

***Protecting Our Water Environment***



**Metropolitan Water Reclamation District of Greater Chicago**

**Cook County Watershed  
Management Ordinance  
March 12, 2009  
John P. Murray, PE, CFM**

# Agenda

- *Legislative Authority*
- *WMO Development Process*
- *Draft WMO Standards*
- *Schedule*
- *Questions*

# Cook County Stormwater Management Program

- *Public Act 93-1049 (2004) conveyed authority to MWRD for stormwater management for Cook County*
- *Cook County Stormwater Management Plan*
- *Comprehensive countywide stormwater management program*
  - *Watershed Plans*
  - *Capital Projects*
  - *Regulations*
  - *Maintenance*
  - *Research*
  - *Public Outreach*

# Cook County Statistics

**Population >> Over 5 million, larger than the population of 29 states**

**Size >> approximately 950 square miles**

**Number of Municipalities >> 130+**

**BIG & COMPLICATED!!!**

# Watershed Management Ordinance (WMO)

## Authority per Public Act 93-1049

- *Act gives MWRD authority to establish rules and regulations to mitigate flooding due to development*
- *Act affords the District an opportunity to expand and update the stormwater provisions of the Sewer Permit Ordinance.*
- *From the Act: “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....”*
- *Rules and regulations, at a minimum, must meet the standards of FEMA and IDNR/OWR*

# Cook County Watershed Management Ordinance

**Objective :** Establish uniform, minimum, and comprehensive countywide stormwater management regulations

**Note:** Municipalities are welcome and encouraged to adopt more stringent standards than the minimum standards of the WMO

## **Comprehensive Ordinance:**

- **Drainage and Detention**
- **Floodplain Management**
- **Wetlands**
- **Soil Erosion and Sediment Control**
- **Water Quality**
- **Riparian Area**

# STORMWATER MANAGEMENT >> CURRENT PERMITTING AUTHORITIES

<i>Regulatory Item</i>	<i>Metropolitan Water Reclamation District</i>	<i>Collar Counties and some Cook County Municipalities</i>	<i>Army Corps of Engineers</i>	<i>Illinois Department of Natural Resources - Office of Water Resources</i>	<i>Illinois Environmental Protection Agency</i>
<i>Floodplain Management</i>		X		X	
<i>Drainage and Detention</i>	X	X			
<i>Wetland Protection</i>		X	X		
<i>Stream Habitat and Riparian Environment Protection</i>		X	X		
<i>Soil Erosion and Sediment Control</i>		X	X		
<i>Stormwater Quality</i>		X			X

# Cook County Watershed Management Ordinance (WMO)

## WMO Stakeholders:

- All Citizens of Cook County
- Mayors / Watershed Planning Councils
- Ecosystem Partners
- Environmental Groups
- Village Engineers / Public Works Directors / City Planners
- Consulting Engineers
- Developers

Essentially **EVERYONE** who lives or does business in  
Cook County!



# WMO Development Process

1. **Began in February 2007**
2. **White Papers >> introduces components and concepts**
3. **Decision Papers >> discusses potential standards**
4. **Draft Language**
5. **Technical Guidance Manual (TGM)**

# WMO Development Process

Two advisory committees formed:  
TAC and PPOAC

## Technical Advisory Committee (TAC)

- *Membership comprised of 2 municipal engineers/public works directors from each Watershed Planning Council and agencies which have stormwater management regulatory authority (FEMA, Corps of Engineers, Collar Counties, etc.)*

# WMO Development Process

## Public and Private Organization Advisory Committee (PPOAC)

- *Membership comprised of ecosystem partnerships, environmental group such as Friends of the Chicago River, Openlands, Environmental Law and Policy Center, Friends of the Forest Preserve District*

# WMO Development Process

## Watershed Planning Council (WPC) Involvement

In addition to having 2 TAC reps:

- All WMO documents are transmitted to the municipal conferences of Cook County for dissemination to the WPC membership
- District representative attends all WPC meetings to discuss WMO

# WMO Development Process

- *Technical Advisory Committee (TAC)*
  - 10 TAC meetings beginning in July 2007
- *Public & Private Organization Advisory Committee (PPOAC)*
  - 5 PPOAC meetings beginning in November 2007
- *Full technical requirement draft presented to TAC & PPOAC, Dec 11, 2008*
  - Written comments were due January 23, 2009

# DRAFT WMO Standards

## Thresholds/Detention Requirements:

Site Area	2-Year Release Rate	100-Year Release Rate	Detention Volume Determination
<b>0 ac ≤ Area ≤ 3 ac (non-residential) 1 ac ≤ Area ≤ 5 ac (residential)</b>	<b>None</b>	<b>None</b>	<b>None, Utilize Volume Control or Reduction in Impervious Surface (redevelopment)</b>
<b>3 ac ≤ Area ≤ 7 ac (non-residential) 5 ac ≤ Area ≤ 7 ac (residential)</b>	<b>None</b>	<b>0.15 cfs/ac</b>	<b>Unit Area Method or Hydrograph Methods</b>
<b>Area &gt; 7 ac (residential and non-residential)</b>	<b>0.04 cfs/ac</b>	<b>0.15 cfs/ac</b>	<b>Unit Area Method or Hydrograph Methods</b>

# DRAFT WMO Standards

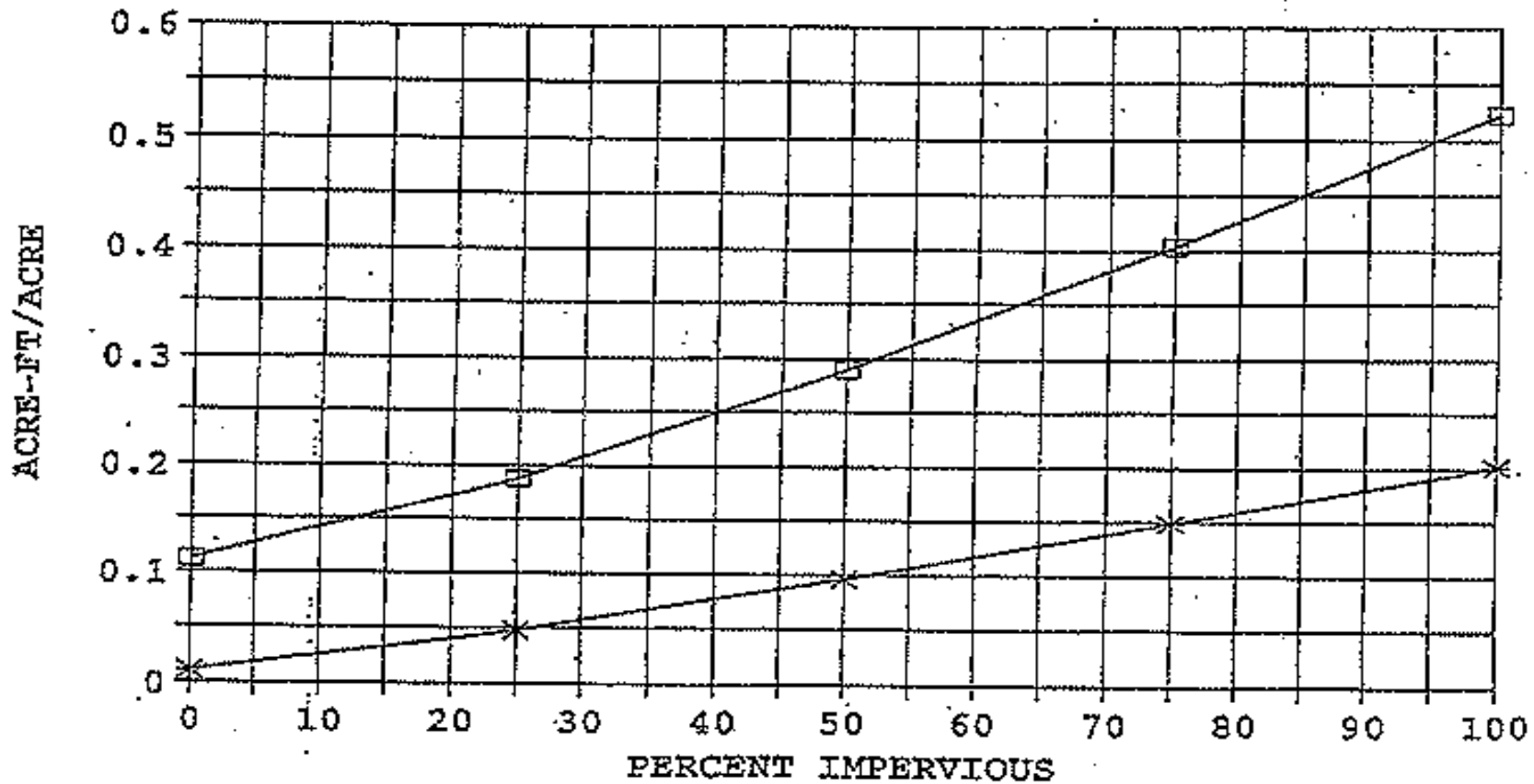
## Drainage and Detention

- Bulletin 70 rainfall data, Huff rainfall distribution
- Unit Area Method or Hydrograph Methods (TR-20, HEC-HMS, etc.) for detention volume determination
- Detention for development or redevelopment is prohibited in the floodway
- Maintenance is exempt
  - *Road resurfacing, etc.*

# DRAFT WMO Standards

## Drainage and Detention

2-YEAR AND 100-YEAR UNIT AREA DETENTION



2-year release = 0.04 cfs/acre, 100-year release = 0.15 cfs/acre

—\*— 2-YEAR    —□— 100-YEAR



# **DRAFT WMO Standards**

## **Volume Control**

- **Capture and retain 1-inch of stormwater runoff from new impervious areas for all development over 1 acre**
- **Redevelopment Sites, capture and retain 1-inch of stormwater runoff from new impervious areas for redevelopment sites over 1 acre OR achieve 20% reduction in impervious surface from existing conditions**
- **If capture or reduction not feasible, then variance may be granted (Fee-in-lieu)**

# DRAFT WMO Standards

## Volume Control

### ■ How?

- *Extended detention (dead storage)*
- *Suite of quantifiable BMPs*
  - *Porous pavement*
  - *Swales*
  - *Rain Gardens*

# **DRAFT WMO Standards**

## **Floodplain Management**

**Flood Protection Elevation = 1-ft above Base Flood Elevation (BFE)**

**BFE is highest elevation determined from:**

- 1. Cook County Flood Insurance Study (FIRMs)*
- 2. Project-specific floodplain studies*
- 3. Inundation Maps from MWRD's Detailed Watershed Plans*

**Compensatory Storage Ratio = 1.1:1.0 (FIRM BFE)**

# DRAFT WMO Standards

## Wetlands

- Permit/mitigation is required for impacts to a wetland or wetland buffer area greater than 0.10 acre
- Isolated wetlands are regulated
- Mitigation ratios for isolated wetlands same as Army Corps of Engineers for jurisdictional wetlands

# **DRAFT WMO Standards**

## **Riparian Area**

**Permit/mitigation is required for impacts to the functions and values of a riparian area**

**Riparian area is setback distance determined by the quality of the stream**

# Permits

- *A Watershed Management Permit will be required for applicable development*
  - *Primary Trigger for MWRD permit under Local Sewer Permit Ordinance is a sanitary sewer connection*
  - *Trigger for Watershed Management Permit will be earthwork affecting stormwater runoff*

# What Will Not Change for Municipal Ordinances:

- *Minor stormwater system requirements, and subdivision, zoning, and other development requirements of your community will still apply.*
- *Your community will still issue building permits.*
- *Still a participating community in the National Flood Insurance Program (NFIP). WMO does not replace NFIP ordinance requirements.*
- *Your community may adopt more restrictive requirements.*
- *Developers are still obligated to obtain required state and federal permits.*

# HOW IS THE WMO DIFFERENT FROM EXISTING MUNICIPAL ORDINANCES?

## Summary of Cook County Municipal Existing Watershed Management Requirements

### Cook County Watershed Planning Council

	<i>Little Calumet River</i>	<i>Lower Des Plaines River*</i>	<i>North Branch Chicago River</i>	<i>Poplar Creek *</i>	<i>Upper Salt*</i>	<i>Calumet-Sag</i>	<i>Entire County</i>
Municipalities within Watershed**	38	59	20	9	10	27	135
Fixed Release Rate w/ Hydrograph Method vs. MWRD Release Rate	13 34%	17 29%	7 35%	6 67%	5 50%	4 15%	43 32%
Compensatory Storage Currently a Ratio of 1.1 or More to 1.0 for Fill in Floodplain	13 34%	27 46%	11 55%	7 78%	8 80%	9 33%	62 46%
1 foot of Freeboard or More Currently Required (Flood Protection Elevation - FPE)	20 53%	34 58%	14 70%	8 89%	10 100%	13 48%	81 60%

January 2009

\* Not including towns who implement other county requirements within corporate boundaries outside of Cook County.

\*\* Not including Uninc. Cook County



# NEAR FUTURE PERMITTING AUTHORITIES

<i>Regulatory Item</i>	<i>Metropolitan Water Reclamation District</i>	<i>Collar Counties and some Cook County Municipalities</i>	<i>Army Corps of Engineers</i>	<i>Illinois Department of Natural Resources - Office of Water Resources</i>	<i>Illinois Environmental Protection Agency</i>
<i>Floodplain Management</i>	X	X		X	
<i>Drainage and Detention</i>	X	X			
<i>Wetland Protection</i>	X	X	X		
<i>Stream Habitat and Riparian Environment Protection</i>	X	X			
<i>Soil Erosion and Sediment Control</i>	X	X	X		
<i>Stormwater Quality</i>	X	X			X

# Stakeholder Concerns

- *Received 57 letters from municipalities, agencies or organizations commenting on the December 11, 2008 draft of the WMO technical standards*
- *Common concerns:*
  - Exemptions / Grandfathering
  - Variance Procedures and Enforcement
  - Technical Requirements
    - Redevelopment / Combined Sewer Areas
    - Increased detention requirements
    - Floodplain compensatory storage ratios

# Cook County Watershed Management Ordinance (WMO)

## Schedule:

- Draft WMO out for public review Spring 2009
- Public review period
- Necessary Revisions
- Present WMO to MWRD Board of Commissioners
- Address any comments from MWRD Board of Commissioners
- Adoption of WMO by MWRD Board of Commissioners
- Effective 2009, 2010....

# **Cook County Watershed Management Ordinance (WMO)**

**Project Team:**

**Engineering Resource Associates (ERA)**

**Project Manager >> Bruce Maki**

- **Black & Veatch**
- **Molly O'Toole and Associates**
- **Infrastructure Engineering**
- **Bronner Group**

Visit the District's website [www.mwrd.org](http://www.mwrd.org) for further information about MWRD and the Cook County Stormwater Management Program

**QUESTIONS????**