

The Metropolitan

Water Reclamation District

of Greater Chicago

**WELCOME
TO THE OCTOBER EDITION
OF THE 2013
M&R SEMINAR SERIES**



BEFORE WE BEGIN

- **SILENCE CELL PHONES & SMART PHONES**

- **QUESTION AND ANSWER SESSION WILL FOLLOW PRESENTATION**

- **PLEASE FILL EVALUATION FORM**

- **SEMINAR SLIDES WILL BE POSTED ON MWRD WEBSITE (www.MWRD.org: Home Page ⇒ Reports ⇒ M&D Data and Reports ⇒ M&R Seminar Series ⇒ 2012 Seminar Series)**

- **STREAM VIDEO WILL BE AVAILABLE ON MWRD WEBSITE (www.MWRD.org: Home Page ⇒ MWRDGC RSS Feeds)**



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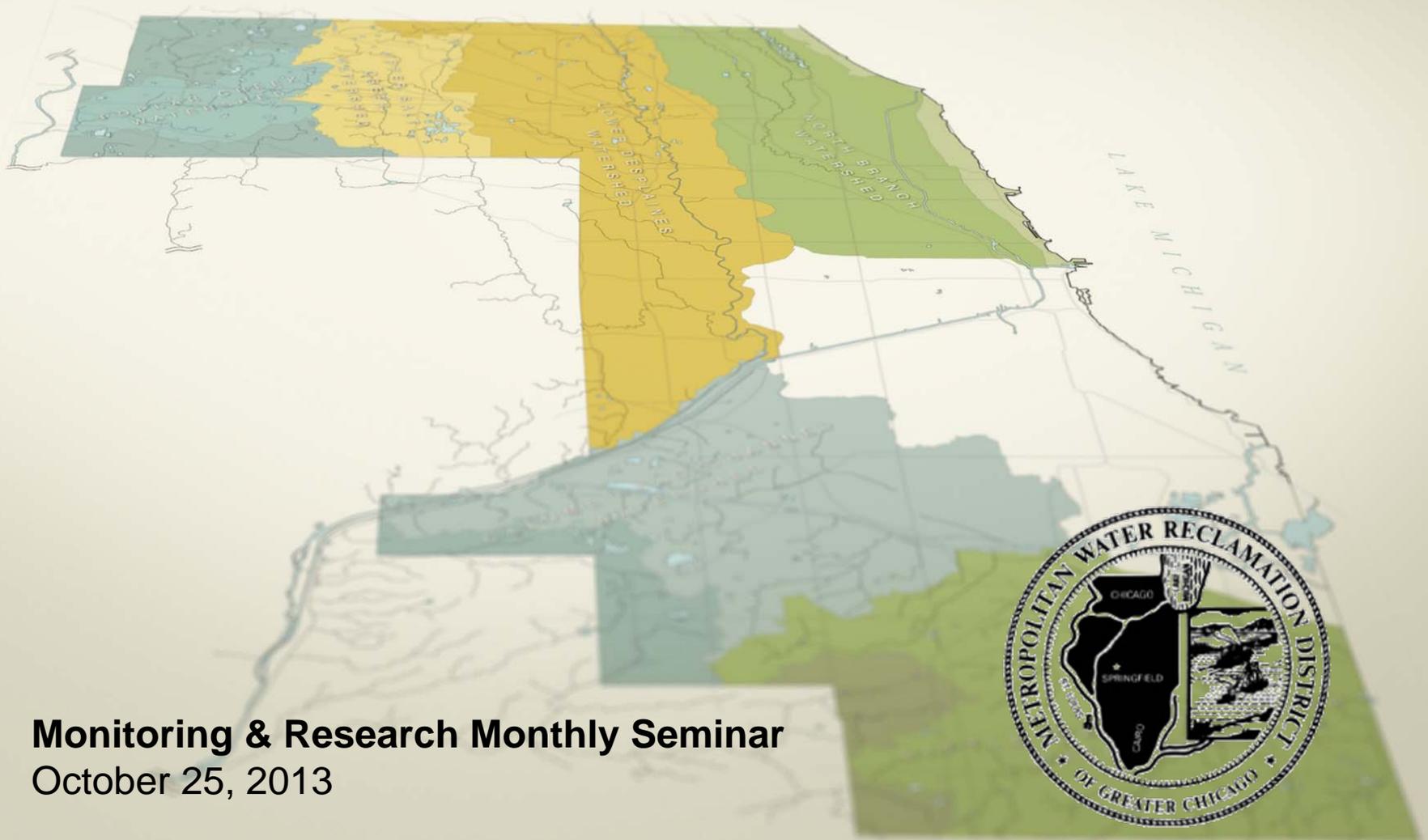
Experience: Section Head of Stormwater Management Section, Engineering, MWRDGC
Section Head of Local Sewer Systems Section, Engineering, MWRDGC

Education : Bachelor of Science in Civil Engineering from Purdue University

Professional: Registered Professional Engineer
Certified Floodplain Manager (CFM)

Hobbies: Coaching youth sports (basketball, softball)

Watershed Management Ordinance



Monitoring & Research Monthly Seminar
October 25, 2013



MWRDGC Stormwater Management Historical Role

30+ Regional Flood Control Reservoirs

Tunnel and Reservoir Plan (TARP or Deep Tunnel)

Sewer Permit Ordinance

1972 Detention Requirements





Legislative History

- Severe Flooding Generates Awareness
 - 1986 & 1987
- Illinois General Assembly Responded with Legislation
 - **Public Act 85-905**
 - DuPage County
 - Kane County
 - Lake County
 - McHenry County
 - Will County
 - **Public Act 093-1049**
 - Cook County



Enabling Legislation Stormwater Management Program

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

Public Act 093-1049

November 2004



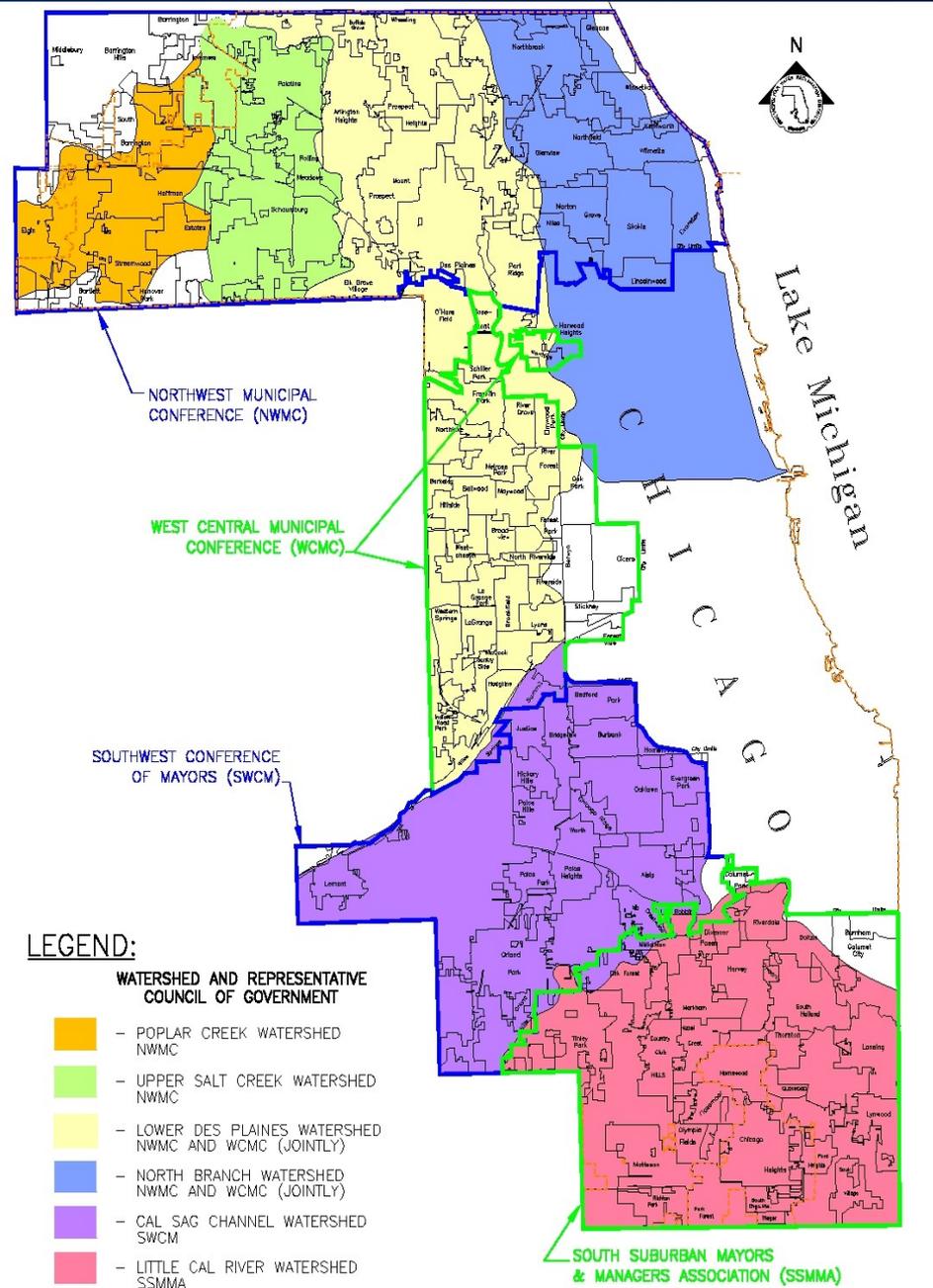
Cook County Stormwater Management Plan

- **Required under Public Act 093-1049**
- **Framework for the District's Stormwater Management Program**
- **Adopted by the District's Board of Commissioners**
 - February 15, 2007

MWRDGC STORMWATER MANAGEMENT

Map Of Cook County Watersheds Planning Councils:

- *North Branch of the Chicago River*
- *Lower Des Plaines River and Tributaries*
- *Calumet Sag Channel*
- *Little Calumet River*
- *Poplar Creek*
- *Upper Salt Creek*



NOTE: COMBINED SEWER WATERSHED NOT SHOWN.



Two Key Objectives of Stormwater Management Program

- 1. Capital Improvement Program to address existing flooding concerns**
- 2. Comprehensive stormwater regulations to prevent future development and redevelopment projects from exacerbating flood damages**



Cook County Stormwater Management Plan

- **Goal D**

“Promote responsible land use practices in all areas of watersheds of Cook County, particularly within floodplains and floodways.”

- **Goal E**

“Establish uniform, minimum countywide stormwater management regulations. . . .”



WMO Statutory Authority

“The District may prescribe by ordinance reasonable rules and regulations for floodplain and stormwater management and for governing the location, width, course, and release rate of all stormwater runoff channels, streams, and basins in Cook County. . . .”

Public Act 093-1049

November 2004



WMO Development Initiated in 2007

Developed an Advisory Committee

- Two members from each watershed planning council
- Members from non-governmental organizations
- Members from regulatory governmental agencies
- 33 total members

Drafted White Papers

- Detention
- Volume Control
- Wetlands, Riparian Areas, Floodplain
- Erosion and Sediment Control
- Volume Control



CHICAGO
CUBS







WMO Components

- **Erosion and Sediment Control**
- **Stormwater Management**
 - Detention
 - Volume control
- **Flood Protection Areas**
 - Floodplain
 - Floodway
 - Isolated wetlands
 - Riparian areas



2009 Public Review Draft

- **Stakeholder involvement**
 - Watershed Planning Councils
 - Advisory Committees
- **Public Review**
 - Concluded December 31, 2009
 - 6 Study Sessions throughout Cook County
 - Written comments
 - Municipalities Requested an Economic Impact Study



Most Common 2009 Public Review Concerns

- **Increased stormwater detention volume requirement**
- **Existing development plans**
- **Local administration**
- **Overlapping regulations with other agencies**
- **Redevelopment**



Release Rates

Sewer Permit Ordinance (SPO)

Average Historical Rate

- **SPO Release Rate Methodology:**
 - Rational Method
 - 3-year undeveloped condition
 - Technical Paper 40 rainfall data
- **Historical SPO Release Rates:**
 - **Finding: 0.30 cfs/acre**
 - Based on existing permits



Release Rates (100-Year Detention Requirements)

County	Release Rate (cfs/acre)	Methodology	Original Adoption Date
Cook 2009 DRAFT WMO	0.15	Hydrograph	N/A
Lake	0.15	Hydrograph	10/18/1992
McHenry	0.15	Hydrograph	1/20/2004
Will	0.15	Hydrograph & Modified Rational Method	1/1/2004
DuPage	0.10	Hydrograph	9/24/1991



Release Rate

The NIPC Study

- Evaluation of Stormwater Detention Effectiveness in Northeastern IL
- Published in 1989 by the Northeastern Illinois Planning Commission (NIPC is now known as CMAP)
- Foundation for the NIPC Model Stormwater Drainage and Detention Ordinance
- Watershed studied
 - Upper Salt Creek Watershed
 - 30 square miles



Release Rate

The NIPC Study

- **Recommendations**
 - Stormwater detention volume should be computed using a hydrograph method
 - The modified rational method should not be used for stormwater detention design
 - Bulletin-70 rainfall data should be used
 - Release rates should limit stormwater discharges:
 - 2-year release rate of 0.04 cfs/acre
 - 100-year release rate of 0.15 cfs/acre
 - A larger watershed should be studied



Volume Control Comparison

	WMO	Lake County	Du Page County	Current recommendation to IEPA by Post Development Stormwater Runoff Standards Workgroup
Capture (inches)	1.00	Maximum Extent Practicable	1.25	1.00 New Development 0.85 Redevelopment



Economic Impact Study

- **Requested by the Municipal Conferences**
- **Purpose**

Estimate the potential economic effect the draft WMO detention requirements may have on real estate development in Cook County

- **Scope**
 - Developed with input from WMO Advisory Committee
 - Analyzed five representative developments
 - Two Components
 - Engineering analysis
 - Economic analysis



Economic Impact Study – 3 Scenarios

1. Sewer Permit Ordinance

- Modified rational method
- 3-year undeveloped release rate
- TP-40 rainfall data (1961)

2. Sewer Permit Ordinance with Bulletin-70 Rainfall

- Modified rational method
- 3-year undeveloped release rate
- TP-40 rainfall data (1961)

3. Draft WMO (2009 Public Review Draft)

- Hydrograph method
- Fixed release rate (0.04/0.15 cfs/ac)
- Bulletin-70 rainfall data (1989)



Economic Impact Study Observations

- **Development cost increases for the WMO scenario (2009 Public Review Draft)**
- **Marginal increases in stormwater management costs for the Sewer Permit Ordinance with Bulletin-70 rainfall data scenario (Historical Release Rates)**
- **Cook County cannot afford increased flooding**



2013 WMO

- **Revised over 6 month period based on input from Advisory Committee and EIS findings**
- **Addressed comments from:**
 - 2009 Public Review
 - Economic Impact Study
 - WMO Advisory Committee
 - 2012 Board of Commissioners Study Session



Summary of WMO Changes Since 2009

- **Authorized Municipalities**
 - Communities may self administer the WMO
 - Communities must be qualified and willing
 - District oversees local administration
- **Multi-County Municipalities**
 - Given a choice of which county ordinance to administer
- **Removed Overlapping Wetlands Regulations**
 - US Army Corps of Engineers jurisdiction overlap
 - Streamline non-Corps' regulations for isolated wetlands



Summary of WMO Changes Since 2009 (cont.)

- **Integration of Sewer Permit Ordinance**
 - Sewer Permit Ordinance
 - Manual of Procedures for the Administration of the Sewer Permit Ordinance



Summary of WMO Changes Since 2009 (cont.)

- **Release Rates**
 - 2-Year release (0.04 cfs/ac) requirement removed
 - Release rate set at 0.30 cfs/ac for first five years
- **Floodplain Requirements**
 - Base Flood Elevation determined by FEMA
 - Not to be based on District's inundation maps
 - Flood Protection Elevation
 - Increased to 2-feet



Summary of WMO Changes Since 2009 (cont.)

- **Existing Developments Plans List from Municipalities**
 - A one-year time extension
 - May submit permits under existing SPO requirements
 - Provided for development already under design
 - Given 3-years from a permit issuance to start construction



Summary of WMO Changes Since 2009 (cont.)

- **Offsite Detention Allowance**
 - Constrained project sites may 'trade' detention
- **Full Credit for Green Infrastructure (GI) Detention**
 - 100% of volume accepted
 - Previously only volume from first inch of runoff
- **Clarified Single Family Homes Exempt**



WMO Public Review 2013

- **Four public meetings**
 - Northwest Municipal Conference
 - Southwest Conference of Mayors
 - South Suburban Mayors and Managers Association
 - West Central Municipal Conference
 - **Concluded August 9, 2013**
- **Public comments**
 - ~ 39 technical comment letters
 - ~ 56 specific letters of support
 - ~ 460 opposition emails (form letter)
 - ~ 718 support emails (form letter)
 - **Board of Commissioners Study Session (9/11/13)**



2013 Post Public Review Revisions

- Release Rate
 - Watershed specific release rates after 5-years or 0.15 cfs/acre
- Opportunities with Land Banks
 - Cook County Land Bank Authority
 - South Suburban Land Bank and Development Authority
- Permit Review Timeframe
 - District same under same time requirements as authorized municipalities
- Other Clarifications



Release Rate Comparison

	WMO	Lake County	Du Page County	Kane County	McHenry County	Will County
100-Year Release Rate (cfs/ac)	0.30 (< 5-yrs) Watershed Specific (> 5-yrs) or 0.15	0.15	0.10	0.10	0.15	0.15



WMO Adoption October 3, 2013





WMO - Moving Forward

Deadline Effective Date: May 1st 2014

- **Authorize willing and qualified municipalities**
- **Compile Existing Development Plans List**
- **Develop Technical Guidance Manual**
 - Create new permit forms
 - Develop illustrative examples
 - Create web-based detention calculator tool
 - Flow diagrams and streamline permit process
- **Conduct training:**
 - In-house engineering staff
 - Design engineers
 - Municipal engineers
 - Inspection Technicians



Acknowledgements



Thank You Comments & Questions

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