

Watershed Development Ordinance ‘Errata Sheet’ - The following are page numbers and Article references that have been amended. Amendment language follows the contents page.

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As approved by the Lake County Board 07/10/12

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LAKE COUNTY WATERSHED DEVELOPMENT ORDINANCE
OF
LAKE COUNTY, IL

ORIGINAL EFFECTIVE DATE
October 18, 1992

Approved as Amended
By the
Lake County Board
July 12, 1994
August 10, 1999
October 10, 2000
August 14, 2001
November 8, 2005
January 10, 2006
July 10, 2012

Page 3 - Article II.C.

- C. ***Enforcement Officers in Certified Communities have the responsibility to report a Designated Erosion Control Inspector's repeated or recurring non-compliance with Articles IV.B.1.j. and VI. in this Ordinance to the SMC Chief Engineer.*** ~~The Enforcement Officer in Certified Communities or the SMC Chief Engineer for development under SMC permit jurisdiction~~ has the authority and responsibility to suspend a Designated Erosion Control Inspector's listing status for repeated or recurring non-compliance ~~with Articles IV.B.1.j and VI in this Ordinance.~~ A notification of suspension from listing shall be issued to the Designated Erosion Control Inspector and copied to the applicant ~~and SMC~~ a minimum of 30 days prior to suspension from listing. Revocation of listing status shall be the responsibility of the SMC per Commission-adopted procedure.
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Page 4 - Article III.B.5.

5. Certified Communities shall petition for recertification every ~~three (3)~~ **five (5)** years. ***This petition shall include SMC-required documentation for the previous certification period.***
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Page 4 - Article III.B.6.

6. Within the ~~three (3)~~ **five (5)** year certification period, the SMC Director shall periodically review the community's Ordinance enforcement records and performance and make remedial recommendations to the community, if necessary. Review findings will be used in the assessment of petitions for recertification from Certified Communities.
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Page 5 - Article III.B.7.

7. ~~If within a Certified Community, development permits are repetitively or recurrently issued not in accordance with the Watershed Development Ordinance, or the community is no longer a participant in the National Flood Insurance Program, the SMC shall after a minimum 30-day notice to the Community and a public hearing held in conjunction with a regularly scheduled SMC meeting, have the authority to rescind, or place conditions on, the community's certification. The SMC may rescind or place conditions on a Certified Community's certification status, after a public hearing, if any of the following circumstances has been documented:~~
- a. ***Permits are recurrently issued not in compliance with the Watershed Development Ordinance;***
 - b. ***Permit or Watershed Development Ordinance requirements are recurrently not enforced on permitted development;***
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- c. ~~Regulated development is allowed to continue without the required permit or approval in place. Regulated development that has been brought through the multi-step Community Notification Procedure (due process) before Commission deliberation.~~

When any of the above circumstances are documented and presented by SMC Staff to the SMC, the SMC shall determine whether to hold a public hearing regarding the Certified Community's certification status. If a public hearing is to be held, a minimum 30-day notice to the Community is required. The public hearing shall be held in conjunction with a regularly scheduled SMC meeting. After close of the public hearing, the SMC shall have the authority to make a decision on any potential modifications to the Community's certification status.

Page 5 - Article III.B.11.

11. ~~**Certified Communities shall have a designated Enforcement Officer.**~~ To be qualified to act as an Enforcement Officer, the person shall pass the Lake County Enforcement Officer's Exam. ~~**Once the exam is available, community Enforcement Officers shall have six (6) months to pass the exam. After this six (6) month period, a community shall be required to have a named Enforcement Officer that has passed the exam, in order to remain certified.**~~ If a community Enforcement Officer vacates that position, the ~~community shall designate an Interim Enforcement Officer within thirty (30) days. Final designation of a qualified Enforcement Officer shall occur within~~ **person filling the vacancy shall have six (6) months to pass the exam** in order for the community to remain certified.

Page 5 - Article III.B.12.

12. Communities with Isolated Wetland Certification ~~authority~~ shall have a **designated** Certified Wetland Specialist (CWS) either as an employee or contracted to ~~perform administer~~ wetland ~~related services provisions~~ as specified in the Ordinance, **under direction of the Enforcement Officer.** SMC will ~~perform administer~~ **Ordinance specified wetland provisions Certified Wetland Specialist duties** for communities **without in the interim period between WDO adoption and certification of those communities desiring** Isolated Wetland Certification.

If a community Certified Wetland Specialist vacates that position, the community shall designate a CWS within sixty (60) days, or may utilize SMC CWS staff capabilities on an interim basis prior to final designation. Final designation of a CWS shall occur within six (6) months in order for the community to remain Isolated Waters of Lake County-certified.

Page 8 - Article IV.A.1.g.

- g. Any public road development ~~resulting in meeting both of the following criteria:~~
- (1) **One and one-half (1.5) acres or more of new impervious surface; and**
 - (2) ~~One and one-half (1.5) acres or more of~~ **additional-new** impervious surface per mile, for linear or nonlinear projects; or

Page 8 - Article IV.A.1.i. - (new paragraph)

- i. **Any activity to a building in a Special Flood Hazard Area (SFHA) as described in FEMA Publication 480 National Flood Insurance Program Flood Management Requirements.**

Page 8 - Article IV.A.2.

2. Exempted Development

All development shall meet the minimum state, federal, and local regulations. No development is exempt from the floodplain, floodway, wetland, and soil erosion and sediment control provisions of this Ordinance.

~~Upon review and verification by the Enforcement Officer, that a. or b. or c. below are met, the following are exempt from specific Ordinance performance standards:~~

An exemption request under Article IV.A.2.a. or b. or c. shall be submitted in writing by the applicant to the Enforcement Officer for an exemption from specific performance standards of this Ordinance. The applicant's exemption request shall itemize each Ordinance provision that is requested for exemption. After review and verification by the Enforcement Officer that Article IV.A.2.a. or b. or c. are met, the specific Ordinance provision exemptions may be granted.

- a. Annexation agreements, final plats, site development permits, or current building permits approved prior to October 18, 1992 if the stormwater management systems are installed, functioning, and in compliance with all applicable stormwater regulations then in effect.
- b. ~~Preliminary plats,~~ Annexation ~~a~~Agreements, ~~f~~Final plats, ~~p~~Planned ~~u~~Unit ~~d~~Developments, site development permits, or current building permits approved between October 18, 1992 and ~~[August 10, 1999] July 10, 2012~~ if the approved plans and designs are in conformance with the pre- ~~[August 10, 1999] July 10, 2012~~ Ordinance provisions. That portion of any ~~preliminary plat,~~ annexation agreement, final plat, planned unit development, site development permit, or current building permit which is amended after the effective date of this Ordinance and which affects the stormwater management system is not exempt from the provisions of this Ordinance.
- c. Re-subdivision of commercial or industrial subdivisions identified under ~~Article IV.A.2.a. above,~~ provided that the stormwater management systems are installed and functioning and there is no increase in impervious surface area permitted. Re-subdivision of commercial or industrial subdivisions identified under ~~Article IV.A.2.b. above,~~ provided there is no increase in impervious surface area beyond that which was originally approved.

If eligible under ~~Article IV.A.2.a. or b. or c. above,~~ the applicant may submit a written request to the Enforcement Officer for an exemption from specific performance standards of this Ordinance. The applicant's exemption request shall itemize each Ordinance provision that is requested for exemption.

Page 9 - Article IV.A.3.a.

a. Minor Development

A minor development is defined as any development that:

- (1) Is not located in ~~a depressional storage area which has a volume larger than 0.75 acre-foot or is not located in any other portion of~~ a Regulatory Floodplain, **or is located in a Regulatory Floodplain outside of the Regulatory Floodway, with no compensatory storage requirement;** and
- (2) Does not create a wetland impact ~~of one-quarter (1/4) or more acre~~ to Waters of the United States or Isolated Waters of Lake County **exceeding the isolated wetland impact mitigation thresholds in Article IV.E.3.a.;** and
- (3) ~~Does not M~~**modify** a channel where the tributary drainage area is ~~less~~ **greater** than 100 acres, **with no compensatory storage requirement;** and
- (4) **Does not require detention per Article IV.B.1.c.(1).**
Consists of:
(a) ~~Single family detached residential development of less than ten (10) acres; or~~

- ~~(b) Single family detached residential development of ten (10) acres or less more with a gross density of less than 0.5 unit per acre, and an impervious cover area of less than fifteen (15) percent; or~~
 - ~~(c) Multi-family, non-residential and other developments of less than three (3) acres requiring a Watershed Development Permit.~~
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Page 10 - Article IV.A.4.b.

b. Earth Change Approval

If all the performance standards and application requirements in Article IV, Sections B., C., D., E., and F. have been met, except for obtaining all the required local, state, and federal approvals, a request for the commencement of grading activities may be made ~~on~~ **for a development** site prior to the issuance of a Watershed Development Permit. The proposed grading activity may commence with written approval from the Enforcement Officer of the earth change approval plan that delineates the activities specifically allowed **including appropriate soil erosion and sediment control measures**. The written approval will state the conditions and limitations of the proposed grading activities. No development activity may occur in ~~those portions of the site~~ **areas** for which state and federal permits are required, except for IEPA sewer and water extension permits. Earth change approvals may not be granted for any development within a Regulatory Floodplain, **except for excavations outside of the Regulatory Floodway and which do not require an IDNR/OWR permit**.

Page 11 - Article IV.A.6.

6. Contiguous Property **and Development Phasing**

In order to preclude inappropriate phasing of developments to circumvent the intent of this Ordinance, when a proposed development activity will occur on a lot or parcel of land that has contiguous lots or parcels of lands owned in whole, or in part, by the same property owner **at the time of subdivision subsequent to October 18, 1992**, then the criteria as defined in this section will be applied to the total land area compiled from aggregate ownership parcels. If this aggregate ownership parcel area is greater than the minimum area requirements defined in Article IV, Section A.1., then a Watershed Development Permit will be required.

Page 11 - Article IV.A.7.d. - (new paragraph)

d. **A permit that includes a structure located within the Regulatory Floodplain, or will be located within the Regulatory Floodplain, shall be terminated without the possibility of an extension, if the start of construction is not commenced within 180 days of the permit issuance date unless the structure is compliant with the following:**

- (1) Any modification to National Flood Insurance Program regulations after permit issuance; or**
- (2) Any modification to a FEMA FIRM or FIS after permit issuance.**

For the purposes of this subsection, “start of construction” means the commencement of any repair, reconstruction, rehabilitation, addition, or improvement of a structure; or the first placement of permanent construction of a structure on a site, such as the pouring of slab or footings, the installation of piles, the construction of columns, or any work beyond the stage of excavation; or the placement of a manufactured home on a foundation. Permanent construction does not include land preparation, such as clearing, grading, and filling; nor does it include the installation of streets and/or walkways; nor does it include excavation for a basement, footings, piers, or foundations or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main structure.

Page 12 - Article IV.B.1.a.(2)

- (2) In addressing Article IV, Section B.1.d., **“Runoff Volume Reduction Hierarchy”** streets, blocks, lots, deed or plat restricted areas, parks, and other public grounds shall be located ~~and lined out~~ in such a manner as to preserve and utilize natural streams, ~~W~~wetlands, ~~and~~ flood-prone areas, **and best management practices and undisturbed native soil/plant areas utilized to meet the runoff volume reduction requirements whenever possible.**
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Page 13 - Article IV.B.1.a.(10)

- (10) All stormwater management systems **within the ownership parcel** shall be located and described within a deed or plat restriction. Stormwater management systems that service a single parcel ~~(or two parcels)~~ of property may be excused from this requirement upon approval of the Enforcement Officer.
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Page 14 - Article IV.B.1.b.(6)

- (6) For determination of soil runoff characteristics, areas of the development that are hydrologically disturbed and compacted shall be changed to that soil types' highest runoff potential/soil group classification. **Conversely,** ~~s~~Soil groups that are not hydrologically disturbed will retain their current runoff characteristics. ~~, and a~~Areas that are deed or plat restricted for native planting areas may be determined to have lower runoff characteristics, **and may be taken into account when meeting the runoff volume reduction requirements of this Ordinance (Article IV.B.1.d.(2)).**
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Page 14 - Article IV.B.1.c.(1)

- (1) Unless otherwise specified in Appendix J, an SMC-adopted basin plan or floodplain study, the detention volume required shall be calculated using a rating curve based on maximum release rates of 0.04 cubic feet per second per acre for the 2-year, 24-hour storm event and 0.15 cubic feet per second per acre for the 100-year, 24-hour storm event. The release rate requirement shall apply to the hydrologically disturbed area of the ownership parcel unless the Enforcement Officer determines that specific locations of the **ownership parcel development site** have unique circumstances such that the release rate shall apply to a broader or smaller area. The release rate requirements shall only apply to developments listed in Article IV, Section A.1.f., ~~and~~ Article IV, Section A.1.g.
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Page 15 - Article IV.B.1.c.(3)

- (3) All concentrated stormwater discharges must be conveyed into **a maintainable outlet an existing channel, storm sewer, or overland flow path** with adequate downstream stormwater capacity (as defined in Appendix A) and will not result in increased flood and drainage hazard.
-

Page 15 - Article IV.B.1.d.(1)

d. Runoff Volume Reduction **Hierarchy (RVR)**

- (1) An applicant shall choose ~~a~~**strategies that minimize stormwater runoff volumes and address water quality impairments. The site development plan shall incorporate stormwater infiltration, evapotranspiration, reuse, or other methods, into the project. to meet the release rate requirements that minimizes the increase in runoff volumes and rates from the development and addresses the water quality treatment requirements in Article IV, Section B.1.h., of this Ordinance.** The applicant shall use appropriate **green infrastructure techniques and** best management practices **to reduce runoff volume, as presented in the Technical Reference Manual and according to** the following hierarchy, **in order of preference**, in preparing a ~~drainage~~**stormwater management** plan:
- (a) Preservation **and enhancement** of **the stormwater management benefits of the** natural resource features of the development site (e.g., **areas of Hydrologic Soil Groups A and B,**

floodplains, ~~wetlands~~ **Waters of the United States**, Isolated Waters of Lake County, **channels, drainageways**, prairies, **savannas**, and woodlands);

- (b) **Minimization or disconnection of impervious surfaces;**
~~Preservation of the existing natural streams, channels and drainageways;~~
- (c) **Enhancement of the infiltration and storage characteristics of the development site using appropriate best management practices;**
~~Minimizing impervious surfaces created at the site (e.g., narrowing road width, minimizing driveway length and width, clustering homes and shared driveways;~~
- (d) The use of open ~~vegetated~~ channels **with native vegetation** to convey stormwater runoff;
- ~~(e) Preservation of the natural infiltration and storage characteristics of the site (e.g., disconnection of impervious cover and on-lot bioretention facilities);~~
- (fe) Structural measures that provide water quality and ~~volume reduction quantity control;~~
- (gf) Structural measures that provide only **volume reduction or other rainwater harvesting practices** ~~quantity control and conveyance;~~
- (g) **Measures that provide water quality and quantity control;**
- (h) **Measures that provide only quantity control.**

Page 16 - Article IV.B.1.d.(2) - (new paragraph)

(2) Runoff Volume Reduction (RVR) Quantitative Standard

The minimum RVR quantitative standard shall be the volume achieved utilizing applicable RVR Credits, as determined by the applicant and approved by the Enforcement Officer, based on the maximum extent practicable, for the following development. The term “new” for the RVR Quantitative Standard refers to impervious surface area created after April 1, 2009.

Minor and Major Development that result in at least 1 acre hydrologic disturbance and more than 0.5 acre of new impervious surface area;

Redevelopment of previously developed sites that result in at least 1 acre hydrologic disturbance;

Public Road Development that meet or exceed the thresholds in Article IV.A.1.g.

(a) RVR Implementation Criteria

- (i) **Runoff volume reduction quantity shall be implemented with appropriate methods, as approved by the Enforcement Officer, which may include the following: Best management practices; green infrastructure; detention facilities; and preservation or enhancement of natural streams, wetlands, and areas with deed restricted native vegetation.**
- (ii) **Best management practices, and the portion of the detention facility designed to meet this provision, shall be designed to dewater the RVR quantity in no greater than 96 hours. The applicant shall provide infiltration rate information for each RVR practice. The use of an underdrain system may be incorporated into the design in order to achieve the required draw down time. Underdrain systems shall be designed to dewater the RVR quantity in not less than 48 hours.**

(b) RVR Credits

The following credits may be used alone or in combination to meet the RVR quantity requirement:

- (i) **Detention Facility Credit – Up to 50% of the RVR quantity may be provided within the portion of the detention facilities that have been designed to meet this standard. The volume provided to meet this provision shall be below the elevation of the primary outlet for the RVR portion of the facility.**
 - (ii) **Native Vegetation Cover Credit – Up to 100% of the reduced 2-year, 24-hour runoff volume achieved with native vegetation in deed or plat restricted areas (e.g., compensatory storage and buffer areas) as described in Soil Runoff Characteristics (Article IV.B.1.b.(6)) and Streams and Channels (Article IV.B.1.g.(2)).**
 - (iii) **Isolated Wetland Hydrology Credit – A maximum of 100% of the existing 2-year, 24-hour runoff volume to a preserved Isolated Waters of Lake County if the Wetland Hydrology (Article IV.E.6.) and Water Quality Treatment (Article IV.B.1.h.) requirements are met.**
 - (iv) **Water Quality Treatment Credit – Up to 100% of the volume utilized to meet the Water Quality Treatment Volume (Article IV.B.1.h.).**
 - (v) **Off-Site RVR Credit – RVR practices may be provided on off-site, localized properties that are within the same basin. Deed or plat restrictions shall be obtained and recorded on off-site properties to assure perpetual operation and maintenance of RVR facilities.**
 - (vi) **Best Management Practice and Green Infrastructure Credits – Up to 100% of the volume within the practices designed to meet this standard.**
-

Page 18 - Article IV.B.1.e.

- e. ~~Detention~~**Stormwater** Facilities
-

Page 18 - Article IV.B.1.e.(1)(a)

- (a) An emergency overflow structure capable of passing the **critical duration** base flood inflow rate without damages to downstream structures or property.
-

Page 18 - Article IV.B.1.e.(2) - (new paragraph)

- (2) **All parcels within the established flood table land's elevation criteria of a detention facility design high water level shall be protected from flooding as follows:**
 - (a) **For detention facilities with less than 100 acres of tributary area, all structures in parcels containing or adjoining the facility shall have a lowest adjacent grade a minimum of 1.0 foot above the design high water elevation within the emergency overflow structure.**
 - (b) **For detention facilities with greater than or equal to 100 acres of tributary area, all structures in parcels containing or adjoining the facility shall meet the requirements of Article IV, Sections C.2.e., f.(1)(a), f.(2)(a), f.(3), and f.(4) of this Ordinance at an elevation 2.0 feet above the design high water elevation within the emergency overflow structure. New residential structures may have the lowest floor below this elevation if structurally dry flood-proofed to at least 2.0 feet above the design high water elevation within the emergency overflow structure.**
-

Page 23 - Article IV.B.1.g.(1)(c)(ii)

- (ii) **Observation structures, or similar maintenance and inspection access structures, shall be installed within the development ~~Where tiles are being connected~~ at suitable points of ingress or egress. ~~from the development site, observation structures or similar maintenance and inspection access structures shall be installed and parties responsible for those tasks shall be identified in the maintenance plan.~~**
-

Page 24 - Article IV.B.1.g.(1)(c)(iv) - (new paragraph)

- (iv) **Drain tiles within the disturbed portions of the ownership parcel shall be replaced or intercepted and connected into the proposed stormwater management system or a bypass. The system or bypass shall be of an equivalent size.**
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Page 24 - Article IV.B.1.g.(1)(c)(v) - (new paragraph)

- (v) **Drain tiles located within an ownership parcel may be removed or disabled provided that a maintainable outlet exists or is installed to prevent flood damages to off-site properties.**
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Page 24 - Article IV.B.1.g.(1)(c)(vi) - (new paragraph)

- (vi) **If the development stormwater management system depends on existing drain tiles for stormwater conveyance or water surface elevation control, a maintainable outlet is required.**
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Page 24 - Article IV.B.1.g.(1)(c)(vii) - (new paragraph)

- (vii) **The locations for existing drain tiles within the ownership parcel shall be defined using the Subsurface Drainage Inventory. Recorded deed or plat restrictions shall be provided for all existing and replaced drain tiles within the ownership parcel which are part of the stormwater management system. Drain tiles that service a single parcel of property may be excused from this requirement upon approval of the Enforcement Officer.**
-

Page 24 - Article IV.B.1.g.(1)(c)(viii) - (new paragraph)

- (viii) **The maintenance plan per Article IV.B.2.b.(9) shall include the type and frequency of maintenance for all existing and replaced drain tiles within the ownership parcel which are part of the stormwater management system.**
-

Page 27 - Article IV.B.1.h.

h. Water Quality Treatment

Water quality treatment standards can be achieved by combining the runoff volume reduction requirements in Article IV.B.1.d., the Stormwater Quality Runoff Standards in Article VI.B.3., and the following requirements:

- (1) ~~The water quality treatment requirements of this Ordinance shall apply to any development within the total land area of the ownership parcel that results in creation of more than 0.5 acres of new impervious area, where “new” is defined in Article IV.A.1.f. of this Ordinance. The following water quality requirements apply to developments that result in at least 0.5 acre of new impervious surface area, where “new” is defined in Article IV.A.1.f. of this Ordinance. The volume of runoff kept on-site to meet the runoff volume reduction requirements of this Ordinance (Article IV.B.1.d.(2)) may be deducted from the required water quality treatment volume.~~

- (2)(a)** Prior to discharging to Waters of the United States, Isolated Waters of Lake County or adjoining property, all development shall divert and detain at least the first 0.01 inches of runoff for every 1% of impervious surface for the development with a minimum volume equal to 0.2 inches of runoff (e.g., 20% or less impervious = 0.2”, 50% impervious = 0.5”, 90% impervious = 0.9”); or provide a similar level of treatment of runoff as approved by the Enforcement Officer and consistent with the Best Management Practices guidance contained in the Technical Reference Manual.

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As approved by the Lake County Board 07/10/12

- ~~(3)(b)~~ A buffer shall be established between design normal and high water levels around stormwater management facilities constructed for water quality treatment to enhance treatment effectiveness. The buffer area planting plan shall use the Native Plant Guide for Streams and Stormwater Facilities in Northeastern Illinois, NRCS, et al., (as amended) as a minimum standard.
- ~~(4)(c)~~ ~~In addition to the requirements above, h/h~~ Hydrocarbon (e.g., oil and grease) removal technology shall be required using a volume of 0.5 inches of runoff for the **new** impervious surface tributary area to each treatment device and meeting a minimum 70% removal rate for all development classified as follows:
- ~~(a)(i)~~ Vehicle fueling and servicing facilities;
- ~~(b)(ii)~~ Parking lots with more than 25 **new** stalls.
-

Page 31 - Article IV.B.1.j.(1)(c)

- (c) ~~Soil erosion and s~~ Sediment control ~~measures features~~ shall be constructed prior to the commencement of hydrologic disturbance of upland areas.
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Page 32 - Article IV.B.1.j.(1)(d)

- (d) Disturbed areas shall be stabilized with temporary or permanent measures within ~~fourteen (14)~~ **seven (7)** calendar days following the end of active hydrologic disturbance, or redisturbance, consistent with the following criteria or using an appropriate measure as approved by the Enforcement Officer.
- (i) Appropriate temporary or permanent stabilization measures shall include seeding, mulching, sodding, and/or non-vegetative measures.
- (ii) ~~Disturbance to A~~ Areas or embankments having slopes ~~greater than or~~ equal to **or steeper than** 3H:1V ~~shall be minimized; disturbed slopes~~ shall be stabilized with staked in place sod, **appropriately specified** mat or blanket, **or other appropriate measure(s)** in combination with seeding.
- (iii) Erosion control blanket shall be required on all interior detention basin side slopes between normal water level and high water level.
- (iv) The ~~fourteen (14)~~ **seven (7) calendar** day stabilization requirement may be precluded by snow cover or where ~~construction activity-land disturbing activities~~ will resume within ~~21~~ **fourteen (14) calendar** days from when the active hydrologic disturbance ceased, **provided that the disturbed then stabilization measures do not have to be initiated on that** portion of the **development** site ~~by the 14th day after construction activity temporarily ceased given that portion of the site~~ has appropriate soil erosion and sediment controls.
-

Page 34 - Article VI.B.1.j.(1)(h)

- (h) If dewatering services are used, adjoining properties and discharge locations shall be protected from erosion **and sedimentation**. Discharges shall be routed through an **approved anionic polymer dewatering system or a similar measure as approved by the Enforcement Officer**. ~~effective sediment control measure (e.g., sediment trap, sediment basin or other appropriate measure)~~. **The Enforcement Officer, or approved representative, must be present at the commencement of dewatering activities.**
-

Page 34 - Article IV.B.1.j.(1)(j)

- (j) A stabilized mat of ~~aggregate-crushed stone meeting IDOT gradation CA-1~~ underlain with filter ~~cloth (or other appropriate measure)~~ **fabric and in accordance with the Illinois Urban Manual, or other measure(s) as approved by the Enforcement Officer**, shall be located at any point where traffic will be entering or leaving a ~~construction-development~~ site to or from a public right-of-way, street, alley, or parking area. **Pollutants from**

equipment and vehicle washing, wheel wash water, and other wash waters shall be treated in a sediment basin or other appropriate measure(s) designed to minimize the discharge of pollutants, as approved by the Enforcement Officer. 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. The Enforcement Officer may require additional stabilized construction entrance methods.

Page 35 - Article IV.B.1.j.(1)(q) - (new paragraph)

- (q) *The applicant shall minimize the discharge of pollutants from the exposure of building materials, building products, landscape materials (e.g. fertilizers, pesticides, herbicides), detergents, sanitary waste, and other on-site materials to precipitation and stormwater runoff.*
-

Page 35 - Article IV.B.1.j.(1)(r) - (new paragraph)

- (r) *If the installed soil erosion and sediment controls do not minimize sediment leaving the development site, additional measures such as anionic polymers or filtration systems may be required by the Enforcement Officer.*
-

Page 36 - Article IV.B.1.j.(1)(s) - (new paragraph)

- (s) *If stripping, clearing, grading, or landscaping are to be done in phases, the permittee shall plan for appropriate erosion control measures to be in place after each stage listed in Article VI.A.*
-

Page 36 - Article IV.B.1.j.(2)

- (2) Designated Erosion Control Program Standards
- (a) ~~Formal adoption of the Designated Erosion Control Inspector Exam shall include the determination of a starting date for the Designated Erosion Control Inspection Program requirements in this Ordinance.~~
- (b)(a) A Designated Erosion Control Inspector, hired or employed by the applicant, ~~is~~ **shall be** required for all development ~~that:~~ **in (i) and (ii), and may be required by the Enforcement Officer for (iii):**
- (i) ~~e~~ **Exceeds 10 acres of hydrologic disturbance; or**
- (ii) ~~e~~ **Exceeds 1 acre of hydrologic disturbance and has a Regulatory Floodplain, Isolated Waters of Lake County, or Waters of the United States on-site or on a *downstream* adjoining property; or**
- (iii) **Is less than or equal to 1 acre of hydrologic disturbance and has a Regulatory Floodplain, Isolated Waters of Lake County, or Waters of the United States on-site or on a *downstream* adjoining property.**
- (e)(b) Article VI of this Ordinance contains inspection requirements for development meeting the above threshold for program inclusion and Designated Erosion Control Inspector requirements.
- (d)(c) The applicant shall submit the name of the Designated Erosion Control Inspector to the Enforcement Officer at or before the pre-construction meeting or commencement of hydrologic disturbance for the development.
-

Page 37 - Article IV.B.2.a.(11) - (new paragraph)

- (11) **Performance Guarantees: As specified in Appendix E, Section E.**
-

Page 37 - Article IV.B.2.a.(12) - (new paragraph)

- (12) **For permits required only in accordance with Article IV.A.1.i., documentation shall be submitted towards the determination of a substantial improvement. Other submittal requirements may be waived.**
-

Page 37 - Article IV.B.2.b.(2)

- (2) A topographic map of the existing conditions of the development site showing the location of all roads, all drainageways, the boundaries of predominate soil types, the boundaries of predominate vegetation, and the location of any drainage easements, detention or retention basins, including their inflow and outflow structures, if any. The map shall also include the location, size, and flowline elevations of all existing storm or combined sewers and other utility lines within the site. The map shall be prepared using a ~~21~~-foot or less contour interval and shall be prepared at an appropriate scale for the type of project and shall include specifications and dimensions of any proposed channel modifications, location and orientation of cross-sections, if any, north arrow, and a graphic or numerical scale. All elevations shall be referenced to National Geodetic Vertical Datum NGVD (1929 adjusted).
-

Page 38 - Article IV.B.2.b.(6)

- (6) A section in the hydrologic and hydraulic analysis report describing how the ~~Rrunoff Vvolume Rreduction Hierarchy clauses requirements~~ (as described in Article IV, Section B.1.d.) **are incorporated into the development site plan. The section shall include the rationale for not selecting approaches with higher preference. The section shall also provide supporting calculations for meeting the runoff volume reduction requirements were evaluated in designing and determining the stormwater management needs of the site.**
-

Page 40 - Article IV.B.2.b.(8)(k)

- ~~(k) Bonds: The applicant may be required to file with the Enforcement Officer a faithful performance bond or bonds, letter of credit, or other improvement security satisfactory to the Enforcement Officer in an amount deemed sufficient by the Enforcement Officer to cover all costs of improvement, landscaping, maintenance of improvements and landscaping, and soil erosion and sediment control measures for such period as specified by the Enforcement Officer, and engineering and inspection costs to cover the cost of failure or repair of improvements installed on the site.~~
-

Page 40 - Article IV.B.2.b.(9)

- (9) A maintenance plan for the ongoing maintenance of all stormwater management system components, including wetlands, is required prior to plan approval. **The plan shall be referenced in the recorded deed or plat restriction document associated with the stormwater management system.** The plan shall include:
-

Page 40 - Article IV.B.2.b.(9)(a)

- (a) Maintenance tasks **and the type and frequency of maintenance of all components of the stormwater management system, including existing and replaced drain tiles within the ownership parcel which are part of the stormwater management system.**
-

Page 42 - Article IV.B.2.b.(17)(b)

- (b) Information collected during the **Subsurface Drainage Inventory drainage investigation** shall be used **as part of the to design and construction of a stormwater management system that meets the requirements of this Ordinance, including connecting tile lines on adjoining properties. Tiles discovered during construction**
-

~~that were not identified during the investigation shall be incorporated into the development stormwater system design and recorded on the development as-built documents.~~

Page 42 - Article IV.B.2.b.(19) - (new paragraph)

- (19) A copy of the building plans and cost estimate in accordance with FEMA NFIP standards shall be submitted for modifications to existing structures in the Regulatory Floodplain.**
-

Page 43 - Article IV.B.2.e.

- e. The applicant shall submit the data required to SMC, ~~IDNR/OWR~~, and FEMA for proposed revisions to the base flood elevation of a Regulatory Floodplain study or relocation of a Regulatory Floodway boundary. **The applicant shall also submit this data to IDNR/OWR when the tributary area is greater than one square mile.**
-

Page 43 - Article IV.B.3. - (new paragraph)

3. As-Built Drawings

As-built drawings, signed and sealed by a Professional Engineer, shall be required for all major developments, public road developments, and other types of development as determined by the Enforcement Officer (such as those developments that affect stormwater runoff rates or volume, impact wetlands or wetland buffers, or are adjacent to floodplains). As-built drawings and supporting information shall clearly show all as-built conditions, including, but not limited to:

- a. **Topographic spot elevations and contours for overland flow paths, detention ponds, storage facilities, and building pads.**
 - b. **Detention pond restrictor size, invert elevation, emergency overflow size, and elevation.**
 - c. **Verification of required native vegetation planted (seed tags, invoices).**
 - d. **Storm sewer sizes, inverts.**
 - e. **Drain tile information provided from the Subsurface Drainage Inventory, or identified during construction as follows: location, connection, size, material, and inverts for those drain tiles that are part of the stormwater management system.**
 - f. **Other information required under this Ordinance.**
 - g. **Applicable calculations or other information verifying conformance with the permitted plan set.**
 - h. **Low floor and low opening elevations of structures. Low opening sizes where vents are required.**
 - i. **Benchmark information.**
-

Page 45 - Article IV.C.1.d.

- d. Nothing contained herein shall prohibit the application of these regulations to land that can be demonstrated by engineering survey to lie within any Regulatory Floodplain. Conversely, any lands (except for those located in a Regulatory Floodway) that can be demonstrated by a topographic survey certified by a Registered Professional Engineer or Registered Land Surveyor to lie beyond the Regulatory Floodplain, and show to the satisfaction of the Enforcement Officer, to have been higher than the BFE as of the ~~effective~~ date of the first floodplain mapping denoting the site to be in a Special Flood Hazard Area **and as of the date of the current effective map**, shall not be ~~considered to be located in the Special Flood Hazard Area subject to the regulations of this section.~~

In the case of a site located in the Regulatory Floodway that is higher than the BFE, it is subject to the regulations of this section until such time as a letter of map revision is received for the IDNR/OWR and FEMA.

Page 46 - Article IV.C.2.d.

- d. Compensatory storage is required for all storage lost or displaced in a Regulatory Floodplain due to development.
- (1) Hydraulically equivalent compensatory storage requirements for ~~fill or structures development activity~~ in a riverine Regulatory Floodplain shall be at least equal to 1.2 times the volume of Regulatory Floodplain storage lost or displaced. Such compensation areas shall be designed to drain freely and openly to the channel and located opposite or adjacent to fill areas. A deed or plat restriction is required to prohibit any modification to the compensation area. ~~The Regulatory Floodplain storage volume lost below the existing 10-year frequency flood elevation must be replaced below the proposed 10-year frequency flood elevation. The Regulatory Floodplain storage volume lost above the 10-year existing frequency flood elevation must be replaced above the proposed 10-year frequency elevation.~~
 - (2) Hydraulically equivalent compensatory storage requirements for ~~fill or structures development activity~~ in a non-riverine Regulatory Floodplain shall be at least equal to 1.0 times the volume of Regulatory Floodplain storage lost or displaced. **Compensation areas shall be designed to access the required volume. A deed or plat restriction is required to prohibit any modification to the compensation area. Non-riverine floodplain storage may be** ~~Upon approval of the Enforcement Officer, hydraulic equivalency for non-riverine compensatory storage may be altered, provided that the storage is~~ replaced at or below the existing elevation **at which storage is lost or displaced** but not below the ~~proposed normal water level.~~
 - (3) **Hydraulically equivalent compensatory storage requirements for development activity in a non-riverine Regulatory Floodplain, that is located partially on-site, with more than 10% of the BFE surface area located on-site, shall be at least equal to 1.2 times the volume of Regulatory Floodplain storage lost or displaced. Such compensation areas shall be designed to access the required volume. A deed or plat restriction is required to prohibit any modification to the compensation area. Upon approval of the Enforcement Officer, hydraulic equivalency for non-riverine compensatory storage may be altered, provided that the storage is replaced at or below the existing elevation at which storage is lost or displaced but not below the proposed normal water level.**
 - ~~(4)~~(3) Upon approval of the Enforcement Officer, shorelines or streambanks that have experienced erosion may be restored to their condition as of the **current** effective date of the ~~first~~ FIRM in that community without the need to provide compensatory storage or pay a fee-in-lieu of for the fill used to restore the eroded area according to the following criteria:
 - (a) The restoration fill shall meet existing grades and within riverine areas the current effective Regulatory Floodplain **BFE shall not be increased** and ~~the~~ Regulatory Floodway conveyance shall be maintained.
 - (b) The amount of eroded property being restored shall be documented and submitted by the applicant as part of the permit process. Proper documentation shall be either field survey information or photo documentation of the erosion that has occurred for the property being restored.
 - (c) For rivers, lakes, and streams where no floodway has been designated, no documentation of past shoreline erosion is required if the applicant does not exceed 1 cubic yard of fill per lineal foot for a maximum of 200 feet. In this case, the placing of the fill shall not significantly alter the alignment of the shoreline with adjoining properties as determined by the Enforcement Officer. Non-documentable fills are a one-time allowance on a per property basis and all fills exceeding 200 cubic yards shall be regulated as specified in Articles IV.B.1.f. and IV.C.2.d. of this Ordinance.
 - ~~(5)~~(4) Top dressing is the placement of not more than four (4) inches of topsoil within the Regulatory Floodplain for the purposes of stabilizing an existing erosion control problem or establishing vegetative cover. Top

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dressing shall be allowed by permit on a per-parcel, one-time only allowance, and not **impact-damage or alter** adjoining property drainage patterns. Upon approval of the Enforcement Officer, floodplain compensatory storage shall not be required. Top dressing fill shall comply with the Soil Erosion and Sediment Control standards and Wetlands ~~P~~provisions of this Ordinance (Article IV.B.1.j. and IV.E.). This provision shall not be applicable to the design process for new development.

- (6)(5)** Top dressing is the placement of not more than four (4) inches of topsoil within the Regulatory Floodplain. For the purposes of restoring pre-subsidence grade to an area that primarily experiences subsidence due to a documented flood event, top dressing shall be allowed by permit on a per-parcel basis and not **impact-damage or alter** adjoining property drainage patterns. Upon approval of the Enforcement Officer, floodplain compensatory storage shall not be required. Top dressing fill shall comply with the Soil Erosion and Sediment Control standards and Wetlands ~~P~~provisions of this Ordinance (Article IV.B.1.j. and IV.E.). This provision shall not be applicable to the design process for new development. **A one-time allowance of this provision shall be in accordance with (a) through (c) of the following criteria and repeat allowances shall be in accordance with (a) through (d) of the following criteria:**

(a)(b) The restoration fill shall meet pre-subsidence elevations, and within riverine areas, the pre-subsidence effective Regulatory Floodplain and Regulatory Floodway conveyance shall be maintained.

(b)(c) The ~~damaged~~ property being considered for top dressing shall be documented and submitted by the applicant as part of the permit process. Proper documentation shall be either **field survey topographic** information or **photographic** documentation of the flooding and subsidence that has occurred on the property.

(c)(d) Upon completion of top dressing, the applicant shall provide topographic or photographic documentation of completed work.

(d)(a) Repeat top dressing applications are limited to documented flood events with topographic or photographic evidence of subsidence.

- (7)** ***Impervious surface rehabilitative maintenance is the placement of not more than four (4) inches of pavement or any other impervious material within the Regulatory Floodplain. For the purposes of restoring pre-subsidence grades to an area that has experienced subsidence, rehabilitative maintenance of such areas shall be allowed by permit on a per-project basis and not damage or alter adjoining property drainage patterns. Upon approval of the Enforcement Officer, floodplain compensatory storage shall not be required. Rehabilitative maintenance fill shall comply with the Soil Erosion and Sediment Control standards and Wetlands provisions of this Ordinance (Article IV.B.1.j. and IV.E.). This provision shall not be applicable to the design process for new development. A one-time allowance of this provision shall be in accordance with (a) through (c) of the following criteria and repeat allowances shall be in accordance with (a) through (d) of the following criteria:***

(a) ***The restoration fill shall meet pre-subsidence elevations, and within riverine areas, the pre-subsidence effective Regulatory Floodplain and Regulatory Floodway conveyance shall be maintained.***

(b) ***The project being considered for rehabilitative maintenance shall be documented and submitted by the applicant as part of the permit process. Proper documentation shall be either topographic information or photographic documentation of the subsidence that has occurred on the project.***

(c) ***Upon completion of rehabilitative maintenance, the applicant shall provide topographic or photographic documentation of completed work.***

(d) ***Repeat rehabilitative maintenance applications are limited to documented topographic or photographic evidence of subsidence.***

Page 49 - Article IV.C.2.f.

f. Building Protection Requirements

(1) Building protection requirements for residential structures shall follow applicable FEMA regulations and include the following:

- (4)(a)** The lowest floor, including basements, of all new residential structures, *including additions*, shall be elevated up to at least the Flood Protection Elevation (FPE). ~~The floor of an~~ attached garage for a new structure must be elevated up to at least ½ of one **(0.5)** foot above the base flood elevation (BFE).

- (a)(i)** If placed on compacted fill, the top of the fill for ~~a~~ residential structure shall be above the FPE. The top of fill for an attached garage shall be ½ of one **(0.5)** foot above the BFE. The fill pad shall be placed at the appropriate elevation and designed to extend a minimum of ~~ten (10)-~~ feet out from the building's designed footprint unless the building is certified by a Registered Structural Engineer to be protected from damages due to hydrostatic pressures. Additionally, the fill pad shall meet 95% of Standard Proctor Density in order to be demonstrated not to settle below the FPE for the residential structure and not below ½ of one **(0.5)** foot above the BFE for an attached garage, and to be adequately protected against erosion, scour, and differential settlement. Foundation excavations shall not extend more than ~~five (5)-~~ feet beyond the foundation footprint. Backfill for the over excavated area does not need to meet the compaction requirements.

- (b)(ii)** If elevated by means of walls, pilings, or other foundation, the building's supporting structure must be permanently open to flood waters and not subject to damage by hydrostatic pressures of the base flood. The ~~bottom of the~~ permanent openings shall be no more than one **(1)** foot above the lowest adjacent grade. ~~The total net area shall be provided and~~ below the BFE, and consist of a minimum of two **(2)** openings *for each enclosed area with each opening of an enclosed area on a different exterior wall*. The openings must have a total net area of not less than one square inch for every one square foot of enclosed area subject to flooding below the BFE. ~~Any louvers, screens, or other opening covers must not block or impede the automatic flow of flood waters into and out of the enclosed area.~~ The foundation and supporting members shall be anchored and aligned in relation to flood flows and adjoining structures so as to minimize exposure to known hydrodynamic forces such as current, waves, ice, and floating debris. All areas below the FPE shall be constructed *with* materials resistant to flood damage. The lowest floor (including basement) for the residential structure and all electrical, heating, ventilation, plumbing, ~~and~~ air conditioning equipment, and utility meters shall be located at or above the FPE. ~~An attached garage must be elevated to at least ½ of one foot above the BFE. Waterproofed service facilities, including, but not limited to, W~~water and sewer pipes, electrical and telephone lines, ~~and~~ submersible pumps, ~~and other waterproofed service facilities~~ may be located below ~~the~~ FPE. No area less than one **(1)** foot above the BFE shall be used for storage of items or materials.

- (2)(b)** The lowest floor, including basements, of an existing residential structure with a substantial improvement shall be elevated ~~in order to be not less than to~~ at least one **(1)** foot above the BFE. ~~The lowest floor including the basements of all substantially improved non-residential buildings shall be elevated or structurally dry flood-proofed, per Article IV.C.2.f.(3), to a minimum of one foot above the BFE. The structural design requirements in Article IV, Section C.2.f.1. a and b shall also apply to this section.~~

- (i)** *If placed on compacted fill, the top of the fill for a substantially improved residential structure shall be at least one (1) foot above the BFE. The fill pad shall be placed at the appropriate elevation and designed to extend a minimum of ten (10) feet out from the building's designed footprint unless the building is certified by a Registered Structural Engineer to be protected from damages due to hydrostatic pressures. Additionally, the fill pad shall meet 95% of Standard Proctor Density in order to be demonstrated not to settle below one (1) foot above the BFE for the substantially improved residential structure, and to be adequately*

protected against erosion, scour, and differential settlement. Foundation excavations shall not extend more than five (5) feet beyond the foundation footprint. Backfill for the over excavated area does not need to meet the compaction requirements.

- (ii) ***If elevated by means of walls, pilings, or other foundation, the building's supporting structure must be permanently open to flood waters and not subject to damage by hydrostatic pressures of the base flood. The bottom of the permanent openings shall be no more than one (1) foot above the lowest adjacent grade. The total net area shall be provided below the BFE, and consist of a minimum of two (2) openings for each enclosed area with each opening of an enclosed area on a different exterior wall. The openings must have a total net area of not less than one square inch for every one square foot of enclosed area subject to flooding below the BFE. Any louvers, screens, or other opening covers must not block or impede the automatic flow of flood waters into and out of the enclosed area. The foundation and supporting members shall be anchored and aligned in relation to flood flows and adjoining structures so as to minimize exposure to known hydrodynamic forces such as current, waves, ice, and floating debris. All areas lower than one (1) foot above the BFE shall be constructed with materials resistant to flood damage. The lowest floor (including basement) for the substantially improved residential structure and all electrical, heating, ventilation, plumbing, air conditioning equipment, and utility meters shall be elevated to at least one (1) foot above the BFE. Waterproofed service facilities, including, but not limited to, water and sewer pipes, electrical and telephone lines, and submersible pumps, may be located below the BFE-plus-one-foot elevation.***

- (2) ***Building protection requirements for non-residential structures shall follow applicable FEMA regulations and include the following:***

~~(3)~~(a) The lowest floor, including ~~the~~ basements, of all new non-residential buildings, ***including additions***, shall be elevated at least to the FPE ~~in accordance with Article IV, Section C.2.f.1. a and b~~ or be structurally dry flood-proofed to at least the FPE. A non-residential building may be structurally dry flood-proofed (in lieu of elevation) provided that a Registered Professional Engineer, ~~or~~ Registered Structural Engineer, ***or Licensed Architect*** shall certify that the building has been structurally dry flood-proofed ~~below~~ ***up to*** the FPE and the structure and attendant utility facilities are watertight and capable of resisting the effects of the base flood. The building design shall take into account flood velocities, duration, rate of rise, hydrostatic and hydrodynamic forces, the effects of buoyancy, and impacts from debris or ice. Flood-proofing measures shall be operable without human intervention and without an outside source of electricity. (Levees, berms, floodwalls, and similar works are not considered flood-proofing for the purpose of this subsection.)

- (i) ***If a non-residential structure is not dry flood-proofed and is placed on compacted fill, the top of the fill shall be above the FPE. The fill pad shall be placed at the appropriate elevation and designed to extend a minimum of ten (10) feet out from the building's designed footprint unless the building is certified by a Registered Structural Engineer to be protected from damages due to hydrostatic pressures. Additionally, the fill pad shall meet 95% of Standard Proctor Density in order to be demonstrated not to settle below the FPE and to be adequately protected against erosion, scour, and differential settlement. Foundation excavations shall not extend more than five (5) feet beyond the foundation footprint. Backfill for the over excavated area does not need to meet the compaction requirements.***

- (ii) ***If a non-residential structure is not dry flood-proofed and is elevated by means of walls, pilings, or other foundation, the building's supporting structure must be permanently open to flood waters and not subject to damage by hydrostatic pressures of the base flood. The bottom of the permanent openings shall be no more than one (1) foot above the lowest adjacent grade. The total net area shall be provided below the BFE, and consist of a minimum of two (2) openings for each enclosed area with each opening of an enclosed area on a different exterior wall. The openings must have a total net area of not less than one square inch for every***

one square foot of enclosed area subject to flooding below the BFE. Any louvers, screens, or other opening covers must not block or impede the automatic flow of flood waters into and out of the enclosed area. The foundation and supporting members shall be anchored and aligned in relation to flood flows and adjoining structures so as to minimize exposure to known hydrodynamic forces such as current, waves, ice, and floating debris. All areas below the FPE shall be constructed with materials resistant to flood damage. The lowest floor (including basement) for the non-residential structure and all electrical, heating, ventilation, plumbing, air conditioning equipment, and utility meters shall be located at or above the FPE. Waterproofed service facilities, including, but not limited to, water and sewer pipes, electrical and telephone lines, and submersible pumps, may be located below the FPE. No area less than one (1) foot above the BFE shall be used for storage of items or materials.

- (b) The lowest floor, including basements, of all substantially improved non-residential buildings and attendant utility facilities shall be elevated or structurally dry flood-proofed to a minimum of one (1) foot above the BFE. A substantially improved, non-residential building may be structurally dry flood-proofed (in lieu of elevation) provided that a Registered Professional Engineer, Registered Structural Engineer, or Licensed Architect shall certify that the building has been structurally dry flood-proofed up to a minimum of one (1) foot above the BFE and the structure and attendant utility facilities are watertight and capable of resisting the effects of the base flood. The building design shall take into account flood velocities, duration, rate of rise, hydrostatic and hydrodynamic forces, the effects of buoyancy, and impacts from debris or ice. Flood-proofing measures shall be operable without human intervention and without an outside source of electricity. (Levees, berms, floodwalls, and similar works are not considered flood-proofing for the purpose of this subsection.)**
- (i) If a substantially improved non-residential structure is not dry flood-proofed and is placed on compacted fill, the top of the fill for a non-residential structure substantial improvement shall be at least one (1) foot above the BFE. The fill pad shall be placed at the appropriate elevation and designed to extend a minimum of ten (10) feet out from the building's designed footprint unless the building is certified by a Registered Structural Engineer to be protected from damages due to hydrostatic pressures. Additionally, the fill pad shall meet 95% of Standard Proctor Density in order to be demonstrated not to settle below one (1) foot above the BFE for the non-residential structure, and to be adequately protected against erosion, scour, and differential settlement. Foundation excavations shall not extend more than five (5) feet beyond the foundation footprint. Backfill for the over excavated area does not need to meet the compaction requirements.**
- (ii) If a substantially improved non-residential structure is not dry flood-proofed and is elevated by means of walls, pilings, or other foundation, the building's supporting structure must be permanently open to flood waters and not subject to damage by hydrostatic pressures of the base flood. The bottom of the permanent openings shall be no more than one (1) foot above the lowest adjacent grade. The total net area shall be provided below the BFE, and consist of a minimum of two (2) openings for each enclosed area with each opening of an enclosed area on a different exterior wall. The openings must have a total net area of not less than one square inch for every one square foot of enclosed area subject to flooding below the BFE. Any louvers, screens, or other opening covers must not block or impede the automatic flow of flood waters into and out of the enclosed area. The foundation and supporting members shall be anchored and aligned in relation to flood flows and adjoining structures so as to minimize exposure to known hydrodynamic forces such as current, waves, ice, and floating debris. All areas lower than one (1) foot above the BFE shall be constructed with materials resistant to flood damage. The lowest floor (including basement) for the substantially improved non-residential structure and all electrical, heating, ventilation, plumbing, air conditioning equipment, and utility meters shall be elevated to at least one (1) foot above the BFE. Waterproofed service facilities, including, but not**

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limited to, water and sewer pipes, electrical and telephone lines, and submersible pumps, may be located below the BFE-plus-one-foot elevation.

- (4)(3)** Manufactured homes and recreational vehicles to be installed on a site for more than 180 days, shall be elevated to or above the FPE and shall be 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. **The requirements in Article IV, Section C.2.f.(1)(a) shall apply to this section.**
- (5)(4)** Tool sheds, detached garages, and attached garages which are not substantial improvements on an existing single-family platted lot, may be constructed with the lowest floor below the FPE in accordance with the following:
- (a) The building shall not be used for human habitation.
 - (b) All areas below the BFE shall be constructed with waterproof material. Structures located in a Regulatory Floodway shall be constructed and placed on a **development building** site so as not to block the flow of flood waters and shall also meet the Appropriate Use criteria of Article IV, Section C.3. In addition, all other requirements of this Ordinance must be met.
 - (c) The structure shall be anchored to prevent flotation.
 - (d) Service facilities such as electrical and heating equipment shall be elevated or flood-proofed to the FPE.
 - (f)(e)** The building shall be used only for the storage of vehicles or tools and may not contain other rooms, workshops, greenhouses, or similar uses.
 - (f)** **If a residence is elevated appropriately, then the area below the residence can be used as a garage, as long as the garage conforms to (a) through (e) above and includes permanent flow through openings as described in Article IV, Section C.2.f.(1)(a)(ii).**
 - (e)(g)** The building shall be valued at less than **\$17,250 (2011 costs)** ~~\$12,500 (1998 costs)~~ and be no greater than 576 square feet in floor size.
- (6)(5)** A non-conforming structure damaged by **any origin flood, fire, wind or other natural or man-made disaster** may be restored unless the **damage meets or exceeds fifty percent (50%) of its market value before it was damaged, activity meets the definition of substantial improvement**, in which case it shall conform to the ~~above~~ provisions of Article IV, Section C.2.f.**(2)(1)(b) for residential structures or Article IV, Section C.2.f.(2)(b) for non-residential structures.**

Page 56 - Article IV.C.2.k.

- k. For public flood control projects, the permitting requirements of Article IV, Section C. will be considered met if the applicant can demonstrate to IDNR/OWR, **or SMC in areas outside of IDNR/OWR jurisdiction**, through hydraulic and hydrologic calculation that the proposed project will not singularly or cumulatively result in increased flood heights outside the project right-of-way or easements for all flood events up to and including the base flood event.

Page 57 - Article IV.C.3.

3. Additional Performance Standards for the Regulatory Floodway (IDNR/OWR Regulations)

The only development in a Regulatory Floodway which will be allowed are Appropriate Uses which will not cause an increase in flood heights for all flood events up to and including the base flood. Only those Appropriate Uses listed below and in 17 Ill. Adm. Code ~~Part~~ 3708 will be allowed in the Regulatory Floodway. Appropriate ~~Uses~~ **Uses** do not include the construction or placement of any new structures, fill, building additions, buildings on stilts, **piles, piers, or columns**, fencing (including landscaping or planting designed to act as a fence), and storage of

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materials except as specifically defined below as an Appropriate Use. If the development is proposed for the Regulatory Floodway portion of the Regulatory Floodplain, the following standards apply in addition to the previously stated standards for the Regulatory Floodplain:

Page 58 - Article IV.C.3.a.(11)

- (11) The replacement, reconstruction, or repair of a damaged building, provided that the outside dimensions of the building are not increased and, ~~provided that the activity building is not a substantial improvement. damaged to 50% or more of the building's market value before it was damaged. When damage is 50% or more, the~~ **An activity that is a substantial improvement shall conform to Article IV, Section C.2.f.(2)(1)(b) for residential structures or Article IV, Section C.2.f.(2)(b) for non-residential structures.**

Page 58 - Article IV.C.3.a.(13) - (new paragraph)

- (13) **Substantial improvements, provided that the outside dimensions of the building are not increased; the building shall conform to Article IV, Section C.2.f.(1)(b) for residential structures or Article IV, Section C.2.f.(2)(b) for non-residential structures.**

Page 62 - Article IV.C.4.b.

- b. If the proposed development will increase upstream flood stages greater than 0.1- ~~feet~~, the applicant must contact IDNR/OWR, Dam Safety Section for a Dam Safety Permit or waiver.

Page 62 - Article IV.C.4.c.

- c. Lost Regulatory Floodway **and Regulatory Floodplain** storage must be compensated for per the Regulatory Floodplain performance standards of this Ordinance except that artificially created storage that is lost or displaced due to a reduction in upstream head loss caused by a bridge, culvert, storm sewer, or constructed embankment shall not be required to be replaced, provided no flood damage will be incurred downstream.

Page 62 - Article IV.C.4.e.

- e. For modifications or replacement of existing structures, the existing structure must first be evaluated in accordance with ~~Department of Transportation Rules 92-17 Ill. Adm. Code Part 3708~~ to determine if the existing structure is a source of flood damage. If the structure is a source of flood damage, the applicant's engineer ~~shall submit justification to allow the damage to continue and evaluate the feasibility of relieving the structure's impact must evaluate the feasibility of redesigning the structure to reduce the existing backwater, taking into consideration the effects of flood damage to upstream and downstream properties.~~ Modifications or replacement structures shall not increase flood stages compared to the existing **or regulatory** condition, **whichever is greater**, for all flood events up to and including the base flood event. The evaluation must be submitted to IDNR/OWR, or its designee, for review and concurrence before a permit is issued.

Page 64 - Article IV.D.2.

2. Flood-prone Area Conveyance, Velocities, Flood Profiles, and Flood Storage

For all development within a flood-prone area where the tributary drainage area is 100 acres or more, the applicant shall meet the requirements of Article IV, Sections **G.1. and G.2. C.2.e & f** of this Ordinance according to the following criteria:

- a. Submit to SMC an engineering study performed by a Registered Professional Engineer which will determine a floodway which meets the definition of a Regulatory Floodway and show that the proposed development will meet the requirements of Article IV, Section C. of this Ordinance; or

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- b. Submit to SMC an engineering study performed by a Registered Professional Engineer which will determine a base flood elevation and demonstrate that the proposed development will maintain the existing conditions conveyance, will not increase flood velocities, will not increase flood profiles, and will ~~compensate for all lost flood~~ **provide hydraulically equivalent compensatory** storage at a ratio of 1.2:1. **Such compensation areas shall be designed to drain freely and openly to the channel and located opposite or adjacent to fill areas in a manner that is hydraulically equivalent;** or
- c. Submit to SMC an engineering study performed by a Registered Professional Engineer which will demonstrate that for a range of flood elevations (which would conservatively exceed the expected 100-year flood elevation) that the proposed development will maintain the existing conditions conveyance, will not increase flood velocities, will not increase flood profiles, and will ~~compensate for all lost flood~~ **provide hydraulically equivalent compensatory** storage at a ratio of 1.2:1. **Such compensation areas shall be designed to drain freely and openly to the channel and located opposite or adjacent to fill areas in a manner that is hydraulically equivalent.**

Page 65 - Article IV.E.

E. WETLANDS PROVISIONS

The standards of this section apply when Waters of the United States or Isolated Waters of Lake County are located wholly or partially within the development site:

Page 65 - Article IV.E.1.

~~1. Applicability~~

~~A Watershed Development Permit is required for any regulated development as defined in Article IV Section A.1, that:~~

- ~~a. Creates a wetland impact within an area defined as Waters of the United States; or,~~
- ~~b. Creates a wetland impact within an area defined as Isolated Waters of Lake County; or~~
- ~~c. Occurs in buffer areas adjoining to Waters of the United States or Isolated Waters of Lake County.~~

21. Wetland Submittal Requirements

In addition to all other WDO provisions, wetland submittal requirements depend upon whether the development ~~site contains is within~~ Waters of the United States or Isolated Waters of Lake County as provided below.

Page 65 - Article IV.E.1.a.

- a. The applicant shall ~~obtain~~ **provide** a **valid**, written jurisdictional determination **from the U.S. Army Corps of Engineers or a Corps-approved agency**, as to which wetlands on the development site are Isolated Waters of Lake County or Waters of the United States. A copy of the jurisdictional determination shall be included with the wetland submittal.
-

Page 65 - Article IV.E.1.b. - (new paragraph)

- b. **For development containing Waters of the United States or Isolated Waters of Lake County, but with no proposed impacts, the following information is required for a Letter of No Impact (LONI):**
 - (1) **A cover letter describing the proposed activity;**
 - (2) **Development plan(s) as specified in Article IV.E.1.d.(4);**

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- (3) **A wetland hydrology analysis meeting the requirements of Article IV.E.6. when there is a modification of tributary drainage area or surface runoff volume to Isolated Waters of Lake County;**
 - (4) **A letter from the U.S. Army Corps stating that the proposed development will not impact Waters of the United States, if required by SMC or the Isolated Wetland Certified Community.**
-

Page 67 - Article IV.E.1.d.(4) - (new paragraph)

- (4) **Development site plan(s) meeting the requirements of Article IV.B.2. of this Ordinance showing the boundaries of all existing wetlands or water bodies on the ownership parcel, including the development site and the areas of proposed wetland impacts.**
-

Page 67 - Article IV.E.2.d.(12)(b)

- (b) Upon concurrence of the Enforcement Officer and the **SMC or the Isolated Waters of Lake County-Certified Community's** Certified Wetland Specialist that a Watershed Development Permit application meets **all other the** wetland submittal requirements of this Ordinance, the **SMC or the Isolated Waters of Lake County-Certified Community's Enforcement Officer-Certified Wetland Specialist** shall issue a Technical Notification to USACE, IDNR, IEPA, USFWS, and the SMC requesting comments with respect to the proposed wetland impacts **and request comments** within 15 working days. The **SMC or the Isolated Waters of Lake County-Certified Community's Enforcement Officer-Certified Wetland Specialist** shall receive the comments and copies of the comments shall be forwarded to the applicant for response. Full consideration of the comments and applicant's response shall be evaluated by the **SMC or the Isolated Waters of Lake County-Certified Community's Enforcement Officer-Certified Wetland Specialist for compliance with Article I, Section B.10.** prior to **approval of wetland provisions and** permit issuance.
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Page 68- Article IV.E.2.a.

- a. The applicant shall identify the boundaries, extent, function, and quality of all wetland areas on the development site, and prepare a Wetland Determination Report. The presence and extent of wetland areas shall be determined by, or under **the** supervision of, a Certified Wetland Specialist using an on-site wetland procedure within three (3) years of the initial permit application date in accordance with the methodology contained in the 1987 Corps of Engineers wetland delineation manual (**as amended, including applicable supplements**) or as otherwise noted below.
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Page 69- Article IV.E.2.b.(5)

- (5) A written description of the wetland(s) that includes a Floristic Quality Assessment as determined by methodology contained in Swink, F. and G. Wilhelm's Plants of the Chicago Region (1994., 4th Edition, **The Morton Arboretum, Lisle, Illinois Indianapolis: Indiana Academy of Science**). Floristic quality assessments shall generally be conducted between May 15 and October 1, which approximates the growing season. Non-growing season assessments may require additional sampling during the growing season to satisfy this requirement;
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Page 69- Article IV.E.2.b.(6)(a)

- (a) Site-specific delineation according to the 1987 Federal wetland delineation manual (**as amended, including applicable supplements**). If such delineation is not available, use **Paragraph (Article IV, Section E.2.b) below..(6)(b).**
-

Page 70 - Article IV.E.3.a.

- a. Mitigation is required within Lake County for:

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- (1) Wetland impacts greater than or equal to one-tenth (0.10) acres of Isolated Waters of Lake County **including those** that are high-quality aquatic resources (HQAR).
- (2) **For single-lot, single-family residences, provided the activity is a single and complete project:** Wetland impacts greater than ~~or equal to~~ one-quarter (0.25) acres of Isolated Waters of Lake County **or one-tenth (0.10) acre of Isolated Waters of Lake County** that are ~~not~~ high-quality aquatic resources.

Page 72 - Article IV.E.5.

65. Detention in Isolated Waters of Lake County

- a. Detention shall only be allowed in the following Isolated Waters of Lake County and ~~are~~ **may not be** considered a wetland impact, **subject to provisions of Articles IV.E.5.b. and IV.E.5.c.:**
 - (1) Farmed wetlands.
 - (2) Non-farmed wetlands **that are not high-quality aquatic resources** when the existing vegetated wetland acreage (not including open water area) **are is either:**
 - (a) ~~C~~e covered by a minimum of 85% of one or more of the following species:
 - ~~(a)(i)~~ ~~r~~Reed canary grass (*Phalaris arundinacea*)
 - ~~(b)(ii)~~ ~~p~~Purple loosestrife (*Lythrum salicaria*)
 - ~~(c)(ii)~~ ~~c~~Common reed (*Phragmites australis*)
 - ~~(d)(iv)~~ ~~b~~Buckthorn (*Rhamnus* spp.)
 - (b) **Has an FQI of 7 or less.**
 - (2) Isolated Waters of Lake County comprised of open water that are not high-quality aquatic resources (HQARs).
 - (4) **Non-farmed wetlands not meeting Article IV.E.5.a.(2) that are not high-quality aquatic resources and wholly located within a deed or plat restriction may be utilized for detention greater than the required 2-year, 24-hour volume. The outlet design shall maintain or replicate the existing hydrologic condition of the wetland, unless changes are proposed to enhance the wetland function. Excavation or grading shall be considered an impact under the appropriate impact Category I, II, or III.**
- b. ~~When using Isolated Waters of Lake County for detention and not for wetland mitigation enhancement credit, the applicant shall use a ‘wetland’ detention design as provided in the Technical Reference Manual (TRM), and shall re-establish vegetation within the detention basin using the Native Plant Guide for Streams and Stormwater Facilities in Northeastern Illinois, NRCS, et al., (as amended) as a minimum standard for the re-vegetation plan. The following shall apply when using Isolated Waters of Lake County for detention and not for wetland enhancement mitigation credit:~~
 - (1) **The applicant shall use a “wetland detention basin” design as provided in the Technical Reference Manual (TRM), and shall re-establish vegetation within the detention basin using the Native Plant Guide for Streams and Stormwater Facilities in Northeastern Illinois, NRCS, et al., (as amended) as a minimum standard for the re-vegetation plan.**
 - (2) **Reduction of wetland area within the existing delineated wetland boundary from existing to proposed conditions shall be reviewed as an impact under the appropriate impact Category I, II, or III.**
 - (3) **Excavation of existing wetland as part of the proposed wetland detention basin design shall be reviewed under Category IV meeting the criteria of Articles IV.E.5.a.(1), IV.E.5.a.(2), and IV.E.5.a.(3).**

- (4) *The wetland hydrology thresholds of Article IV.E.6. shall apply for Isolated Waters of Lake County meeting the criteria of Articles IV.E.5.a.(1) and IV.E.5.a.(4).*
 - (5) *The requirements for water quality treatment of Article IV.B.1.h. shall apply upstream of the Isolated Waters of Lake County.*
 - (6) *The maintainable outlet requirements of Article IV.B.1.c.(3) shall apply.*
- c. ~~If the wetland detention basin is also used as wetland mitigation enhancement credit, then the mitigation requirements of Article IV.E.4. and the wetland hydrology thresholds of Article IV.E.7. shall apply. The following shall apply when using Isolated Waters of Lake County for detention and for wetland enhancement mitigation credit:~~
- (1) *Isolated Waters of Lake County meeting the criteria of Article IV.E.5.a. may be used for wetland enhancement mitigation credit.*
 - (2) *Wetland enhancement within the proposed detention basin shall be reviewed under Category IV requirements, and the performance standards listed in Appendix N, Section H. shall apply.*
 - (3) *Reduction of wetland area within the existing delineated wetland boundary from existing to proposed conditions shall be reviewed as an impact under the appropriate impact Category I, II, or III.*
 - (4) *The mitigation requirements of Article IV.E.3. shall apply.*
 - (5) *The wetland hydrology thresholds of Article IV.E.6. shall apply.*
 - (6) *The requirements for water quality treatment of Article IV.B.1.h. shall apply upstream of the Isolated Waters of Lake County.*
- d. ~~Enhancement of existing wetland areas within the proposed detention basin will be permitted as a Category IV impact. Fill or loss of existing wetland area will be permitted under the appropriate impact Category I, II or III.~~
- e. ~~For all wetlands used for detention, the requirements for water quality treatment of Article IV.B.1.h. shall apply upstream of the detention facility.~~
- f. ~~The wetland hydrology thresholds of Article IV.E.7. shall apply for Isolated Waters of Lake County used for detention meeting the criteria of (a)(1) above. The wetland hydrology thresholds of Article IV.E.7. shall not apply for Isolated Waters of Lake County used for detention meeting the criteria of (a)(2) and (a)(3) above.~~
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Page 74 - Article IV.E.6.

76. Wetland Hydrology Requirement:

The following hydrology requirement applies to Isolated Waters of Lake County located wholly or partially within *the ownership parcel, including* the development site. *The runoff volume reduction requirements (Article IV.B.1.d.(2)) may be modified to satisfy the wetland hydrology requirement for the portion of the development site tributary to the wetland.*

Page 76 - Article IV.G.

G. PERFORMANCE STANDARDS FOR FLOOD TABLE LAND DEVELOPMENT

~~For all development within the flood table lands, the applicant shall meet the requirements of Article IV, Sections C.2.e., f.(1), f.(3), f.(4) and f.(5) of this Ordinance.~~

~~The following flood table land requirements This requirement applies to new construction only and not to additions or substantial improvements to structures within flood table lands built before the effective date of this Ordinance Amendment (August 10, 1999):~~

1. **Public Health Protection Standards**

- a. **No chemicals, explosives, buoyant materials, animal waste, fertilizers, flammable liquids, pollutants, or other hazardous or toxic materials shall be placed or stored below the Flood Protection Elevation (FPE).**
- b. **New and replacement water supply systems, wells, and sanitary sewer lines may be permitted providing all manholes or other above-ground openings located below the FPE are watertight.**
- c. **On-site waste disposal systems shall be designed to avoid inundation by the base flood.**

2. **Building Protection Requirements**

- a. **The lowest floor, including basements, of all new residential structures, including additions, shall be elevated or structurally dry flood-proofed up to at least the Flood Protection Elevation (FPE). The floor of an attached garage for a new structure must be elevated up to at least ½ of one (0.5) foot above the base flood elevation (BFE). If structurally dry flood-proofed, a Licensed Professional Engineer, Licensed Structural Engineer, or Licensed Architect shall certify that the building has been structurally dry flood-proofed up to the FPE and the structure and attendant utility facilities are watertight and capable of resisting the effects of the base flood. The building design shall take into account flood velocities, duration, rate of rise, hydrostatic and hydrodynamic forces, the effects of buoyancy, and impacts from debris or ice. Flood-proofing measures shall be operable without human intervention and without an outside source of electricity. (Levees, berms, floodwalls, and similar works are not considered flood-proofing for the purpose of this subsection.)**
 - (1) **If the residential structure is not dry flood-proofed and is placed on compacted fill, the top of the fill for a residential structure shall be above the FPE. The top of fill for an attached garage shall be ½ of one (0.5) foot above the BFE. The fill pad shall be placed at the appropriate elevation and designed to extend a minimum of ten (10) feet out from the building's designed footprint unless the building is certified by a Registered Structural Engineer to be protected from damages due to hydrostatic pressures. Additionally, the fill pad shall meet 95% of Standard Proctor Density in order to be demonstrated not to settle below the FPE for the residential structure and not below ½ of one (0.5) foot above the BFE for an attached garage, and to be adequately protected against erosion, scour, and differential settlement. Foundation excavations shall not extend more than five (5) feet beyond the foundation footprint. Backfill for the over excavated area does not need to meet the compaction requirements.**
 - (2) **If the residential structure is not dry flood-proofed and is elevated by means of walls, pilings, or other foundation, the building's supporting structure must be permanently open to flood waters and not subject to damage by hydrostatic pressures of the base flood. The bottom of the permanent openings shall be no more than one (1) foot above the lowest adjacent grade. The total net area shall be provided below the FPE, and consist of a minimum of two (2) openings for each enclosed area with each opening of an enclosed area on a different exterior wall.**

The openings must have a total net area of not less than one square inch for every one square foot of enclosed area subject to flooding below the FPE. Any louvers, screens, or other opening covers must not block or impede the automatic flow of flood waters into and out of the enclosed area. The foundation and supporting members shall be anchored and aligned in relation to flood flows and adjoining structures so as to minimize exposure to known hydrodynamic forces such as current, waves, ice, and floating debris. All areas below the FPE shall be constructed with materials resistant to flood damage. The lowest floor (including basement) for the residential structure and all electrical, heating, ventilation, plumbing, air conditioning equipment, and utility meters shall be located at or above the FPE. Waterproofed service facilities, including, but not limited to, water and sewer pipes, electrical and telephone lines, and submersible pumps, may be located below the FPE. No area less than one (1) foot above the BFE shall be used for storage of items or materials.

- b. The lowest floor, including basements, of all new non-residential buildings, including additions, shall be elevated at least to the FPE or be structurally dry flood-proofed to at least the FPE. A non-residential building may be structurally dry flood-proofed (in lieu of elevation) provided that a Licensed Professional Engineer, Licensed Structural Engineer, or Licensed Architect shall certify that the building has been structurally dry flood-proofed up to the FPE and the structure and attendant utility facilities are watertight and capable of resisting the effects of the base flood. The building design shall take into account flood velocities, duration, rate of rise, hydrostatic and hydrodynamic forces, the effects of buoyancy, and impacts from debris or ice. Flood-proofing measures shall be operable without human intervention and without an outside source of electricity. (Levees, berms, floodwalls, and similar works are not considered flood-proofing for the purpose of this subsection.)**
- (1) If a non-residential structure is not dry flood-proofed and is placed on compacted fill, the top of the fill shall be above the FPE. The fill pad shall be placed at the appropriate elevation and designed to extend a minimum of ten (10) feet out from the building's designed footprint unless the building is certified by a Licensed Structural Engineer to be protected from damages due to hydrostatic pressures. Additionally, the fill pad shall meet 95% of Standard Proctor Density in order to be demonstrated not to settle below the FPE and to be adequately protected against erosion, scour, and differential settlement. Foundation excavations shall not extend more than five (5) feet beyond the foundation footprint. Backfill for the over excavated area does not need to meet the compaction requirements.**
- (2) If a non-residential structure is not dry flood-proofed and is elevated by means of walls, pilings, or other foundation, the building's supporting structure must be permanently open to flood waters and not subject to damage by hydrostatic pressures of the base flood. The bottom of the permanent openings shall be no more than one (1) foot above the lowest adjacent grade. The total net area shall be provided below the FPE, and consist of a minimum of two (2) openings for each enclosed area with each opening of an enclosed area on a different exterior wall. The openings must have a total net area of not less than one square inch for every one square foot of enclosed area subject to flooding below the FPE. Any louvers, screens, or other opening covers must not block or impede the automatic flow of flood waters into and out of the enclosed area. The foundation and supporting members shall be anchored and aligned in relation to flood flows and adjoining structures so as to minimize exposure to known hydrodynamic forces such as current, waves, ice, and floating debris. All areas below the FPE shall be constructed with materials resistant to flood damage. The lowest floor (including basement) for the non-residential structure and all electrical, heating, ventilation, plumbing, air conditioning equipment, and utility meters shall be located at or above the FPE. Waterproofed service facilities, including, but not limited to, water and sewer pipes, electrical and telephone lines, and submersible pumps, may be located below the FPE. No area less than one (1) foot above the BFE shall be used for storage of items or materials.**

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- c. **Manufactured homes and recreational vehicles to be installed on-site for more than 180 days shall be elevated to or above the FPE and shall be 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.**
- d. **Accessory structures and attached garages may be constructed with the lowest floor below the FPE in accordance with the following:**
 - (1) **The building shall not be used for human habitation.**
 - (2) **The structure shall be anchored to prevent flotation.**
 - (3) **Service facilities such as electrical and heating equipment shall be elevated or flood-proofed to the FPE.**

~~New residential structures built within flood table lands may have the lowest floor below the FPE if structurally dry flood-proofed to at least the Flood Protection Elevation in accordance with Article IV, Section C.2.f.(3) of this Ordinance.~~

Page 80 - Article V.A.5.d.

- d. A finding that the granting of a variance would not result in increased flood heights, additional threats to public safety, or extraordinary public expense, nor create nuisances, cause fraud, or victimization of the public, nor conflict with existing local laws or ordinances and that all buildings will be protected by methods that minimize flood damage ~~during below~~ the base flood elevation; and

Page 81 - Article V.A.11.

- 11. Due to the unique nature of public road developments occurring in a narrow ~~R.O.W.~~ **right-of-way** instead of an expansive tract of land, variances requested in connection with public road developments that will further the public policy of minimizing the condemnation of private or public property may be granted using criteria more permissive than the requirements of Article V, Section A.45. to the minimum extent necessary to achieve the minimal amount of condemnation. No variances shall be granted pertaining to Articles IV.C.3., IV.C.4., and IV.C.5.

Page 83 - Article VI.A.

A. INSPECTION

- 1. The Enforcement Officer may inspect site development at any stage in the construction process. For major developments, the Enforcement Officer shall conduct site inspections, at a minimum, at the end of the construction stages ~~4a.~~ and ~~7g.~~ listed below. Construction plans approved by the Enforcement Officer shall be maintained at the **development** site during progress of the work.
- 2. The Designated Erosion Control Inspector shall conduct inspections and document as described below, at a minimum, at the intervals in ~~4a.~~ and ~~6f.~~ listed below, for those developments that require a Designated Erosion Control Inspector, **until permanent stabilization and Enforcement Officer approval of appropriate as-built documentation and drawings.**
 - ~~a.1.~~ 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.2.~~ After stripping and clearing.
 - ~~c.3.~~ After rough grading.

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- ~~d.4.~~ After final grading.
 - ~~e.5.~~ After seeding and landscaping deadlines.
 - ~~f.6.~~ After every seven (7) calendar days or storm event with greater ~~then than~~ 0.5 -inches of rainfall **or liquid equivalent precipitation.**
 - ~~g.7.~~ After final stabilization and landscaping, prior to removal of sediment **and erosion** controls.
 - ~~h.~~ **After removal of erosion and sediment controls.**
3. **Designated Erosion Control Inspector inspections may be performed at a reduced frequency, at the discretion of the Enforcement Officer, for projects with a valid Watershed Development Permit, that are permanently stabilized, have submitted a Notice of Termination to IEPA, and are entering a prolonged period of inactivity. Designated Erosion Control Inspector inspections shall only be required after storm events with greater than 0.5 inch of rainfall or liquid equivalent precipitation.**
4. If a wetland mitigation area is constructed as part of the Watershed Development Permit, ~~it is recommended that a~~ **the SMC or Isolated Waters of Lake County-Certified Community's** Certified Wetland Specialist **shall**, at a minimum, perform the following inspections:
- ~~a.8.~~ After final grading and before seeding or plant installation.
 - ~~b.9.~~ After seeding and plant installation.
 - ~~c.10.~~ Annual inspections during the 5-year monitoring and maintenance period.

~~If stripping, clearing, grading and/or landscaping are to be done in phases or areas, the permittee shall plan for appropriate erosion control measures to be in place after each stage listed above and for each phase of construction.~~

Page 91 - Article XI: EFFECTIVE DATE

The effective date of this Ordinance shall be October 18, 1992.
Approved as amended by the Lake County Board, July 12, 1994
Approved as amended by the Lake County Board, August 10, 1999
Approved as amended by the Lake County Board, October 10, 2000
Approved as amended by the Lake County Board, August 14, 2001
Approved as amended by the Lake County Board, November 8, 2005
Approved as amended by the Lake County Board, January 10, 2006
Approved as amended by the Lake County Board, October 10, 2006
Approved as amended by the Lake County Board, November 18, 2008
Approved as amended by the Lake County Board, July 10, 2012

Page 94 - Appendix A: Definitions

~~compensatory storage: An excavated, hydraulically equivalent volume of storage used created to offset the loss or displacement of natural flood storage capacity due to a development activity when artificial fill or structures are placed within a Regulatory Floodplain.~~

Page 94 - Appendix A: Definitions - (new definition)

critical duration: The design storm duration for a given frequency storm which produces the greatest peak flow, volume, or stage by analyzing all durations presented in Appendix I.

Page 94 - Appendix A: Definitions

Designated Erosion Control Inspector: A person responsible for, at a minimum, verifying compliance and on-going maintenance of the approved soil erosion and sediment control plan measures of a development and who is recommended to meet the minimum qualification requirements of a., b., c., and d., as follows:

- a. Provide a one-page statement of qualifications in the areas noted below and a request to be included on the SMC Designated Erosion Control Inspector qualified listing. The signed statement will be considered as evidence of qualifications.
 - b. Pass the Designated Erosion Control Inspector Exam that is administered by the SMC.
 - c. Complete a SMC-approved soil erosion and sediment control course and meet the requirements of one of the following:
 - (1) Have an official designation as a Certified Professional in Erosion and Sediment Control (CPESC) **or Certified Erosion, Sediment and Storm Water Inspector (CESSWI)**;
 - (2) Two years cumulative experience in the Upper Midwest Region on soil erosion and sediment control inspections.
 - d. The listing of Designated Erosion Control Inspectors shall be officially updated every three years by the SMC. A minimum of 24 work-related professional development hours including SMC mandatory training for this designation shall be obtained within the three-year period in order to qualify for re-listing. Documentation shall be self-monitoring and shall be provided to SMC upon application for listing.
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Page 95 - Appendix A: Definitions

development: Completion of a final plat, replat, or man-made change to ~~real estate by~~ private or public **real estate agencies** including:

- a. Construction, reconstruction, repair, or placement of a building or any addition to a building;
- b. Installation of a manufactured home on a site, preparation of a site for a manufactured home, or the placement of a recreational vehicle on a site for more than 180 days;
- c. Drilling, mining, installation of utilities, construction of roads, bridges, or similar projects;
- d. Clearing of land as an adjunct of construction;
- e. Construction or erection of levees, walls, fences, dams, or culverts; channel modification; filling, dredging, grading, excavating, paving, or other alterations of the ground surface; storage of materials; deposit of solid or liquid waste; or
- f. Any other activity that might change the direction, height, volume, or velocity of flood or surface water, including the drainage of wetlands and removal of vegetation to the extent such that the wetland would no longer meet the criteria of supporting hydrophytic vegetation as defined in this Ordinance except that which would be considered appropriate for management purposes.

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 similar agriculture practices that do not involve filling, grading, or construction of levees. Nor does development include agriculture practices outside of the Regulatory Floodplain involving filling or grading as part of a Natural Resources Conservation Service designed and approved conservation project (i.e., terraces, grass waterways). 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 as long as the development activity is not located in a Regulatory Floodplain, wetland, or channel.

Page 96 - Appendix A: Definitions - (new definition)

drain tile: A conduit, such as corrugated plastic tubing, clay tile, or pipe, installed beneath the ground surface to collect and/or convey drainage water.

Page 97 - Appendix A: Definitions

erosion: The process whereby soil is removed by *precipitation*, flowing water, ~~or~~-wave action, *or wind*.

Page 98 - Appendix A: Definitions - (new definition)

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

Page 98 - Appendix A: Definitions

hydraulically equivalent compensatory storage: Compensatory storage placed between the proposed normal water elevation and the proposed 100-year flood elevation. All storage lost or displaced below the existing 10-year flood elevation is replaced below the proposed 10-year flood elevation. All storage lost or displaced above the existing 10-year flood elevation is replaced above the proposed 10-year flood elevation. *The additional compensatory storage required beyond a 1:1 ratio may be placed at any elevation between the normal water level and the base flood elevation.*****

Page 99 - Appendix A: Definitions

Isolated Waters of Lake County: All waters such as lakes, ponds, streams (including intermittent streams), farmed wetlands, and wetlands that are not under U. S. Army Corps of Engineers jurisdiction. The limits of the Isolated Waters of Lake County extend to the ordinary high water mark or the delineated wetland boundary.

a. The following are excluded from Isolated Waters of Lake County:

- (1) Excavations and impoundments that have received a permit from the appropriate jurisdictional authority.
- (2) Excavations and impoundments permitted by right, prior to being a regulated activity, within 40% or more non-hydric soils. Areas designated as 'water' as depicted on the Soil Survey of Lake County, SCS, 1970 are determined as either hydric or non-hydric soils by connecting adjoining soil boundaries to create complete polygons of the depicted soil type.
- (3) ~~Areas-Wetlands created by incidental to construction grading on development sites that have received a Watershed Development Permit or meet the criteria of Article IV.A.2.a. are exempt per Article IV, Section A.2. of this Ordinance.~~
- (4) Roadside ditches.

b. The following shall not be considered as meeting the exclusion criteria in A. above:

- (1) All areas meeting the definition of High quality aquatic resources.
- (2) Wetland mitigation areas created to meet the requirements of this Ordinance or Section 404 of the Clean Water Act.

- (3) Wetland areas created or restored using public funds.
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Page 100 - Appendix A: Definitions - (new definition)

Letter of No Impact (LONI): *Written confirmation from SMC or Isolated Wetland Certified Community that no wetland impacts will occur from a proposed development, based on a review of plans or other applicable information provided by the applicant as specified in this Ordinance.*

Page 100 - Appendix A: Definitions - (new definition)

liquid equivalent precipitation: *The amount of precipitation, including any frozen precipitation in its melted state (e.g., snow, sleet, freezing rain). With varying densities of frozen precipitation, the liquid equivalent precipitation indicates the actual amount of water that falls in a storm event, regardless of the type of precipitation.*

Page 100 - Appendix A: Definitions

lowest floor: *Lowest floor of the lowest enclosed area, including basement. **An unfinished or flood resistant enclosure, usable solely for parking of vehicles, or building access in an area other than a basement area is not considered a building's lowest floor; provided, that the requirements of Article IV, Section C.2.f.(1)(b)(ii) are met.***

Page 101 - Appendix A: Definitions - (new definition)

maintainable outlet: *A stormwater conveyance system (such as a storm sewer or overland flow path) that provides positive drainage to a natural watercourse or stormwater management system. The natural watercourse or stormwater management system shall have adequate downstream stormwater capacity. Stormwater management systems shall be within a recorded drainage easement or right-of-way.*

Page 101 - Appendix A: Definitions - (new definition)

maximum extent practicable (MEP): *For the purposes of this Ordinance, the maximum extent practicable (MEP) is defined as the highest level of runoff volume reduction (RVR) that is achievable for the development as determined by the applicant and approved by the Enforcement Officer (see Appendix O for runoff volume reduction quantities). The MEP RVR quantitative standard for the development shall not be required to exceed the minimum performance standards identified in Article IV.B.1.d.(2). For public road developments, the MEP shall not necessitate the need to acquire right-of-way or deed and plat restricted areas outside of the right-of-way.*

In making the determination that the RVR quantitative standard for the development is the MEP, the following objectives should be considered, when applicable, including, but not limited to:

- a. *Prevention or reduction of existing, adjacent flood-related problems.*
- b. *Examination of adequate downstream capacity from the development.*
- c. *Preservation of existing wetland hydrology.*
- d. *Protection of adjacent streams from degradation due to increased volumes and prolonged bankfull flows.*
- e. *Minimization of off-site water quality impacts.*

- f. **Enhancement of aquifer recharge on-site.**
 - g. **Evaluation of geographic features of the site (e.g. topography, soil structure, natural resources).**
 - h. **Utilization of best available and feasible technology.**
 - i. **Maximization of the performance of the design.**
 - j. **Provide for sustainability through maintenance and management of the installed practices.**
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Page 103 - Appendix A: Definitions

Regulatory Floodplain: Regulatory Floodplains may be either riverine or non-riverine depressional areas. Floodplain boundaries shall be delineated by projecting the base flood elevation onto the best available topography **and by superimposing the Special Flood Hazard Area onto the base map.** A flood-prone area is a Regulatory Floodplain if it meets any of the following descriptions:

- a. Any riverine area inundated by the base flood where there is at least 640 acres of tributary drainage area.
 - b. Any non-riverine area with a storage volume of 0.75 acre-foot or more when inundated by the base flood.
 - c. Any area indicated as a Special Flood Hazard Area on the FEMA Flood Insurance Rate Map **or Letter of Map Revision. and located with the best available topography to be inundated by the base flood.**
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Page 104 - Appendix A: Definitions - (new definition)

substantial damage: *Damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damaged condition would equal or exceed 50% of the market value of the structure before the damage occurred.*

Page 104 - Appendix A: Definitions

substantial improvement: Any repair, reconstruction, **rehabilitation**, addition, or improvement of a structure **which increases the total building floor area by more than 75% of the structure's first floor area or** the cost of which equals or exceeds 50% of the market value of the current structure **before the start of construction. either:**

- a. ~~Before the improvements or repair is started; or~~
 - 1.1.1. ~~—~~
 - b. ~~If the structure has been damaged, and is being restored, before the damage occurred.~~ This term includes structures which have incurred a repetitive loss **or substantial damage, regardless of the actual repair work performed. and, for** the purposes of this definition, **“start of construction substantial improvement”** is considered to occur when the first **qualifying improvement, as described in FEMA Publication 480 National Flood Insurance Program Flood Management Requirements, commences or when the first** alteration of any wall, ceiling, floor, or other structural part of the building commences, whether or not that alteration affects the external dimensions of the structure. This term includes all cumulative improvements within the last **ten (10)** years. The term does not, however, include either:
 - a.(1) Any project for improvement of a structure to comply with existing state or local health, sanitary, or safety code specifications which are solely necessary to assure safe living conditions, or;
 - b.(2) Any alteration of a structure listed on the National Register of Historic Places or a State Inventory of Historic Places.
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Page 105 - Appendix A: Definitions

wetland: **A wetland is a specific type of natural or man-made drainageway as follows:** 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 hydrophytic 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.

Page 122 - Appendix E, Section E.

- E. ~~*To assure projects are built and maintained according to permitted plans*~~ **The Enforcement Officer may shall determine applicable require** deed restrictions, performance ~~*bonds or sureties guarantees, as-built certification drawings, or and*~~ maintenance guarantees, ~~*as stipulated in this Ordinance to assure projects are built and maintained according to permitted plans. for all projects that affect stormwater runoff characteristics, impact wetlands or buffers, or impact floodplains.*~~ If such performance ~~*bond or sureties guarantees*~~ or other such adequate security as the Enforcement Officer may approve is required, the amount shall be ~~*equal to at least*~~ 110% of the estimated cost to complete construction of the stormwater management system ~~*and soil erosion and sediment control measures*~~ required by the Watershed Development Permit, which the estimated probable cost shall be approved by the Enforcement Officer. ~~*If a performance bond or surety is required by another community, that includes the cost of the stormwater management system of the development, additional performance bonding or surety shall not be required. The performance guarantee may be reduced upon verification of construction milestones or after approval of the as-built drawings and calculations. The performance guarantee shall be valid for a minimum of one year beyond the date of project completion or two (2) years from the start of construction, whichever is greater. The performance guarantee shall not be reduced below ten percent (10%) of the original value until project as-built drawings are accepted. The performance guarantee may not be further reduced before the completion of a minimum two-year maintenance period.*~~
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Page 123 - Appendix E, Sections J.1. and J.2.

- J. Enforcement Officer Duties
1. IDNR/OWR has retained permit review and approval authority over the following:
 - a. Illinois Department of Natural Resources projects, dams, or impoundment structures as defined in Appendix A and that meet the 'permit required' criteria for dams in Appendix G.
 - b. All other state, federal, and SMC development located in the Regulatory Floodplain.
 - c. Permit issuance for development within or over Public Waters.
 - ~~d. Changes to the Regulatory Floodway boundaries.~~
 2. For the following types of regulatory approvals or permit authority, SMC has jurisdiction within depressional flood-prone areas with greater than 20 acres of tributary area and riverine flood-prone areas with greater than 100 acres of tributary area. IDNR/OWR has jurisdiction within all Regulatory Floodways or Floodplains with greater than 640 acres (one square mile) of tributary area.
 - a. Base flood elevation determinations where none now exist.
 - b. Any changes in the base flood elevation.
 - c. **Changes to the Regulatory Floodway boundaries.**
 - d. Determination that the development is a public flood control project.

Page 132 - Appendix L, Section A.

- A. Advanced Identification (ADID) sites: Aquatic sites that have been **determined to provide Biological Values identified** by the U.S. Army Corps of Engineers, Chicago District and U.S. Environmental Protection Agency (U.S. Environmental Protection Agency. 1992. Advanced Identification (ADID) Study, Lake County, Illinois. Chicago, Illinois) or latest ADID study.
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Page 142 - Appendix M, Section O. - (EXCERPT ONLY - does not show unmodified paragraphs)

~~All high-quality aquatic resources existing on the mitigation bank site shall, at a minimum, meet the buffer requirements for high quality aquatic resources, all other existing enhanced, created or restored wetland areas shall, at a minimum, meet the non-high quality aquatic resource buffer requirements of this Ordinance (Article IV.B.1.i.).~~ **created, restored, or enhanced wetland areas on the mitigation bank site shall, at a minimum, meet the buffer width requirements of Article IV, Section B.1.i.(1) of this Ordinance. All existing high-quality aquatic resources on the mitigation bank site shall, at a minimum, meet the buffer width requirements of Article IV, Section B.1.i.(2) of this Ordinance.**

Page 144 - Appendix M, Section P. - (EXCERPT ONLY - does not show unmodified paragraphs)

Incremental demonstration of wetland hydrology, and incremental planting of the site may also be awarded credit. For example, ~~peizometer~~ **piezometer** data from a 50-acre wetland restoration area shows that 37 acres of the planned wetland meets the wetland hydrology criterion of the 1987 Federal Wetland Delineation manual **(as amended, including applicable supplements)**.

The initial physical and biological improvements at the bank site (including, but not limited to, grading, planting, and restoration of wetland hydrology) must be completed no later ~~that than~~ the end of the (third full growing season following the sale of the first mitigation bank credit).

Page 146 - Appendix M, Section S. - (EXCERPT ONLY - does not show unmodified paragraphs)

Species eComposition: Species selected for the planting shall be native to Lake County (ref. Swink and Wilhelm, Plants of the Chicago Region, 4th Edition, 1994), and shall be appropriate for the hydrologic zone to be planted. A minimum number of native perennial species proposed for establishment must be present within each plant community to meet certification standards, as follows:

Wetland hHydrology: Wetland hydrology must be independently demonstrated within each wetland for which credit is sought from data gathered from ~~peizometers~~ **piezometers** placed throughout the bank site. ~~Peizometer~~ **Piezometer** placement must be approved by the SMC prior to approval of the bank.

Page 149 - Appendix N, Section C.1.

1. Topography

If grading is proposed, submit a grading plan at a minimum scale of 1 in.=100 ft. showing existing and proposed grades with a minimum of ~~2~~ 1-foot contour lines. Identify elevation and location of reference benchmarks. Include cross-sections for the mitigation wetlands with normal water level (NWL) and high water level (HWL) depicted, if applicable.

Page 150 - Appendix N, Section C.4.

4. Planting Plan

Submit a plan at a minimum scale of 1 in.=100 ft. depicting the location and acreage of each wetland and wetland buffer community type to be established. This plan shall ~~ould~~ also be used as the base map to show the

locations of the vegetation monitoring transects and hydrology sampling points discussed in Appendix N, Section I. Provide the list of plants to be established in community by common and scientific name, along with the seeding or planting rate for each species. Seed and plant stock source(s) shall originate from within 150 miles of the mitigation site to maintain local genotypes.

Page 154 - Appendix N, Section H.3.c.

2. **Invasive Species Dominance:** By the end of the performance period, none of the three dominant plant species in the mesic prairie buffer community shall be non-native or weedy species including, but not limited to, **the** following species: *Cirsium arvense*, *Mellilotus* spp., *Alliaria petiolata*, *Poa compressa*, *Poa pratensis*, *Ambrosia artemisiifolia*, or *Rhamnus cathartica* and *R. frangula*. Dominance shall be based on the relative importance value (RIV) of each species, which is calculated using the equation in Appendix N, Section H.42.d.
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Page 154 - Appendix N, Section I.1.b.

- b. **Vegetation Monitoring:** A sufficient number of straight-line sampling transects shall be established in the mitigation wetlands and wetland buffers to achieve a representative amount of plant frequency and coverage data. The beginning and end points of each transect shall be monumented in the field with a metal stake. The location of each transect and the number of proposed quadrats per transect shall be accurately identified on the Planting Plan (Appendix N, Section C.4.), which shall be included in the annual monitoring reports. Each transect shall consist of a series of sample quadrats either 0.25 or 1.0 square meter in size. Vegetation sampling shall be conducted **by, or under the supervision of, a Certified Wetland Specialist** twice during the growing season with at least one month between sampling dates (e.g., May/June and August/September). Vegetation sampling shall include the following, at a minimum:
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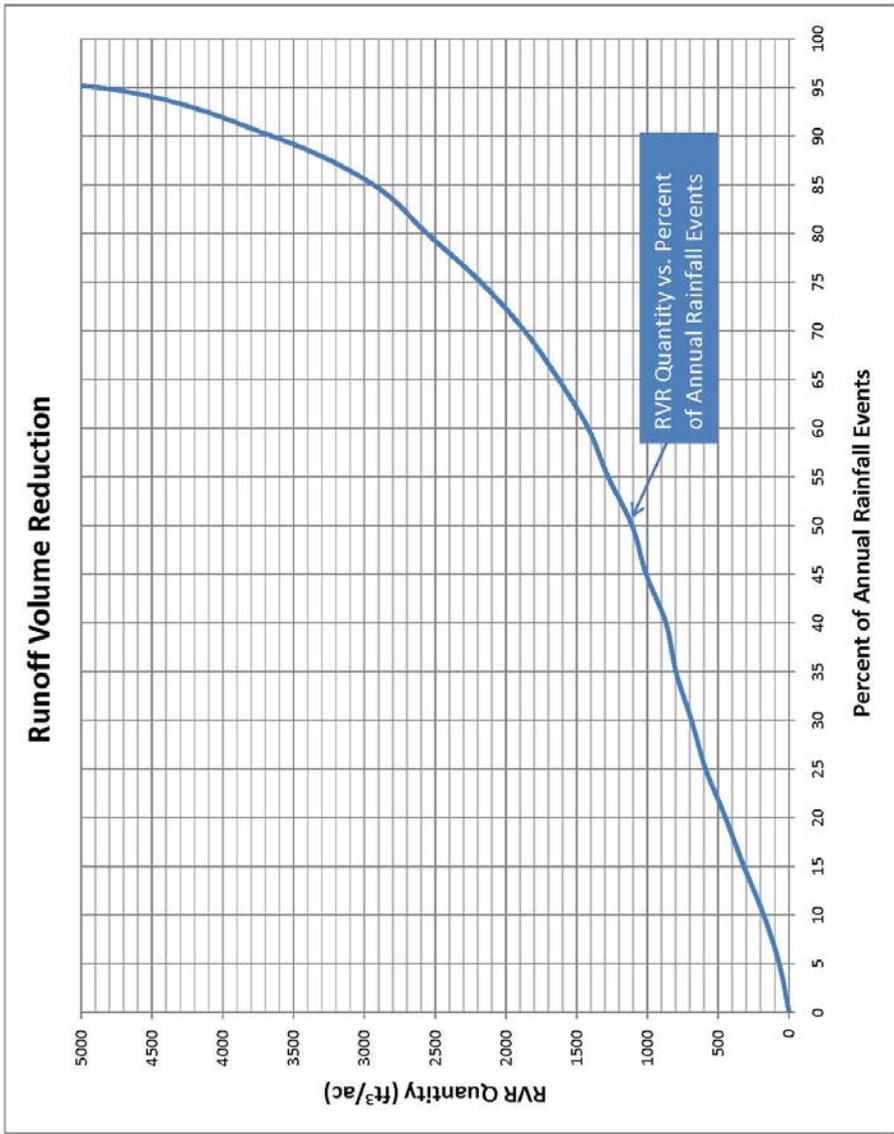
Page 156 - Appendix N, Section J.

J. REPORTS

At a minimum, an annual report **prepared by, or under the supervision of, a Certified Wetland Specialist** summarizing the results of the previous year's monitoring data shall be submitted to the SMC or IWCC by January 31st of the following year. The annual reports shall contain, at a minimum:

1. A narrative summary of the vegetation and hydrology monitoring data;
 2. A discussion of the progress of native vegetation establishment relative to the performance standards in Appendix N, Section H.;
 3. An appendix containing the monitoring data;
 4. Photographs of the sample transects and panoramic views of the mitigation wetlands and buffers;
 5. A narrative summary of the management practices employed during the previous year and photographs documenting these activities;
 6. Recommendations for proposed management practices to be employed during the following year(s), based on the monitoring results to date; and
 7. The proposed schedule for management practices in the following year(s).
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Page 158 - Appendix O: Runoff Volume Reduction - (new appendix)



Percent of Annual Rainfall Events	Runoff Depth (in)	RVR Quantity ft ³ /ac new impervious
0	0	0
5	0.02	70
10	0.05	180
15	0.09	320
20	0.12	450
25	0.16	590
30	0.19	690
35	0.22	800
40	0.24	870
45	0.28	1010
50	0.30	1110
55	0.35	1280
60	0.39	1420
65	0.45	1630
70	0.51	1870
75	0.60	2180
80	0.70	2560
85	0.81	2940
90	1.01	3660
95	1.35	4900
99	2.41	8760

Runoff Depth based on Figure 3 of the Center For Watershed Protection Report.
 Runoff Depth = P*R where:
 P = Rainfall Depth (inches)
 R=Volumetric Runoff Coefficient = 0.95 for 100% impervious cover [0.05+0.09(I), where I is 100% (impervious cover)]
 RVR Quantity = Runoff Depth (in) / 12 (in/ft) * 43560 (ft²/ac)