and sand.

LOT. An individual platted parcel in an approved subdivision.

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

MINOR DRAINAGE SYSTEM. That portion of a drainage system designed for the convenience of the public. It consists of street gutters, storm sewers, small open channels and swales and, where human-made, is to be designed to handle the two-year runoff event.

MITIGATION. When the prescribed controls are not sufficient and additional measures are required to offset the development, including those measures necessary to minimize the negative effects which storm water drainage and development activities might have on the public health, safety and welfare. Examples of ***MITIGATION*** include, but are not limited to, compensatory storage, soil erosion and sedimentation control, and channel restoration.

MODIFIED RATIONAL METHOD. As described in the Illinois Department of Transportation*Drainage Manual* is based on the principal that the maximum rate of runoff from a given drainage area occurs at that point in time when all parts of the watershed are contributing to the flow. The rainfall generating the peak flow is assumed to be of uniform intensity for the entire watershed with a rainfall duration equal to the time of concentration.

NATURAL. Conditions resulting from physical, chemical and biological processes without intervention by humans.

NATURAL DRAINAGE. Channels formed in the existing surface topography of the earth prior to changes made by unnatural causes.

ONE HUNDRED-YEAR EVENT. A rainfall, runoff or flood event having a 1% chance of occurring in any given year. A 24-hour storm duration is assumed unless otherwise noted.

PARCEL. All contiguous land in one's ownership.

PEAK FLOW. The maximum rate of flow of water at a given point in a channel or conduit.

PERMITEE. Any person to whom a building permit is issued.

PERSON. Any individual, firm or corporation, public or private, the state and its agencies or political subdivisions, the United States of America, and its agencies or political subdivisions, and any agent, servant, officer or employee of any of the foregoing.

POSITIVE DRAINAGE. Provision for overland paths for all areas of a property including depressional areas that may also be drained by storm sewer.

PRIME FARMLAND. Land that is best suited to food, feed, forage, fiber and oilseed crops. It may be cropland, pasture, woodland or other land, but it is not urban and built up land or water areas. It is either used for food or fiber or is available for those uses. The soil qualities, growing season and moisture supply are those needed for a well managed soil to economically produce a sustained high yield of crops. ***PRIME FARMLAND*** produces the highest yields with minimum inputs of energy and economic resources, and farming it results in the least damage to the environment.

PROPERTY. A parcel of real estate.

RETENTION BASIN. A facility designed to completely retain a specified amount of storm water runoff without release

except by means of evaporation, infiltration, emergency bypass or pumping.

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

SITE. A parcel of land, or a contiguous combination thereof, where grading work is performed as a single unified operation.

SINKHOLE, (KARST AREAS). A land surface depression or blind valley which may or may not have surface openings to cavernous underground areas and are the result of water movement through silts and jointed limestone. These conditions make such areas unstable and susceptible to subsidence and surface collapse. Fractures in the limestone may channel runoff water to public or private water supplies, making those sources especially susceptible to groundwater contamination.

SLOPE DISTURBANCE LINE. The line which delineates relatively level building areas from areas where slopes exceed 8% and where special precautions must be taken.

STORM SEWER. A closed conduit for conveying collected storm water.

STORM WATER DRAINAGE SYSTEM. All means, natural and human-made, used for conducting storm water to, through or from a drainage area to the point of final outlet from a property. The storm water drainage system includes, but is not limited to, any of the following: conduits and appurtenance features; canals; channels; ditches; streams; culverts; streets; storm sewers; detention basins; swales; and pumping stations.

STORM WATER RUNOFF. The waters derived from melting snow or rain falling within a tributary drainage basin which are in excess of the infiltration capacity of the soils of that basin, which flow over the surface of the ground or are collected in channels or conduits.

STREAM. Any river, creek, brook, branch, flowage, ravine or natural or human-made drainage way which has a definite bed and banks or shoreline, in or into which surface or groundwater flows, either perennially or intermittently.

STRIPPING. Any activity which removes the vegetative surface cover including tree removal, by spraying or clearing, and storage removal of top soil.

TEN-YEAR EVENT. A runoff, rainfall or flood event having a 10% chance of occurring in any given year. A 24-hour storm duration is assumed unless otherwise note.

TIME OF CONCENTRATION. The elapsed time for storm water to flow from the most hydraulically remote point in a drainage basin to a particular point of interest in that watershed.

TRIBUTARY WATERSHED. All of the land surface area that contributes runoff to a given point.

TWO-YEAR EVENT. A runoff rainfall, or flood event having a 50% chance of occurring in any given year. A 24-hour storm duration is assumed unless otherwise noted.

VACANT. Land on which there are no structures or only structures which are secondary to the use or maintenance of the land itself.

WATERSHED. All land area drained by, or contributing water to, the same stream, creek, ditch, lake, marsh, storm water facility, groundwater or depressional area.

WET BASIN. A detention basin designed to maintain a permanent pool of water after the temporary storage of storm water runoff.

WETLANDS. Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. For general, but no inclusive locations of designated ***WETLANDS*** refer to mapping prepared jointly by the U.S. Department of Interior, Fish and Wildlife Service and the Illinois Department of Natural Resources, Office of Resource Conservation: National Wetlands Inventory Mapping, 1987. The applicant may be required to provide a field investigation by a qualified wetland delineator.

(Ord. passed 9-8-2009)

STORM WATER DRAINAGE AND DETENTION

§ 153.035 DRAINAGE PLAN SUBMITTAL REQUIREMENTS.

(A) Each applicant shall submit 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 and benefits of the development on water resources both on-site and off-site, and the effectiveness of the proposed drainage plan in managing storm water runoff, and meet the provisions of § 153.002. The applicant shall certify on the drawings that all clearing, grading, drainage and construction shall be accomplished in strict conformance with the drainage plan.

(B) The following information shall be submitted for both existing and proposed property conditions for all new development or redevelopment.

(1) *Drainage plan requirements.* A topographic survey of the property at two-foot contours unless otherwise specified

or approved by the county. If the mapping is compiled using a digital format and the global positioning system (GPS), the applicant will provide both paper and digital copies including GPS points.

(2) *Mapping and descriptions.* An existing drainage and proposed drainage plan, for the property and 100 feet surrounding the property at a scale of not more than 100 feet to one inch and including the following:

(a) Property boundary, dimensions and approximate acreage;

(b) Building setback lines;

(c) All existing and proposed structures and sizes;

(d) Area in square feet of existing and proposed impervious surface;

(e) All existing or proposed easements;

(f) All existing, abandoned or proposed water or monitoring well head locations;

(g) All sanitary or combined sewer lines and septic systems;

(h) The banks and centerline of streams and channels;

(i) Shoreline of lakes, ponds and detention basins with normal water level elevation;

(j) Known farm drains and tiles;

(k) Soils classifications;

(l) Location, size and slope of storm water conduits and drainage swales;

(m) Depressional storage areas;

(n) Detention facilities;

(o) Roads, streets and associated storm water inlets including finished grades;

(p) Base flood elevation, flood fringe and regulatory floodway;

(q) Basis of design for the final drainage network components;

(r) A statement giving any applicable engineering assumptions and calculations;

(s) A vicinity map showing the relationship of the site to its general surroundings at a scale of not less than 2,000 feet to one inch (1:24,000);

(t) Title, scale, north arrow, legend, seal of licensed professional engineer, date and name of person preparing plans;

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

(v) Direction of storm flows;

(w) Flow rates and velocities at critical points in the drainage system (may be included in the supporting documentation);

(x) A statement by the design engineer of the drainage system's provision for handling events greater than the 100-year, 24-hour runoff (may be included in the supporting documentation); and

(y) A statement of certification of all drainage plans, calculations and supporting data by a licensed professional engineer.

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

(a) The limits of designated regulatory and non-regulatory wetland areas;

(b) The location and limits of known sinkholes (karst areas);

(c) Any known designated natural areas, prime farmland; and

(d) Any known proposed environmental mitigation features.

(Ord. passed 9-8-2009)

§ 153.036 MINIMIZATION OF INCREASES IN RUNOFF VOLUMES AND RATES.

(A) In the selection of a drainage plan for a new development or redevelopment, the applicant shall evaluate and implement site design features which minimize the increase in runoff volumes and rates from the site.

(B) The applicant's drainage plan submittal shall include evaluations of site design features which are consistent with the following hierarchy:

(1) Preservation of regulatory floodplains, flood prone and wetland areas;

(2) Minimize impervious surfaces on the property, consistent with the needs of the project;

(3) Attenuate flows by use of open vegetated swales and natural depressions and preserves the existing natural stream channel;

(4) Infiltration of runoff on-site;

(5) Provide storm water retention structures;

(6) Provide wet or wetland detention structures;

(7) Provide dry detention structures; and

(8) Construct storm sewers.

(Ord. passed 9-8-2009)

§ 153.037 WATER QUALITY AND MULTIPLE USES.

(A) The drainage system should be designed to minimize adverse surface and groundwater quality impacts off-site and on the property itself. Detention basins shall incorporate design features to capture storm water runoff pollutants. When designers propose wet bottom and wetland type designs, all flows from the development shall be routed through the basin (i.e. low flows shall not be bypassed). When it is not practical or feasible to route all of the project's flow to the detention basin, the design of the basin shall compensate for the bypass flow. In cases where detention facilities are practical and the long term maintenance of such facilities are provided for, detention of storm water shall be promoted through the property's drainage system to reduce the volume of storm water runoff and to reduce the quantity of runoff pollutants.

(B) The drainage system should incorporate multiple uses where practicable. Uses considered compatible with storm water management include open space, aesthetics, aquatic habitat, recreation (boating, fishing, trails, playing fields), wetlands and water quality mitigation.

(C) Water quality shall adhere to:

(1) Illinois Environmental Protection Act: 415 ILCS 5/11 and 5/12, from Ch. 111-1/2, par 1011 and 1012;

(2) Illinois Pollution Control Board Rules and Regulation: Title 35: Environmental Protection, Subtitle C: Water Pollution, Chapter I: Pollution Control Board, Part 302 Water Quality Standards; and

(3) Illinois Pollution Control Board Rules and Regulations: Title 35: Environmental Protection, Subtitle C: Water Pollution, Chapter I: Pollution Control Board, Part 304 Effluent Standard.

(Ord. passed 9-8-2009)

§ 153.038 DESIGN CRITERIA, STANDARDS AND METHODS.

(A) (1) *Release rates.* The drainage system for new developments or redevelopments shall be designed to control the peak rate of discharge from the property for the two-year, 24-hour and 100-year, 24-hour events to discharge rates at or below those which existed prior to development. Additionally, the discharge from a storm water detention facility shall not cause an increase in flooding or channel instability downstream when considered in aggregate with other developed properties and downstream drainage capacities.

(2) *Detention basin outlet design.* The detention basin outlet control structure shall be designed to account for observed or anticipated downstream tailwater elevations. The tailwater elevations used in the detention model shall be for the particular storm frequency being routed through the detention basin. An emergency spillway or overflow device shall be provided and set at an elevation equivalent to the 100-year design high water. A calculation shall be made to determine the water elevation in the detention basin that would result from a 100-year storm with the outflow control structure openings blocked. The discharge rate flowing through the emergency spillway shall not exceed the 100-year pre-development flow rate. The top of bank for the detention basin shall be set at least one foot above this elevation. The lowest finished floor elevation of adjacent structures shall also be at least one foot above the detention basin top of bank.

(B) *Detention storage requirements.* See division (A) above.

(C) *Drainage system design and evaluation.* The following criteria should be used in evaluating and designing the drainage system. The design will provide capacity to pass the ten-year peak flow rate in the minor drainage system and an overload flow path for flows in excess of the design capacity.

(1) *Design methodologies.* Detention basin design shall be calculated using NRCS TR-55 methods. Basins with drainage areas of ten acres or less may be calculated using the rational method as approved by the Illinois Department of Transportation. Other applicable methods, i.e., HEC-1, TR-20, SWMM and the like shall be used for large watersheds.

(2) *Positive drainage.* When practical, all developments must be provided an overland flow path that will pass the 100-year, 24-hour event flow at a stage at a stage at least one foot below the lowest grade, adjacent to a structure, in the vicinity of the flow path. Street ponding and flow depths shall not exceed curb heights.

(D) *Rainfall.* Unless a continuous simulation approach to drainage system hydrology is used, all design rainfall events

shall be based on the Illinois State Water Survey's Bulletin 70.

(1) The first quartile point rainfall distribution shall be used for the design and analysis of conveyance systems with critical durations less than or equal to six hours.

(2) The second quartile distribution shall be used for storms with durations greater than six hours and less than or equal to 12 hours.

(3) The third quartile point rainfall distribution shall be used for the design and analysis of detention basins and conveyance system with critical durations greater than 12 and less than or equal to 24 hours.

(4) The fourth quartile distribution shall be used in the design and analysis of systems with durations greater than 24 hours.

(5) The first, third and fourth quartile distributions described by Huff are presented in Table 37 of Bulletin 70. Refer to Table 13 of Bulletin 70 for rainfall depth, duration and frequency. The NRCS Type II distribution may be used as an alternate to the Huff distributions. The total rainfall value for the design storm shall be adjusted for the "St. Louis Urban Effect" as given in Table 4, Illinois State Water Survey Circular 172.

(E) *Antecedent moisture.* Average antecedent moisture conditions shall be assumed when calculating runoff curve numbers for use in the NRCS TR-55 method.

(F) *Wet detention basin design.* Wet detention basins shall be designed to remove storm water pollutants, to be safe, to be aesthetically pleasing, and as much as feasible to be available for recreational use.

(1) *Wet basin depths.* Wet basins shall be at least three feet deep, excluding nearshore banks and safety ledges. If fish habitat is to be provided they shall be at least eight feet deep over 25% of the bottom area to prevent winterkill.

(2) *Wet basin shoreline slopes.* The side slopes of wet basins at the normal pool elevation shall not be steeper than three to one (3 to 1 horizontal to vertical). It is recommended that aquatic vegetation be established around the perimeter to provide protection from shorelines erosion. For basins in excess of five acres, riprap shoreline protection shall be provided.

(3) *Permanent pool volume.* The permanent pool volume in a wet basin at normal depth shall, at a minimum, be equal to the runoff volume from its watershed for the two-year, 24-hour event (calculated during dry weather conditions).

(4) *Wet basin inlet and outlet orientation.* The distance between detention inlets and outlets shall be maximized. Inlets and outlets shall be at opposite ends of the basin providing that the orientation does not create undue hardship based on topography or other natural constraints.

(G) *Dry detention basin design.* In addition to the other requirements of this chapter, dry basins shall be designed to remove storm water pollutants, to be safe, to be aesthetically pleasing and as much as feasible to be available for multiple uses. Paved low flow channels may be used in a dry basin provided provisions are made to prevent ponding.

(H) (1) *Dry basin drainage.* Dry basins shall be designed so that 80% of their bottom area shall have standing water no longer than 72 hours for any runoff event less than the 100-year, 24-hour event. Grading plans shall clearly distinguish the wet portion of the basin bottom. Underdrains directed to the outlet may be used to accomplish this requirement.

(2) *Velocity dissipation.* Velocity dissipation measures shall be incorporated into dry basin designs to minimize erosion at inlets and outlets and to minimize resuspension of pollutants.

(3) *Dry basin inlet and outlet orientation.* Shall be the same as division (F)(4) above.

(I) *Existing depressional areas.* Existing depressional storage volume will be maintained and the volume of detention storage provided to meet the requirements of this chapter shall be in addition to existing storage.

(J) *Minimum detention outlet size.* Where a single pipe outlet orifice plate is to be used to control discharge, it shall have a minimum diameter of 12 inches for larger basins. Smaller basins may install a smaller rectangular or v-notch weir to control discharge. If this minimum orifice size permits release rates greater than those specified in this section, and regional detention is not a practical alternative, outlets, structures such as perforated risers, or flow control orifices shall be used.

(K) (1) *Detention in floodplains.* The placement of detention basins within the floodplain is strongly discouraged because of questions about their reliable operation during flood events. However, the storm water detention requirements of this chapter may be fulfilled by providing detention storage within flood fringe areas on the project site provided the following provisions are met as well as compliance with § 153.002.

(2) *Detention in flood fringe areas.* The placement of a detention basin in a flood fringe area shall require compensatory storage for one and one-half times the volume below the base flood elevation occupied by the detention basin including any terms. The release from the detention storage provided shall still be controlled consistent with the requirements of this section. The applicant shall demonstrate its operation for all streamflow and floodplain backwater conditions.

(a) Excavations for compensatory storage along watercourses shall be opposite or adjacent to the area occupied by detention.

(b) All floodplain storage lost below the existing ten-year flood elevation shall be replaced below the existing ten-year elevation. All floodplain storage lost above the existing ten-year elevation shall be replaced above the existing ten-year flood elevation. All compensatory storage excavations shall be constructed to drain freely and openly to the watercourse and

comply with § 153.002.

(3) *Detention on prime farmland.* The placement of detention basins shall avoid the utilization of prime farmland. All detention basin construction shall examine potential impacts to adjacent agricultural land and shall address measures that will be implemented to eliminate such impacts and comply with § 153.002.

(4) *Detention in floodways.* Detention basins shall be placed in the floodway only in accordance with division (K)(1) above.

(5) *On-stream detention.* On-stream detention basins are discouraged but allowable if they provide regional public benefits and if they meet the other provisions of this chapter with respect to water quality and control of the 100-year 24-hour events from the property. Further criteria are presented in § 153.039. If on-stream detention is used in watersheds larger than one square mile, the applicant will use hydrographic modeling to demonstrate that the design will not increase the water level for any properties upstream or downstream of the property. Also, impoundment of the stream as part of on-stream detention shall:

(a) Not prevent the migration of indigenous fish species, which require access to upstream areas as part of their life cycle, such as for spawning;

(b) Not cause or contribute to the degradation of water quality or stream aquatic habitat;

(c) Include a design calling for gradual bank slopes, appropriate bank stabilization measures and a pre-sedimentation basin;

(d) Not involve any stream channelization or the filling of wetlands;

(e) Require the implementation of an effective non-point source management program throughout the upstream watershed which shall include as a minimum: runoff reduction best management practices (BMPs) consistent with § 153.036; two-year, 24 hour detention/sedimentation basin for all development consistent with this division (K)(5);

(f) Not occur downstream of a wastewater discharge;

(g) Not contribute to the duration or flood frequency of any adjacent land; and

(h) Comply with § 153.002.

(L) *Drainage into wetlands, rivers, streams, lakes, ponds and depressional storage areas.* Wetlands, lakes, ponds and depressional storage areas shall be protected from damaging modifications and adverse changes in runoff quality and quantity associated with land developments. In addition to the other requirements of this chapter, the following requirements shall be met for all developments whose drainage flows into wetlands, rivers, lakes, ponds or depressional storage areas.

(1) *Detention in wetlands, rivers, streams, lakes, ponds or depressional storage areas.* Existing wetlands, rivers, lakes, ponds or depressional storage areas shall not be modified for the purpose of storm water detention unless it is demonstrated that the proposed modifications will maintain or improve its habitat and ability to perform beneficial functions and shall comply with § 153.002. Existing storage and release rate characteristics of wetlands, rivers, lakes, ponds or depressional storage areas shall be maintained and the volume of detention storage provided to meet the requirements of this section shall be in addition to this existing storage.

(2) *Sediment control.* The existing wetlands, rivers, lakes, ponds, or depressional storage areas shall be protected during construction and as further regulated in §§ 153.055 through 153.060.

(3) *Alteration of drainage patterns.* Site drainage patterns shall not be altered to substantially decrease or increase the existing area tributary to the wetlands, rivers, lakes, ponds or depressional storage areas.

(4) *Detention/sedimentation.* All runoff from the development shall be routed through a preliminary detention/sedimentation basin designed to capture the two-year, 24-hour event and hold it for at least 24 hours, before being discharged to the wetland, river, lake, pond or depressional storage area. This basin shall be constructed before property grading begins and shall be maintained throughout the construction process. In addition, the drainage hierarchy defined in § 153.036 should be followed to minimize runoff volumes and rates being discharged to the wetland, river, stream, lake, pond or depressional storage area and as further regulated in and this section.

(5) *Loessal soils.* Care must be taken to avoid open flow discharges of storm water over silt (loessal) soils due to high potential for erosion.

(6) *Sinkholes, karst area.* The following requirements apply for new developments or redevelopments where sinkholes are determined to be present.

(a) A storm water detention basin shall not be placed in or over a sinkhole.

(b) Storm water detention basins shall not be located closer than 100 feet from the rim of a sinkhole.

(c) The outflow from a storm water detention basin, channel, ditch or any storm water runoff generated as a result of a new development or redevelopment shall not empty into or be directed, redirected by any means into or through any sinkhole.

(d) If, after the review of the storm water drainage plan, the Code Administrator may determine that more detailed

information is required, a sinkhole evaluation may be required. A sinkhole evaluation which addresses the geologic, engineering and environmental factors resulting from a new development or redevelopment be performed by a professional with experience and expertise in karst topography, whom shall certify the results of the evaluation. This evaluation shall be the responsibility of the applicant and performed at no cost to the county. After a review of this evaluation and with the consultation of the County Soil and Water Conservation District, the County Code Administrator may either approve or disapprove the drainage plan as submitted.

(e) Whenever a new sinkhole appears or it becomes apparent that the sinkhole has not yet been identified, it shall be reported to the County Soil and Water Conservation District.

(f) Compliance with § 153.002 is required.

(M) *Street detention, parking lot detention and culvert drainage.*

(1) *Street detention.* If streets are to be used as part of the minor or major drainage system, ponding depths shall not exceed curb heights and shall not remain flooded for drainage system, ponding depths shall not exceed curb heights and shall not remain flooded for more than eight hours for any event less than or equal to the 100-year, 24-hour event.

(2) *Parking lot detention.* The maximum storm water ponding depth in any parking area shall not exceed six inches for more than four hours.

(3) *Culvert, road and driveway crossings.* Sizing of culvert crossings shall consider entrance and exit losses as well as tailwater conditions on the culvert.

(N) (1) *Infiltration practices.* To effectively reduce runoff volumes, infiltration practices including basins, trenches and porous pavement should be located in hydrologic soil groups “A” and “B” as designated by the U.S.D.A. Natural Resources Conservation Service. Infiltration basins and trenches designed to re-charge groundwater shall not be located within 75 feet of a water supply well or building foundation and comply with § 153.002. A sediment settling basin shall be provided to remove coarse sediment from storm water flows before they reach infiltration basins or trenches. Storm water shall not be allowed to stand more than 72 hours over 80% of the dry basin’s bottom area for the maximum design event to be exfiltrated. The bottom of infiltration basins or trenches shall be a minimum of four feet above the seasonally high groundwater and bedrock level. Engineering calculations demonstrating infiltration rates shall be included with the application.

(2) *Vegetated filter strips and swales.* To effectively filter storm water pollutants and promote infiltration of runoff sites should be designed to maximize the use of vegetated filter strips and swales. Whenever practicable, runoff from impervious surfaces should be directed onto filter strips and swales comprised of native grasses and forbs before being routed to a storm sewer or detention basin.

(O) *Safety considerations.* The drainage system components, especially all detention basins, shall be designed to protect the safety of any children or adults coming in contact with the system during runoff events and shall comply with § 153.002.

(1) *Slide slopes.* The side slopes of all detention basins at 100-year, 24-hour capacity shall be as level as practicable to prevent accidental falls into the basin and for stability and ease of maintenance. Side slopes of detention basins and open channels shall not be steeper than three to one (horizontal to vertical).

(2) *Safety ledge.* All wet detention basins shall have a level safety ledge at least four feet in width two and one-half to three feet below the normal water depth or must be protected by an enclosed fence, at least 48 inches in height.

(3) *Velocity.* Velocities throughout the surface drainage system shall be controlled to safe levels taking into consideration rates and depths of flow.

(4) *Overflow structures.* See division (A)(2) above.

(P) *Maintenance considerations.* The storm water drainage system shall be designed to minimize and facilitate maintenance. Turfed side slopes shall be designed to allow lawn mowing equipment to easily negotiate them. Wet basins shall be provided with alternate outflows which can be used to completely drain the pool for sediment removal. Pumping may be considered if drainage by gravity is not feasible. Presedimentation basins shall be included, where feasible, for localizing sediment deposition and removal. Site access for heavy equipment shall be provided.

(Ord. passed 9-8-2009)

§ 153.039 ACCOMMODATING FLOWS FROM UPSTREAM TRIBUTARY AREAS.

(A) Storm water runoff from areas tributary to the property shall be considered in the design of the property’s drainage system.

(B) Whenever practicable, flows from upstream areas that are not to be detained should be routed around the basin being provided for the site being developed.

(1) *Upstream areas not meeting chapter requirements.*

(a) When there are areas not meeting the storage and release rates of this chapter, tributary to the applicant’s property, regionalized detention on the applicant’s property shall may be explored by the applicant or the county. When it is deemed beneficial by the county or the applicant to explore such a design, the following steps shall be followed:

1. The applicant shall compute the storage volume needed for his or her property using the release rates of § 153.038, the applicant's property area and the procedures described in §153.037;

2. Areas tributary to the applicant's property, not meeting the storage and release rate requirements of this chapter, shall be identified; and

3. Using the areas determined above plus the applicant's property area, total storage needed for the combined properties shall be computed.

(b) Allowable release rates shall be computed using the combined property areas. Storage shall be computed as described in § 153.038. If tributary areas are not developed, a reasonable fully developed land cover shall be assumed for the purposes of computing storage.

(c) Once the necessary combined storage is computed, the county may choose to pay for over-sizing the applicant's detention basin to accommodate the regional flows. The applicant's responsibility will be limited to the storage for his or her property as computed above. If regional storage is selected by the county then the design is produced in § 153.037 shall be implemented. If regional storage is rejected by the county, the applicant shall bypass all tributary area flows around the applicant's basin whenever practicable. If the applicant must route upstream flows through his or her basin and the upstream areas exceed one-square mile in size, the applicant must meet the provision of § 153.038(K)(5) for on-stream basins.

(2) *Upstream areas meeting chapter requirements.* When there are areas which meet the storage and release rate requirements of this chapter, tributary to the applicant's property, the upstream flows shall be bypassed around the applicant's detention basin if this is the only practicable alternative. Storage needed for the applicant's property shall be computed as described in division (B)(1) above. However, if the county decides to route tributary area flows through an applicant's basin, the final design storm water releases shall be based on the combined total of the applicant's property plus tributary areas. It must be shown that at no time will the release rate from the combined property exceed the allowable release rate for applicant's property alone.

(Ord. passed 9-8-2009)

§ 153.040 EARLY COMPLETION OF DETENTION FACILITIES.

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. Any eroded sediment captured in these facilities shall be removed by the applicant on a regular basis and before project completion in order to maintain the design volume of the facilities.

(Ord. passed 9-8-2009)

SOIL EROSION AND SEDIMENT CONTROL

§ 153.055 FINDINGS.

The county hereby finds that:

(A) The soil types found in the county are susceptible to erosion and left unprotected could cause severe loss of soil with resultant damage to property;

(2) The topography of the county contains areas with steep slopes upon which, if clearing of trees and/or inappropriate construction takes place, could result in severe erosion and slope stability problems which could result in damage to property;

(3) Excessive quantities of soil may erode from areas undergoing development for certain non-agricultural uses including, but not limited to, the construction of dwelling units, commercial buildings and industrial plants, the buildings of roads and highways, the modification of stream channels and drainage ways, and the creation of recreational facilities;

(4) The washing, blowing and falling of eroded soil across and upon roadways endangers the health and safety of users thereof, by decreasing vision and reducing traction of road vehicles;

(5) Soil erosion necessitates the costly repairing of gullies, washed out fills and embankments;

(6) Sediment from soil erosion tends to clog sewers and ditches and to pollute and silt rivers, streams, lakes, sinkholes, wetlands and reservoirs;

(7) Sediment limits the use of water and waterways for most beneficial purposes, promotes the growth of undesirable aquatic weeds, destroys fish and other desirable aquatic life, and is costly and difficult to remove; and

(8) Sediment reduces the channel capacity of waterways and the storage capacity of floodplains and natural depressions, resulting in increased chances of flooding at risk to public health and safety.

(Ord. passed 9-8-2009)

§ 153.056 GENERAL PRINCIPLES.

(A) It is the objective of this chapter to control soil erosion and sedimentation caused by development activities, including

clearing, grading, stripping, excavating and filling of land in the county. Measures taken to control soil erosion and off-site sediment runoff shall be adequate to assure that sediment is not transported from the site by a storm event of ten-year, 24-hour frequency or less.

(B) The following principles shall apply to all new development or redevelopment activities within the county and to the preparation of the submissions required under § 153.057.

(1) New development or redevelopment shall be related to the topography and soils of the site so as to create the least potential for erosion. Areas of steep slopes greater than 33% where high cuts and fills may be required are to be avoided whenever possible, and natural contours should be followed as closely as possible.

(2) Natural vegetation shall be retained and protected wherever possible. Areas immediately adjacent to natural watercourses, lakes, ponds, sinkholes, and wetlands are to be left undisturbed wherever possible. Temporary crossings of watercourses, when permitted, must include appropriate stabilization measures.

(3) Special precautions shall be taken to prevent damages resultant from any necessary development activity within or adjacent to any stream, lake, pond, sinkhole or wetland. Preventive measures shall reflect the sensitivity of these areas to erosion and sedimentation.

(4) The smallest practical area of land should be exposed for the shortest practical time during development.

(5) Sediment basins or traps, filter barriers, diversions and any other appropriate sediment or runoff control measures shall be installed prior to site clearing and grading and maintained to remove sediment from run-off waters from land undergoing development.

(6) The selection of erosion and sediment control measures shall be based on assessment of the probable frequency of climatic and other events likely to contribute to erosion, and on evaluation of the risks, costs and benefits involved.

(7) In the design of erosion control facilities and practices, aesthetics and the requirements of continuing maintenance must be considered.

(8) Provisions shall be made to accommodate the increased run-off caused by changing soil and surface conditions during and after development. Drainage ways should be designed so that their final gradients and the resultant velocities and rates of discharge will not create additional erosion on-site or downstream.

(9) Permanent vegetation and structures shall be installed and functional as soon as practical during development.

(10) Those areas being converted from agricultural purposes to other land uses shall be vegetated with an appropriate protective cover prior to development.

(11) All waste generated as a result of site development activity shall be properly disposed of and shall be prevented from being carried off the site by either wind or water.

(12) All construction sites shall provide measures to prevent sediment from being tracked onto public or private roadways.

(13) All temporary soil erosion and sediment control practices shall be maintained to function as intended until the contributing drainage area has been permanently stabilized at which time they shall be removed.

(C) Water quality shall adhere to:

(1) Illinois Environmental Protection Act: 415 ILCS 5/11 and 5/12, from Ch.111-1/2, par 1011 and 1012;

(2) Illinois Pollution Control Board Rules and Regulations: Title 35: Environmental Protection, Subtitle C: Water Pollution, Chapter 1: Pollution Control Board, Part 302 Water Quality Standards; and

(3) Illinois Pollution Control Board Rules and Regulations: Title 35: Environmental Protection, Subtitle C: Water Pollution, Chapter I: Pollution Control Board, Part 304 Effluent Standards.

(Ord. passed 9-8-2009)

§ 153.057 EROSION AND SEDIMENT CONTROL PLAN SUBMITTAL REQUIREMENTS.

(A) Each applicant shall submit the information depending on development size, as regulated 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 related to erosion both on-site and off-site, and the effectiveness of the proposed erosion and sediment control plan in reducing sediment loss and meet the provisions of § 153.002. The applicant shall certify on the drawing that all clearing, grading, drainage and construction shall be accomplished in strict conformance with the erosion and sediment control plan.

(B) The following information shall be submitted for both existing and proposed property conditions; new development or redevelopments meeting the requirements of § 153.003.

(1) *Erosion and sediment control plan requirements.* Shall meet the requirements of §§ 153.002 and 153.035(B)(1) and (B)(2).

(2) *Mapping and descriptions.* The existing and proposed erosion and sediment control features of the property and

immediate vicinity including:

(a) As required in § 153.035(B)(1), (B)(2) and (B)(3);

(b) Location of the slope disturbance line;

(c) Location and description of the erosion and sediment control measures to be employed during construction;

(d) 1. For any structures proposed to be located on the slope side of the slope disturbance line the map shall include the limits of disturbance including tree removal, erosion and sediment control measures during construction, cross-section view of any proposed cut or fill, erosion and sediment control measures during construction, details of method(s) proposed for providing slope stability, permanent storm water control measures and permanent erosion and sediment control measures all being certified by a registered professional engineer or a certified professional erosion control specialist; and

2. The predominant soil types on the site, their location and their limitations for the proposed use as defined by the U.S.D.A. Natural Resources Conservation Service.

(e) The proposed use of the site, including present and planned development, areas of clearing, stripping, grading, excavation and filling; proposed contours, finished grades, and street profiles; the storm water plan as required in §§ 153.035 through 153.040; kinds and locations of utilities, areas and acreages proposed to be paved, sodded or seeded, vegetatively stabilized, or left undisturbed; and the location of specimen trees over 18 inches in diameter and their type;

(f) The erosion and sediment control plan showing all measures necessary to meet requirements of this chapter throughout all phases of construction and those remaining permanently after completion of the development of the site, including:

1. Location and description, including standard details, of all sediment control measures, runoff control measures, including diversions, waterways and outlets, and design specifics of sediment basins and traps including outlet details;

2. Location and description of all soil stabilization and erosion control measures, including seeding mixtures and rates, types of sod, method of seedbed preparation, expected seeding dates, type and rate of lime and fertilizer application, kind and quantity of mulching for both temporary and permanent vegetative control measures, and types of non-vegetative stabilization measures;

3. Location and description of methods to prevent tracking of sediment off-site including construction entrance details, as appropriate;

4. Description of dust and traffic control measures;

5. Locations of stockpiles and description of stabilization methods;

6. Location of off-site fill or borrow volumes, locations and methods of stabilization;

7. Provisions for maintenance of control measures, including type and frequency of maintenance, easements and estimates of the cost of maintenance; and

8. The proposed phasing of development of the site, including stripping and clearing, rough grading and construction, and final grading and landscaping.

a. Phasing should identify the expected date on which clearing will begin, the estimated duration of exposure of cleared area, and the sequence of installation of temporary sediment control measures (including perimeter controls), installation of storm water drainage, paving streets and parking areas, final grading and the establishment of permanent vegetative cover, and the removal of temporary measures.

b. It shall be the responsibility of the applicant to notify the Code Administrator of any significant changes which occur in the site development schedule after the initial erosion and sediment control plan has been approved.

(Ord. passed 9-8-2009)

§ 153.058 DESIGN AND OPERATION STANDARDS AND REQUIREMENTS.

(A) *General.* The preparation of soil erosion and sediment control plans shall follow the principles outlines in the *Illinois Procedures and Standards for Urban Soil Erosion and Sedimentation Control*, excepting Chapter Six published by the Urban Committee of the Association of Illinois Soil and Water Conservation Districts. The design criteria, standards and methods shall be prepared in accordance with the requirements of this chapter and the standards and specifications contained in *Illinois Urban Manual* prepared for the Illinois Environmental Protection Agency by the U.S.D.A. Natural Resources Conservation Service, which standards and methods are hereby incorporated into this chapter by reference. In the event of conflict between the provisions of said manuals and of this chapter, this chapter shall govern.

(B) *Erosion and sediment control design requirements.* New developments or redevelopments shall comply with § 153.057 and meet the following.

(1) Control measures shall be constructed to control runoff from the property to such an extent possible that sediment is retained on-site.

(2) Temporary on-site control measures required shall be constructed and functional prior to initiating clearing, grading, stripping, excavating or fill activities on the site.

(3) Disturbed areas shall be stabilized with permanent measures within seven calendar days following the end of active disturbance, or re-disturbance consistent with the following criteria.

(a) Appropriate permanent stabilization measures shall include seeding, mulching, sodding, with non-vegetative measures as a last resort.

(b) Areas having slopes greater than 33% shall be stabilized with sod, mat or blanket in combination with seeding or equivalent.

(4) All temporary and permanent erosion and sediment control practices must be maintained and repaired as needed to assure effective performance of their intended function.

(5) Site development requirements: on-site sediment control measures, as specified by the following criteria, shall be constructed as specified in the referenced handbooks, and functional prior to initiating clearing, grading, stripping, excavating or fill activities on the site.

(a) For new developments or redevelopments less than one acre, or for a tract of land where a single-family dwelling is being erected and less than 10,000 square feet of impervious surface is being developed, filter barriers (including filter fences, straw bales or equivalent control measures) shall be constructed to control all on-site runoff. Vegetated filter strips, with a minimum width of 25 feet, may be used as an alternative only where runoffs in sheet flow is expected.

(b) For new developments or redevelopments more than one acre but less than five acres, a sediment trap designed in accordance with the IEPA *Standards and Specifications for Soil Erosion* or equivalent control measures shall be constructed at the down slope point of the disturbed area.

(c) For new developments or redevelopments greater than five acres, a sediment basin or equivalent control measure shall be constructed at the down slope point of the disturbed area.

(d) Sediment basin and sediment trap designs shall provide for both “dry” detention and “wet” detention sediment storage. The detention storage shall be composed of equal volumes of “wet” detention storage and “dry” detention storage and each shall be sized as regulated in §§ 153.035 through 153.040. The release rate of the basin shall be that rate as regulated in §§ 153.035 through 153.040. The elevation of the outlet structure shall be placed such that it only drains the dry detention storage.

(e) The sediment storage shall be sized to store the estimated sediment load generated from the site over the duration of the construction period with a minimum storage equivalent to the volume or sediment generated in one year. For construction periods exceeding one year, the one-year sediment load and a sediment removal schedule may be substituted.

(f) The alteration of sinkholes by tilling, grading or excavating is prohibited, including an area within 25 feet from the rim.

(g) To the extent possible or as otherwise regulated in this chapter all desirable trees eight inches in diameter and larger shall be protected for their present and future value for erosion protection and other environmental benefits. Trees that have been selected for preservation shall be marked prior to the beginning of any clearing, grading, stripping, excavation or filling of the site. A “no construction zone” shall be established and marked at the perimeter of the drip line of each tree which is to be preserved.

(6) Storm water conveyance channels, including ditches, swales and diversions, and the outlets of all channels and pipes shall be designed and constructed as regulated in §§ 153.035 through 153.040. All constructed or modified channels shall be stabilized within 48 hours, consistent with the standards as required in the IEPA *Erosion Control Manual: Standards and Specifications for Soil Erosion and Sediment Control*.

(7) (1) Land disturbance activities in stream channels shall be avoided, where possible, or as regulated in §§153.035 through 153.040. If disturbance activities are unavoidable, the following requirements shall be met.

(2) Construction vehicles shall be kept out of the stream channel to the maximum extent practicable. Where construction crossings are necessary, temporary crossings shall be constructed of non-erosive material, such as riprap or gravel. The time and area of disturbance of stream channels shall be kept to a minimum. The stream channel, including bed and banks, shall be stabilized within 48 hours after channel disturbance is completed, interrupted or stopped.

(8) Storm sewer inlets and culverts shall be protected by sediment traps or filter barriers meeting accepted design standards and specifications.

(9) Soil storage piles containing more than ten cubic yards of material shall not be located with a down slope drainage length of less than 25 feet to a roadway, drainage channel or sinkhole. Filter barriers, including straw bales, filter fence or equivalent, shall be installed immediately on the down slope side of the piles.

(a) If dewatering devices are used, discharge locations shall be protected from erosion. All pumped discharges shall be routed through appropriately designed sediment traps or basins, or equivalent and shall not be deposited into a sinkhole.

(b) Each site shall have graveled (or equivalent) entrance roads, access, drives and parking areas of sufficient length and width to prevent sediment from being tracked onto public or private roadways. Any sediment reaching a public or private road shall be removed by shoveling or street cleaning (not flushing) before the end of each workday and transported to a controlled sediment disposal area.

(Ord. passed 9-8-2009)

§ 153.059 MAINTENANCE OF CONTROL MEASURES.

All soil erosion and sediment control measures necessary to meet the requirements of this chapter shall be maintained periodically by the applicant or subsequent land owner during the period of land disturbance and development of the site in a satisfactory manner to ensure adequate performance.

(Ord. passed 9-8-2009)

§ 153.060 CONTROL OF CONSTRUCTION SITE WASTES.

All waste materials generated during construction activities must be properly disposed. Examples of construction site waste may consist of, but not be limited to, all building materials, raised structure debris, concrete (including concrete truck wash), asphalt, brick, excess soil, rebar, erosion and sediment control materials, cleared vegetation, chemicals, temporary bathroom facilities and all other construction site wastes.

(Ord. passed 9-8-2009)

§ 153.061 CONSTRUCTION SITE STORM WATER POLLUTION PREVENTION.

(A) *Plan.*

(1) Activities that are applicable to this chapter, per §153.003, must provide a construction site storm water pollution prevention plan (CSSPPP).

(2) The construction site storm water pollution prevention plan may be a full sized plan sheet with necessary notes for requirements or may be a narrative explaining construction site operating procedures to minimize or eliminate storm water pollution as a result of construction activities.

(3) The items covered in an approvable CSSPPP are dependent on the activities and the materials required on site to complete the project. Therefor, the detail of the plan may be more or less depending on-site activities planned.

(B) *Standard items.* Standard items included in a CSSPPP are, but at not limited to:

(1) Purpose;

(2) Construction site description;

(3) Activities/materials to be addressed in the CSSPPP;

(4) Construction site operating procedures;

(5) Activities/materials monitoring and maintenance; and

(6) Emergency and spill procedures.

(C) *Change during construction.* Should construction site activities/materials change during construction, the CSSPPP must reflect the changes. Therefor, the plan must be kept on-site at all times and be altered as necessary with the approval of the Inspector. Should major changes be warranted, a revised plan must be submitted for review and approval.

(Ord. passed 9-8-2009)

LONG-TERM MAINTENANCE RESPONSIBILITY

§ 153.075 LONG-TERM MAINTENANCE RESPONSIBILITY.

Maintenance of storm water drainage, and erosion and sediment control facilities located on private property shall be the responsibility of the owner of that property. Before an appropriate permit is obtained from the county, the applicant shall execute a maintenance agreement with the county guaranteeing that the applicant and all future owners of the property will maintain its storm water drainage and erosion and sediment control system and shall provide for access to the system for inspection by authorized personnel of the county. The maintenance agreement shall also stipulate that if the appropriate personnel of the county notify the property owner in writing of maintenance problems which require correction, the property owner shall begin such corrections within 24 hours and shall not extend beyond seven calendar days of such notification. If the corrections are not made within this time period, the county may have the necessary work completed and assess the cost to the property owner. The county has the option of requiring a bond to be filed by the property owner for maintenance of the storm water drainage and erosion and sediment control system.

(Ord. passed 9-8-2009)

INSPECTIONS

§ 153.090 INSPECTIONS.

(A) *General.*

(1) (a) The Soil and Water Conservationist shall make inspections as hereinafter required and shall either approve that

portion of the work completed or shall notify the permittee wherein the work fails to comply with the storm water drainage or erosion and sedimentation control plan as approved. Plans for grading, stripping, excavating and filling work bearing the stamp of approval of the Soil and Water Conservationist shall be maintained at the site during progress of the work.

(b) In order to obtain inspections and to ensure compliance with this chapter, the permittee shall notify the Soil and Water Conservationist within two working days of the completion of the construction stages specified below:

1. Upon completion of installation of the storm water drainage and erosion and sediment control measures (including perimeter controls and diversions), prior to proceeding with any other earth disturbance or grading;

2. After stripping and clearing;

3. After final grading;

4. After seeding and landscaping deadlines; and

5. After final stabilization and landscaping, prior to removal of sediment controls.

(2) If stripping, clearing, grading and/or landscaping are to be done in phases or areas, the permittee shall give notice and request inspection at the completion of each of the above work stages in each phase or area. If an inspection is not made and notified of the results given within five working days after notice is received by the county from the permittee, the permittee may continue work at his or her own risk, without presuming acceptance by the county. Notification of the results of the inspection shall be given in writing at the site.

(B) *Bi-weekly inspections.* Bi-weekly inspection reports shall be submitted to the county for all development permits. Except for permits involving the development of one single-family dwelling, the bi-weekly reports must be certified by a registered professional engineer, describing the current status of construction for proposed drainage and detention system, including whether drainage construction and erosion control has been installed in accordance with construction plans. Report shall define whether maintenance has been provided as needed for the erosion.

(Ord. passed 9-8-2009)

§ 153.091 SPECIALIZED PRECAUTIONS.

(A) (1) If at any stage of the grading of any development site the Soil and Water Conservationist determines by inspection that the nature of the site is such that further work authorized by an existing permit is likely to imperil any property, public way, stream, lake, wetland, or drainage structure, the Soil and Water Conservationist may require, as a condition of allowing the work to be done, that such reasonable special precautions to be taken as is considered advisable to avoid the likelihood of such peril.

(2) Special precautions may include, but shall not be limited to, a more level exposed slope, construction of additional drainage facilities, berms, terracing, compaction or cribbing, installation of plant materials for erosion control, and recommendations of a registered soils engineer and/or engineering geologist which may be made requirements for further work.

(B) (1) Where it appears that storm damage may result because the grading on any development site is not complete, work may be stopped and the permittee required to install temporary structures or take such other measures as may be required to protect adjoining property or the public safety.

(2) On large developments or where unusual site conditions prevail, the Soil and Water Conservationist may specify the time of starting grading and time of completion or may require that the operations be conducted in specific stages so as to ensure completion of protective measures or devices prior to the advent of seasonal rains.

(Ord. passed 9-8-2009)

§ 153.092 AMENDMENT OF PLANS.

(A) Major amendments to storm water drainage and detention or erosion and sediment control plans shall be submitted to the Code Administrator and shall be processed and approved or disapproved in the same manner as the original plans.

(B) Field modification of a minor nature may be authorized by the Code Administrator by written authorization to the permittee.

(Ord. passed 9-8-2009)

PERMITTING

§ 153.105 APPLICATION FOR DEVELOPMENT PERMIT.

Application for a development permit shall be made by the owner of the property or his or her authorized agent to the Code Administrator on a form furnished for that purpose. Each application shall bear the name(s) and address(es) of the owner or developer of the site, the contractor(s) and any consulting firm retained by the applicant together with the name of the applicant's principal contact at such firm, and shall be accompanied by a filing fee of $200 for any permit subject to the requirements of §§ 153.035 through 153.040. No permit fee is assessed for those developments where only the requirements of §§ 153.055 through 153.060 apply. Each application shall include certification that any land clearing, construction or development involving the movement of earth shall be in accordance with the plans approved upon issuance

of the permit.

(Ord. passed 9-8-2009)

§ 153.106 BOND REQUIRED.

The applicant for a development permit may be required to file with the county a faithful performance bond or bonds, letter of credit or other improvement security satisfactory to the County State's Attorney in an amount deemed sufficient by the Code Administrator to cover all costs of improvements, landscaping, maintenance of improvements and landscaping, and soil erosion and sediment control measures for such period as specified by the county and engineering and inspection costs to cover the cost of failure or repair of improvements installed on the site.

(Ord. passed 9-8-2009)

§ 153.107 REVIEW AND APPROVAL.

Each application for a development permit shall be reviewed and acted upon according to the following procedures.

(A) (1) The Code Administrator will review each application for a development permit to determine its conformance with the provisions of this chapter. The Administrator may also refer any application to the County Soil and Water Conservation District, a consulting engineer retained by the county, and or any other local government or public agency within whose jurisdiction the site is located for review and comment.

(2) Within 30 days after receiving an application, the Code Administrator shall in writing:

(a) Approve the permit application if it is found to be in conformance with the provisions of this chapter, and issue the permit;

(b) Approve the permit application subject to such reasonable conditions as may be necessary to secure substantially the objectives of this chapter, and issue the permit subject to these conditions; or

(c) Disapprove the permit application, indicating the deficiencies and the procedure for submitting a revised application and/or submission.

(B) No development permit shall be issued for an intended development site unless:

(1) The development, including, but not limited to, subdivision or planned unit development, has been approved by the county where applicable;

(2) Such permit is accompanied by or combined with a valid building permit issued by the county;

(3) The proposed earth moving is coordinated with any overall development program previously approved by the county for the area in which the site is situated; and

(4) All relevant federal and state permits have been received for the portion of the site subject to soil disturbance as noted in § 153.002.

(C) Failure of the Code Administrator to act on an original or revised application within 30 days of receipt shall authorize the applicant to proceed in accordance with the plans as filed and in compliance with the regulations contained herein, unless such time is extended by agreement between the Code Administrator and the applicant. Pending preparation and approval of a revised plan, development activities shall be allowed to proceed in accordance with conditions established by the Code Administrator.

(Ord. passed 9-8-2009)

§ 153.108 FINAL CERTIFICATION.

Prior to final approval by the county, a registered professional engineer shall certify that detention basin has been constructed in accordance with construction plans and proposed volume has been provided. An "as-built" survey of the detention basin, prepared by a license surveyor, shall be included with the certification for approval.

(Ord. passed 9-8-2009)

§ 153.109 EXPIRATION OF DEVELOPMENT PERMIT.

Every development permit shall expire and become null and void if the work authorized by such permit has not been commenced within 180 days, or if not completed by a date which shall be specified in the permit; except that the Code Administrator may, if the permittee presents satisfactory evidence that unusual difficulties have prevented work being commenced or completed within the specified time limits, grant a reasonable extension of time if written application is made before the expiration date of the permit. The Code Administrator may require modification of the erosion control plan to prevent any increase in erosion or off-site sediment runoff resulting from any extension.

(Ord. passed 9-8-2009)

§ 153.110 APPEALS.

The applicant, or any person or agency which received notice of the filing of the application, may appeal the decision of the Code Administrator to the Subdivision and Land Use Committee. Upon receipt of an appeal, the Subdivision and Land Use Committee shall schedule and hold a public hearing, after giving 15 days' notice thereof. The Board shall render a decision within 30 days after the hearing. Factors to be considered on review shall include, but need not be limited to, the effects of the proposed development activities on the surface water flow to tributary and downstream lands, any comprehensive watershed management plans, or the use of any retention facilities; possible saturation of fill and unsupported cuts of said fill by water, both natural and domestic; runoff of surface waters that produce erosion and siltation of drainage ways; nature and type of soil and excessive and unnecessary scarring of the natural landscape through grading or removal of vegetation.

(Ord. passed 9-8-2009)

ENFORCEMENT

§ 153.125 STOP-WORK ORDER: REVOCATION OF DEVELOPMENT PERMIT.

(A) In the event any person holding a development permit pursuant to this chapter violates the terms of the permit, or carries on-site development in such a manner as to materially adversely affect the health, welfare, environment or safety of persons residing or working in the neighborhood of the development site or so as to be materially detrimental to the public welfare or injurious to property or improvements in the neighborhood, the Code Administrator may suspend or revoke the development permit.

(B) Suspension of a permit shall be by a written stop-work order issued by the Code Administrator and delivered to the permittee or his or her agent of the person performing the work. The stop-work order shall be effective immediately, shall state the specific violations cited, and shall state the conditions under which work may be resumed. A stop-work order shall remain in effect until the next regularly scheduled meeting of the Subdivision and Land Use Committee at which the time the conditions of § 153.109 can be met.

(C) (1) No development permit shall be revoked until a hearing is held by the Subdivision and Land Use Committee.

(2) Written notice of such hearing shall be served on the permittee, either personally or by registered mail, and shall state:

(a) The grounds for complaint or reasons for suspension or revocation, in clear and concise language; and

(b) The time when and place where such hearing will be held.

(3) Such notice shall be served on the permittee at least five days prior to the date set for the hearing. At such hearing, the permittee shall be given an opportunity to be heard and may call witnesses and present evidence on his or her behalf. At the conclusion of the hearing, the Subdivision and Land Use Committee shall determine whether the permit shall be revoked.

(Ord. passed 9-8-2009)

§ 153.999 PENALTY.

No person shall construct, enlarge, alter, repair or maintain any grading, excavating or fill, or cause the same to be done, contrary to or in violation of any terms of this chapter. Any person violating any of the provisions of this chapter shall be deemed guilty of a misdemeanor, and each day during which any violation of any of the provisions of this chapter is committed, continued or permitted shall constitute a separate offence. Upon conviction of any such violation, such person, partnership or corporation shall be punished by a fine of not more than $500 for each offense. In addition to any other penalty authorized by this section, any person, partnership or corporation convicted of violating any of the provisions of this chapter shall be required to restore the site to the condition existing prior to commission of the violation, or to bear the expense of such.

(Ord. passed 9-8-2009)