Watershed Management Ordinance (WMO)

IAFSM
March 10, 2016

Presented by:
Dan Feltes, P.E., CFM
WMO Update Agenda

• Brief WMO Development Background
• Permit Applicability
• Permit Compliance Resources and Website
• Permit Time
• How to Calculate Volume Control
• Flood Protection Elevation
• WMO Stormwater Volume Results from 2015
• WMO Forthcoming Developments
Summary of MWRD Facilities:

- 7 Water Reclamation Plants
  (including one of the world's largest)
- ~554 Miles of Interceptors
- ~109 Miles of Tunnels
- ~10.6 Billion Gallons of CSO Storage
Thornton Composite Reservoir

- 7.9 BG CSO Reservoir
- Largest in the World
- 83 Acres
- 2,480 Ft X 1,580 Ft
- 300 Feet Deep
District Responsibilities

Wastewater Treatment
- 7 Wastewater Treatment Plants
- Stickney 1.2 billion gallons per day

Stormwater Management
- Public Act 093-1049
- Public Act 098-0625
WMO Objective
Establish uniform, minimum, and comprehensive countywide stormwater management regulations

Enabling Legislation
Watershed Management Ordinance

“Stormwater management in Cook County shall be under the general supervision of the Metropolitan Water Reclamation District of Greater Chicago.”

“The District may prescribe by ordinance reasonable rules and regulations for floodplain and stormwater management . . . in Cook County.”

Public Act 093-1049
Sewer Permit Ordinance

- Sanitary Sewers
- Stormwater Detention
  - TP-40 Rainfall Data
  - Modified Rational Method

Watershed Management Ordinance

- Sanitary Sewers
- Stormwater Detention
  - Bulletin-70 Rainfall Data
  - Flat Release Rate
  - Hydrograph Method
- Volume Control
- Erosion & Sediment
- Flood Protection Areas
  - Floodplain
  - Floodway
  - Isolated Wetlands
  - Riparian Areas

- Ordinance
- Technical Guidance Manual
- Permit Forms
- Flow Charts
- Checklists

August 2015
METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO
QUALIFIED SEWER CONTRUCTION* FLOW CHART

START

IS DEVELOPMENT LOCATED IN THE CITY OF CHICAGO?

IS NEW SEWER BEING CONSTRUCTED?

IS NEW SEWER CONNECTION BEING MADE?

IS REPAIR, REPLACEMENT, OR OTHER MAINTENANCE BEING DONE?

NO

NO

NO

NO

NO

NO

NO

YES

IS THERE DIRECT CONNECTION TO DISTRICT SEWERS OR AN OUTFALL?

FACILITY CONNECTION AUTHORIZATION REQUIRED

YES

IS NEW SEWER SOLELY STORM, AND NOT TRIBUTARY TO COMBINED SEWER?

YES

IS THE SEWER BEING REMOVED AND REPLACED (SAME SIZE ENTIRELY WITHIN THE SAME TRENCH)?

NO

YES

IS THE BUILDING A SINGLE FAMILY HOME?

YES

IS THE SEWER BEING CIPP LINED?

NO

IS WORK BEING DONE ON A PUBLIC LIFT STATION?

YES

NO

IS PIPE SIZE OR ROUTE CHANGING?

YES

NO

WATERSHED MANAGEMENT PERMIT REQUIRED

NRI (SHORT-FORM) PERMIT REQUIRED

PUBLIC SEWER

PRIVATE SEWER

NO

YES

IS LESS THAN 25 LINEAR FEET OF NEW SEWER BEING CONSTRUCTED?

DOES SEWER WORK INCLUDE NEW OUTFALL?

QUALIFIED SEWER REQUIREMENTS DO NOT APPLY

VERIFY REQUIREMENTS FOR DEVELOPMENT, FLOOD PROTECTION AREAS, AND DISTRICT IMPACTS DO NOT APPLY

QUALIFIED SEWER REQUIREMENTS DO NOT APPLY

*See definition of qualified sewer construction in Appendix A of the WMO.
Permit Applicability

§201, Table 1

Permit Applicability

Development
> 0.5 Disturbed Area

Flood Protection Areas
Floodplain, Wetlands, Riparian etc.

Qualified Sewer Construction

District Impacts

Stormwater Requirements
Article 5, Table 2
Ownership

Color Code:
• Cook County, Chicago
• District Corporate Limits, Chicago
• Cook County including Chicago

TARP / Interceptors
Waterway Outfalls
Lake Michigan
District Property
<table>
<thead>
<tr>
<th>Development Type</th>
<th>$§502$</th>
<th>$§503$</th>
<th>$§504$</th>
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<tr>
<td>(See Appendix A for definitions)</td>
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<tr>
<td>Single-Family Home</td>
<td>Exempt</td>
<td>Exempt</td>
<td>Exempt</td>
</tr>
<tr>
<td>Residential Subdivision</td>
<td>Parcels ≥ 1 acre</td>
<td>Parcels ≥ 1 acre</td>
<td>Parcels ≥ 5 acres</td>
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<tr>
<td>Multi-Family Residential</td>
<td>Parcels ≥ 0.5 acre</td>
<td>Parcels ≥ 0.5 acre</td>
<td>Parcels ≥ 3 acres ‡</td>
</tr>
<tr>
<td>Non-Residential</td>
<td>Parcels ≥ 0.5 acre</td>
<td>Parcels ≥ 0.5 acre</td>
<td>Parcels ≥ 3 acres ‡</td>
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<tr>
<td>Right-of-Way</td>
<td>New Impervious Area ≥ 1 acre</td>
<td>New Impervious Area ≥ 1 acre †</td>
<td>New Impervious Area ≥ 1 acre †</td>
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<tr>
<td>Open Space</td>
<td>Parcels ≥ 0.5 acre</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

1 Site stormwater management requirements are not required for maintenance activities as defined in Appendix A.

2 Requirements are applicable when a Watershed Management Permit is required under §201 of this Ordinance.

† Where practicable.

‡ Starting the effective date of this Ordinance, any new development on the parcel that totals either individually or in the aggregate to more than one-half (0.5) of an acre.
Watershed Management Ordinance

The Watershed Management Ordinance (WMO) establishes uniform, minimum, countywide stormwater management regulations throughout Cook County. Components which are regulated under the WMO include control, floodplain management, isolated wetland protection, riparian environment protection, and soil erosion and sediment control. The WMO went into effect on May 1, 2014 and the District’s Board of Commissioners approved the WMO on July 10, 2014. The WMO is accessible through the link below.

- [WMO](#) (As amended on July 10, 2014 meeting) (7.2 MB)
- [WMO Comparison Documents](#) (Compares changes from May 1, 2014 WMO to July 10, 2014 latest amendments) (6.08 MB)
- [Article 8: Infiltration / Inflow Control Program](#) (Incorporated into WMO on July 10, 2014) (58.3 KB)

The District developed a Technical Guidance Manual (TGM), which will serve as a technical reference to the WMO. The TGM documents are accessible through the link below.

- [TGM](#)
- [Appendix C: Standard Details & Notes](#) (Updated July 2015)

The District will conduct training for stakeholders to ease the transition from the Sewer Permit Ordinance to the WMO.

- [Training Schedule](#)

Permit Resources:

- [Information Pamphlets for Developers and Homeowners](#)
- [Watershed Management Permit Flow Charts, Checklist and Forms](#)
- [Minimum Permit Submittal Checklist](#) (164 KB)
- [WMO Design Calculators](#)
- [WMO Model Templates](#)
- [Authorized Municipalities and Multi-County Municipalities](#)

Other Resources:

- [Watershed Management Ordinance: Short Summary](#)
- [Permit Inquiries (Request Copies of Past Issued Permits)](#)
- [Permit Revision Information](#)
- [Existing Development Plans List](#)
- [Frequently Asked Questions (FAQs)](#)
Managing Stormwater
The WMO aims to protect public health, safety, and welfare, and Cook County homes and businesses from flood damage by managing and mitigating the effects of development and redevelopment on stormwater drainage. It provides uniform minimum stormwater management regulations for Cook County that are consistent with the region.

The WMO replaces the MWRD’s repealed Sewer Permit Ordinance (SPO). WMO permit requirements are more comprehensive than those of the SPO.

How it Works
The WMO establishes rules and guidelines for development to ensure that flooding problems are not exacerbated. Permits are required prior to start of construction for new projects as described inside.

Single Family Homes
The WMO was not intended to regulate most single family homes. When a new development is located in or near a Flood Protection Area, a permit may be required. See “WMO: A Quick Guide for Homeowners” and the WMO.

WMO: A Quick Guide for Developers
This pamphlet is an introduction for developers to the requirements and permit compliance process of the Metropolitan Water Reclamation District of Greater Chicago’s Watershed Management Ordinance.

For More Information
please visit wmo.mwrd.org
or contact the MWRD at 312.751.3255
or WMOinbox@mwrd.org

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Metropolitan Water Reclamation District of Greater Chicago

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Chairman of Finance
Michael A. Alvarez
Timothy Bradford
Cynthia M. Santos
Debra Shore
Karl K. Steele
David J. Walsh
David St. Pierre
Executive Director

mwrdo.org
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Single Family Homes
The WMO is not intended to regulate most single family homes. A permit is generally only required for single family home development that involves a Flood Protection Area or requires an extension of a public sewer to serve the parcel. These types of development are regulated under the WMO because they can have a significant potential for loss of property from flood drainage. Unlike residential subdivisions, single family home developments are exempt from the stormwater provisions of the WMO.

The WMO defines a “single family home” as a residential parcel containing less than 3 dwelling units. This does not include single family home parcels subdivided after May 1, 2014.

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mwrd.org
When to Apply
Past contractor expectations:

- Design Project
- Mobilize
- Substantial Completion
- Apply for MWRD Permit
- MWRD Inspect
- Obtain Permit
- Occupancy

$$

15
When to Apply
Early coordination needed with new regulations
Permit Review Time

- **Per Ordinance § 1401:2**
  - 15 working days outside FPA
  - 30 working days inside FPA
  - 10 working days for resubmittal

- **3 year approved permit life**
  - 1 year to start construction
  - Extensions to construction start may be granted upon request
  - 3 years total to finish

- **Stagnant permits now canceled quarterly**
  - Applications cannot remain open indefinitely
  - 90 days no resubmittal = 30 day deadline to respond with schedule
  - MWRD is reasonable, but be certain to respond in a letter
Green Infrastructure (GI) = Volume Control (VC) (in WMO)
Root Systems of Prairie Plants

The fundamental base for encouraging use of native plant species for improved soil erosion control is stream and stormwater facilities. In the fact that native plants have extensive root systems which improve the ability of the soil to infiltrate water and withstand wet or erosive conditions. Native plant species, like those listed in this Guide, often have greater biomass below the surface. In this illustration, note the Kentucky Bluegrass shown on the far left, which, when compared to native grasses and forb species, exhibits a shallow root system. Illustration provided by Heidi Natura of the Conservation Research Institute.
## Appendix C. Standard Details & Notes (29 MB) (Updated July 2015)

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<td>Bioswale (Must be used with Check Dam)</td>
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<tr>
<td>Bioswale Check Dam</td>
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<td>Constructed Wetlands</td>
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<td>Drywell</td>
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<td>Infiltration Trench</td>
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<td>Lake Michigan Outfall Water Quality Device</td>
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<td>Observation Well</td>
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<td>Permeable Pavers</td>
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<td>Rain Cistern/Water Reuse System</td>
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<td>Removable Hood for Catch Basin and Water Quality Structures</td>
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<td>Sediment Forebay/Pretreatment Basin</td>
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<td>Signage for Permeable Pavement</td>
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<td>Storage Below Outlet of Detention Basin</td>
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<td>Vegetated Filter Strip (Flow-Through)</td>
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<td>Volume Control Pretreatment Measures</td>
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<td>Volume Control Storage Matrix</td>
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<td>Floodplain Garage</td>
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<td>Outlet Control Structure (Plate)</td>
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<td>Outlet Control Structure (Wall)</td>
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<td>Parking Lot Detention</td>
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<td>Signage for Parking Lot Detention</td>
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<td>Vortex Restrictor</td>
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<td>Window Well</td>
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<td>Concrete Cradle</td>
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<td>Concrete Encasement</td>
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<td>Dog House Manhole</td>
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<td>Drop Manhole Connection</td>
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<td>Rigid And Flexible Pipe Installation</td>
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<td>Forecemain Discharge to Gravity Manhole</td>
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<tr>
<td>Large Grease Basin</td>
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<td>Methods for Connecting to MWRD Manholes</td>
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<tr>
<td>Riser for Sanitary Service Lateral</td>
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<td>Sanitary Manhole Type A and B</td>
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<tr>
<td>Small Grease Basin</td>
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<td>Water Separation Requirements</td>
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<td>MWRD General Notes</td>
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<tr>
<td>Example Drainage Exhibit</td>
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<td>Example Exhibit R</td>
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<td>Example Routing Exhibit</td>
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TABLE 1

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<tr>
<th>VOLUME TYPE</th>
<th>POROSITY</th>
<th>MEDIA VOLUME</th>
<th>STORAGE VOLUME</th>
<th>VOLUME PROVIDED</th>
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<td>SURFACE STORAGE</td>
<td>1.00</td>
<td>$V_A$</td>
<td>$1.00 \times V_A$</td>
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<tr>
<td>SOIL MEDIA MIX</td>
<td>0.25</td>
<td>$V_B$</td>
<td>$0.5 \times 0.25 \times V_B$</td>
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<tr>
<td>COARSE AGG. (ABOVE INVERT)</td>
<td>0.36</td>
<td>$V_C$</td>
<td>$0.5 \times 0.36 \times V_C$</td>
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<tr>
<td>COARSE AGG. (BELOW INVERT)</td>
<td>0.36</td>
<td>$V_D$</td>
<td>$0.36 \times V_D$</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td></td>
<td>$V_{TOTAL}$</td>
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</table>
Deep rooted native plants, installed as specified on plans. Use vegetation tolerant of wet and dry cycles.

Observation well, 6" PVC pipe with overflow grate. Non perforated above soil media mix 6" - 12" above ground.

Shredded hardwood mulch layer (3") (See Note 8)

Vegetated filter strip/other BMPs (see note 9)

20% max. slope

12" depth maximum drains in 24-48 hours

Vegetated filter strip/other BMPs (see note 9)

20% max. slope

18" soil media mix, 50% sand 30% compost 20% topsoil (or district mix)

Woven geotextile fabric, not to cover entire bottom of excavation (or choking stone per engineer approval)

Native soil

Vc (above invert of underdrain)

Vd (below invert of underdrain)

Seasonally high groundwater level (___ . ___ NAVD 88)

Ca-7 coarse aggregate storage bed with 4" underdrain perforated pipe (see note 6)

2" to 12" stone bedding (see note 7)

<table>
<thead>
<tr>
<th>VOLUME TYPE</th>
<th>POROSITY</th>
<th>MEDIA VOLUME</th>
<th>STORAGE VOLUME</th>
<th>VOLUME PROVIDED</th>
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<tr>
<td>Surface Storage</td>
<td>1.00</td>
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<td>1.00 x V_A</td>
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<tr>
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<td>V_B</td>
<td>0.5 x 0.25 x V_B</td>
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<td>Coarse Agg. (above invert)</td>
<td>0.36</td>
<td>V_C</td>
<td>0.5 x 0.36 x V_C</td>
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<tr>
<td>Coarse Agg. (below invert)</td>
<td>0.36</td>
<td>V_D</td>
<td>0.36 x V_D</td>
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</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
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Ca-7 coarse aggregate storage bed with 4" underdrain perforated pipe (see note 6)

2" to 12" stone bedding (see note 7)

<table>
<thead>
<tr>
<th>Volume Type</th>
<th>Porosity</th>
<th>Media Volume</th>
<th>Storage Volume</th>
<th>Volume Provided</th>
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<td>0.36</td>
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<td>$0.36 \times V_D$</td>
<td></td>
</tr>
</tbody>
</table>

Total
Does an existing conventional wet pond satisfy Volume Control for new Development?

Short answer: No

- Is there a new stormwater benefit created?
- Existing systems can be planned for retrofit, permitted, and improved to serve new areas
Volume Control
Detention Retrofit

Figure 8: Schematic showing conversion of a dry pond to a shallow marsh
Figure 1: Five strategies to retrofit a pond

- Excavate Bottom
- Raise Embankment
- Modify Riser
- Trade Storage
- Change Geometry
Floodplain

- **Flood Protection Elevation**
  - \( FPE = BFE + 2 \) feet
## Single Family Home SFHA Short Permit Form (Jan 2015)

### New Window Well Detail

### Technical Guidance Manual

**Typical Window Well Detail**

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### Watershed Management Permit Form

#### Single Family Home - Special Flood Hazard Area (SFHA) Permit Form

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO
111 EAST ERIE STREET, CHICAGO, ILLINOIS 60611
312-751-3260

### 1. PROJECT INFORMATION

- **New Construction**
- **Foundation Expansion**

**Project Name:**

**Description of Project:**

**Street Address of Project:**

**Municipality (Township, if unincorporated):**

**Parcel Area:** acres Related MWRT Sewer Permit and/or Watershed Management Permit Number, if known:

### 2. SPECIAL FLOOD HAZARD AREA (SFHA) INFORMATION

Provide the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Panel number(s) and Map Revision date(s) for the single family home parcel:

- Based on the most current FEMA FIRM, check all conditions that apply:
  - Parcel is within 100 feet of Zone A (unfilled) floodplain
  - Parcel is within 100 feet of Zone A (filled) floodplain
  - Parcel contains regulatory floodway

Provide a copy of the FEMA FIRM showing the boundary of the single family home parcel.

### 3. BASE FLOOD ELEVATION (BFE)

- **BFE (rounded to nearest tenth of a foot):** ft, NAVD88
- **Waterway:**

**List the source of the BFE for the subject parcel:**

- Cook County Flood Insurance Study (FIS)
- MWRT Detailed Watershed Plan study
- Project-Specific Floodplain Study

**Provide the profile for the BFE source listed above.**

### 4. SINGLE FAMILY HOME ELEVATION (MUST BE 2 FEET ABOVE BFE)

- **Provide the lowest floor elevation for the proposed single family home (rounded to nearest tenth of a foot):** ft, NAVD88
- **Provide the lowest entry elevation for the proposed single family home (rounded to nearest tenth of a foot):** ft, NAVD88

**Provide an exhibit showing the BFE clearly delineated on site-specific topography for the subject parcel, along with the lowest floor and lowest entry elevation shown for the proposed single family home. If applicable, show limits of regulatory floodway on the subject parcel.**

### 5. COMPENSATORY STORAGE (EQUAL TO AT LEAST 1.1 TIMES VOLUME LOST BELOW BFE)

<table>
<thead>
<tr>
<th>Floodplain Fill (cubic feet)</th>
<th>Compensatory Storage Provided (cubic feet)</th>
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<tbody>
<tr>
<td>0 - 10 Year</td>
<td>0 - 10 Year*</td>
</tr>
<tr>
<td>10 - 100-Year</td>
<td>10 - 100-Year*</td>
</tr>
<tr>
<td>Total</td>
<td>Total**</td>
</tr>
</tbody>
</table>

*Must be at least 1.1 times the floodplain fill **Must be at least 1.1 times the floodplain fill

### 6. CERTIFICATION BY PROFESSIONAL ENGINEER OR PROFESSIONAL LAND SURVEYOR

This application and the drawings, together with other data in this application, have been examined by me and are found to be in compliance with all applicable regulations contained within the Watershed Management Ordinance.

**Certified by:**

- **Municipality**
- **Design Engineer**

**Name:**

**Title:**

**Address:**

**Zip:**

**Signature:**

**Date:**

**Phone:**

### 7. PERMITTEE (MUNICIPALITY)

- **This project is considered a substantial improvement.**

**Address:**

**Zip:**

**Name:**

**Title:**

**Signature:**

**Date:**

**Phone:**

### 8. CO-PERMITTEE (PROPERTY OWNER)

**Address:**

**Zip:**

**Name:**

**Title:**

**Signature:**

**Date:**

**Phone:**

---

**PE SEAL**
102 MG of Required Detention =
1,200 Miles of Rain Barrels
Chicago to Disney World

7.9 MG of Required Volume Control =
90 Miles of Rain Barrels
Chicago to Milwaukee

30.5 MG of Required Compensatory Storage =
350 Miles of Rain Barrels
Chicago to Cleveland

2015 WMO Volume Results

Typical 55 gallon rain barrel
The TCR will be able to store 7.9 billion gallons of CSO or the equivalent to 144 million rain barrels... enough to circle the earth 3.64 times when laid end to end!
WMO Prospective Schedule 2016

• Ongoing Advisory Committee Meetings
  Discuss further permitting improvements

• Watershed Specific Release Rate Study
  • Contracted with Illinois State Water Survey
  • Ongoing QA/QC of DWP Models
  • Phase 1 Results, end of 2016
    Pilot Areas: Uppers Salt and Stony Creek

• Improve and shorten permit forms and paperwork
  • 2 copies of permits
Thank you
Questions

Dan Feltes, P.E., CFM
Daniel.Feltes@mwrd.org

Metropolitan Water Reclamation District of Greater Chicago
100 E. Erie Street
Chicago, Illinois
Reference Slides Follow
1Does not apply to single family lots subdivided after May 1, 2014 (residential subdivision), see Appendix A of the WMO for a list of defined terms
WMO Volume Control Summary

• One inch of volume over total new impervious area

• Can be provided in several ways:
  – Infiltration Trenches
  – Infiltration Basins
  – Porous Pavement (storage in the voids below the pavement)
  – Bio-Retention Systems
  – Dry Wells
  – Cisterns
  – Open Channel Practices Fitted With Check Dams
  – Storage Below the Outlet of a Site Detention Facility

• Credit toward required detention volume (CN reduction)
WMO Volume Control Summary

- When providing storage in void space of aggregate, stone must be angular cut and cleaned/washed free of fines. Different aggregate sizes are acceptable.

- Underdrains are required, and must be offset at least 2” above bottom of volume control storage.

- Bottom of storage must be above groundwater level
  - 2 feet in separate sewer areas
  - 3.5 ft in combined sewer areas
  - Highest seasonal groundwater level established through soil borings

- One monitoring well per 40,000 ft$^2$ of area
Before the MWHD can accept a Watershed Management Permit application submittal, assign it a permit application number, and initiate engineering review; the submittal must include all the items listed below. Incomplete applications will be returned, unreviewed, to the applicant.

General Submittal Requirements:

1. ☐ One (1) copy of this form, checked as appropriate

2. ☐ Four (4) copies of the Watershed Management Permit application (Cover, Schedule A, Schedule B, Schedule C, General Conditions, and Engineering Certifications, original signatures with seals)
   - Municipality’s (Permittee’s) signature on permit form (page 9)
   - Owner/developer’s (Co-permittee’s) signature on permit form (page 9)
   - Design Engineer’s signature and seal on permit form (page 8)
   - Municipal/Systems Engineer’s signature and seal on permit form (page 8)
   - Inspection Engineer’s signature and seal on permit form (page 8)

3. ☐ Two (2) copies of plan set (signed and sealed), as required to initiate review
   Note that four (4) copies of the plans will be required as part of final permit approval (2 copies + 2 original)

4. ☐ One (1) copy of Fee Payment Voucher form & a check for appropriate fees (no personal checks accepted)

5. ☐ One (1) copy of all completed detailed submittal checklists (as specific to the site and development type)

6. ☐ One (1) copy of all supporting calculations, exhibits, etc., as required by the applicable submittal checklists

If the application submittal is for a project that is on the existing development plans list, check the box below; and refer to Legacy Sewerage System Permit application information and provide appropriate legacy permit forms and checklist.

☐ Project is on existing development plans list

If you have any questions, please contact MWHD Engineering Department Permit Section at (312) 751-3255.

For reference, a typical permit schedule package might include the following specific permit schedules, in addition to the base permit application. Circle the example package used as a guide and check the applicable schedule boxes for this application:

<table>
<thead>
<tr>
<th>Development with Stormwater Detention</th>
<th>Sanitary Sewer Only</th>
<th>Development with Floodplain and Wetlands</th>
<th>Storm Sewer Only (ROW, no parcel development)</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Schedule D WMO (w)</td>
<td>☐ Schedule K</td>
<td>☐ Schedule D WMO (w)</td>
<td>☐ Schedule D (for outfall)</td>
</tr>
<tr>
<td>☐ Schedule D Legacy</td>
<td>☐ Schedule O (Direct) or NRI only</td>
<td>☐ Schedule D Legacy</td>
<td>☐ Schedule P</td>
</tr>
<tr>
<td>☐ Schedule K &amp; Exhibit A</td>
<td></td>
<td>☐ Schedule K &amp; Exhibit A</td>
<td></td>
</tr>
<tr>
<td>☐ Schedule R &amp; Exhibit R</td>
<td></td>
<td>☐ Schedule L (if undetained area)</td>
<td></td>
</tr>
<tr>
<td>☐ Schedule P</td>
<td></td>
<td>☐ Schedule H</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>☐ Schedule P</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>☐ Schedule W</td>
<td></td>
</tr>
</tbody>
</table>
## CN Reduction Calculator

### Site Information:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Site Area, $A_s$ (ac)</td>
<td>10</td>
</tr>
<tr>
<td>Runoff, $R$ (in)</td>
<td>5.00</td>
</tr>
<tr>
<td>$P$ = rainfall depth (in)</td>
<td>7.58</td>
</tr>
<tr>
<td>$CN$</td>
<td>78</td>
</tr>
<tr>
<td>$S$</td>
<td>2.82</td>
</tr>
<tr>
<td>Runoff Volume Over Watershed, $V_w$ (ac-ft)</td>
<td>4.17</td>
</tr>
</tbody>
</table>

### Volume of GI Provided:

- **Control Volume, $V_R$:** 0.25 ac-ft
- **Additional Volume, $V_{ADJ}$:** 0.00 ac-ft

- 1" of volume over impervious area
- Additional volume over the required 1"

### Adjusted Volume Over Watershed, $V_{ADJ} - V_w - V_R - V_{GI}$

- $V_{ADJ}$ (ac-ft) = 3.92

### Adjusted Runoff Over Watershed, $R_{ADJ} = \frac{V_{ADJ}}{A_w}$

- $R_{ADJ}$ (in) = 4.70
- $S_{ADJ}$ = 3.28

### Adjusted CN for detention calcs, $CN_{ADJ}$ = 75.32

*Blue values are entered by user*
Role of an Authorized Municipality

• Issue permits for development activities in § 201.1
  – Development within Flood Protection Areas (FPA)
  – Development impacting wetlands
  – Substantial improvements to buildings in regulatory floodplain
  – Development disturbing more than 0.5 acres
    (with some exceptions)

• Perform inspections to ensure compliance with WMO
• Establish fees
Authorized Municipalities shall not issue permits for

- Development activities listed in § 201.2
  - Areas within CSA, tributary to combined sewer or waterway
  - Qualified sewer construction
  - Direct connection to District infrastructure
  - New outfall to waterways or Lake Michigan
  - Existing detention facility
    - Alters service area
    - Modifications
  - Discharging stormwater directly to District property
  - Non-residential on septic or private system connecting to sanitary sewer
Authorization Procedure

Letter of Intent

• Template Available from WMO website
• Legal opinion
• Verified financial statement
• Implementation plan
• Schedule of permit fees
• Exhibit showing corporate limits and CSA
• Contact information sheet

Dr. Catherine A. O’Connor, Ph.D., P.E.
Director of Engineering
Metropolitan Water Reclamation District of Greater Chicago
100 E. Erie Street
Chicago, Illinois 60611

Dear Dr. O’Connor:

Subject: Intent to become an authorized municipality to administer the Watershed Management Ordinance

The Town/City/Village of ___________________ (“municipality”) intends to become authorized to adopt and administer the Watershed Management Ordinance (“WMO”) to the extent allowed by Article 14 of that ordinance.

The municipality designates Mr./Ms. __________________ as the municipality’s enforcement officer. All correspondence should be directed to Mr./Ms. __________________’s attention at the following address:

Street Address
City, State ZIP

Please find the following documents enclosed in support of this letter of intent.

1. Legal Opinion indicating the municipality has legal authority to perform all obligations required by the WMO, including:
   a. Regulating erosion and sediment control, stormwater management, floodplains, isolated wetlands, and riparian environments;
   b. Conducting inspections on private property;
   c. Issuing watershed management permits;
   d. Administering the WMO; and
   e. Entering into an intergovernmental agreement with the District.

2. A verified statement of financial capacity to perform and adequately fund the municipality’s obligations related to the administration of the WMO as set forth in Article 14 of that ordinance.

3. An implementation plan, with an estimate of permit load and available review staff.

4. Schedule of Permit Fees.

5. An exhibit delineating the corporate limits of the municipality for the purposes of administering the WMO. Note that areas within the limits of the Combined Sewer Area Limits cannot be locally administered.

6. Contact information sheet.

Please contact the municipality’s enforcement officer at (XXX) XXX-XXXX if you require further information.

Very truly yours,

Municipal Executive

Month XX, Year
**Annual Reporting**

- **SSOs and basement backups:**
  - Summary of all SSOs and basement backups, not including those caused by collapse/blockage solely on the private service lateral
  - Maintain records of all SSOs and basement backups (example form in TGM)

<table>
<thead>
<tr>
<th>Report Due Date</th>
<th>Reporting Year</th>
<th>Report Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>March 1, 2015</td>
<td>2014</td>
<td>ICAP Annual Summary Report</td>
</tr>
<tr>
<td>March 1, 2016</td>
<td>2015</td>
<td>Short Term Requirements Annual Summary Report</td>
</tr>
<tr>
<td>March 2021</td>
<td>2020</td>
<td>Long Term O&amp;M Annual Summary Report</td>
</tr>
</tbody>
</table>
Multi-County Municipalities

- **May adopt adjacent county stormwater ordinance**
- **Process**
  - Letter of intent
  - Adoption of adjacent county ordinance
  - Intergovernmental Agreement
- **Permits**
  - Municipality issues permits for activities in Section 201.1
  - District issues permits for activities in Section 201.2
Under the Current SPO
MWRD Involvement in Project

- Design Project
- Apply for MWRD Permit
- Mobilize
- Obtain Permit
- Substantial Completion
- MWRD Inspect
- Occupancy

Cost: $$
<table>
<thead>
<tr>
<th>Design Project</th>
<th>Mobilize</th>
<th>Substantial Completion</th>
<th>Apply for MWRD Permit</th>
<th>MWRD Inspect</th>
<th>Obtain Permit</th>
<th>Occupancy</th>
</tr>
</thead>
</table>

Under the Current SPO

MWRD Involvement in Project (expedited)
# Under the Coming WMO

## MWRD Involvement in Project

<table>
<thead>
<tr>
<th>Design Project</th>
<th>Apply for MWRD Permit</th>
<th>Obtain Permit</th>
<th>Mobilize</th>
<th>Sewer Work</th>
<th>Substantial Completion</th>
<th>Occupancy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>• MWRD Erosion Inspection</td>
<td>• MWRD Inspect</td>
<td>• MWRD Inspect</td>
<td>$ $$</td>
</tr>
</tbody>
</table>
Frequently Asked ‘Key’ Questions

✦ Is the WMO really effective May 1, 2014?
  Yes

✦ How do I get on the existing development plans list, aka the ‘grandfather’ list? When is it due?
  **Contact your municipality or township, List due by 5/1/14**

✦ When will WMO training be provided?
  **Third and fourth week of April**

✦ How long will it take to obtain a WMO permit?
  **That depends on what is submitted…**
  Initial submittal response: 15 working days / 30 for complicated
  10 working days for resubmittal
Frequently Asked ‘Key’ Questions

✧ Is there a deadline to submit a letter of intent to become an authorized municipality?

**There is no deadline**

✧ Will the District’s inundation maps be used to establish the FPE?

**No, refer to FEMA regulatory floodplain maps (FPE = BFE + 2’)**

✧ How do I provide detention according to the new WMO standards in a high density downtown area?

**Detention trading is a final option, but lots of flexibility**

✧ When will the snow melt and this record breaking winter end?

May 1, 2014
MWRD SEPARATE SEWER AND COMBINED SEWER AREAS

LEGEND:
- Separate/Unsewered area, 508.5 sq. mi.
- Combined Sewer area, 375 sq. mi.