

Please be advised



This presentation is the first draft of a larger training initiative. The material contained in the presentation is meant to be a summary of Ordinance regulations based upon interpretation at the time of preparation, but is not intended to supplement nor supersede the actual written requirements from the Stormwater Ordinance (CSFPO) and General Certifications (GCs). Therefore, the most recent copy of the CSFPO and GCs should be referenced during planning, preparation, and permitting of site development plans. As the material contained within the presentation is reviewed and revised, it will be replaced with the latest version. A number of seminars on this topic will be available in the near future. Please check back for updated training materials and information about upcoming seminars. If you have questions about this presentation or the regulations, please do not hesitate to contact us for clarification.

- Phone: (630) 407-6700
- Email: contactedp@dupageco.org

DuPage County Ordinance Revisions



PRESENTED BY

**STORMWATER
MANAGEMENT**

JULY 31, 2012



Intent



- To amend the Stormwater Ordinance to provide the structure to better meet local, state, and federal stormwater regulations, while optimizing the requirements for new development, re-developments, and existing developments so DuPage County may remain competitive in maintaining/attracting business while preserving the high standard of flood control and environmental protection for all County residents

Background



- **Contract to proceed with revisions approved by County Board June 9, 2009**
- **Public meeting**
- **Survey**
- **Meeting with Forest Preserve**
- **National Ordinance review**
- **Municipal Engineers Meeting Group**
- **Steering Committee consisting of staff and municipal members**
- **Meetings with Stormwater Management Committee**
- **Website and blog to maximize public outreach**
 - ec.dupageco.org/stormwaterupdate

Background (Cont.)



- **60-Day Public Comment period from January 4, 2011 through March 4, 2011**
 - 45 separate sources submitted written comments
- **45-Day Public Comment period from September 6, 2011 through October 20, 2011**
 - 20 sources submitted written comments
- **Final draft approved by DuPage County Board April 24, 2012**
- **Final version effective April 25, 2012**

Involvement



- Maximize engagement from federal, state, and local government agencies, local municipalities, the DuPage Mayors and Managers Conference, private sector professionals, the development community, County residents, and anyone else that wanted to provide input into the process



Highlights



- Provides alternate methods to review and approve applications for permits by reducing submittal requirements under special circumstances through General Certifications and Letters of Permission.
- Thresholds for providing stormwater runoff facilities is changed from a zoning based system to a system that recognizes the change in impervious areas on a site over time.
- Volume control BMPs are now required on development sites to promote runoff reduction, groundwater recharge, water quality.
- Limitations on flood plain modeling regulations to reduce submittal requirements.

Highlights (Cont.)



- Flood plain regulations adjusted to allow for additional types of development within the flood plain (sheds, detached garages, etc.).
- Consolidating requirements for riparian mitigation into the requirements of wetland buffers.
- Amending the thresholds for post construction best management practices (PCBMP) to correlate directly with changes in impervious area on the development site.
- Recognizing additional special cases of development that may be eligible for reduced submittal requirements.

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Articles with Minimal Changes



- **Article 1: Authority and Purpose**
- **Article 13: Fee-in-Lieu**
- **Article 14: Prohibited Acts/Enforcement/Penalties**
- **Article 15: Appeals**
- **Article 16: Variances**
- **Article 17: Waiver Communities**
- **Article 18: Miscellaneous Provisions**

Article II: Administration



- **Municipal Engineers Group (MEG)**
 - Formal portion of the Municipal Engineers Meeting Group
 - Purpose will be to provide advisory input to the Director for representation of communities on technical matter related to the Ordinance
 - Will adopt their own bylaws
 - Voting may apply to decisions
 - Summaries of discussions will be kept of meetings
- **Certifications and County Authorization**
- **Definitions moved to Appendix A**

Article III: General Provisions



- **General Stormwater and Flood Plain Requirements.** The following general stormwater and flood plain requirements shall apply to all development.
 - ✦ **Development shall not:**
 - Result in unreasonable new or additional expense to any person other than the developer for flood protection or for lost environmental stream uses and functions attributable to the development; nor
 - Unreasonably increase flood elevations or decrease flood conveyance capacity upstream or downstream of the area under the ownership or control of the developer; nor
 - Pose any unreasonable new or additional increase in flood velocity or impairment of the hydrologic and hydraulic functions of streams and flood plains unless a watershed benefit is realized; nor
 - Violate any provision of this Ordinance or any applicable Waiver Community Ordinance either during or after construction; nor
 - Unreasonably or unnecessarily degrade surface or ground water quality.



Article III: General Provisions (Cont.)



- **Site runoff storage and compensatory storage facilities shall be either constructed before or concurrently with general construction. The facilities shall be functional prior to or concurrent with any building construction that increases a site's total impervious area.**
- **Building Protection Standards**
 - All usable space in new buildings or added to existing buildings, shall be elevated, floodproofed, or otherwise protected to at least one foot above the design elevation to prevent the entry of surface stormwater.

Article IV: Stormwater Management Certifications



- **When a stormwater management certification is required**
 - Flood plain, wetland, buffers present
 - $\geq 2,500$ SF of net new impervious
 - $\geq 5,000$ SF of land disturbance....
 - And other exclusions as identified
- **Letters of Permission**
 - Minor developments
 - ✦ 3 acres or less
 - ✦ $\leq 2,500$ SF of net new impervious or no stormwater runoff facilities required with permission
 - No flood plain, wetland, or buffers present
 - No indirect impacts to wetlands
 - Cannot be used to substantively change the technical standards of the Ordinance.



Article IV (Cont.)



- **General Certifications**

- Act as the Stormwater Certification
- Intended to reduce submittal requirements, design cost, and review time
 - ✦ Construction of Accessory Structures in a Flood Plain
 - ✦ Construction of Utilities
 - ✦ Etc... 12 adopted on April 24, 2012 (located on County website)

- **Datum**

- North American Vertical Datum of 1988 (NAVD 88)
- Clearly establish in submittals (Flood Plain and Modeling)

- **Special Cases of Development**

- Roadway, Bridge and Culvert, Streambank, etc.

Article V: Certification Submittals



- **Minimum Submittal Requirements**
- **Record Drawings / Information note**
- **Documentation such as Site Runoff Storage Calculations**
- **Wetland, Buffer**
- **PCBMP**
- **SESC**
- **Flood Plain**



Article VI: Performance Security and Easements

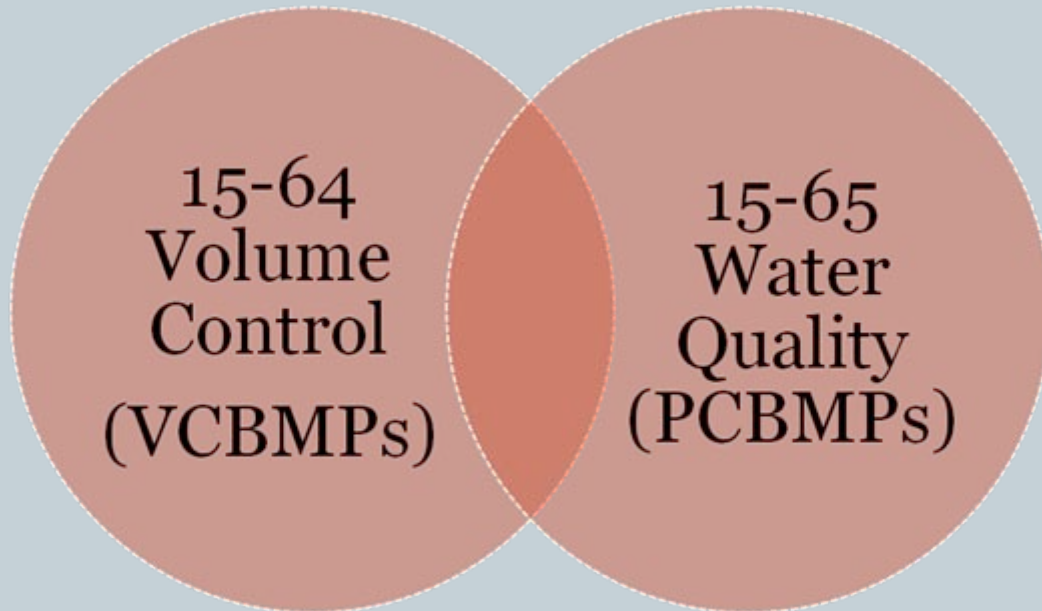


- A note shall be recorded against the title when wetlands or buffers are present. Easements are not required for most individual parcels.
- Temporary easements are required to access the development site to perform or complete any act or work the developer is required to do.
- Securities are not required for government development.
- Securities are required for SESC, development, native vegetation.

Article VIII: Post Construction Best Management Practices



PCBMPs



Adding 2,500 or more net new impervious area?

Both Volume Control and water quality BMPs are required.

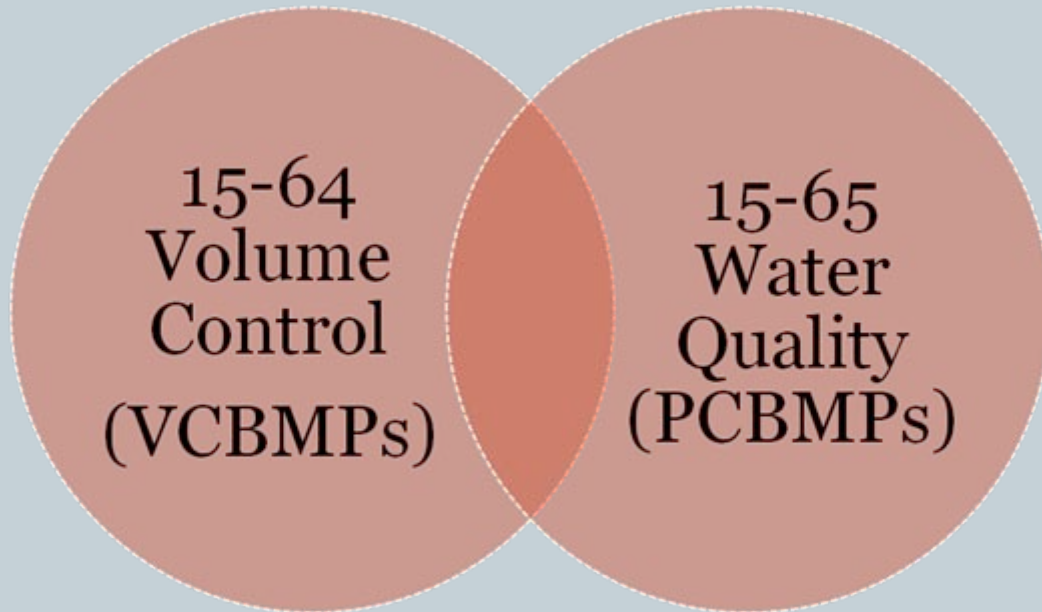
Space at a premium?

Many Water Quality BMPs can double as Volume Control facilities.

VC WHAT?



PCBMPs



Think of PCBMPs as a family of Post Construction BMPs.

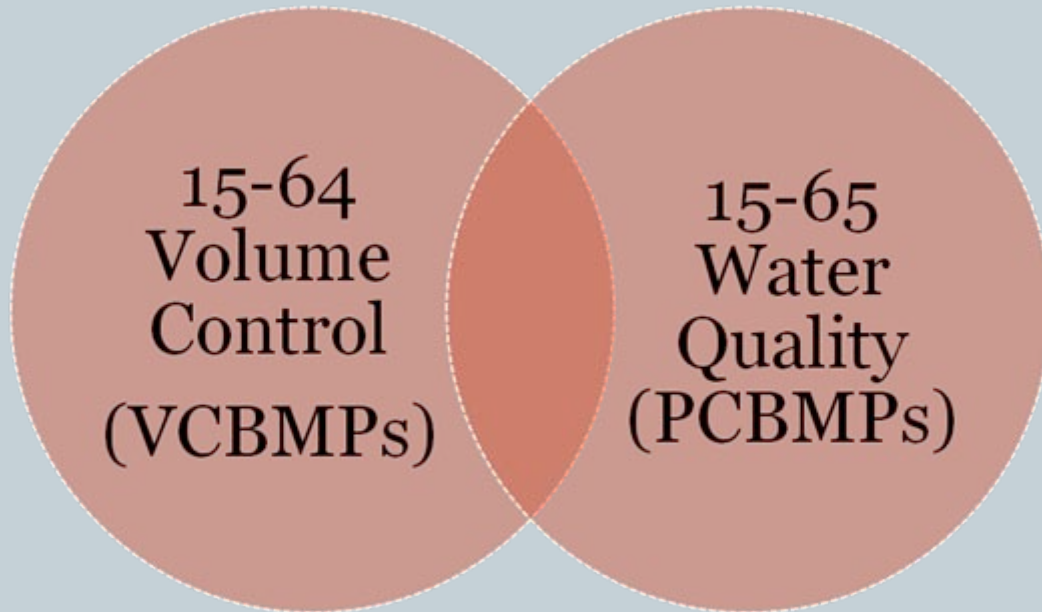
Volume Control BMPs reduce runoff.

Water Quality BMPs reduce the pollutants of concern.

Designing BMPs: How much is enough?



PCBMPs



Volume Control:

Ordinance section 15-64.A:
Calculate volume based on a
1.25" event

Water Quality:

Ordinance section 15-65 and
BMP Manual:
Design for a 2" event

Calculating for Water Quality BMPs: Where did 2 inches come from?



80% of runoff is from storms which are 2 inches or less
80% of the sediment load is from storms 1.78 inches or smaller*

**BMP Manual
Guidance**

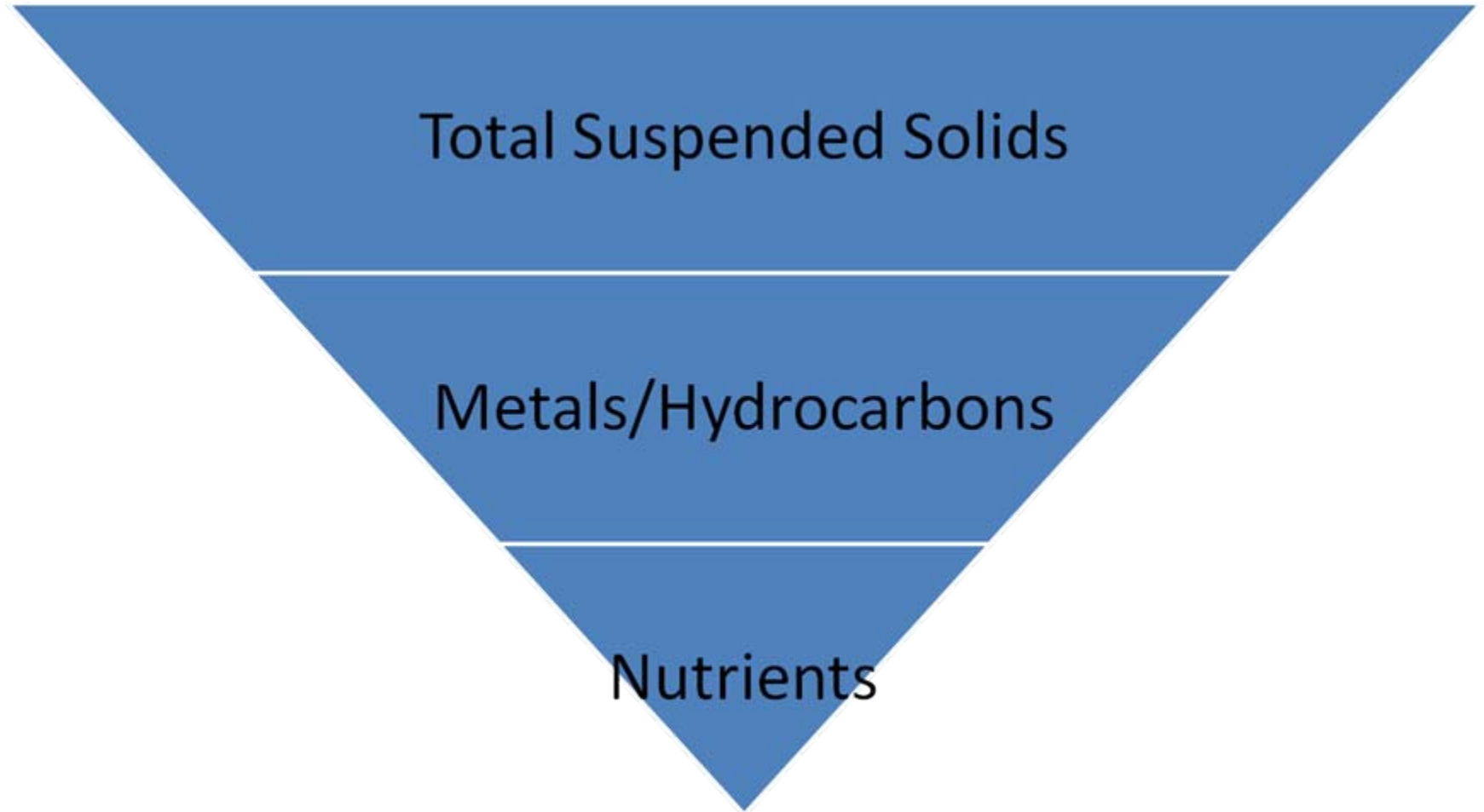
2-year 24 hour event
3.04 inches

Current Guidance

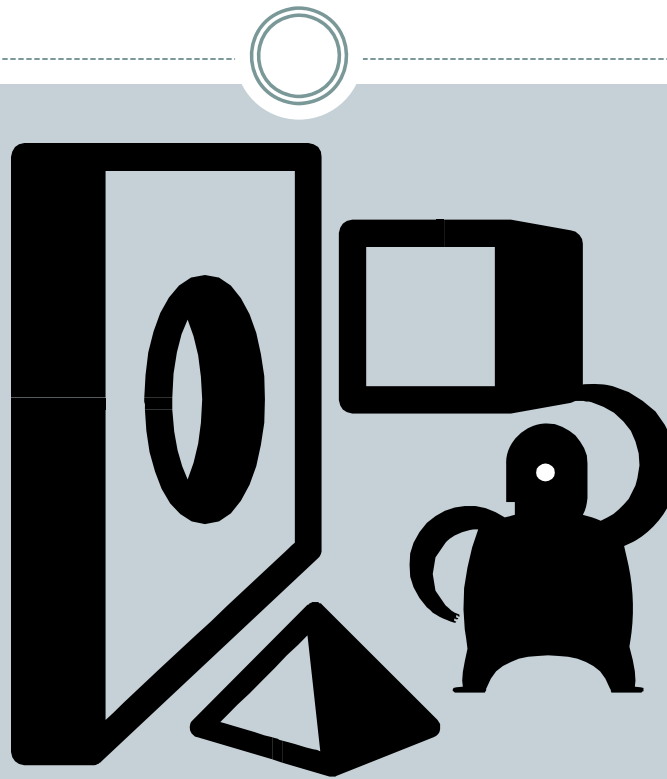
2 inch 24 hour rain
event

*Based on Wisconsin Data

Pollutants of concern listed by importance for a commercial use



*The selection guide is a **guide, not regulation.**



If it isn't fitting with the pollutants of concern, don't be afraid to set it aside in favor of a more practical solution.

Common Exemptions from all PCBMPs



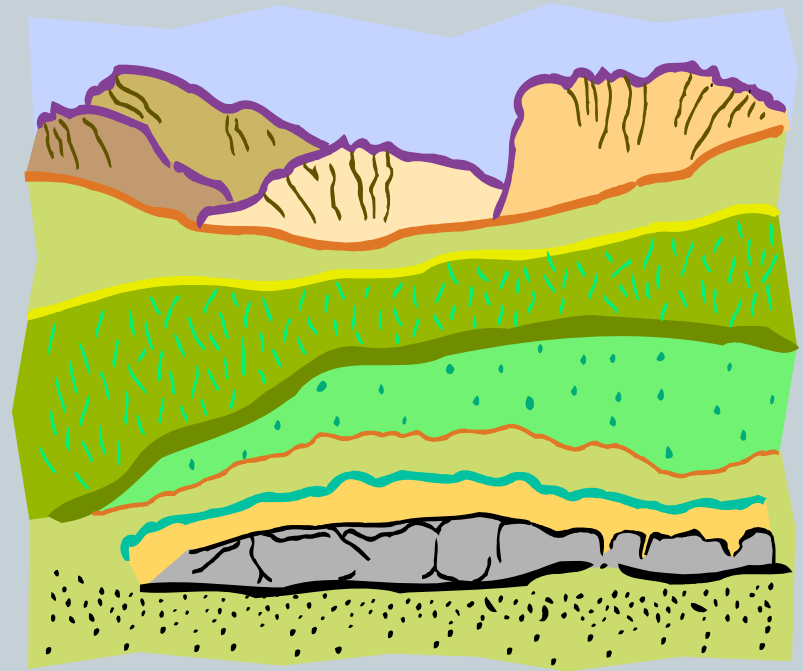
The development is limited to.....

- Resurfacing or reconstructing a roadway with 2,500 square feet or less per ¼ mile
- Bridge or culvert replacement
- Flood or stormwater control facility
- Ecological restoration or streambank stabilization
- Path no wider than 16 feet (including shoulder) constructed for general public use
- Water or sewer improvement
- Underground or overhead utility conduit or line

Common Exemptions from Volume Control



- Fueling and vehicle maintenance areas
- Soils are in Hydrologic subgroup A
- Groundwater table is within 2 feet of the surface



Uncommon Exemptions from Volume Control



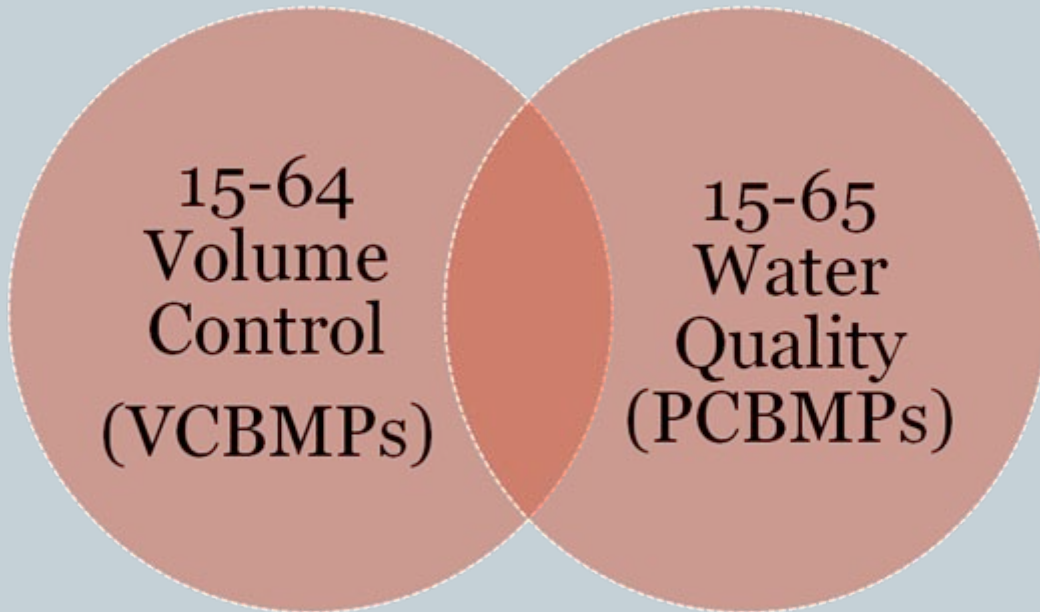
- A commercial, industrial, or institutional development within 400 feet of a known community water system well or 100 feet from a private well
- USEPA or IEPA has identified contaminants of concern in the soil where infiltration may occur



Fee-in-lieu of BMPs



PCBMPs



If placing one or both types of BMPs in your development is found to be impractical, a fee-in-lieu option is available.

Volume Control:

Ordinance section: 15-98.B.1
Cost: \$500/1000 ft² *net new impervious area

Water Quality:

Schedule B
Cost: Per acre *new impervious surface based on land use.

Special Permit Submittal and As-built Requirements for BMPs



- Where infiltration will be used as a BMP, provide a soil profile description at the location of the BMP.
- Provide a tributary area exhibit for each BMP. Size the Water Quality BMP for the entire tributary area.
- Provide a long term maintenance plan.
- Provide a cost estimate for plantings (where applicable) to include stock, installation, management, and monitoring.
- During construction, document that the BMP was constructed properly and be prepared to submit materials tickets, photos and other relevant information at the time of as-built approval.

Article IX: Site Runoff Conveyance



- Stormwater Facilities draining over 5 acres must use event hydrograph methods
- Use ISWS Bulletin 71
- Trib Area > 100 acres use critical duration analysis



Article IX: Site Runoff Storage



- **Required** if based on Total Impervious Area (TIA) of the site
 - Increases by 25,000 SF of net new impervious area (excluding areas where detention was previously provided). Calculated cumulatively since 1992
 - Additional exemptions and exclusions listed in Ordinance
- “Open Space Development” or “Roadway” projects only if they will increase discharges after development and only enough to maintain pre-project discharge rates (Site Runoff Storage Special).

Article IX: Site Runoff Storage



- **Special Cases of Development not requiring “Site Runoff Storage” or “Site Runoff Storage, Special”**
 - Bridge and Culvert Modification, Repair or Replacement
 - Streambank Stabilization
 - Natural Area Restoration
 - Wetland Mitigation Sites or Banks.
 - Trails, Bikeways & Walkways
 - Water & Sewer Improvement and All Underground Utilities

Article IX: Calculating Runoff Storage



- Limits of Grading or Land Cover Disturbance, whichever encompasses a greater area.
 - Including previously deferred disturbance.
- NRCS Curve Number
- ISWS Bulletin 71 Rainfall Depth, 100-Year, 24-Hour
- Release Rate of 0.1 cfs/Acre of disturbed Area (cumulative)
- Sites < 5 acres can use NIPC (a.k.a. CMAP) Nomograph (where applicable)
- Sites > 5 acres require event hydrograph
- Volume can be reduced if Volume Control BMP used

Article IX: Modifications to Drainage Tiles



- **Any modification of a drainage tile shall comply with the Illinois Drainage code.**
 - Listed provisions in Ordinance for purposes of determining compliance.
 - Drain tile systems disturbed by development activities shall be reconnected unless the approved drainage plan provides otherwise, etc...
- **Documentation for maintenance activities and re-routed tiles.**
- **Guidelines for submittal when subsurface Drainage Tiles are detected on a pre-development site.**
- **Maintenance allowed without a Stormwater Certification - except in special management areas**

Article X: Floodplain Management



- **Base Flood Elevation (BFE) is determined by the following hierarchy:**
 - Flood plain study completed and adopted by FEMA as the regulatory flood plain.
 - Flood Plain study published by the Director.
 - If neither is available, the BFE shall be determined using FEMA-accepted models and methodology.
- **Compensatory storage based on FEMA regulatory model when available.**
- **Flood Protection Elevation (FPE) is the BFE plus one foot of freeboard at a minimum. If a FEMA regulatory BFE and an elevation published by the Director are both available, the FPE is based upon the **higher** of the elevations. Communities may be more restrictive.**
- **Parking Lots Max Depth 1 Foot during Base Flood; Require Signs when below BFE.**

Article X: Floodplain Management (Cont.)



- **General Performance Standards**
 - No adverse hydraulic impact upstream or downstream from development in the floodplain
 - Removal, Replacement, or Modification of Stormwater Facilities that has an adverse hydraulic impact shall provide a watershed benefit
 - Development Exceptions to H&H Modeling 15-81.A.3
 - ✦ Flood fringe, pedestrian paths, guard rails, equivalent culverts...



Article X: Building Protection



- **New Buildings in SFHA Shall:**
 - Be adequately anchored
 - Be constructed of flood damage resistant materials
 - Be constructed by methods that minimize flood damage
 - Be constructed with utilities located above the FPE
 - Be in conformance with FEMA Technical Bulletin 2 below the FPE



Article X: Residential Buildings in SFHA



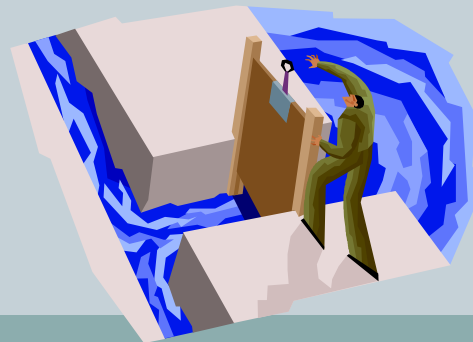
- **New construction or substantial improvements:**
 - Lowest floor at least to FPE
 - Fully enclosed areas (not basements) can be used for parking vehicles, building access or storage
 - The fully enclosed areas below the BFE must have at least 2 flood openings meeting size requirements.
 - Flood openings may be screened as long as displacement is calculated in size of vents.



Article X: Non-Residential Buildings in SFHA



- New construction or substantial improvements:
 - Lowest floor at least to FPE; OR
 - Watertight walls below the BFE; and
 - Utilities and Sanitary facilities designed to keep building watertight; and
 - A registered PE or architect shall certify the design in accordance with 44CFR60.3; and,
 - Record of Floodproofing elevation filed with community.



Article X: Compensatory Storage



- Required for fill above grade in floodplain
- 1.5 times volume displaced
 - 1.0 times in 0-10-yr and 10-100-yr increments
 - Remaining 0.5 times in any increment



Comp Storage Exceptions



- **No comp storage if: no regulatory floodway and less than 640 acres tributary AND**
 - X-Sectional Floodplain Area not reduced by more than 0.5% at any X-Section throughout the site
 - OR Total Fill Volume < 200 ft³
- **1:1 Comp Storage Required For:**
 - Channel Modifications
 - Public Roadway Developments



Article X: Floodway



- **Only Appropriate Uses Allowed in Floodway**
 - Listed in 15-82.A
 - Examples: Utilities, Flood control structures, bridges, culverts
 - Recreational facilities and elevating structures without enlarging footprint now recognized
- **H&H Modeling for Proposed Floodway Impacts**
- **Preserve Floodway conveyance without increases to 100 year flood elevations, flows, or velocity**
 - UNLESS increases are contained in public flood easement and a watershed benefit is provided
 - Increases of 0.1 feet or less for bridge or culverts is allowable, in accordance with IDNR-OWR Part 3700 and 3708 rules

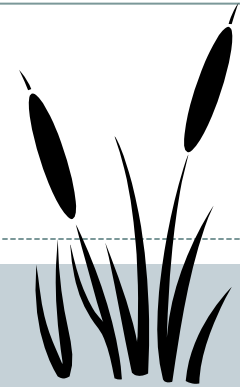
Article X: Floodway



- **County has delegation from IDNR-OWR for certain floodway developments**
 - Must still apply to IDNR-OWR for delegation to County
 - Exceptions to delegated authority listed in 15-82G



Article XI: Wetlands



- All wetlands on or within 100 feet of the property must be identified.
- Wetland determinations and wetland boundaries that have been delineated and verified are valid for 2 years.
- Submittal Requirements
 - Wetland and Buffer Impacts- Required items listed in Section 15-48

Article XI: Wetlands (Cont.)



IS THE WETLAND CRITICAL?

- MDNR (updated form): score 5 or higher
- FQI and mean C- Value: FQI ≥ 20 or C- Value ≥ 3.5
- IDNR/USFWS known Threatened or Endangered species
- Noted as critical on the DuPage County wetland map



Article XI: Wetlands 15-86.C.1



No alternatives analysis or mitigation is required if for developments with an aggregate 0.10 acre or less direct impact to wetlands.

Developments shall meet all of the conditions listed in 15-86.C.1. We have highlighted only the main points here.

1. The wetland is 0.10 acre or less in size
2. Wetland is regulatory;
3. Wetland is not jurisdictional as determined by USACE

15-87 Indirect Impacts to Wetlands



- A Hydrology Analysis for development within 100ft of a wetland or disturbing 20% of the tributary area, may be required to determine if the development may result in hydrologic changes to a wetland.
- In general, increases or decreases in depth of more than 3 inches or increases to the maximum duration greater than 48 hours are considered an Indirect Impact

Note: Additional analysis for wetlands with a sensitive plant community type that may be sensitive to small changes in depth and duration (e.g. sedge meadow, vernal pool) is required.

- Indirect impacts require Alternatives Analysis and Mitigation before impact is permitted.

15-88 Wetland Mitigation Requirements



- Mitigation required for wetland impacts as follows:
 - 1.5:1 ratio for Regulatory Wetlands
 - 3:1 ratio for Critical Wetlands
 - 1:1 ratio for Natural Area Restoration Projects
- Mitigation credit can be given as follows:
 - Enhancement of an existing wetland = 0.5: 1 credit
 - Enhancement, restoration, creation of buffer= 0.25 : 1 credit

NOTE: Mitigation shall not fall below a 1:1 ratio

***As always, consider USACE requirements as they may differ from County**

- Once performance standards have been met, applicants must obtain written regulatory sign-off for all mitigation efforts prior to release of mitigation performance securities.

Article XII: Buffers



- Wetland buffers
 - 50 foot buffer for Regulatory Wetlands
 - 100 foot buffer for Critical Wetlands
- Riparian buffers
 - Apply to areas around Waters of DuPage
 - Extend from ordinary high water mark (OHWM)
- All impacts to buffers require replacement of function



Determining Buffer for Waters of DuPage



- There is a regulatory floodplain study
 - Buffer width equals limits of floodplain or 15 feet, whichever is greater.
- There is no regulatory floodplain study
 - Buffer width is based on drainage area
 - ✦ Drainage area over 100 Acres:
 - Conduct a BFE study to determine 100 year flood;
 - Buffer width equals limits of floodplain
 - ✦ Drainage area less than 100 Acres:
 - Buffer width equals 15 feet from Ordinary High Water Mark

Ordinary High Water Mark (OHWM)



Use of the OHWM applies in certain circumstances and may depend on the choices of the applicant.

If riparian buffers are calculated from the OHWM, the line must be delineated by an Environmental Specialist and verified by the Stormwater Administrator.



Article XII: Buffers



- Buffers are still regulated based on functions- replace function of existing buffer
- Buffer does not include impervious, non-vegetated areas, permanent structures, and buildings as these features do not provide buffer functions
- Existing landscaped areas and lawn have limited function and may be replaced in kind
- Naturalized stormwater management systems may be placed within outer 50% of the buffer as long as functions are replaced

Performance Standards



- Performance standards can be found in an appendix to the Ordinance. They can be modified and tailored to site conditions or project goals as appropriate
- A separate Natural Areas security is held until native plantings meet Performance Standards
- Monitoring reports are due January 31st for the preceding growing season.
- If the property being managed is sold, plans and permit documents must now be transferred to the new owner.

Letters of Permission and GC's



- Letters of Permission
 - Different than Article IV LOP
 - Vegetative maintenance in a buffer is allowed without a formal permit
 - Submit written description of goals, objectives, and a management plan
- General Certifications may also apply in wetlands & buffers

Additional Information



- Final Adoption by all communities under the jurisdiction of the Stormwater Ordinance should be complete by July 25, 2012 (3 months)
- Future products should include additional flow charts, checklists, and a guidance document
- Anticipated revisions in 6 months
- Revised Ordinance on GCs available on the DuPage County Website directly at www.dupageco.org/EDP/Stormwater_Management/Regulatory_Services/1420/

Questions?



- **DuPage County Stormwater Management and Stormwater Permitting:**
 - (630) 407-6700 main
 - ContactEDP@dupageco.org

- **DuPage County website:**
 - www.dupageco.org

- **Archival documents from Ordinance revisions:**
 - ec.dupageco.org/stormwaterupdate