

# **DEKALB COUNTY STORMWATER MANAGEMENT PLANNING COMMITTEE**

**July 31, 2019  
2:00 p.m.**

**Conference Room East  
DeKalb County Administration Building  
110 E. Sycamore St., Sycamore, IL**

## **AGENDA**

- 1. Roll Call**
- 2. Approval of Agenda**
- 3. Approval of Minutes**
- 4. Update on IEPA 319 Grant Application**
- 5. Review and Approval of Amendments to DeKalb County Stormwater Ordinance in response to ISWS Contract Report CR-2019-05 - Frequency Distributions of Heavy Precipitation in Illinois: Updated Bulletin 70**
- 6. Next Meeting**
- 7. Adjournment**

*Note: These minutes are not official until approved by the Stormwater Management Planning Committee at a subsequent meeting. Please refer to the meeting minutes when these minutes are approved to obtain any changes to these minutes.*

DeKalb County Government  
Sycamore, Illinois

**STORMWATER MANAGEMENT PLANNING COMMITTEE MINUTES**  
(May 2, 2019)

The DeKalb County Stormwater Management Planning Committee (SMPC) met on May 2, 2019 at 3:00 p.m. in the DeKalb County Administrative Building, Conference Room – East, in Sycamore, Illinois. In attendance were Committee Members: Mark Bushnell, Derek Hiland, Donna Prain, Nathan Schwartz, Tom Horak, Paul Stoddard, and Pat Vary. Also in attendance were Dean Johnson and Committee Staff: Marcellus Anderson.

- 1. Roll Call** – Mr. Hiland noted that Committee members Mr. Bauling, Mr. Gentile, Mr. Emerson, and Mr. Bunge were absent. Ms. Vary arrived late to the meeting. Prior to Ms. Vary's arrival, the Committee did not have quorum. The approval of the agenda and minutes for the May 4, 2017 meeting occurred after her arrival.
- 2. Approval of Agenda** – Mr. Schwartz moved to approve the agenda, seconded by Mr. Stoddard, and the motion carried unanimously.
- 3. Approval of Minutes** – Ms. Vary moved to approve the minutes of the May 4, 2017 meeting, seconded by Mr. Schwartz, and the motion carried unanimously.

Ms. Prain noted that the minutes indicated that a motion had been made at that meeting to accept recommendations for appointment to membership to the Committee, and inquired as whether these appointments were ever made. Mr. Hiland responded that the affirmations were handled through the email proxy meetings that occurred during 2018.

**4. Update on IEPA 319 Grant Applications**

Mr. Johnson updated the Committee on the status of the IEPA 319 Grant, explaining that the grant was being used for watershed planning for the Upper South Branch of the Kishwaukee River and noted that the Watershed Steering Committee had already met twice. He noted that Applied Ecological Services (AES) had been contracted as the consultant for the project and would be conducting a watershed field inventory and collecting data from the municipalities and the County. Mr. Johnson noted that Education Strategy component of the process had been submitted to and approved of by the IEPA, adding that the Education Strategy was a "living

document”, which could be changed, improved, or added to. Mr. Johnson also distributed a memo summarizing this information.

Mr. Johnson informed the Committee that a Watershed Bus Tour was planned for June 8, 2019, explaining what the attendees could expect on the tour and describing the goals of the tour. He distributed an informative handout regarding the bus tour.

Mr. Johnson noted that they would be working with Northern Illinois University (NIU) graduate students to gather water samples from the East and South Branch of the Kishwaukee River to help establish needed baseline data for the project. He noted in particular that next year one of the students picked to participate will be writing her Masters Thesis on this topic.

Mr. Johnson finished by thanking everyone involved in the project for helping it to come to fruition.

Mr. Stoddard and Ms. Vary both indicated that they wanted to attend the bus tour.

Mr. Hiland offered to help with the promotion of the bus tour.

Ms. Prain noted that the data being collected was also being made available on the Watershed Website. She also inquired as to who would be AES’s contact with the City of DeKalb. Mr. Johnson responded that Zack Gill, the DeKalb City Engineer would be the contact,

#### **5. ISWS Contract Report CR-2019-05 – Frequency Distribution of Heavy Precipitation in Illinois: Updated Bulletin 70**

Mr. Bushnell informed the Committee that he had attended the Floodplain Managers Conference, wherein the Illinois State Water Survey (ISWS) had presented an updated Bulletin 70, which covers rainfall data and distributions that is the standard in stormwater management designs, retention basins, and storm sewers. He noted that significant changes were noted in the new report, which will impact system designs, likely requiring larger system designs. He particularly noted that when an inquiry was made as to when the new data would be adopted, they were told it had been adopted that morning, and that the DNR would be adopting it starting January 1, 2020. Mr. Bushnell informed the Committee that he had begun to coordinate with Mr. Schwartz on the local adoption of the data.

Mr. Stoddard noted that the data points in DeKalb County did not seem to fit with the surrounding counties, and inquired whether there could be a systematic reporting difference that

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could account for that. Ms. Schwartz noted that there were also other anomalies. Ms. Prain noted that there were many disclaimers on the data.

Ms. Vary noted that she was very impressed with the data on the charts in the report which seemed to indicate a preponderance in the County. Mr. Schwartz hypothesized that there may just be a case of it being better recording capabilities over that of one hundred years prior. Ms. Prain noted that the key is in looking at the longer time frames. Mr. Hiland wondered how many testing sites were near a state school, which could allow for better and more frequent testing.

Mr. Schwartz noted that when informed by Mr. Bushnell about the changes, he wondered would this impact all of the bridges in the County. He added that he found out later that bridge design will continue to use stream stats, which hadn't been updated.

Ms. Vary inquired as to whether there was any standardization in how things were being measured. Mr. Schwartz indicated that he believed there was.

Mr. Johnson inquired as to when the last update had occurred. Mr. Bushnell responded that it had been at least since 1995. Ms. Prain noted that information appeared to indicated 1989.

Ms. Prain inquired what needed to be done, if anything. Mr. Schwartz responded that this would be a good time to look at the Stormwater Ordinance, to review and potential update it. Mr. Bushnell said that he believed that Ordinance just said to use Bulletin 70 data, and did not identify the data from a particular year. He then suggested that they may just need to add a line to the Ordinance indicating that they would be continuing to use the old data, but that on January 1, 2020, we would be switching to the new data. Mr. Schwartz clarified that the new data would apply to projects based on their actual construction timeline, not their application timeline.

Mr. Horak emphasized the need to get the word out about the changes.

Mr. Bushnell asserted his belief that the size of detention basins will be the biggest difference.

Ms. Prain inquired as to physical impact of all the rain, noting that if the County was truly receiving so much more precipitation, it had to be going somewhere. She wondered how the increased rain affected things such as: surface runoff; floodplain protection; compensatory storage; etc., and asked whether there needs to a reassessment of the waterways and current flood storage. Ms. Prain also noted that the surrounding counties seemed to have suffered far more during the last rain storm, but that DeKalb County seemed to do ok. Mr. Johnson noted

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that watershed planning is looking into alternatives to stormwater runoff and capacities. He also opined that the EPA will eventually step in to ask what communities are doing.

The Committee then discussed the pros and cons of permeable parking lots, and locations that have used them.

Mr. Johnson noted that if more communities have watershed plans, then the 319 Grants become available for those communities. He noted that proper management of the watershed will impact the ability of communities to grow.

Mr. Hiland asked whether there was a need to review the current ordinance, if so, then the Committee should do so at its next meeting, making drafts and suggestions in the interim. Mr. Schwartz agreed that this would be a good idea.

## **6. Committee Membership Terms / Reappointments**

Mr. Hiland informed the Committee that the terms of service for six (6) Committee members would expire at the end of June. Mr. Hiland informed the Committee that letters were being sent out to chief executive elected official for each of the municipalities requesting their vote for the appointment or reappointment of the three (3) municipal representatives and that the County Administrative Office had been informed of the need to reappoint the three (3) county representatives. He noted that action was expected by the County Board Chair at the June 19, 2019 meeting of the DeKalb County Board.

Ms. Vary noted two issues she had, first, that she represented the south side of DeKalb but that she no longer lives there, and second, she pointed out that she did not consider herself an expert on these issues and would gladly step aside if there was someone more knowledgeable in these matters to take her place. She did note however that she was willing to continue to serve on the Committee if they had no one else. Mr. Hiland noted that she was there as a representative of the County, not just the City of DeKalb, so her move did not affect her position.

Mr. Hiland noted that Tom Holderman was no longer with the City of DeKalb, and would be getting replaced on the Committee. He also noted that Mike Bauling would not likely be able to continue serving on the Committee, due to other pressing commitments.

Mr. Stoddard, Mr. Bushnell, and Mr. Horak all indicated their willingness to continue serving on the Committee if they received reappointment.

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7. **Next Meeting** – The Committee will next meet at 2:00 p.m. on July 31, 2019 in the Conference Room East, DeKalb County Administration Building.

Mr. Horak inquired whether anyone had any other ideas for other changes to the Stormwater ordinance at that time, since they will have to go through the process of getting it adopted by the County. Mr. Schwartz indicated that he did not have any ideas at that time, but was open to other suggestions. Mr. Bushnell noted that suggestions and items for discussion could be brought to the July 31<sup>st</sup> meeting.

Mr. Johnson informed the Committee that as of June 31<sup>st</sup>, the EPA has cut funding to their office for EPA inspection of construction sites. He noted that the EPA would begin training their own people to handle the inspections. The Committee then discussed the change this would cause.

8. **Adjournment** – Mr. Stoddard motioned to adjourn, seconded by Mr. Horak, and the motion carried unanimously.

Respectfully submitted,

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Derek Hiland  
Chairman, DeKalb County Stormwater Management Planning Committee

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**DeKalb County  
Community Development Department**

110 East Sycamore Street  
Sycamore, IL 60178  
(815) 895-7188

**STAFF REPORT**

**TO:** Stormwater Management Planning Committee

**FROM:** Derek M. Hiland  
Director

**DATE:** July 24, 2019

**SUBJECT:** Discussion and Review on Wetland Ordinance Modification

The Stormwater Management Planning Committee met in May 2019 and discussed possible changes to the DeKalb County Stormwater Ordinance. The purpose of those discussions were to consider changes that are consistent with the latest ISWS Contract Report CR-2019-05 – Frequency Distributions of Heavy Precipitation in Illinois: Updated Bulletin 70.

The current ordinance has been included for review and the Stormwater Management Planning Committee is requested to consider bulletin, propose changes and forward a recommendation to the County Board for inclusion into the County's Stormwater Ordinance.

DMH:dmh

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## **Stormwater Management Ordinance, Phase 2**

### **Sec. 1. Authority and Purpose**

#### **A. Authority**

This ordinance is enacted pursuant to the powers granted to DeKalb County, Illinois by the Illinois Compiled Statutes, 55 ILCS 5/5-1062.2, and Illinois Drainage Law.

B. The purpose of this Ordinance is to safeguard persons, protect property, prevent damage to the environment, and promote the public welfare by guiding, regulating and controlling the design, construction, use and maintenance of any development or other activity which disturbs or breaks the topsoil or otherwise results in the movement of earth on land situated in DeKalb County. It is the intention of this Ordinance that land disturbing activities not result in an increase in the rate of or the location of storm water runoff from properties in order to safeguard adjoining properties from the negative impacts of such runoff. Further, it is intended to require the temporary storage and the control of the rate of release of excess storm water thereby equitably apportioning the liabilities and benefits of storm water runoff between dominant and subservient estates.

### **Sec. 2. Definitions.**

The following words, terms and phrases, when used in this division, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning. Words not defined shall be interpreted in accordance with definitions contained in Merriam Webster's New Collegiate Dictionary, Ninth Edition.

**Administrator:** The person designated by the County to administer and enforce this ordinance. The Planning Director and County Engineer shall jointly administer this ordinance.

**Adverse Impacts:** Any deleterious impact on water resources or wetlands 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 procure official approval of a development or permit to carry out construction or a development from the County.

**Base Flood:** The flood having a one percent probability of being equaled or exceeded in any given year. The base flood is also known as the 100-year frequency flood.

**Base Flood Elevation:** The elevation at all locations delineating the level of flooding resulting from the base flood event.

## Sec. 6 Generally

**Best Management Practice (BMP):** A measure used to control the adverse stormwater-related effects of development. BMPs include structural devices (e.g. swales, filter strips, infiltration trenches, and detention basins) designed to remove pollutants, reduce runoff rates and volumes, and protect aquatic habitats. BMPs also include non-structural approaches, such as public education efforts to prevent the dumping of household chemicals into storm drains.

**Buffer Area:** An area of predominantly vegetated land to be left open, adjacent to wetlands, drainage ways, lakes, ponds, or other surface waters for the purpose of eliminating or minimizing adverse impacts on such areas.

**Channel:** Any river, stream, creek, brook, branch, natural or artificial depression, ponded area, flowage, slough, ditch, conduit, culvert, gully, ravine, wash, or natural or manmade drainage way, which has a defined 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), widening, deepening, straightening, relocating, lining, and significant removal of bottom or woody rooted vegetation. Channel modification does not include the clearing of debris or removal of trash.

**Compensatory Storage:** An artificially excavated, hydraulically equivalent volume of storage within the floodplain used to balance the loss of natural flood 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.

**Control Structure:** A structure designed to control the rate of flow that passes through the structure, given a specific upstream and downstream water surface elevation.

**County:** Unless otherwise identified, the County of DeKalb, Illinois.

**County Engineer:** The County Superintendent of Highways or a professional engineer, registered in the State of Illinois, who has been duly appointed as the County Engineer of the County of DeKalb, or who has been hired by the County as its consulting engineer.

**Critical Duration:** The duration of a storm or flood event that results in the greatest peak runoff or high water elevation.

**Deed or Plat Restriction:** Easements, covenants, deed restricted open spaces, outlets dedicated to a public entity, reserved plat areas, conservation easements, or public road rights-of-way that contain any part of the stormwater management system of a development.

## Sec. 6 Generally

**Depressional Storage:** A non-riverine depression where stormwater collects. The depressional storage volume is the volume contained in a depression below the high water level of the critical duration 100-year flood through the site in the pre-developed condition.

**Detention Basin:** A facility constructed or modified to provide for the temporary storage of stormwater runoff and the controlled release by gravity of this runoff at a prescribed rate during and after a flood or storm.

**Detention Time:** The mean residence time of stormwater in a detention basin.

**Development:** Any man-made change to real estate, including:

- a) Preparation of a plat of subdivision;
- b) Construction, reconstruction or placement of a building or any addition to a building;
- c) Installation of a manufactured home on a site, preparing a site for a manufactured home, or installing a travel trailer on a site for more than 180 days;
- d) Drilling, mining, installation of utilities, construction of roads, bridges, or similar projects;
- e) Filling, dredging, grading, construction of levees, clearing, excavating, paving, or other non-agricultural alterations of the ground surface;
- f) Storage of materials or deposit of non-agricultural solid or liquid waste; and
- g) Any other activity that might alter the magnitude, frequency, deviation, or velocity of stormwater flows from a property.

Development does not include maintenance of existing buildings and facilities such as resurfacing of roadways when the road elevation is not increased, or gardening, plowing, and traditional agricultural practices that do not involve filling, grading, or construction of levees. Additionally, development does not include fence installation, pole placement, drilling or other minor auxiliary construction activity, which does not affect stormwater runoff rates or volumes.

**Director:** the County Planning Director

**Drainage District:** A special district created by petition or referendum and court approval having the power to construct and maintain drainage improvements and to pay for improvements with assessments on the land within the district boundaries.

**Dry Detention Basin:** A detention basin designed to drain completely after temporary storage of stormwater flows and to normally be dry over the majority of its bottom.

**Emergency Overflow:** The structure in a stormwater management system designed to protect the system in event of a malfunction of the primary flow structure or a storm event greater than the system design. The emergency overflow capacity initiates at the facility

## Sec. 6 Generally

design high water level or base flood elevation.

Erosion: The general process whereby soil is detached by the action of water or wind.

Excess Stormwater Runoff: The volume and rate of flow of stormwater discharged from an urbanized area which is or will be in excess of that volume and rate which pertained before urbanization.

Exempt Municipality : A municipality located entirely or partially within the boundaries of DeKalb County that has adopted and enforces its own stormwater management ordinance, said ordinance being consistent with and at least as stringent as the Countywide Stormwater Management Ordinance, based on the finding of the Stormwater Management Planning Committee in accordance with Sec 8 herein.

FEMA: Federal Emergency Management Agency and its regulations codified as 44 CFR 59-79, effective September 29, 1989, as amended.

Floodplain: That land adjacent to a body of water with ground surface elevations at or below the base flood or the 100-year frequency flood elevation. The floodplain is also known as the Special Flood Hazard Area (SFHA)

Flood Fringe: That portion of the floodplain outside of the regulatory floodway.

Flood Rate Insurance Map (FIRM): A map prepared by the Federal Emergency Management Agency of HUD that depicts the special flood hazard area (SFHA) within a community. The map includes insurance rate zones and floodplains and may or may not depict Regulatory Floodways.

Floodway: The channel and that portion of the floodplain 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 1.0 foot increase in stage due to any loss of flood conveyance or storage and no more than ten percent (10%) increase in velocities. Municipality should reference the FIRMs applicable to the municipality and the surrounding areas.

Freeboard: An increment of height added to the base flood elevation, groundwater table, or 100-year design water surface elevation to provide a factor of safety for uncertainties in calculations, unknown local conditions, wave action, and unpredictable effects.

GIS Maps: The digital maps created and maintained by the Information Management Office of DeKalb County, IL.

Hydrograph: A graph showing the flow with respect to time for a given location on a stream or conduit.

Illinois Urban Manual: Technical design manual by the Natural Resource Conservation

## Sec. 6 Generally

Service for best management practices (BMPs) for controlling non-point source pollution.

**Impervious Surface:** Any hard-surfaced, man made area that does not readily absorb, retain, or infiltrate water, including but not limited to building roofs, parking and driveway areas, graveled areas, sidewalks and paved recreation areas.

**Infiltration:** The passage or movement of water into the soil surfaces.

**Lowest Adjacent Grade:** The lowest finished grade adjacent to a structure, not including the bottom of window wells.

**Major Drainage System:** That portion of a stormwater management system needed to store and convey flows beyond the capacity of the minor drainage system. Where manmade, it is designed to handle stormwater runoff from the 100-year frequency event.

**Minor Drainage System:** That portion of a stormwater management system designed for the convenience of the public. It consists of street gutters, storm sewers, small open channels, and swales. Where manmade, the minor conveyance system is designed to handle stormwater runoff from the 10-year frequency event. It also consists of crossroad culverts, which shall be designed to handle stormwater runoff from the 50-year frequency event.

**Mitigation:** Mitigation includes those measures necessary to minimize the negative effects, which stormwater drainage and development activities might have on the public health, safety and welfare. Examples of mitigation include compensatory storage, soil erosion and sediment control, and channel restoration.

**Natural:** Conditions resulting from physical, chemical, and biological processes without intervention by man.

**New Impervious Area:** Impervious surface area created after the effective date of this ordinance.

**One Hundred-Year Return Frequency Event:** A rainfall, runoff, or flood event having a one percent chance of occurring or being exceeded in any given year.

**On-Stream Detention:** Any detention facility to which runoff from upstream tributary areas flow.

**Overland Flow Route:** An area of land, which conveys stormwater runoff for all events up to, and including the base flood event.

**Peak Flow:** The maximum rate of flow of water at a given point in a channel or conduit.

**Person:** An individual, public or private corporation, government, partnership, or unincorporated association.

## Sec. 6 Generally

**Planning and Zoning Committee:** The Planning and Zoning Committee of the DeKalb County Board, it's successors or assigns.

**Plat Officer:** The Plat Officer of DeKalb County.

**Positive Drainage:** Provision for overland paths for all areas of a property including depressional areas that may also be drained by storm sewers.

**Property:** A parcel of real estate.

**Redevelopment:** Any activity, alteration, or change in land use that is undertaken on previously developed land.

**Registered Professional Engineer:** An engineer in the State of Illinois, under the Professional Engineer Act of 1989, 225 ILCS 325/1-49.

**Regulatory Floodway:** The channel, including on-stream lakes, and that portion of the floodplain adjacent to a stream or watercourse as designated by the Illinois Department of Natural Resources, Office of Water Resources (IDNR-OWR), which is needed to store and convey the existing and anticipated future 100-year frequency flood discharge with no more than a 1.0 foot increase in stage due to loss of flood conveyance or storage, and no more than ten percent (10%) increase in velocities. To locate the regulatory floodway boundary on any site, the regulatory floodway boundary shall be scaled off the regulatory floodway map and located on a site plan, using reference marks common to both maps. Where interpretation is needed to determine the exact location of the regulatory floodway boundary, the IDNR-OWR should be contacted for the interpretation.

**Release Rate:** The rate at which stormwater runoff leaves the property.

**Retention Basin:** A facility designed to completely retain a specified amount of stormwater runoff without release except by means of evaporation, infiltration, emergency bypass or pumping.

**Riverine:** Relating to, formed by, or resembling a stream (including creeks and rivers).

**Sedimentation:** The process that deposits soils, debris, and other materials either on other ground surfaces or in bodies of water or stormwater drainage systems.

**Special Flood Hazard Area (SFHA):** Any area subject to inundation by the base flood from a river, creek, stream, or any other identified channel or ponding and shown on the FEMA Flood Insurance Rate Map. The SFHA is also known as the floodplain.

**Storm Sewer:** A closed conduit for conveying collected stormwater.

**Stormwater Management Planning Committee:** The Committee appointed by the DeKalb

## Sec. 6 Generally

County Board and charged with the development of the Countywide Stormwater Management Plan and Ordinance and other duties as set forth in 55 ILCS 5/5-1062.2

**Stormwater Management Plan:** The Countywide Stormwater Management Plan, which describes the existing stormwater drainage system and environmental features, as well as the stormwater management system and environmental features in DeKalb County.

**Stormwater Management System:** The collection of natural features and man-made facilities, which define the stormwater management for a development. Examples include major and minor drainage systems, stormwater storage facilities, BMPs, etc.

**Stormwater 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.

**Structure:** The results of man-made change to the land constructed at or below the ground, including the construction, reconstruction or placement of a building or any addition to a building; installing a manufactured home on a site; preparing a site for a manufactured home or installing a recreational vehicle on a site for more than 180 days.

**Time of Concentration:** The elapsed time for stormwater to flow from the most hydraulically remote point in a drainage basin to a particular point of interest in that watershed.

**Traditional Agriculture Uses:** Uses commonly classified 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 single-family dwellings and other farm structures incidental to and typically associated with said uses. Agribusiness uses are not considered to be traditional agricultural uses and include but are not limited to commercial grain elevators, commercial facilities for grain storage, drying or other processing; commercial feed, seed or fertilizer manufacturing, processing or sales; or any other agricultural-related use, which substantially increases the size of impervious surface areas which may cause significant or measurable increases in stormwater runoff.

**Tributary:** A stream or river that flows into a main stem (or parent) river.

**Two-Year Return Frequency Event:** A runoff, rainfall, or flood event having a fifty percent (50%) chance of occurring or being exceeded in any given year.

**Watershed:** An area of land where all of the water that drains off of it goes into the same place. Watershed boundaries in DeKalb County are as depicted on the GIS Maps, as may be amended by additional studies of greater detail.

**Wet Detention Basin:** A detention basin designed to maintain a permanent pool of water after the temporary storage of stormwater runoff.

## Sec. 6 Generally

Wetland: Wetlands are land that is inundated or saturated by surface or ground water at a frequency and duration sufficient to support, under normal conditions, a prevalence of vegetation adapted for life in saturated soil conditions (known as hydrophilic vegetation). A wetland is identified based upon the three attributes: 1) hydrology, 2) soils and 3) vegetation as mandated by the current Federal wetland determination methodology.

Sec. 3. Flood control assurances.

**Sec. 3. Flood control assurances.**

The County Board hereby assures the Federal Insurance Administration that it will enact as necessary, and maintain in force for those areas having flood hazards, adequate land use and control measures with effective enforcement provisions consistent with the criteria set forth in Section 1910 of the National Flood Insurance Program Regulations and agrees to take such other official action as may be reasonably necessary to carry out the objectives of the program (see Appendix A, Zoning, Article 4, Section 4.01, FP/C Floodplain/Conservation District).

**Sec. 4. Duties of Planning Director.**

1. The County Board hereby vests the Planning Director with the responsibility and authority to:

- (a) Delineate or assist the Federal Flood Insurance Administrator, at his request, in delineating the limits of the areas having special flood hazards on available local maps of sufficient scale to identify the location of building sites;
- (b) Provide such information as the administrator may request concerning present uses and occupancy of the floodplain;
- (c) Cooperate with federal, state and local agencies and private firms which undertake to study, survey, map and identify floodplain areas, and cooperate with neighboring counties with respect to management of adjoining floodplain areas in order to prevent aggravation of existing hazards;
- (d) Together with the County Engineer, interpret and enforce the regulations of this Chapter.

2. The County Board appoints the Planning Director to maintain for public inspection and to furnish upon request a record of elevations (in relation to mean sea level) of the lowest floor (including basement) of all new or substantially improved structures located in the special flood hazard areas. If the lowest floor is below grade on one or more sides, the elevation of the floor immediately above must also be recorded. (Ord. No. 93-30, 7-3, 10-20-93)

## **Sec. 6 Generally**

3. The County Board appoints the Planning Director to serve as the Plat Officer for DeKalb County.

The Plat Officer shall review subdivision proposals and other proposed new developments to ensure that:

## **Sec. 5. Review of subdivision proposals, other new developments for flood control measures**

1. All such proposals are consistent with the need to minimize flood damage.
2. All public utilities and facilities, such as sewer, gas, electrical and water systems are located, elevated and constructed to minimize or eliminate flood damage.
3. Adequate drainage is provided so as to reduce exposure to flood hazards. (Ord. No. 93-30, 7-3, 10-20-93)

## **Sec. 6. Generally**

The following requirements shall be applicable and shall be satisfied prior to the construction, improvement or development of any structure, project or land which is subject to the provisions of this division:

1. No land disturbing activity shall be permitted which alters natural or man-made waterways or drainage features, including but not limited to ditches, culverts, swales, drain tiles, streams, rivers, ponds, lakes, wetlands and floodplains, unless such alteration is in compliance with the provisions of this Article. Further, any land disturbing activity proposed within the designated 100-year floodplain, as established by the current Flood Insurance Rate Maps for DeKalb County, shall be subject to the FP/C, Floodplain/Conservation District regulations of the DeKalb County Zoning Ordinance.
2. Any land disturbing activity shall be conducted in such a way that the location of storm water run-off from a site shall not be altered, and the post-development rate of storm water run-off from the site shall not exceed the maximum rate stipulated in Section 30-9 below, unless such alteration is approved by the County as part of a development review process. In assuring compliance with this standard, the Planning Director may require the property owner to obtain a Site Development Plan in accordance with this Article.

## **Sec. 6 Generally**

3. The discharge point of any sump pump, as well as any stormwater management measures, including but not limited to swales, drains and contouring, intended to direct sump pump discharge, shall be entirely within the buildable area of a lot, and shall not extend beyond any minimum required building setback line, provided, however, the Planning Director may waive this provision upon the advice of the County Engineer.

## **Sec. 7. Site Development Permit**

A Site Development Permit shall be obtained through the DeKalb County Planning and Zoning Office prior to the commencement of construction of any structure or change to any land that is subject to the provisions of this Chapter.

1. Except as otherwise provided in this Chapter, the following activities shall require a Site Development Permit:

- (a) Construction of any new structure, establishment of any new uses of any land or existing structures, structural alteration or relocation of any existing structures, and enlargements of or additions to any existing uses located within the County and outside of any city, village or incorporated town;
- (b) Issuance of any Building Permit, approval or recording of any subdivision or plat of any land, approval of any planned development, and construction of pavement or compacted area designated to be used for loading, open storage, or the parking of vehicles, shall first comply with the provisions of this Chapter and obtain the approval of the director;
- (c) Any land disturbing activity that will affect an area in excess of 10,000 square feet;
- (d) Any land disturbing activity within 100 feet of a lake, pond, river, stream, wetland, whether farmed, delineated, or depicted on the County GIS maps, or floodplain. In addition to the provisions set forward in this ordinance, development in Special Flood Hazard Areas shall comply with the requirements of the FP/C, Floodplain/Conservation District of the DeKalb County Zoning Ordinance. Where these ordinances conflict or overlap, whichever imposes the more stringent restrictions shall prevail;

## Sec. 7. Site Development Permit

- (e) Excavating, dredging and filling or any combination thereof, that will exceed 250 cubic yards;
  - (f) Construction of any lake or pond, mining of minerals including sand and gravel, development of golf courses, and construction of roads and streets;
  - (g) Construction of agricultural buildings and structures that disturb one (1) acre or more in area or are within 250 feet of the corporate limits of a municipality or a property line of an occupied residential property; and
  - (h) Construction of buildings and structures associated with agribusinesses and other land uses governed by special use permits.
2. A Site Development Permit shall not be required for:
- (a) Tilling of soil and installation of drain tiles associated with traditional farming or other agricultural activities on property zoned for agricultural uses;
  - (b) of sod waterways, terraces, surface water diversions, grade stabilization structures, and grading and excavation associated with wildlife habitat practices such as shallow water impoundments, ponds, wetland enhancements and wildlife watering facilities, on properties zoned for agriculture, provided these are part of a USDA-NRCS approved project;
  - (c) Agricultural buildings and structures the construction of which disturbs less than one (1) acre of land, provided these are more than 250 feet from the corporate limits of a municipality and the property line of an occupied residential property;
  - (d) Excavations below final grade for the basement and footings of a single-family residence, septic systems, drain fields, tanks, vaults, tunnels, swimming pools, or cellars for which a Building Permit has been issued by the County;

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- (e) Construction associated with any work in a public right-of-way for which the Illinois Department of Transportation, Township Road Commissioner, or the County Engineer has issued approval;
- (f) Tilling of soil for fire protection purposes;
- (g) Construction of or modification to single-family residences which will continue to be used as single-family dwellings, provided, however, a Site Development Permit shall be required for any residence which would be 100 feet or closer to a lake, pond, river, stream, wetland or floodplain and shall be required if, in the determination of the Planning Director, construction of a residence could negatively impact adjacent properties due to water runoff;
- (h) Modification of structures or appurtenances other than single-family dwellings, which do not increase the amount of impermeable area; and
- (i) Excavations associated with mineral extractions conducted pursuant to a valid County Special Use Permit and valid permit under the Surface Mined Land Conservation and Reclamation Act;
- (i) On agriculturally-zoned property, the Planning Director shall have the authority to waive the requirements of this Chapter if it is determined that there are unique circumstances, that compliance with these provisions would impose particular hardships or that there are practical difficulties in doing so, and that waiving the requirements for a particular property will not alter the essential character of the immediate area. (Ord. No. 93-30 7-18,10-20-93; Ord. No. 97-16 3, 9-17-97)

3. An applicant for a Site Development Permit shall submit the following information to ensure that the provisions of this ordinance 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 Stormwater Management 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 this

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ordinance. Applicant shall provide a Stormwater Management Plan, prepared by and bearing the stamp and seal of a registered professional engineer, which includes the following information for both existing and proposed property conditions:

- (a) Narrative description of proposed development and impact on surrounding drainage systems.
- (b) A location map and description providing township, range and section; showing the property's location within the larger watershed; and showing the jurisdictional boundaries of all municipalities, drainage districts and townships within 2 miles of the project.
- (c) Existing and proposed topography at a minimum of two-foot contour intervals.
- (d) Existing and proposed storm water management features, including (but not limited to) drain tiles, ditches, culverts, swales, storm sewers and structures, detention areas, wetlands, lakes, ponds, streams, etc.
- (e) Plan, profile, and cross-sections of stormwater storage facilities, and overland flow routes, including the areas expected to be inundated or covered with water.
- (f) Construction cost estimate of the stormwater management facilities required by this ordinance.
- (g) Proposed soil erosion and sediment control measures.
- (h) Existing and proposed buildings, structures, roads, impervious surfaces, ground elevations, and other improvements where site grading is proposed.
- (i) Existing and proposed wells, septic fields, water main, sanitary sewers and other underground utilities.
- (j) Property area lines and dimensions, including rights-of-way, easements, buffer areas and setback lines.
- (k) Sub-watershed boundaries within the property.
- (l) Delineation of upstream and downstream drainage features that might be affected by the development.
- (m) Environmental features of the property and immediate vicinity, including wetland areas, natural areas, and proposed environmental mitigation features.
- (n) Copies of permit applications, permits and signoffs as required by other jurisdictions.
- (o) Basis of design for all stormwater management system components.
- (p) Any other information deemed necessary by the Director.

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- (q) Drain tile survey (reference Appendix A for drain tile survey guidelines).
- (r) Wetland delineation report prepared using the guidelines and methods as specified by the Corps of Engineers Wetland Delineation Manual, January 1987 (Technical Report Y-87-1), or latest edition.

4. A plan for the short- and long-term maintenance and the responsibility of maintaining the storm water storage areas shall be submitted to and approved by the Planning Director and County Engineer prior to final approval. Acceptable plans for the maintenance of storm water storage areas may include agreements with individual property owners' associations, in which case the director shall require that the face of the plat make reference to the agreement and that a restrictive covenant running with the land be imposed on all affected property. If a property owners' association is to be established, the developer of the project or subdivision or the applicant shall be responsible for its establishment and for informing the individual property owners of their responsibilities.

5. The facilities for the control of storm water runoff shall be constructed prior to the start of any construction or during the earliest possible stage of construction on the site of the project. All costs of construction, including the restoring, temporary seeding and permanent erosion control measures, shall be borne by the contractor, applicant or developer. The County Engineer shall approve the erosion control measures and the timing of their installation.

6. The construction of the storm water storage area and excess storm water passageway shall be under the supervision of a state-registered professional engineer. He shall be responsible for all construction in accordance with the approved plans and set of as-built plans, which shall be submitted upon completion of the storm water storage area and excess storm water passageway.

7. In the site development plan for a particular development, the applicant shall evaluate and implement, where practicable, site design features, which minimize the increase in runoff volumes and rates from the site. The applicant's Stormwater Management Plan submittal shall include evaluations of site design features, which are consistent with the following hierarchy:

- (a) Minimize impervious surfaces on the property, consistent with the needs of the project;
- (b) Preservation of the existing natural streams, channels and

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- drainageways;
- (c) Attenuate flows by use of open vegetated swales and natural depressions;
- (d) Preservation of natural infiltration and storage characteristics of the site;
- (e) Provide stormwater retention structures;
- (f) Provide stormwater detention structures; and
- (g) Construct storm sewers.

8. Water Quality -- All development disturbing one or more acres must comply with the provision of the IEPA General NPDES Permit No. ILR10 for Stormwater Discharges from Construction Site Activities.

- (a) Construction Site Stormwater Runoff Control -- The development must have a construction site stormwater pollution prevention plan that meets the requirements of Part IV of IEPA General Permit No. ILR10 for Stormwater Discharges from Construction Site Activities, including BMPs, controls, and other provisions at least as protective as the requirements contained in the Illinois Urban Manual, current edition.
- (b) Stormwater Management Plan -- The development must have a stormwater management plan that meets the requirements of Part IV (D)(2)(b) of IEPA General Permit No. ILR10 for Storm Water Discharges from Construction Site Activities, including BMPs, controls, and other provisions at least as protective as the requirements contained in the Illinois Urban Manual, current edition.

9. Multiple Uses -- The stormwater management system should incorporate multiple uses where practicable. Uses considered compatible with stormwater management include open space, aesthetics, aquatic habitat, recreation (boating, trails, playing fields), and natural area enhancement. The applicant should avoid using portions of the property exclusively for stormwater management wherever practicable.

10. All applications for Building Permits shall contain a statement that such buildings or structures and appurtenances connected therewith include facilities for the orderly runoff or retention of rain and melting snow, as required in this division. Plans submitted with the application shall include a signed statement issued by a state-registered professional engineer that the plans include facilities adequate to prevent

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harmful runoff, as required in this division. For single-family dwellings to be located in a subdivision meeting the requirements of this division, the signed statement may, in lieu of the above procedure, be placed on the face of the final plat and/or approved improvement plans.

11. The fee for applying for a Site Development Permit shall be as established by the DeKalb County Board. Further, a letter of credit issued by a reputable financial institution, irrevocable escrow agreement, or other form of financial guarantee, on forms approved by the Director in an amount sufficient to cover 120 percent of the estimated cost of all construction required by this Section, shall be required prior to the start of any construction on the project. Proof of the assurance shall be given to the Director for his records. The letter of credit or other financial guarantee shall be returned after all provisions of this division have been met. (Ord. No. 93-30, 7-20, 10-20-93)

12. The County Engineer shall review the grading plan for compliance with applicable regulations. The County Engineer may approve or deny the grading plan, or require such changes as are deemed necessary to meet the requirements of the County. Approval of a grading plan shall not be unreasonably withheld.

13. Upon receipt of approval of a grading plan, the Planning Director shall issue the Site Development Permit. The applicant shall commence work within six (6) months of the date of the issuance and, once started, such work shall be continuously and diligently pursued to its completion. In any event, work shall be completed within one (1) year of the start of work on the project.

14. Upon completion of work, the applicant shall schedule a final inspection by the County Engineer. In the event that the project is not completed in accordance with the approved grading plan, the County Engineer or Planning Director may require the applicant to provide to the County a grading plan, prepared by and bearing the stamp and signature of a registered surveyor or certified engineer, depicting the final topography of the subject property. The reason(s) for requiring the 'as-built' topographic survey shall be given to the applicant in writing. This 'as-built' grading plan shall be subject to review by the County Engineer for compliance with the grading plan approved for the Site Development Permit. Further, the County may, in addition to its other possible remedies, draw upon the financial guarantee to complete the work.

15. Following written approval of the finished grading by the County Engineer, the applicant shall submit a revised financial guarantee in the amount of ten percent (10%) of the original guarantee, upon the receipt of which the Planning Director shall release

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the original guarantee. The Planning Director shall hold the revised financial guarantee for a period of not less than two (2) years to assure proper function and maintenance of the stormwater management project, in accordance with the requirements of this division. After the two-year anniversary of the project approval and upon written confirmation from the County Engineer that the project is functioning as intended and has been properly maintained, the Planning Director shall release the guarantee of construction.

16. It shall be the responsibility of the property owner on which a stormwater management facility has been constructed or exists to maintain said facility in a condition necessary to assure it continuously functions as intended. Failure to adequately maintain an approved stormwater management facility, or alteration of the same without approval from the Planning Director, may subject the property owner to the procedures and penalties for Code Violations as set forth in Article III of Chapter 42 of the DeKalb County Code.

17. Following issuance of a Site Development Permit, an applicant may request approval of an amended grading plan. Such a request must include the reasons for the request to amend the approved plan and, if the request is approved, the amended plan shall be subject to the review and approval procedure and fees set forth in subparagraphs 3. through 8. above. Once approved by the County Engineer, the amended plan shall replace the original grading plan for the earth-moving project. The County Engineer or Planning Director may elect to extend the period for completion of the project to a date not exceeding one year from the approval of the amended plan.

18. A Site Development Permit shall not be issued for an intended site development unless:

- (a) The earth moving is part of a development, such as a subdivision, special use, planned development or variation, which has been approved by the County; or
- (b) The Permit is accompanied by a valid Building Permit issued by the County; or
- (c) The earth moving is associated with a permitted use in the zoning district in which the subject property is located and no other permits or approvals are required from the County; and

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- (d) All other required local, State and Federal permits have been received for that portion of the site subject to a Site Development Permit.

19. The Planning Director shall have the authority to waive the requirements of this Article I for any proposed land disturbing activity, if the permit is deemed unnecessary. In the case where a grading project is subject to regulation by a State or Federal agency, the requirement for a Site Development Permit may be waived provided a copy of the State or Federal permit(s) is provided to the County prior to commencement of the project, and such permit is adequate to address the requirements of the County. In other instances where the requirement for a Site Development Permit is waived, any application for Building Permit may be required to include a certification from a registered surveyor or engineer to the effect that the proposed building(s), structure or improvement and associated grading will comply with all applicable regulations of this Chapter 30. For lots within subdivisions, the proposed top of foundation elevation shall be identified on Building Permit plans, and a surveyor shall certify that the proposed final grading of the parcel shall comply with proposed grades on the approved subdivision plans and that the top of foundation shall match the top of foundation shown on the subdivision plats. In the case of buildings or structures proposed on property that includes floodplain, a Site Development Plan may be required.

## Sec. 8. Exempt Municipalities.

1. *Petition.* Municipalities located partially or entirely within the boundaries of DeKalb County that have adopted their own stormwater management regulations may petition the Stormwater Management Planning Commission for exemption from this Stormwater Management Ordinance. Such petitions shall include an evaluation the municipal stormwater management regulations against the following minimum criteria:

- (a) The municipal ordinance requires a stormwater management plan for new development, including individual commercial, industrial and recreational uses, and for subdivisions of all kinds;
- (b) The municipal ordinance requires review and approval of stormwater management plans for new development by the appointed or consultant village/city/town engineer;
- (c) The municipal ordinance allows post-development peak 100-year discharge not greater than 0.2 cfs per acre;
- (d) The municipal ordinance requires detention storage volume determination using the SCS method and the Illinois State Water

## Sec. 8. Exempt Municipalities

Survey Bulletin 70, for 100 year-24 hour events, provided, however, the Rational Method may be used for smaller basins.

- (e) The municipal ordinance requires the provision of compensatory storage for development in the floodplain of at least a 1:1.1 ratio.

2. *Finding.* Within 60 days following receipt of a petition for exempt status from a municipality, the Stormwater Management Planning Commission shall evaluate said petition and determine if the municipal stormwater management ordinance is consistent with and at least as stringent as the Countywide Ordinance based on the above criteria. A positive finding by the Committee shall designate the petitioner as an exempt municipality.

3. *Effect.* Exempt municipalities shall enforce the locally-adopted municipal stormwater management regulations within the corporate limits of the municipality, and for all development within 1 ½ miles of the municipal boundaries, and the rules and regulations of this Countywide Stormwater Management Ordinance shall not apply within said corporate limits or for developments within 1 ½ miles of any exempt municipality, provided, however, the County and a municipality may share or exchange authority to regulate stormwater management for any proposed development(s) via an intergovernmental agreement adopted in accordance with the provisions of the Intergovernmental Cooperation Act, 5 ILCS 220/1 et seq. and Article 7, Section 10 of the Illinois State Constitution (1970).

## Sec. 9. Variances.

1. *Standards.* In order to promote the best possible development and use of land, the Planning Director shall interpret the standards, provisions and specifications contained in this division liberally and in favor of the public interest. Variations from these standards, provisions and specifications may be granted when it is demonstrated to the satisfaction of the Planning Director and the County Board that, owing to special conditions, a strict adherence to the provisions of this division will result in unnecessary hardship and that the spirit and intent of the division will be observed.

2. *Procedure.* A request for a Variance shall be filed by the owner seeking to develop or change the use of this property, or his agent, with the Planning Director who shall refer it, together with his recommendations, to the Planning and Zoning Committee for decision. The request for Variance shall be written and shall state specifically what Variance is sought and the public's interest in granting the Variance. (Ord. No. 93-30,7-21,10-20-93

## Sec. 10. Technical requirements

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The following performance standards shall be applicable and shall be satisfied prior to any development, which is subject to the provisions of this ordinance. However, in all cases where a development lies within one and one-half (1-1/2) miles of the corporate limits of an exempt municipality having more restrictive requirements, those requirements shall apply unless said municipality defers to the requirements of this Ordinance via an intergovernmental agreement.

1. Release Rates -- Stormwater management systems for properties required to provide stormwater runoff storage facilities shall be designed to control the rate of discharge from the property for the two-year and 100-year critical duration events. The maximum controlled release rate of stormwater from all developments requiring storage shall not exceed the stormwater runoff rate able to be carried by the downstream stormwater management system and may not exceed the predetermined safe carrying capacity of any limiting downstream restriction. The peak rate of discharge shall not cause an increase in flooding or channel instability downstream when considered in aggregate with other developed properties and downstream drainage capacities.

- (a) The peak discharge from events less than or equal to the two-year event shall not be greater than the pre-development discharge rate for the property.
- (b) The peak 100-year discharge shall not be greater than 0.2 cfs per acre, unless the subject property is within 1 ½ miles of a municipality, in which case it shall not be greater than 0.15 cfs per acre of property drained, or the adopted requirement of the adjacent municipality, whichever is more restrictive.
- (c) The County reserves the right to require more restrictive release rates for any development within a watershed or sub-watershed, which has either limited downstream capacity or observed historical flooding.
- (d) All concentrated stormwater discharges leaving a site must be conveyed into an existing channel, storm sewer, drainage tile, or overland flow path (with appropriate permission from owners of downstream system) with adequate downstream stormwater capacity and must not result in increased flood and drainage hazard.
- (e) The design of stormwater management systems shall not result in the interbasin transfer of drainage, unless no reasonable alternative exists and there is no legal restraint preventing such transfer.

#### 2. Detention Storage Requirements

## Sec. 10. Technical requirements

- (a) The design of stormwater storage facilities shall be based on the peak runoff from the 100-year storm event determined through a critical duration analysis. Detention storage shall be computed using hydrograph methods as described in this ordinance.
- (b) The function of existing on-site depressional storage shall be preserved or compensated for at a ratio of 1:1.

3. Stormwater Management System Design and Evaluation -- The following criteria should be used in evaluating and designing the stormwater management system. The underlying objective is to provide capacity to pass the 10-year peak flow in the minor drainage system and to provide an overland flow path for flows in excess of the design capacity.

- (a) Design Methodologies
  - 1) Minor drainage systems may be designed using the rational formula.
  - 2) Major drainage system for areas up to 10 acres may be designed using the rational formula.
  - 3) Major drainage systems for areas larger than 10 acres and all detention basins must be designed using an approved hydrograph-producing runoff calculation method.
- (b) Positive Drainage
  - 1) All areas of the property must be provided with an overland flow route that will pass the 100-year flow at a stage at least 2 feet below the lowest adjacent grade of structures hydraulically connected to the flow route.
  - 2) Overland flow routes up to the 100-year frequency flow level shall be placed in drainage easements. Drainage easement language shall strictly prohibit the placement or construction of fill or other obstructions that would impede stormwater runoff flow.
  - 3) Wherever possible, storm sewers should be used as minor drainage systems in lieu of drainage swales for rear and side yard drainage.

4. Methods for Generating Runoff Hydrographs -- For the determination of detention and depressional storage requirements, an approved hydrograph-producing runoff calculation method shall be used. Approved methods include HEC-1, Soil Conservation Service TR-20, or Soil Conservation Service TR-55 tabular method. The use of methods other than those listed above must be approved by the County Engineer.

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Runoff hydrographs shall be developed incorporating the following assumptions of rainfall amounts and antecedent moisture:

- (a) Unless a continuous simulation approach to stormwater management system hydrology is used, all design rainfall events shall be based on the Illinois State Water Survey Bulletin 70.
- (b) The first quartile point rainfall distribution shall be used for the design and analysis of conveyance systems with critical durations of less than or equal to 6 hours.
- (c) The second quartile point rainfall distribution shall be used for the design and analysis of conveyance systems with critical durations of greater than 6 hours and less than or equal to 12 hours.
- (d) The third quartile point rainfall distribution shall be used for the design and analysis of conveyance systems with critical durations of greater than 12 hours and less than or equal to 24 hours.
- (e) The fourth quartile point rainfall distribution shall be used for the design and analysis of conveyance systems with critical durations of greater than 24 hours.
- (f) The first, second, third and fourth quartile distributions described by Huff are presented in Table 37 of Bulletin 70. The SCS Type II distribution may be used in lieu of the Huff distributions.
- (g) Computations of runoff hydrographs, which do not rely on a continuous accounting of antecedent moisture conditions, shall assume an antecedent moisture condition of two as a minimum.

### 5. Dry Detention Basin Design

- (a) Wherever practicable, dry detention basins shall be designed to serve a secondary purpose for recreation, open space, habitat, or similar type of uses, which will not be adversely affected by occasional, intermittent flooding.
- (b) Dry detention basins shall be designed to completely drain within 48 hours after the end of storm events. Underdrains should be utilized if necessary to meet this requirement.
- (c) Dry detention basins shall have a minimum bottom slope of two percent. Underdrains directed to the outlet control structure shall be installed if the minimum bottom slope cannot be obtained, provided that there are no inlets or other direct connections to the underdrain.
- (d) Velocity dissipation measures shall be incorporated into dry basin designs to minimize erosion at inlets and outlets and to minimize the resuspension of pollutants.
- (e) To the extent feasible, the distance between detention inlets and

## Sec. 10. Technical requirements

outlets shall be maximized. If possible, inlets and outlets should be located at opposite ends of the basin.

- (f) An emergency overflow weir able to pass the 100-year frequency flow without damage to the basin shall be provided.
- (g) A minimum of 1 foot of freeboard shall be provided between the 100-year frequency high water level and the top of the basin berm.

6. Wet Detention Basin Design -- Wet detention basins shall be designed to remove stormwater pollutant, to be safe, to be aesthetically pleasing, and as much as feasible to be available for recreational use.

- (a) All wet basins shall be designed to provide fish habitat.
- (b) "Management of small lakes and ponds in Illinois" (IDNR, revised 1997) provides guidance for design of fishing ponds in Illinois. The applicant is encouraged to contact the local IDNR Fisheries Biologist for additional information.
- (c) Wet basins shall have a minimum depth of at least 5 feet with a minimum depth of 10 feet over 25 percent of the bottom area of the basin to prevent winter freeze out.
- (d) The minimum normal water elevation surface for a wet basin shall be 1 acre.
- (e) The side slopes of wet basins at the normal pool elevation shall not be steeper than 5 to 1.
- (f) A 10-foot wide safety ledge shall be provided below the normal water level with a maximum depth of 3 feet and a maximum side slope of 10:1.
- (g) The permanent pool volume in a wet basin at the normal water elevation shall be equal or greater to the runoff volume from its watershed for the two-year frequency event.
- (h) To the extent feasible, the distance between detention inlets and outlets shall be maximized. If possible, inlets and outlets should be located at opposite ends of the basin.

7. Detention in Floodplains -- The placement of detention basins within the floodplain is strongly discouraged because of questions about their reliable operation during flood events. The use of fee-in-lieu of detention shall be investigated where detention outside of the floodplain is not feasible. However, the stormwater detention requirements of this ordinance may be fulfilled by providing detention storage within flood fringe areas on the project site provided the following provisions are met:

- (a) Detention in Flood Fringe Areas:
  - 1) The placement of a detention basin in a flood fringe area shall

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require compensatory storage for 1.5 times the volume below the base flood elevation occupied by the detention basin including any berms.

- 2) The release from the detention basin provided shall still comply with the requirements of this ordinance.
- 3) The applicant shall demonstrate its operation for all stream flow and floodplain backwater conditions up to the 10-year frequency flood elevation.
- 4) Excavations for compensatory storage along watercourses shall be opposite or adjacent to the area occupied by detention.
- 5) All floodplain storage filled below the existing 10-year frequency flood elevation shall be replaced below the proposed 10-year frequency flood elevation. All floodplain storage filled above the existing 10-year frequency flood elevation shall be replaced above the proposed 10-year frequency flood elevation. The additional storage volume (0.5 times the total volume filled) may be provided at any elevation between the normal water elevation and the BFE.
- 6) All compensatory storage excavations shall be constructed to drain freely and openly to the watercourse.

(b) Detention in Floodways: Detention in floodways is prohibited.

8. Drainage into Wetlands and Depressional Storage Areas --Applicants are encouraged to avoid and minimize impacts to wetlands. The enhanced mitigation ratios are set up to reflect the difficulty in replacing diverse wetlands and should cause the applicant to carefully consider avoiding and minimizing impacts to these resources. The applicant shall provide adequate documentation establishing the presence, location and extent, jurisdictional status, and current and potential environmental quality of those area(s).

- (a) The applicant may use the following to determine the presence of wetlands on site.
  - 1) Wetland identified on the National Wetland Inventory Map as prepared by the Natural Resource Conservation Service
  - 2) Wetland identified on the Wetlands Inventory Map as prepared the United States Fish and Wildlife Service
  - 3) Wetland Maps as identified on the DeKalb County GIS Maps

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- 4) Wetland delineation following the current federal guidance, which is the 1987 Corp of Engineers Wetland Delineation Manual. This report shall be prepared by certified wetland specialist recognized in Kane, DuPage, McHenry, Lake or Will Counties or as approved by the Director.
- (b) The following sets the hierarchy for determinations.
    - 1) Wetland delineation following the current federal guidance, which is the 1987 Corp of Engineers Wetland Delineation Manual. This report shall be prepared by certified wetland specialist recognized in Kane, DuPage, McHenry, Lake or Will Counties or as approved by the Director. This is required when wetlands are located onsite or as required by the director or jurisdictional agency.
    - 2) Wetland Maps as identified on the DeKalb County GIS Maps
    - 3) Wetland identified on either of the following sources
      - i. National Wetland Inventory Map as prepared by the Natural Resource Conservation Service
      - ii. Wetland Inventory Map as prepared the United States Fish and Wildlife Service
  - (c) The applicant shall be responsible for preparing and submitting a request for Jurisdictional determination by the Army Corp of Engineers (COE). The COE response shall be included within the wetland report.
  - (d) The Floristic Quality Index (FQI) of the wetland vegetation must be calculated using the procedure found in “plants of the Chicago Region”, 4th ED. by Floyd Swink and Gerald Wilhelm.
  - (e) Jurisdiction: Wetlands deemed Jurisdictional by the Army Corp of Engineers (COE) will be subject to COE rules and regulations. A copy of all permits shall be provided prior to the start of any construction. Only Wetlands not deemed jurisdictional and larger than 0.25 acres shall be subject to the following rules and regulations. Any areas not included within the wetland mitigation portion of the ordinance are still subject to depressional storage requirements.
  - (f) Wetland Buffers

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- 1) Buffers are vegetated upland that serves a variety of functions including shoreline stabilization, sediment filtration, habitat, promotion of infiltration, and nutrient sequestration.
- 2) Buffer widths are to be a minimum of 50 feet wide unless the drainage areas are less than 1 sq mi and have a corresponding FQI < 16. In these cases the buffer width may be determined by using the following formula, and rounded up to the nearest 5' increment.

$$\text{Buffer Width} = (\text{Tributary Area in acres}) \times (0.0547) + 15$$

- 3) Buffers are not required for stormwater management systems provided the system(s) do not meet the requirements of "Waters of the U.S.". Stormwater Management Systems are identified as:
  - i. Roadside Ditches
  - ii. Channels
  - iii. Conveyance Systems
  - iv. Excavated or construction stormwater detention facilities
  - v. Roadway Crossings of Wetlands
  - vi. Down Spouts and Sump Discharges
- 4) Buffer Construction: Native vegetation, particularly deep-rooted warm season grasses and prairie forbs, are required for seeding, re-seeding, or inter-planting buffers. Only plants with local (Upper Midwest) provenance may be used. Genetically modified warm season grasses are not allowed. Plant material selection information may also be found in the Native Plant Guide for Streams and Stormwater Facilities in Northeastern Illinois prepared by USDA-NRCS. The use and extended maintenance of protective measures along linear buffers allows for a reduction in width up to 15%. Accepted methods are as follows.

<u>MEASURE</u>	<u>IL URBAN STANDARD</u>	<u>USE</u>
Erosion Blanket	Std. 830	Temp
Silt Fence	Std. 920	Temp
Sodding (as temp measure)	Std. 925	Temp
Deep-rooted grasses –	Sod or Seed	Perm
Sediment Trap	Std. 960	Temp
Sediment Basin	Std. 841 & 842	Temp/Perm

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(g) When wetland mitigation is required it shall be subject to the following requirements:

FQI	Proposed Activity	Mitigation Options	Mitigation Ratio (All Options)	Comments
<7	Dredging	Mitigation not required		
<7	Fill	Wetland Mitigation Approved Wetland Bank	1:1	.25 wetland credit per acre for enhancement of wetlands w/ FQI less than 5.0
7-16	Any Activities	Wetland Mitigation Approved Wetland Bank	2:1	
16-25	Any Activities	Wetland Mitigation Approved Wetland Bank	3:1	
>25		Not eligible for mitigation		

Exceptions:

Agricultural activities in wetlands occurring on agricultural land in any program under the Food Security Act for the previous three years will not have to be mitigated, when these wetlands are determined to be “farmed wetlands”. This also includes “prior converted wetlands”.

<http://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/programs/alphabetical/camr/?cid=stelprdb1043554%20>

Wetland impacts to manmade wetlands that were created by excavation or as a result of development may be mitigated at a 1:1 ratio. These include partially excavated ponds and incompletely graded sites that develop wetland vegetation.

Wetlands that have been created as a result of the use of irrigation, whether directly or indirectly, but that would revert to non-wetland conditions if irrigation ceased, also need not be mitigated.

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- (h) Wetland Mitigation Facility – Plan and Performance Requirements
- 1) If the area of the impacted wetland is more than 50% of the total contiguous wetland area then the mitigation requirement shall be based on the total contiguous area.
  - 2) The plan must contain the following: a narrative description of the proposed plan that includes the description of the wetland hydrology to be created, the soils that will be utilized and local geomorphologic conditions that impact the construction of the wetland. This should include a description of both surface and groundwater conditions, relating to the construction and maintenance of the wetland mitigation. Each wetland mitigation plan must have a drawing that depicts the limits of the wetland mitigation facility as well as wetlands that are impacted on the onsite wetlands. The summary table on this drawing should include the acreage to be disturbed, the acreage to be mitigated, the mitigation ratio and the total mitigation acreage.
  - 3) Specifications for construction, monitoring and maintenance shall be included with the mitigation plan and should include specifications for rough and final grading, types of soils to be used for creation of the wetland mitigation, plant materials to be used, how they will be procured, and from what sources. Specifications should also include water control structures, specifications related to the planting plan including scientific and common names, rates of seeding or spacing, as appropriate, and any special planting provisions necessary for a successful wetland mitigation.
  - 4) Wetland mitigations must have a final FQI at or above the mitigated wetland and shall contain a minimum of two wetland plant communities. These plant communities must be appropriate for the site on which they are contained and be a naturally occurring wetland type within DeKalb County. This includes, but is not limited to wet prairie, emergent marsh, floating vascular, shrub-scrub, wooded, forested floodplain, sedge, meadow wet meadow, fen or calcareous seep, submerged aquatic, and mudflat annual. Open water shall not constitute greater than 20% of the entire wetland mitigation facility.
  - 5) Maintenance and monitoring plan shall at a minimum include an annual work schedule describing each task in detail and its expected effect, the time of year it will be performed, and any measure of success of the technique as employed. All wetland mitigation facilities shall achieve a minimum 85% vegetative cover, of which

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80% of the cover shall be comprised of native species, prior to acceptance of the wetland mitigation facility as complete. Changes to the mitigation and monitoring plan shall be approved by the Director as necessary.

6) All wetland mitigation facilities developed under this ordinance shall be monitored and managed for five years beginning on the day the wetland planting is complete. The procedures for monitoring wetland mitigation facilities will be those set by the current Rock Island District Corp of Engineers Protocols. The monitoring and management plan shall be included with the wetland mitigation plan submittal. The monitoring plan should include sampling method 5. These sampling methods shall include a vegetation map based upon as-built drawings of the completed grading. This information must be descriptive and define the limits of all of the vegetative community types that are installed. Permanent transects for sampling vegetation must be shown on this map. The dominant species and the planting list should also be submitted with the monitoring plan. Additionally, representative photographs of each vegetative area should be submitted with the annual monitoring report. These photographs should be based upon each transect location and have an overall view of the transect area. An inventory of the vascular plant community must be taken according to the procedures identified by Masters (1996) in Monitoring Vegetation in the Tall Grass Restoration Handbook for Prairies, Savannas and Woodlands edited by Packard and Corat, Island Press, 1996. An inventory of the total number of exotic taxa shall be recorded for each quadrat. Then mean C value shall be calculated as well as the FQI for each quadrat. Additionally, the wetness coefficient shall be calculated for each quadrat.

7) An overall mean C value as well as the FQI for each vegetative community shall be established using the procedures identified in the FQI program. A relative frequency and relative coverage of each species shall be identified for each plant community. On an aerial base each plant community shall be delineated. The soil in each community will be evaluated for morphologic, physical and chemical characteristics to determine whether hydric soil conditions exist. This includes redoxomorphic features and manganese accumulations, oxidized rizospheres, depleted matrices and other mottle colors. Any special mitigation features developed, as part of the wetland mitigation facility shall be described and their function evaluated

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annually during the monitoring period. The annual report for the monitoring program shall cover the calendar year from January 1st to December 31st and shall be submitted to the director no later than February 15th of the following year.

8) Wetland mitigation facilities that fail to meet the performance standards established in the ordinance shall have the maintenance period be extended by one year for each failed period and with a minimum of four consecutive performing years. The Director may approve modifications to the mitigation plan or method.

(i) Mitigation may be satisfied by purchase of credits from a wetland mitigation bank and the ratio found within the preceding table. This bank must be an approved mitigation bank by the Corp of Engineers or must be a mitigation bank occurring within the boundaries DeKalb County and approved by the Director or designated representative. Wetland credits shall be acquired within the same watershed in which wetland impacts are occurring. If credits are not available, credits shall be purchased in the closest adjacent watershed

9. Street, Parking Lot, and Underground Storage -- The following design criteria shall be met where streets, parking lots and culverts are proposed to be used for stormwater detention or conveyance.

(a) Streets -- If streets are to be used as part of the major drainage system, ponding depths shall not exceed three (3) inches at the street centerline and the street shall not remain flooded for more than eight (8) hours for the 100-year frequency event.

(b) Parking Lots

1) The maximum ponding depth in parking facilities designed to store excess stormwater runoff shall not exceed twelve (12) inches at the deepest point and the duration of flooding shall not exceed eight (8) hours for the 100-year frequency event. Storage in parking facilities shall only be allowed in the most remote, least-used areas of the parking facilities.

2) Underground -- Underground stormwater storage facilities must meet the following design criteria.

i. Access to all chambers shall be provided in order to

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remove accumulated sediment and debris.

ii. Underground facilities shall be provided with a positive gravity outlet.

iii. Storage volume shall only be provided in the pipe. Void space volume of bedding material will not be considered as part of the detention volume.

10. Culvert Design -- Sizing of culvert and roadway crossings shall consider entrance and exit losses as well as tailwater conditions on the culvert.

11. 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.

12. Maintenance Considerations -- The stormwater management 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. Pre-sediment basins shall be included, where feasible, for localizing sediment deposition and removal. Maintenance easements shall be provided to allow access for maintenance equipment.

13. Soil Erosion and Sediment Control -- Soil erosion and sediment control-related measures are required for any land disturbance activity regulated by this ordinance. The following requirements shall be met.

(a) Soil disturbances shall be conducted in such a manner as to minimize erosion. Areas of the development site that are not to be graded shall be protected from construction traffic or other disturbance until final seeding is performed. Soil stabilization measures shall consider the time of year, site conditions and the use of temporary or permanent measures.

(b) Properties and channels adjoining development site shall be protected from erosion and sedimentation. At points where concentrated flow leaves a development site, energy dissipation devices shall be placed at discharge locations and along the length of any outfall channel as necessary to provide a non-erosive velocity of flow from the structure to the watercourse so that the natural physical and biological characteristics and functions are maintained and protected.

(c) Soil erosion and sediment control features shall be constructed prior to the commencement of excavating or mass grading.

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(d) Disturbed areas shall be stabilized with temporary or permanent measures within seven (7) calendar days following the end of active hydrologic disturbance, or redistribution, consistent with the following criteria or using an appropriate measure as approved by the County.

i. Appropriate temporary or permanent stabilization measures shall include seeding, mulching, sodding, and/or non-vegetative measures.

ii. Areas or embankments having slopes greater than or equal to 3H:1V shall be stabilized with staked-in-place sod, mat or blanket in combination with seeding.

iii. Erosion control blanket shall be required on all interior detention basin side slopes between normal water level (or basin bottom for dry basins) and high water level.

iv. The seven (7) day stabilization requirement may be precluded by snow cover or where construction activity will resume within 21 days from when the active hydrologic disturbance ceased, in which case stabilization measures do not have to be initiated on that portion of the site by the 7th day after construction activity temporarily ceased given that portion of the site has appropriate soil erosion and sediment controls.

(e) Land disturbance activities in streams shall be avoided, where possible. If disturbance activities are unavoidable, the following requirements shall be met:

i. Where stream construction crossings are necessary, temporary crossings shall be constructed of non-erosive material.

ii. The time and area of disturbance of a stream shall be kept to a minimum. The stream, including bed and banks, shall be restablized within 48 hours after channel disturbance is completed or interrupted.

(f) Soil erosion and sediment control measures shall be appropriate with regard to the amount of tributary drainage area as follows:

i. Disturbed areas draining greater than 5000 square feet but less than 1-acre shall, at a minimum, be protected by a filter barrier (including filter fences, straw bales, or equivalent control measures) to control all off-site runoff. Vegetated filter strips, with a minimum width of 25 feet, may be used as an alternative only where runoff in sheet flow is expected.

ii. Disturbed areas draining more than 1 but fewer than 5 acres shall, at a minimum, be protected by a sediment trap or equivalent

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control measure at a point downslope of the disturbed area.

iii. Disturbed areas draining more than 5 acres, shall, at a minimum, be protected by a sediment basin with a perforated filter riser pipe or equivalent control measure at a point downslope of the disturbed area.

iv. Sediment basins shall have both a permanent pool (dead storage) and additional volume (live storage) with each volume equal to the runoff amount of a 2-year, 24-hour event over the on-site hydrologically disturbed tributary drainage area to the sediment basin.

If the detention basin for the proposed development condition of the site is used for sediment basin, the above volume requirements will be explicitly met. Until the site is finally stabilized, the basin permanent pool of water shall meet the above volume requirements and have a filtered perforated riser protecting the outflow pipe.

(g) All storm sewers that are or will be functioning during construction shall be protected by an appropriate sediment control measure.

(h) If dewatering services are used, adjoining properties and discharge locations shall be protected from erosion. Discharges shall be routed through an effective sediment control measure (e.g., sediment trap, sediment basin or other appropriate measure).

(i) All temporary soil erosion and sediment control measures shall be removed within 30 days after final site stabilization is achieved or after the temporary measures are no longer needed. Trapped sediment and other disturbed soil areas shall be permanently stabilized.

(j) A stabilized mat of aggregate underlain with filter cloth (or other appropriate measure) shall be located at any point where traffic will be entering or leaving a construction site to or from a public right-of-way, street, alley or parking area. Any sediment or soil reaching an improved public right-of-way, street, alley or parking area shall be removed by scraping or street cleaning as accumulations warrant and transported to a controlled sediment disposal area.

(k) Earthen embankments shall be constructed with side slopes no steeper than 3H:1V. Steeper slopes may be constructed with appropriate stabilization as approved by the (County/Village/City/Town).

(l) Stormwater conveyance channels, including ditches, swales, and

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diversions, and the outlet of all channels and pipes shall be designed and constructed to withstand the expected flow velocity from the 10-year frequency storm without erosion. All constructed or modified channels shall be stabilized within 48 hours.

(m) Temporary diversions shall be constructed as necessary to direct all runoff from hydrologically disturbed areas to the appropriate sediment trap or basin.

(n) Soil stockpiles having greater than 100 yards of soil and remaining in place for more than 7 days shall not be located in a flood-prone area or Waters of the United States. Soil stockpile locations shall be shown on the soil erosion and sediment control plan and shall have the appropriate measures to prevent erosion of the stockpile.

(o) Soil erosion and sediment control BMPs shall be designed and constructed per the requirements contained in the Illinois Urban Manual, 2002 (or current edition).

14. Flow From Upstream Tributary Areas -- Stormwater runoff from areas tributary to the property shall be considered in the design of the property's stormwater management system. Whenever practicable, undetained stormwater runoff from upstream areas that are not providing detention should be routed around the basin being provided for the applicant's property.

(a) Upstream Tributary Areas -- The following shall apply to upstream tributary areas:

i. If upstream tributary flows are passed through the applicant's basin, then a detention volume safety factor of five percent (5%) shall be added to storage volume required for the applicant's property.

ii. If upstream tributary flows are passed through the applicant's detention basin, the final design release rates shall be based on the total tributary area (the applicant's property and upstream areas tributary to the applicant's property).

(b) Regional Detention Evaluation -- When upstream property tributary to the applicant's property does not meet the stormwater runoff storage and release requirements of this ordinance, regionalized detention on the applicant's property shall be explored by the applicant. The following steps shall be followed:

## Sec. 10. Technical requirements

- i. The applicant shall compute the storage volume needed for his property alone using the applicable release rates from this ordinance, the applicant's property area, and the procedures described in this ordinance.
  - ii. Upstream areas tributary to the applicant's property not meeting the storage and release rate requirements of this ordinance shall be identified.
- (c) The applicant shall compute the combined storage volume needed for the total area (the applicant's property and upstream areas tributary to the applicant's property) using the applicable release rates from this ordinance, the total area, and the procedures described in this ordinance.
- i. If upstream tributary areas are not currently developed, a reasonable fully developed land cover, based on anticipated zoning, shall be assumed for the purposes of computing storage.
  - ii. Once the necessary combined storage is computed, the County may choose to pay for increasing the size of the applicant's detention basin to accommodate the upstream area flows. The applicant's responsibility will then be limited to the required storage for his property alone.
  - iii. If regional storage is selected by the County, then the combined-storage design computed above shall be implemented.

15. Alternative Methods – Alternative stormwater management, erosion control, and water quality facilities and measures to those set forth above, including but not limited to: permeable concrete and asphalt; underground stormwater detention; rain gardens; rain barrels; filtration strips; and groundwater recharge areas; will be considered and may be approved by the Planning Director and County Engineer provided sufficient documentation is submitted by an applicant seeking to employ such alternatives.

## Sec. 11. Enforcement; penalty

1. The Planning Director shall be the official primarily responsible for the enforcement of this Article relative to any land disturbing activity conducted in violation of this Article as it pertains to the owner or his authorized agent, a tenant, architect, builder, contractor, or other person who commits or participates in any violation. The Director may request the County State's Attorney to institute legal proceeding necessary to enforce this Article or prevent or remedy any violations of this Article.

**Sec. 11. Enforcement; penalty**

2. Failure to comply with any of the requirements of this Article shall constitute a violation, and any person, upon conviction thereof, shall be subject to punishment for each offense as provided in Section 1-13 of this Code.(Ord. No. 93-30 '7-22,10-20-93)

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## APPENDIX A

### DRAIN TILE SURVEY GUIDELINES

The drain tile survey shall locate existing farm and storm tiles by means of silt trenching and other appropriate methods performed by a qualified subsurface drainage consultant. The purposes of a drain tile survey include (but are not limited to) the following:

- a. Protection of the upland land owner(s) whose property drains through the subject development site;
- b. Identification of local drainage and drain tile systems dynamics to maintain those systems which function properly and improve (wherever possible) those systems which are deficient;
- c. Maintain drain tiles and septic fields separation at a safe and suitable distance from one another.

The following procedures for conducting the required drain tile investigation shall be used:

1. Utilize aerial photography, topographical data, and soils data to identify potential drain tile locations.
2. Cut trenches adjacent to existing surface waters, wetlands and other depressional areas, including locations where stormwater runoff is tributary.
3. Trenches shall be a minimum three (3) feet wide, five (5) feet deep and six (6) feet long.
4. Field stake existing drain tiles at a minimum 50-foot intervals over its complete length within the proposed development property.
5. Repair all existing drain tiles damaged during the investigation.
6. Provide a topographical boundary map location showing:
  - a. Location of each drain tile with a flow direction arrow, tile size and any connection to adjoining properties; a summary of the tile investigation report showing trench identification number, tile size, material and quality, percentage of the tile filled with water, percentage of restrictions caused by silting, depth of ground cover, and soil texture at grade;
  - b. Name, address and phone number of person or firm conducting tile location

investigation.