{Proposed Aug, 2006}

Winnebago County

Surface Water Management

Technical Regulations

100 Introduction

The Surface Water Management Ordinance establishes the policies and objectives adopted by the Winnebago County Board for surface water management. The Ordinance also includes a common location, Section 50-248, of definitions, and other sections covering administrative procedures and legal foundation. These Surface Water Technical Regulations further define much of the specific criteria by which plans and implementations shall be judged to meet the policies and objectives. They, too, are adopted by the Winnebago County Board, except that Section 1000 and beyond is for Guidance that may be established, and revised as appropriate, by the administrator. (See Sec. 1000 for refinement.)

200 Floodplain Regulations

201 Introduction

These Regulations are taken directly from the **Illinois State Model Floodplain Ordinance (IDNR/OWR, operating in 2006),** sections 6 thru 10. Those who are familiar with this model ordinance will have little difficulty in navigating the section numbers for citation--though should note some qualifications for section 6. The standard definitions of Section 2 of the model ordinance are incorporated in sec. 50-248 of the Surface Water Management Ordinance. Similarly, that ordinance also contains the policy statements, administrative assignments, and legal framework that are partially unique to each jurisdiction, while maintaining the required minimum standards of 44 CFR 60.3(d).

206 Section 6. Preventing Increased Flood Heights and Resulting Damages.

{The SWMO acknowledges Statewide Permits issued by IDNR/OWR and the County reserves the discretion to use them as indicators of compliance, but does not adopt them as blanket exemptions outside SFHA's. IDNR/OWR's threshold of regulation is a drainage area of at least 1 square mile. Winnebago County uses floodway regulations on as small as 5 acres, and defines floodways the same way they are determined in floodplain mapping: i.e. encroachment is defined as 0.1 foot stage increase over 'existing' conditions. This is inconsistent with SWP#2. Also 500 s.f. Accessory Structures under SWP#10 would not be appropriate in a 20 foot wide drainage easement. Being more restrictive is consistent with 44 CFR 60.3(d) as minimum requirements.}

Within any floodway identified on the countywide Flood Insurance Rate Map, and within all other floodplains where a floodway has not been delineated, and are within the jurisdiction of IDNR/OWR, the following standards shall apply: Floodway determinations within floodplains with lesser tributary areas shall be based upon the same one-tenth of a foot (0.1 ft.) allowable stage increase consistent with base flood elevation determinations in the FIS, recognizing floodplain configurations that existed prior to November 19, 1980, and as lawfully established subsequently. Using this criteria, some of the following standards, notably A.1.a, A.1.b, A.5.a.v, and A.9.c, would apply only upon the merits of individual cases.

A. Except as provided in Section 6(B) of this ~~ordinance~~ regulation, no development shall be allowed which, acting in combination with existing and anticipated development will cause any increase in flood heights or velocities or threat to public

health and safety. The following specific development activities shall be considered as meeting this requirement:

1. Bridge and culvert crossings of streams in rural areas meeting the following conditions of the Illinois Department of Natural Resources, Office of Water Resources Statewide Permit Number 2:

a. the crossing will not result in an increase in water surface profile elevation in excess of 1.0 feet, and

b. the crossing will not result in an increase in water surface profile elevation in excess of one half (0.5) feet at a point one thousand (1,000) feet upstream of the proposed structure.

c. There are no buildings in the area impacted by the increases in water surface profile.

d. The proposed bridge or culvert crossing will not involve straightening, enlarging, or relocating the existing channel.

e. The design must be certified by a registered professional engineer in the State of Illinois and the designs must meet the conditions of an IDNR/OWR permit.

f. The design must be certified by a second registered professional engineer.

2. Barge fleeting facilities meeting the following conditions of IDNR/OWR Statewide Permit Number 3:

a. The permit is only applicable when deadmen, pier cells, or other similar anchorage devices have been permitted by the U.S. Army Corps of Engineers.

3. Aerial utility crossings meeting the following conditions of IDNR/OWR Statewide Permit Number 4;

a. The utility line must be constructed above the existing 100-year flood elevation or attached to an existing bridge.

b. A utility line attached to an existing bridge shall be constructed above the low cord elevation of the bridge.

c. No supporting towers or poles shall be located

in a river, lake or stream.

d. Supporting towers including foundation and poles shall be designed and located so as to not cause an obstruction of flood flows by trapping debris.

e. All disturbed areas shall be returned to pre-construction grades and re-vegetated.

f. All Illinois Commerce Commission, National Electrical Safety Code, and federal requirements must be met.

4. Minor boat docks meeting the following conditions of IDNR/OWR Statewide Permit Number 5:

a. The boat dock must not extend more than fifty (50) feet into a waterway and no more than one quarter (1/4) of the width of the waterway and shall not extend beyond the navigational limited established by the IDNR and Corps of Engineers.

b. The width of the boat dock shall not be more than ten (10) feet.

c. For L-Shaped or T-shaped docks, the length of that portion parallel to the shoreline must not exceed fifty percent (50%) of the landowner's shoreline frontage nor fifty (50) feet.

d. Docks must be aligned so as not to cross the projection of property lines into the waterway or come within ten (10) feet of the projected property line.

e. Dock posts must be marked by reflective devices.

f. The boat dock must be securely anchored to prevent detachment during times of high wind or water.

g. Metal drums or containers may not be used as buoyancy units unless they are filled with floatation foam. Containers which previously stored pesticides, herbicides, or any other toxic chemicals are not permissible.

h. This permit does not authorize any other related construction activity such as shore

protection or fill.

i. Non-floating boat docks must be constructed in a manner which will minimize obstruction to flow.

j. At any future date, the permittee must agree to make necessary modifications to the dock as determined by the IDNR or Corp of Engineers

5. Minor, non-obstructive activities meeting the following conditions of IDNR/OWR Statewide Permit Number 6:

a. the following activities (not involving fill or positive change in grade) are covered by this permit:

i. The construction of underground utility lines, wells, or septic tanks not crossing a lake or stream.

ii. The construction of light poles, sign posts, and similar structures.

iii. The construction of sidewalks, driveways, athletic fields (excluding fences), patios, and similar structures.

iv. The construction of properly anchored, unwalled, open structures such as playground equipment, pavilions, and carports.

v. The placement of properly anchored buildings not exceeding seventy (70) square feet in size, nor ten (10) square feet in any dimension. Only one such building on a property is authorized by this statewide permit.

vi. The raising of existing buildings, provided no changes are made to the outside dimensions of the building and the placement of fill is not involved.

6. Outfall Structures and drainage ditch outlets meeting the following conditions of IDNR/OWR Statewide Permit Number 7:

a. Any outfall structure, including any headwall or end-section, shall not extend riverward or lakeward of the existing adjacent natural bank

slope or adjacent bank protection.

b. The velocity of the discharge shall not exceed the scour velocity of the channel soil, unless channel erosion would be prevented by the use of riprap or other design measures.

c. Outlets from drainage ditches shall not be opened to a stream until the ditch is vegetated or otherwise stabilized to minimize stream sedimentation.

d. Disturbance of streamside vegetation shall be kept to a minimum during construction to prevent erosion and sedimentation. All disturbed floodway areas, including the stream banks, shall be restored to their original contours and seeded or otherwise stabilized upon completion of construction.

7. Underground pipeline and utility crossings meeting the conditions of IDNR/OWR Statewide Permit Number 8:

a. In all cases, the crossing shall be placed beneath the bed of the river, lake or stream and, unless the crossing is encased in concrete or entrenched in bedrock, a minimum of three (3) feet of cover shall be provided. The river, lake or stream bed shall be returned to its original condition.

b. Disturbance of streamside vegetation shall be kept to a minimum during construction to prevent erosion and sedimentation. All disturbed floodway areas, including stream banks, shall be restored to their original contours and seeded or otherwise stabilized upon completion of construction.

c. Any utility crossing carrying material which may cause water pollution, as defined by the Environmental Protection Act (415 ILCS 5), shall be provided with shut-off valves on each side of the body of water to be crossed.

d. If blasting is to be utilized in the construction of the crossing, the permittee shall notify the IDNR/OWR at least ten (10) days prior to the blasting date to allow monitoring of any related fish kills.

8. Bank stabilization projects meeting the conditions of IDNR/OWR Statewide Permit Number 9:

a. Only the following materials may be utilized in urban areas: stone and concrete riprap, steel sheet piling, cellular blocks, fabric-formed concrete, gabion baskets, rock and wire mattresses, sand/cement filled bags, geotechnical fabric materials, natural vegetation and treated timber. Urban areas are defined as: areas of the State where residential, commercial, or industrial development currently exists or, based on land use plans or controls, is expected to occur within ten (10) years. (The Department should be consulted if there is a question of whether or not an area is considered urban).

b. In addition to the materials listed in Section 6 (8)(a), other materials (e.g. tire revetments) may be utilized in rural areas provided all other conditions of this permit are met.

c. The following materials shall **not** be used in any case: auto bodies, garbage of debris, scrap lumber, metal refuse, roofing materials, asphalt or other bituminous materials, or any material which would cause water pollution as defined by the Environmental Protections Act (415 ILCS 5).

d. The affected length of shoreline, stream bank, or channel to be protected shall not exceed, either singularly or cumulatively, one thousand (1000) feet.

e. All material utilized shall be properly sized or anchored to resist anticipated forces of current and wave action.

f. Materials shall be placed in a way which would not cause erosion or the accumulation of debris on properties adjacent to or opposite the project.

g. Materials shall not be placed higher than the existing top of the bank.

h. Materials shall be placed so that the modified bank full-width and cross-sectional area of the channel will conform to or be no more restrictive than that of the natural channel upstream and downstream of the site.

For projects involving continuous placement of riprap along the bank, toe of the bank or other similar applications, in no case shall the cross-sectional area of the natural channel be reduced by more than ten percent (10%) nor the volume of material placed exceed two (2) cubic yards per lineal foot of the stream bank or shoreline. The bank may be graded to obtain a flatter slope and to lessen the quantity of material required.

i. If broken concrete is used, all protruding materials such as reinforcing rods shall be cut flush with the surface of the concrete and removed from the construction area.

j. Disturbance of vegetation shall be kept to a minimum during construction to prevent erosion and sedimentation. All disturbed areas shall be seeded or otherwise stabilized upon completion of construction.

k. In the case of seawalls and gabion structures on lakes, the structure shall be constructed at or landward of the water line as determined by the normal pool elevation, unless:

i. It is constructed in alignment with an existing seawall(s) or gabion structure(s), and

ii. the volume of material placed, including the structure, would not exceed two (2) cubic yards per lineal foot.

l. Excess material excavated during the construction of the bank or shoreline protection shall be placed in accordance with local, state, and federal laws and rules, shall not be placed in a floodway.

9. Accessory structures and additions to existing residential buildings meeting the conditions of IDNR/OWR Statewide Permit Number 10:

a. The accessory structure or building addition must comply with the requirements of the local floodplain ordinance.

b. The principle structure to which the project is being added must have been in existence on the effective date of this permit (July 25, 1988).

c. The accessory structure or addition must not exceed five hundred (500) square feet in size and must not deflect floodwaters onto another property, and

d. must not involve the placement of any fill material.

e. No construction shall be undertaken in, or within fifty (50) feet of the bank of the stream channel.

f. The accessory structure or addition must be properly anchored to prevent its movement during flood conditions.

g. Only one accessory structure or addition to an existing structure shall be authorized by this permit; plans for any subsequent addition must be submitted to IDNR/OWR for review.

h. Disturbances of vegetation shall be kept to a minimum during construction to prevent erosion and sedimentation. All disturbed floodway areas shall be seeded or otherwise stabilized upon completion of construction.

10. Minor maintenance dredging activities meeting the following conditions of IDNR/OWR Statewide Permit Number 11:

a. The affected length of the stream shall not either singularly or cumulatively exceed one thousand (1000) feet.

b. The project shall not include the construction of any new channel; all work must be confined to the existing channel or to reestablishing flows in the natural stream channel, and

c. the cross-sectional area of the dredged channel shall conform to that of the natural channel upstream and down stream of the site.

d. Dredged or spoil material shall not be disposed of in a wetland and shall be either:

i. removed from the floodway;

ii. used to stabilize an existing bank provided no materials would be placed higher than the existing top of bank and

provided the cross-sectional area of the natural channel would not be reduced by more than ten percent (10%), nor the volume of material placed exceed two (2) cubic yards per lineal foot of streambank;

iii. used to fill an existing washed out or scoured floodplain area such that the average natural floodplain elevation is not increased;

iv. used to stabilize and existing levee provided the height of the levee would not be increased nor its alignment changed;

v. placed in a disposal site previously approved by the Department in accordance with the conditions of the approval, or

vi. used for beach nourishment, provided the material meets all applicable water quality standards.

e. Disturbance of streamside vegetation shall be kept to a minimum during construction to prevent erosion and sedimentation. All disturbed floodway areas, including the stream banks, shall be seeded or otherwise stabilized upon completion of construction.

11. Bridge and culvert replacement structures and bridge widening meeting the following conditions of IDNR/OWR statewide Permit Number 12:

a. A registered professional engineer shall determine and document that the existing structure has not been the cause of demonstrable flood damage. Such documentation shall include, at a minimum, confirmation that:

i. No buildings or structures have been impacted by the backwater induced by the existing structure, and

ii. there is no record of complaints of flood damages associated with the existing structure.

b. A registered professional engineer shall determine that the new structure will provide the same or greater effective waterway opening as

the existing structure. For bridge widening projects the existing piers and the proposed pier extensions must be in line with the direction of the approaching flow upstream of the bridge.

c. The project shall not include any appreciable raising of the approach roads. (This condition does not apply if all points on the approaches exist at an elevation equal to or higher than the 100-year frequency flood headwater elevation as determined by a FEMA flood insurance study completed or approved by IDNR/OWR).

d. The project shall not involve the straightening, enlargement or relocation of the existing channel of the river or stream except as permitted by the Department's Statewide Permit Number 9 (Minor Shoreline, channel and Streambank Protection Activities) or Statewide Permit Number 11 (Minor Maintenance Dredging Activities).

e. The permittee shall maintain records of projects authorized by this permit necessary to document compliance with the above conditions.

12. Temporary construction activities meeting the following conditions of IDNR/OWR statewide Permit Number 13:

a. No temporary construction activity shall be commenced until the individual permittee determines that the permanent structure (if any) for which the work is being performed has received all required federal, state and local authorizations.

b. The term "temporary" shall mean not more than one construction season. All temporary construction materials must be removed from the stream and floodway within one year of their placement and the area returned to the conditions existing prior to the beginning of construction. Any desired subsequent or repetitive material placement shall not occur without the review and approval of the IDNR/OWR.

c. The temporary project shall be constructed such that it will not cause erosion or damage due to increases in water surface profiles to adjacent properties. For locations where there are structures in the upstream floodplain, the temporary project shall be constructed such that

all water surface profile increases, due to the temporary project, are contained within the channel banks.

d. This permit does not authorize the placement or construction of any solid embankment or wall such as a dam, roadway, levee, or dike across any channel or floodway.

e. No temporary structure shall be placed within any river or stream channel until a registered professional engineer determines and documents that the temporary structure will meet the requirements of Special Condition Number 3 of this statewide permit. Such documentation shall include, at a minimum, confirmation that no buildings or structures will be impacted by the backwater induced by the temporary structure.

f. The permittee shall maintain records of projects authorized by this permit necessary to document compliance with the above condition.

g. Disturbance of vegetation shall be kept to a minimum during construction to prevent erosion and sedimentation. All disturbed areas shall be seeded or otherwise stabilized upon completion of the removal of the temporary construction.

h. Materials used for the project shall not cause water pollution as defined by the Environmental Protection Act (415 ILCS 5).

13. Any Development determined by IDNR/OWR to be located entirely within a flood fringe area shall be exempt from State Floodway permit requirements.

B. Other development activities not listed in 6(A) may be permitted only if:

1. permit has been issued for the work by IDNR/OWR (or written documentation is provided that an IDNR/OWR permit is not required), or

2. sufficient data has been provided to FEMA when necessary, and approval obtained from FEMA for a revision of the regulatory map and base flood elevation.207

207 Section 7. Protecting Buildings.

A. In addition to the damage prevention requirements of Section 6 of this ~~ordinance~~ regulation, all buildings located in the floodplain shall be protected from flood damage

below the flood protection elevation. This building protection requirement applies to the following situations:

1. Construction or placement of a new building or alteration or addition to an existing building valued at more than one thousand dollars ($1,000) or seventy (70) square feet.

2. Substantial improvements or structural alterations made to an existing building that increase the floor area by more than twenty percent (20%) or equal or exceed the market value by fifty percent (50%). Alteration shall be figured cumulatively *(*pick either: "subsequent to the adoption of this ordinance", "during the life of the building" or "during a 10- year period").* If substantially improved, the existing structure and the addition must meet the flood protection standards of this section.

3. Repairs made to a substantially damaged building. These repairs shall be figured cumulatively *(*pick either: "subsequent to the adoption of this ordinance:, "during the life of the building" or "during a 10-year period")*. If substantially damaged the entire structure must meet the flood protection standards of this section.

4. Installing a manufactured home on a new site or a new manufactured home on an existing site. (The building protection requirements do not apply to returning a manufactured home to the same site it lawfully occupied before it was removed to avoid flood damage).

5. Installing a travel trailer or recreational vehicle on a site for more than one hundred eighty (180) days per year.

6. Repetitive loss to an existing building as defined in Section 2 (CC).

B. Residential or non-residential buildings can meet the building protection requirements by one of the following methods:

1. The building may be constructed on permanent land fill in accordance with the following:

a. The lowest floor (including basement) shall be at or above the flood protection elevation.

b. The fill shall be placed in layers no greater than six inches before compaction and should extend at least ten (10) feet beyond the foundation before sloping below the flood protection elevation.

c. The fill shall be protected against erosion and scour during flooding by vegetative cover, riprap,

or other structural measure.

d. The fill shall be composed of rock or soil and not incorporated debris or refuse material, and

e. shall not adversely affect the flow of surface drainage from or onto neighboring properties and when necessary stormwater management techniques such as swales or basins shall be incorporated.

2. The building may be elevated on solid walls in accordance with the following:

a. The building or improvements shall be elevated on stilts, piles, walls, crawlspace, or other foundation that is permanently open to flood waters.

b. The lowest floor and all electrical, heating, ventilating, plumbing, and air conditioning equipment and utility meters shall be located at or above the flood protection elevation.

c. If walls are used, all enclosed areas below the flood protection elevation shall address hydrostatic pressures by allowing the automatic entry and exit of flood waters. Designs must either be certified by a registered professional engineer or by having a minimum of one (1) permanent opening on each wall no more than one (1) foot above grade with a minimum of two (2) openings. The openings shall provide a total net area of not less than one (1) square inch for every one (1) square foot of enclosed area subject to flooding below the base flood elevation, and

d. the foundation and supporting members shall be anchored, designed, and certified so as to minimize exposure to hydrodynamic forces such as current, waves, ice, and floating debris.

i. All structural components below the flood protection elevation shall be constructed of materials resistant to flood damage.

ii. Water and sewer pipes, electrical and telephone lines, submersible pumps, and other service facilities may be located below the flood protection elevation

provided they are waterproofed.

iii. The area below the flood protection elevation shall be used solely for parking or building access and not later modified or occupied as habitable space, or

iv. in lieu of the above criteria, the design methods to comply with these requirements may be certified by a registered professional engineer or architect.

3. The building may be constructed with a crawlspace located below the flood protection elevation provided that the following conditions are met:

4. The building must be designed and adequately anchored to resist flotation, collapse, and lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy.

5. Any enclosed area below the flood protection elevation shall have openings that equalize hydrostatic pressures by allowing for the automatic entry and exit of floodwaters. A minimum of one opening on each wall having a total net area of not less than one (1) square inch per one (1) square foot of enclosed area. The openings shall be no more than one (1) foot above grade.

6. The interior grade of the crawlspace below the flood protection elevation must not be more than two (2) feet below the lowest adjacent exterior grade.

7. The interior height of the crawlspace measured from the interior grade of the crawl to the top of the foundations wall must not exceed four (4) feet at any point.

8. An adequate drainage system must be installed to remove floodwaters from the interior area of the crawlspace within a reasonable period of time after a flood event.

9. Portions of the building below the flood protection elevation must be constructed with materials resistant to flood damage, and

10. utility systems within the crawlspace must be elevated above the flood protection elevation.

C. Non-residential buildings may be structurally dry floodproofed (in lieu of elevation) provided a registered professional engineer or architect certifies that:

1. Below the flood protection elevation the structure and attendant

utility facilities are watertight and capable of resisting the effects of the base flood.

2. The building design accounts for flood velocities, duration, rate of rise, hydrostatic and hydrodynamic forces, the effects of buoyancy, and the impact from debris and ice.

3. Floodproofing measures will be incorporated into the building design and operable without human intervention and without an outside source of electricity.

4. Levees, berms, floodwalls and similar works are not considered floodproofing for the purpose of this subsection.

D. Manufactured homes or travel trailers to be permanently installed on site shall be:

1. Elevated to or above the flood protection elevation in accordance with Section 7(B), and

2. anchored to resist flotation, collapse, or lateral movement by being tied down in accordance with the rules and regulations for the Illinois Mobile Home Tie-Down Act issued pursuant to 77 Ill. Adm. Code § 870.

E. Travel trailers and recreational vehicles on site for more than one hundred eighty (180) days per year shall meet the elevation requirements of section 7(D) unless the following conditions are met:

1. The vehicle must be either self-propelled or towable by a light duty truck.

2. The hitch must remain on the vehicle at all times.

3. The vehicle must not be attached to external structures such as decks and porches

4. The vehicle must be designed solely for recreation, camping, travel, or seasonal use rather than as a permanent dwelling.

5. The vehicles largest horizontal projections must be no larger than four hundred (400) square feet.

6. The vehicle’s wheels must remain on axles and inflated.

7. Air conditioning units must be attached to the frame so as to be safe for movement of the floodplain.

8. Propane tanks as well as electrical and sewage connections must be quick-disconnect and above the 100-year flood elevation.

9. The vehicle must be licensed and titled as a recreational vehicle

or park model, and

10. must either:

a. entirely be supported by jacks, or

b. have a hitch jack permanently mounted, have the tires touching the ground and be supported by block in a manner that will allow the block to be easily removed by used of the hitch jack.

F. Garages, sheds or other minor accessory structures constructed ancillary to an existing residential use may be permitted provided the following conditions are met:

1. The garage of shed must be non-habitable.

2. The garage or shed must be used only for the storage of vehicles and tools and cannot be modified later into another use.

3. The garage or shed must be located outside of the floodway or have the appropriate state and/or federal permits.

4. The garage or shed must be on a single family lot and be accessory to an existing principle structure on the same lot.

5. Below the base flood elevation, the garage or shed must be built of materials not susceptible to flood damage.

6. All utilities, plumbing, heating, air conditioning and electrical must be elevated above the flood protection elevation.

7. The garage or shed must have at least one permanent opening on each wall not more than one (1) foot above grade with one (1) square inch of opening for every one (1) square foot of floor area.

8. The garage or shed must be less than ten thousand dollars ($10,000) in market value or replacement cost whichever is greater or less than five hundred (500) square feet.

9. The structure shall be anchored to resist floatation and overturning.

10. All flammable or toxic materials (gasoline, paint, insecticides, fertilizers, etc.) shall be stored above the flood protection elevation.

11. The lowest floor elevation should be documented and the owner advised of the flood insurance implications.

208 Section 8. Subdivision Requirements

The *(*insert name of the village or city governing board)* county shall take into account hazards, to the

extent that they are known, in all official actions related to land management use and development.

A. New subdivisions, manufactured home parks, annexation agreements, planned unit developments, and additions to manufactured home parks and subdivisions shall meet the damage prevention and building protections standards of Sections 6 and 7 of this ~~ordinance~~ regulation. Any proposal for such development shall include the following data:

1. The base flood elevation and the boundary of the floodplain, where the base flood elevation is not available from an existing study, the applicant shall be responsible for calculating the base flood elevation;

2. the boundary of the floodway when applicable, and

3. a signed statement by a Registered Professional Engineer that the proposed plat or plan accounts for changes in the drainage of surface waters in accordance with the Plat Act (765 ILCS 205/2).

Streets, blocks lots, parks and other public grounds shall be located and laid out in such a manner as to preserve and utilize natural streams and channels. Wherever possible the floodplains shall be included within parks or other public grounds.

209 Section 9. Public Health and Other Standards

A. Public health standards must be met for all floodplain development. In addition to the requirements of Sections 6 and 7 of this ~~ordinance~~ regulation the following standards apply:

1. No development in the floodplain shall include locating or storing chemicals, explosives, buoyant materials, flammable liquids, pollutants, or other hazardous or toxic materials below the flood protection elevation unless such materials are stored in a floodproofed and anchored storage tank and certified by a professional engineer or floodproofed building constructed according to the requirements of Section 7 of this ordinance.

2. Public utilities and facilities such as sewer, gas and electric shall be located and constructed to minimize or eliminate flood damage.

3. Public sanitary sewer systems and water supply systems shall be located and constructed to minimize or eliminate infiltration of flood waters into the systems and discharges from the systems into flood waters.

4. New and replacement on-site sanitary sewer lines or waste disposal systems shall be located and constructed to avoid impairment to them or contamination from them during flooding. Manholes or other above ground openings located below the flood protection elevation shall be watertight.

5. Construction of new or substantially improved critical facilities shall be located outside the limits of the floodplain. Construction of new critical

facilities shall be permissible within the floodplain if no feasible alternative site is available. Critical facilities constructed within the SFHA shall have the lowest floor (including basement) elevated or structurally dry floodproofed to the 500-year flood frequency elevation or three feet above the level of the 100-year flood frequency elevation whichever is greater. Floodproofing and sealing measures must be taken to ensure that toxic substances will not be displaced by or released into floodwaters. Access routes elevated to or above the level of the base flood elevation shall be provided to all critical facilities.

B. All other activities defined as development shall be designed so as not to alter flood flows or increase potential flood damages.

210 Section 10. Carrying Capacity and Notification.

For all projects involving channel modification, fill, or stream maintenance (including levees), the flood carrying capacity of the watercourse shall be maintained.

~~In addition, the~~ *(*insert name of city or village)* ~~shall notify adjacent communities in writing thirty (30) days prior to the issuance of a permit for the alteration or relocation of the watercourse~~. *{SWMO 50-249 (d)(15)}*

300 Stormwater Detention Regulations

301 Exclusions

302 maximum controlled stormwater runoff release rate

303 stormwater storage methods

304 Calculations of required stormwater storage

305 Applications for building permits

This section contains the text of **Sec. 50-258. Stormwater detention regulations** of the Natural Hazard Ordinance which are moved to this regulation unammended with the adoption of the Winnebago County Surface Water Management Ordinance. Its requirements follow:

Developments which increase the amount of impermeable area, such as the construction of roof structures, paved areas or compacted areas, shall be subject to the terms of this article.

301 (1) The following, however, shall not be included:

a. Traditional agricultural uses.

b. The construction of single-family dwellings on lots or parcels of land which were of record prior to August 12, 1976.

c. Modification of single-family dwellings which will continue to be used as single-family dwellings.

d. The use of lands adjacent and contiguous to and which discharge directly into the Rock, Pecatonica, Sugar, or Kishwaukee Rivers.

e. Improvement of existing roadways which does not increase the number of traffic lanes in the typical cross section of the roadway.

302 (2) The maximum controlled stormwater runoff release rate shall not exceed the natural safe stormwater drainage capacity of the downstream system, which has been found to be 0.2 cubic feet per second, per acre in the county. Pipe outlets of less than 12 inches in diameter shall not be allowed. Multiple outlets from a stormwater storage area shall be avoided if they are designed to be less than 12 inches in diameter. Removable orifice plates shall be employed when these pipe size requirements cannot be met.

303 (3) When the maximum controlled stormwater runoff release rate shall be exceeded, any or all of the following stormwater storage methods shall be provided and constructed:

a. *Dry bottom stormwater storage.* The following is the dry bottom stormwater storage method:

1. Dry bottom stormwater storage areas must be designed to serve a secondary purpose for recreation, open space or similar type of use, which will not be adversely affected by occasional intermittent flooding.

2. The combination of storage of major floodwater runoff from a 100-year return frequency storm and the allowable release rate shall not result in a storage duration in excess of 48 hours.

3. Minimum grades for turf areas shall be 0.5 percent (200 units horizontal to one vertical) and maximum side slopes shall be 25 percent (four units horizontal to one unit vertical). Storage area side slopes shall follow the natural land contours as closely as practicable, and a minimum of earth excavation shall be used to create the storage facility.

4. Temporary seeding or other soil stabilization measures shall be established in the stormwater storage area and major floodwater passageway immediately following the construction or reconstruction of these areas. During the construction of the overall development, it is recognized that a limited amount of sediment buildup may occur in the stormwater storage area due to erosion. In no case shall the volume of the storage area be reduced to less than three-quarters of the required volume during the construction phase of the development.

5. Permanent erosion control measures such as mulching, hydroseeding, conventional seeding, nurse crops, fertilizing or sod installation shall be utilized to control soil movement and erosion within the storage area and major floodwater passageway. These measures shall meet or exceed the standards established by the county soil and water conservation district. The installation of these permanent measures shall take place only after the majority of construction and other silt- and sediment-producing activities have been completed. Prior to the establishment of the permanent erosion control measures, the required capacity of the stormwater storage area and the excess stormwater passageway shall be restored.

6. The control structure shall be provided with an interceptor for trash and debris, and it shall be designed and constructed to prevent soil erosion and not to require manual adjustments for its proper operation. An inlet design that will produce turbulent flow conditions during any portion of the stormwater storage cycle will not be acceptable.

7. Adequate impact stilling basins shall be provided to ensure that downstream soil erosion is alleviated and the regime of the downstream drainage facility is not disturbed.

8. Each stormwater storage area shall be provided with a method of overflow in the event a storm in excess of the design capacity occurs. This overflow facility shall be constructed to function without specific attention and can become a part of the excess stormwater passageway described in this section.

9. The entire stormwater storage area shall be designed and constructed to fully protect the public health, safety and welfare. If a condition occurs in the stormwater storage area which is hazardous to the public health, safety or welfare, the person responsible for the condition will be required to provide approved corrective measures. If these corrective measures are not provided, the county may eliminate the hazard at the expense of the person responsible.

10. Low flow conduits or channels shall be provided in stormwater storage areas. These conduits or channels shall be so constructed that they will not interfere with the secondary usage of the storage area and will reduce the frequency of time that the storage area will be covered with water.

b. *Wet bottom stormwater storage.* Wet bottom stormwater storage areas shall be designed in compliance with all the regulations which are applicable and govern the construction of dry bottom stormwater storage areas. The following additional regulations shall apply:

1. The water surface area of the permanent pool shall not exceed one-tenth of the area of the tributary watershed.

2. Protection of the shoreline must be provided to alleviate soil erosion due to wave action.

3. Minimum normal water depth shall be four feet. If fish are to be used to keep the pond clean, at least one-quarter of the pond area shall be a minimum of ten feet deep.

4. Facilities shall be provided to lower the pond elevation by gravity floor for cleaning purposes and shoreline maintenance.

5. The control structure for stormwater release shall be designed to operate at full design release rate with only a minor increase in the water depth in order to minimize the land surface wetted by frequent minor stormwater runoff conditions.

6. Measures shall be included in the design to prevent pond stagnation. This may be accomplished by fountain aeration or some other method used to ensure aerobic pond conditions.

7. The volume of water permanently stored shall not be considered to be part of the required excess stormwater storage volume.

c. *Paved stormwater storage.* Design and construction of the pavement base must ensure that there is no pavement damage due to flooding. Control structures in paved areas must be readily accessible for maintenance and cleaning. Vortex control devices will be required.

d. *Rooftop stormwater storage.* Rooftop storage of excess stormwater shall be designed and

constructed to provide permanent control inlets and parapet walls to contain excess stormwater. Adequate structural roof design must be provided to ensure that roof deflection does not occur which could cause the roofing material to fail and result in leakage. Overflow areas must be provided to ensure that the weight of stored stormwater will never exceed the structural capacity of the roof.

e. *Automobile parking stormwater storage areas.* Automobile parking facilities used to store excess stormwater must be constructed having a maximum depth of stored stormwater of 1.5 feet; and these areas shall be located in the most remote, least used areas of the parking facility.

f. *Underground stormwater storage.* Underground stormwater storage facilities must be designed for easy access in order to remove accumulated sediment and debris. These facilities must be provided with a positive gravity outlet.

304 (4) Calculations of required stormwater storage shall be made as follows:

a. ~~The volume of required stormwater storage shall be calculated on the basis of the maximum value achieved from the runoff of a 100-year return frequency storm, less the volume of water released through the outlet structure.~~ *{The previous sentence, using "shall be...", is in conflict with the following 2 sentences. It refers to a methodology (modified rational method) that would only be generally recognized for a small drainage area, where "may be..." is operational. The Technical Guidance reflects on this, and the routing techniques mentioned.}* Any generally recognized and substantiated method acceptable to the administrator may be used for these calculations. The release rate of the outlet structure, when half of the storage area is filled, may be used in lieu of routing techniques in small drainage areas. The control structure shall be designed to maintain as uniform a flow as possible, independent of the stormwater storage volume. Where the proposed structure, project or land development forms only a portion of a watershed or contains portions of several watersheds, the storage volume calculations shall be based upon the area of the entire project, development or land use change. The maximum release rate shall be established by multiplying the total acreage of the tributary watershed by 0.2 cubic foot per second, per acre.

b. Stormwater storage areas which will be filled to capacity by high-frequency storms shall be designed in a manner that will protect immediate downstream properties, and all overflow structures shall be designed to function properly and effectively without the necessity of making manual adjustments. A larger outlet for stormwater storage may be permitted by the administrator for the orderly management of stormwater runoff where large tributary areas are developed without detention.

c. If the orderly management of the stormwater runoff cannot be achieved by passing the entire tributary area runoff through the stormwater storage area, the stormwater storage area shall be constructed to exclude the runoff from the tributary area originating outside of the area to be developed.

305 (5) Applications for building permits shall require the following:

a. Stormwater detention facilities shall be designed by and their construction supervised by a registered professional engineer.

b. Compliance with this section shall be as provided for in section 50-256. In addition, the

following shall be required by the administrator:

1. Upon completion of construction, a set of ~~as-built~~ record drawings certified by a registered professional engineer; and

2. An estimated schedule of development phases.

c. 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. 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 harmful runoff. For single-family dwellings to be located in a subdivision meeting the requirements of this article, the signed statement may, in lieu of other application requirements, be placed on the face of the final plat.

d. When compliance with the stormwater detention requirements of this article will result in a facility, the volume of which is 0.3 acre-feet or less, the administrator may waive the requirement for that specific facility.

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400 Post Construction Runoff Quantity Controls

In principle, development plans should minimize those characteristics that result in the increase of stormwater runoff. The amount of impervious cover should be the minimum practical to meet the requirements of building, zoning, and subdivision regulations, those of the County and township highway authorities, and such other regulations as govern development activities.

401: Stormwater Detention is a control currently required by county ordinance. It is recognized that the controlled release rate referred to in these requirements (sec 304) is release to surface water. Some additional loss of inflow to a stormwater detention facility may be provided by some subsurface infiltration technique. The required detention volume can be reduced by such loss provided that:

401.1 the loss is based on a conservative estimate of the long term infiltration rate of the soil strata to which infiltration is intended. This analysis shall include conditions of saturated or frozen strata and the probable location of groundwater levels;

401.2 additional inspection and certification is guaranteed during the installation process so that the qualifying soil strata is confirmed in place; and that it is not clogged with fine material nor compacted by construction operations;

401.3 there is an acceptable maintenance plan for operation of the infiltration technique;

401.4 complete failure of the infiltion system does not result in flood hazard within the development or to adjacent properties;

401.5 an acceptable plan for restoration of the maximum controlled release rate is provided for the case of substantial or complete failure of the infiltration system; and

401.6 the prevention of groundwater contamination is reasonably assured.

402: Shallow depressional storage volumes, below a surface gravity outlet, cannot be used to partly or completely replace required stormwater detention storage volumes. Their benefit accrues largely to water quality: capturing small storm events, and filled with water and sediments prior to a major runoff event.

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600 Construction Site Erosion and Sediment Control

605 Sec. 5 General Principles

608 Sec. 8 Erosion and Sediment Control Plan.

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613 Sec. 13 Site design requirements.

614 Sec. 14 Inspection.

615 Sec. 15 Retention of plans.

616 Sec. 16 Special precautions.

620 Summary of Erosion and Sediment Control Requirements

This section contains the text of Sections 5, 8, 13 to 16, and summary of the model **Construction Site Erosion and Sediment Control Ordinance,** drafted and put through public review by the Winnebago County Association for Clean Water Action, WinACWA, 2004; and customized for county government to meet its requirements under NPDES Phase II.

605 Sec. 5 General Principles.

It is the objective of ~~this ordinance~~ these regulations to control soil erosion and sedimentation caused by development activities, including clearing, grading, stripping, excavating, and filling of land, in the County of Winnebago. Measures taken to control soil erosion and offsite sediment runoff should be adequate to assure that sediment is not transported from the site by wind erosion or a storm event of ten-year frequency or less. The following principles shall apply to all development activities within the County of Winnebago and to the preparation of the submissions required under Sections 8 and 9 of this ordinance:

(a) Development should be related to the topography and soils of the site so as to create the least potential for erosion. Areas of steep slopes where high cuts and fills may be required

should be avoided wherever possible, and existing contours should be followed as closely as possible.

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

(c) Special precautions should be taken to prevent damages that occur due to any necessary development activity within or adjacent to any stream, lake, pond, or wetland. Preventative measures must be commensurate with the sensitivity of these areas to erosion and sedimentation.

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

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

(f) The selection of erosion and sedimentation control measures should be based on site limitations, project duration, and other factors to provide the necessary site protection during the construction development activity.

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

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

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

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

608 Sec. 8 Erosion and Sediment Control Plan.

The Owners of the property or his/her authorized designee shall prepare and submit an **Erosion and Sediment Control Plan** (Plan) to the County of Winnebago at the time of proposed land disturbing activities. These submissions shall be prepared in accordance with the requirements of this Article and the standards and requirements contained in the NPDES Permit No. ILR10 prepared by the Illinois Environmental Protection Agency and the Illinois Urban Manual prepared by the Natural Resources Conservation Service and adopted by the Boone and Winnebago County Soil and Water Conservation District, which standards and requirements are hereby incorporated into this ordinance by reference. General guidance can be found in the *Illinois Urban Manual* under the section, ***Storm Water Management For Construction Activities, Developing Pollution Prevention Plans and Best Management Practices***. Each plan shall contain the following information:

(a) The name(s) address(es) and telephone number(s) of the owner or [and] developer of the site and of any consulting firm retained by the applicant together with the name of the applicant's principle contact at such firm. The owner must sign a copy of the certification statement. The certification must be included in the plan:

"I certify under penalty of law that this document and all attachments were prepared in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment of knowing violations."

(b) The name, address and telephone number of the general contractor(s) that have been identified at the time of the submittal. Identify the contractor(s) or subcontractor(s) implementing each measure of the plan. All contractor(s) and subcontractor(s) identified in the plan must sign a copy of the certification statement. All certifications must be included in the plan except for owners acting as contractor(s).

"I certify under penalty of law that I understand the terms and conditions of the general National Pollutant Discharge Elimination System (NPDES) permit No. ILR10 and [Chapter 78], Erosion and Sediment Control ordinance that authorizes the storm water discharges associated with the construction activities and site identified as part of this certification."

(c) A vicinity map in sufficient detail to enable easy location in the field of the site for which the permit is sought, and including the boundary line and approximate acreage of the site, existing zoning, and a legend and scale;

(d) A development plan of the site showing:

(1) Existing topography of the site and adjacent land within approximately 100 feet of the boundaries, drawn at no greater than two-foot contour intervals and clearly portraying the conformation and drainage pattern of the area.

(2) The location of existing buildings, structures, utilities, streams, lakes, floodplains, wetlands and depressions, drainage facilities, vegetative cover, paved areas, and other significant natural or man-made features on the site and adjacent land within 100 feet of the boundary.

(3) A general description of the predominant soil types on the site, their location, and their limitations for the proposed use.

(4) Proposed use of the site, including present development and planned utilization; areas of clearing, stripping, grading, excavation, and filling; finished grades, and street profiles; provisions of storm drainage, including storm sewers, swales, detention basins and any other measures to control the rate of runoff, with a drainage area map, indications of flow directions and computations; kinds and locations of utilities; and areas and acreages proposed to be paved, covered, sodded or seeded, vegetatively stabilized, or left undisturbed.

(e) Erosion and sediment controls showing all measures necessary to meet the objectives of

this ordinance throughout all phases of construction and permanently after completion of development of the site, including:

(1) Location and description, including standard details, of all sediment control measures and design specifics of sediment basins and traps, including outlet details.

(2) Plans should ensure existing vegetation is preserved where attainable and disturbed portions of the site are stabilized. Stabilization practices may include, but not limited to: temporary seeding, vegetative buffer strips, protection of trees, preservation of mature vegetation, and other appropriate measures. Location and description of all soil stabilization and erosion control measures, including seeding mixtures and rates, types of sod, method of seedbed preparation, expected seeding dates, type and rate of lime and fertilizer application, kind and quantity of mulching for both temporary and permanent vegetative control measures, and types of non-vegetative stabilization measures.

- Stabilization measures will be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than fourteen (14) days after the construction activity in that portion of the site has temporarily or permanently ceased.

- Where the initiation of stabilization measures by the 14th day after construction activity temporary or permanently snow cover precludes ease, stabilization measures shall be initiated as soon as practicable. [in or out…?]

- Where construction activity will resume on a portion of the site within 21 days from when activity ceased, (i.e. the total time period that construction activity is temporarily ceased is less than 21 days) then stabilization measures do not have to be initiated on that portion of the site by the 14th day after construction activity temporarily ceased.

(3) Location and description of all runoff control measures, including diversions, waterways, and outlets.

(4) Location and description of methods to prevent tracking of sediment offsite, including construction entrance details, as appropriate.

(5) Description of dust and traffic control measures.

(6) Locations of stockpiles and description of stabilization methods.

(7) Description of off-site fill or borrow volumes, locations, and methods of stabilization.

(8) Provisions for maintenance of control measures, including type and frequency of maintenance, easements, and estimates of the cost of maintenance.

(f) The proposed phasing of development of the site, including stripping and clearing, rough grading and landscaping. Phasing should identify the expected date on which clearing will begin and the estimated duration of exposure of cleared areas, and the sequence of installation of temporary sediment control measures (including perimeter controls), clearing and grading, installation of temporary soil stabilization measures, installation of storm drainage, paving streets and parking areas, final grading and the establishment of permanent vegetative cover, and the removal of temporary measures. It shall be the responsibility of the applicant to notify the County of Winnebago of any significant changes that occur in the site development schedule after the initial erosion and sediment control plan has been approved;

(g) A copy of the completed Notice of Intent (NOI) required by the Illinois Environmental Protection Agency.

(h) A copy of the completed Illinois Department of Natural Resources Consultation Agency Action Report.

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613 Sec. 13 Site design requirements.

On-site sediment control measures, as specified by the following criteria, shall be constructed and functional prior to initiating clearing, grading, stripping, excavation, or fill activities on the site.

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

1. Construction vehicles shall be kept out of the stream channel to the maximum extent practicable. Where construction crossings are necessary, temporary crossings shall be constructed of non-erosive material, such as riprap or gravel.

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

3. Whenever channel relocation is necessary, the new channel shall be constructed in the dry and fully stabilized before flow is diverted.

(b) Sediment traps or anchored filter barriers meeting accepted design standards and specifications outlined in the Illinois Urban Manual shall protect storm sewer inlets and culverts.

(c) Soil storage piles containing more than 10 cubic yards of material shall not be located with a downslope drainage length of less than 25 feet to a roadway or drainage channel. Filter barriers, including straw bales, filter fence, or equivalent, shall be installed immediately on the downslope side of the piles.

(d) If dewatering devices are used, discharge locations shall be protected from erosion. All pumped discharges shall be routed through appropriately designed sediment traps or basins, or equivalent.

(e) Each site shall have graveled (or equivalent) entrance roads, access drives, and parking areas a minimum of fifty feet long and 12 feet wide to prevent [minimize] sediment from being tracked onto public or private roadways. Any sediment reaching a public or private road shall be removed by shoveling or street cleaning (not flushing) before the end of each workday and transported to a controlled sediment disposal area.

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

(g) All temporary erosion and sediment control measures shall be disposed of within 30 days after final site stabilization is achieved with permanent soil stabilization measures. Trapped sediment and other disturbed soils resulting from the disposition of temporary measures should be permanently stabilized to prevent further erosion and sedimentation.

614 Sec. 14 Inspection.

The [inspector] shall make inspections as hereinafter required and shall either approve that portion of the work completed or shall notify the applicant wherein the work fails to comply with the erosion and sedimentation control plans as approved. In order to obtain inspections and to ensure compliance with the approved erosion and sediment control plan and this ordinance, the applicant shall notify the [inspector] within two (2) working days of the completion of the construction stages specified below:

(a) Upon completion of installation of sediment and runoff control measures (including perimeter controls and diversions), prior to proceeding with any other earth disturbance or grading,

(b) After stripping and clearing,

(c) After seeding and landscaping deadlines, and

(d) After final stabilization and landscaping, prior to removal of sediment controls.

If stripping, clearing, grading and /or landscaping are to be done in phases or areas, the applicant shall give notice and request inspection at the completion of each of the above work states in each phase or area.

The County of Winnebago shall also reserve the right to inspect disturbed areas of the construction site that have not been finally stabilized, structural control measures, and locations where vehicles enter or exit the site at least once every seven (7) calendar days and within 24 hours of the end of a storm that is 0.5 inches or greater or equivalent snowfall.

615 Sec. 15 Retention of plans.

The applicant shall retain copies of plans and all reports for a period of at least three (3) years from the date the site is finally stabilized. The applicant shall also retain a copy of the plan at the construction site from the date of project initiation to the date of final stabilization.

616 Sec. 16 Special precautions.

(a) If at any stage of the grading of any development site the [inspector] determines by inspection that the nature of the site is such that further work authorized by an existing

building permit is likely to imperil any property, public way, stream, lake, wetland, or drainage structure, the [inspector] may require, as a condition of allowing the work to be done, that such reasonable special precautions to be taken as is considered advisable to avoid the likelihood of such peril. "Special precautions" may include, but shall not be limited to, a more level exposed slope, construction of additional drainage facilities, berms, terracing, compaction or cribbing, installation of plant materials for erosion control, and recommendations of a registered soils engineer and/or engineering geologist which may be made requirements for further work.

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

(c) Major amendments of the erosion and sediment control plan shall be submitted to the County of Winnebago and shall be processed and approved or disapproved in the same manner as the original plans. The County of Winnebago may authorize field modifications of a minor nature by written authorization to the applicant.

County of Winnebago

SUMMARY OF THE NEW EROSION AND SEDIMENT CONTROL ORDINANCE

Purpose of this document:

1. To give contractors, developers, and consultants warning that Winnebago County is implementing a comprehensive erosion and sediment control ordinance

2. This ordinance will prepare developments for the NPDES Phase II requirements, which took effect March 2003.

Main principals of this comprehensive erosion and sediment control ordinance:

1. Design developments to fit existing topography and natural drainage patterns

2. Protect natural vegetation on site

3. Prevent sediment from entering adjacent watercourses

4. Reduce the exposure of disturbed soil

5. Methods of different erosion control structures and practices

6. Continue maintenance of control structures and establish permanent vegetation

7. Dispose of waste generated from site development activity

8. Reduce storm water runoff velocities

9. Prevent sediment on roadways

This comprehensive erosion and sediment control ordinance applies to:

1. NPDES Phase II projects after March 2003 (development activity affecting an area greater than or equal to 1 acre)

2. Any land disturbing activity that may discharge soil and erosion into any storm water conveyance system

3. If development activity is determined to be causing or contributing to existing or potential new erosion of sediment or impacting the storm water conveyance system

All erosion and sediment control plans, contained within the ordinance, will require the following:

1. Certification Sec. 8.a signed by owner and engineer. Must include principal contact with address and phone number.

2. Certification Sec. 8b signed by contractor for all NPDES permit projects (contractor may sign the approved erosion and sediment control plan if the project is not under a NPDES permit)

3. Vicinity map of the project

4. A development plan showing:

i. Existing topography

ii. Location of existing structures, buildings, and waterbodies, etc.

iii. Predominant soil types

iv. Proposed use of the site

v. Appropriate erosion and sediment controls

a. Silt fence, sediment basins and traps, earth dikes, drainage swales, check dams, storm drain inlet protection, rock outlet protection, risers, etc.

b. Construction entrances

c. Stabilization (needs to be implemented within 14 days once construction stops) i.e. temporary seeding, permanent seeding, geotextiles, and sod

Inspection/Enforcement:

1. The principle contact must observe construction to assure the project is following the approved erosion and sediment control plan

2. The [inspector] shall make regular inspections

3. The County of Winnebago may require "special precautions" beyond the approved erosion and sediment control plan

4. The County of Winnebago will verbally warn the principal contact that an erosion and sediment control plan is not being followed or a "special precaution" is needed

5. If no action is taken after 3 days of the verbal warning, the County of Winnebago will warn in writing the principal contact of the violation or of the "special precaution"

6. If no action is taken after 3 days of the written warning, a stop-work order will be issued.

Violations and Penalties:

1. A Certificate of Occupancy permit will not be granted

2. Fine of not more than $500.00 for each offense

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700 Post Construction Runoff Quality Controls

The County encourages developments that incorporate post construction runoff quality controls (PCRQC's) beneficial to water quality. However the county has not established means to measure or estimate pollutant loads or rates characteristic of development types nor standards to assess the compliance of outflows. Until the adoption of Total Maximum Daily Loads, or some other design and performance goals, any specific PCRQC's will not be required. But their presence shall be included and described (including maintenance provisions) in the proposed site development plan, with the following provisos:

701.1 they are part of the stormwater conveyance system, covered elsewhere in this regulation,

701.2 when included in the public rights of way, they must be approved by the appropriate road jurisdiction,

701.3 they must not create a nusiance or hazard; and to avoid that perception, the developer shall inform prospective buyers of their existance and operation,

401.4 the prevention of groundwater contamination is reasonably assured.

{Low Impact Development Principles: grass swales vs. curb and gutter and storm sewers, }

Notwithstanding the conditions for wet- and dry-bottomed stormwater storage areas in Sec 400, the freeboard above a surface water release structure may be used to meet stormwater detention volume requirements.

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999 End of Technical Regulations Adopted by Winnebago County Board

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1000 Surface Water Management Guidance

Under Sec. 50-249, Administration of the Surface Water Management Ordinance is the responsibility of the administrator, who has the duty to review plans for developments governed by the ordinance; and the authority to approve or deny permits, or find implementations in violation. In this capacity, the administrator must exercise sound engineering judgment in areas which go beyond even the detail of the Surface Water Management Technical Regulations. A Surface Water Management Technical Guidance is created as an administrative tool for such areas. Such areas are, for example:

1000.1: Surface water hydraulics and hydrology. Specifically, what techniques, data, coefficients, computer programs, etc. may or may not be acceptable under the circumstances of a given development to adequately estimate the design flow rates for the specified recurrence interval; and then what methods and assumptions could be used to evaluate the capacity of the receiving conveyance system, or

1000.2: Pollutant type and removal rate. Possibly, what pond configuration, filtration media, and/or chemical additives can be expected achieve what pollutant removal rate, operating at what maintenance cycle, with inputs of some volume and contamination level, to meet any future TMDL requirement.

1001: To maintain proficiency in reviewing plans and implementations, the administrator needs to maintain a knowledge base of proven, scientifically acceptable technology, both analytical and physical; and

1002: Be open to new technologies as they are proven; and

1003: Share that knowledge with applicants.

1010: This guidance may be called by reference, or it can be appended to the Technical Regulations, as herein, for ease of distribution.

1100 General Guidance

1101: The Illinois Department of Transportation Drainage Manual is recognized as a good reference, both for general techniques and local conditions. One should note the ISWS Bulletin

70 Rainfalls are in the Apendix as well as Huff rainfall distributions. It can be downloaded from the IDOT website.

http://www.dot.il.gov/bridges/brmanuals.html

(^ ^ Paste link to browser address box ^ ^ . The Drainage Manual is 47,812 kb in .pdf format. Be prepared! The Bridge Office maintains a number of other manuals from this site, also.)

1300 Guidance re: Stormwater Detention Regulations

1304: The Technical Regulations refer to "routing techniques" for all but "small drainage areas". Operationally, this means insignificant, not only in size but location in the context of current and future development in the drainage basin. Some urban and urbanizing jurisdictions (eg. Kane Co., which the City of Rockford may emulate in this respect) are requiring the 100-year, 24-hour duration rain, with AMC 2, be routed. The Department is currently open to arguments based on merit for any method, but one should expect that consistency with methods used by an adjacent jurisdiction will carry some weight.

1400 Post Construction Runoff Quantity Controls

1401: The administrator's concern is that a soil absorption system relies on conditions which cannot be observed directly. There are possibilities that a poorly envisioned or constructed soil absorption system will not function as its design analysis assumes from the day it is installed. More likely, over time, its performance will be degraded by the accumulation of fine particles or debris. The problem is that a system that operates properly in low-flow conditions, which are seldom a problem with flooding, wouldn't reveal a failure until stressed by high flows, precisely when flood control is needed. On the other hand, a system might work too well, if contaminants are present and not intercepted in some way. For example, direct runoff from a gas station should not be drained directly to a drywell, due to the ordinary accumulation of gas and oil drips, and possibility of more disasterous spills.

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