

## Updating the MWRD's Excessive Infiltration and Inflow Control Program


April 3, 2014  
MWRD Board Room  
Study Session

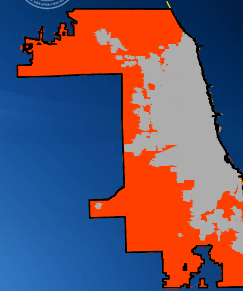


## Presentation Overview

- District's Collection System
- Historical Context of Program
- New Program Development: ATP
- Program Recommendations
- Comments from the Community

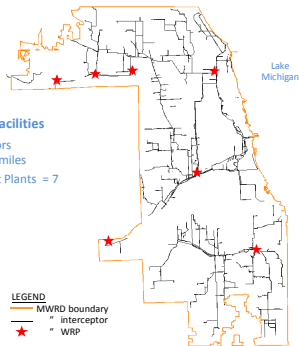
## MWRD SEPARATE SEWER AND COMBINED SEWER AREAS

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



## MWRD Facilities

Interceptors  
= 554 miles  
Treatment Plants = 7



## What is I/I?

- **Infiltration:** Groundwater that enters a sewer via sewer system defects (cracks, open joints)
- **Inflow:** Stormwater that enters a sewer system
  - illegal connections
    - downspouts
    - storm-sanitary cross-connections
    - yard drains, etc.
  - system deficiencies
    - manhole covers with damage or open joints
    - cleanouts with missing caps, etc.
- **Excessive I/I:**
  - diminishes the capacity of the systems and
  - poses operational challenges
  - NPDES permit violations (e.g., SSOs, basement backups)
  - health hazards, property losses, and higher tax/rate-payer costs

## History of MWRD I/I Control

- Federal Clean Water Act – 1972
- Article 6-5 of the MWRD Manual of Procedures – 1973
- Wet-weather flow limit raised to 150 gpcpd in mid 1970s following expressions of difficulties by tributary agencies
- Sewer Summit Agreement (1985) endorsed by USEPA and IEPA: Two Compliance Options
  - 150 gpcpd daily average wet weather flow
  - Cost-effectiveness based ICAP



### Current Status

- 121 out of 125 tributary agencies are in technical compliance
- Those 121 agencies and 8 additional are required to submit annual summary reports in 2014



### Recent Developments

- IEPA has imposed a special condition in the NPDES permits that requires the system owners to implement measures in addition to the Sewer Summit Agreement if excessive wet weather flow causes or contributes to basement backup or SSOs
- There has been an increase in wet weather flows to the MWRD facilities
- MWRD formed the Advisory Technical Panel to address these developments



### ATP Composition and Work

- ATP Members: USEPA, IEPA, COGs-sponsored representatives from member municipalities, local sanitary districts, utility companies, consulting engineers and MWRD staff
- ATP held bi-monthly/monthly meetings over the last two years and has developed an I/I Control Program to address the regulatory requirements

### Consequences of Ineffective I/I Control

NPDES Permit Violations

Consent Decrees

Regulatory Fines

Higher Conveyance & Treatment Costs

### Consequences of Ineffective I/I Control



### New I/I Control Program Elements

- Applicability
- Scope & Goals
- Short Term Requirements
- Long Term Program
- Annual Reporting
- System Analysis
- Enforcement
- Funding



### Applicability

- All tributary municipalities that own and/or operate a sanitary sewer system that discharges directly and/or indirectly into MWRD facilities



### Scope & Goals

- Comply with the NPDES Permit
- Eliminate basement backups (BBs)
- Eliminate waterway pollution through sanitary sewer overflows (SSOs)
- Work with municipalities on a cost-effective approach to I/I reduction



### Short Term Requirements

- To be completed within the first 5 years
  - Public Sector Condition Assessment and Rehabilitation
  - Development of Private Sector Program by each municipality
  - Development of Long Term O&M Program by each municipality



### Public Sector Condition Assessment

- Assessment of medium to high risk public sewer system condition through inspections
- Prioritization of areas with SSOs, BBs and surcharging, including areas upstream
- Plan for correcting identified defects, including a schedule and funding approach
- Removal of illegal downspout connections
- Prior documented inspections may be credited



### Private Sector Program

- Program to be developed by each tributary municipality within 5 years
- Municipalities with existing programs should submit for review within 6 months
- Program should address:
  - Areas to inspect for I/I source identification
  - I/I sources that require immediate or long term correction
  - Enactment of local ordinances and enforcement



### MWRD Support

- GIS platform for collection system inventory
- CMMS to support program management
- Customer service software: BB, SSO tracking
- Unit pricing for flow monitoring
- Economies for multi-community
  - Sewer cleaning
  - Sewer repair
  - Sewer rehabilitation



### Long Term O&M Program

- Implemented no later than 5 years
- Implementation of the Private Sector Program
- Implementation of the Public Sector Program
  - Continual sewer inspection, maintenance, cleaning and rehabilitation
  - Proactive Program addressing sewers on a prioritized basis
  - Emergency Program addressing BBs and SSOs
  - GIS Mapping and Asset Management
  - Prioritized Capital Improvement Plan (CIP)
  - Funding plan for O&M, rehabilitation and replacement



### Annual Reporting

- Report progress toward completing the Short Term Requirements
- Report completed work under the Long Term O&M Program
  - Includes all inspection, cleaning, maintenance and rehabilitation work completed
  - Summary of all public and private sector SSOs and BBs



### System Analysis

- MWRD
  - Identify/allocate MWRD interceptor capacity
  - Develop local storage standards/regulations and guidelines
- Municipal Sewer System and ATP
  - Develop performance metrics to define success
  - Develop percentage of system to be inspected/cleaned/rehabilitated annually



### Enforcement

- MWRD
  - Loss of eligibility for funding assistance
  - Loss of status as an Authorized Municipality
  - Report to IEPA and/or USEPA
  - Denial of WMO permit for qualified sewer construction
- Municipality
  - Enact and enforce ordinance(s) to address non-compliance with the Private Sector Program
  - Incentive program(s) to encourage compliance



### Funding

- The MWRD may provide funding options to the municipalities for their I/I removal subject to Public Act 90-0690 as amended from time to time
- The IEPA has SRF funding available to all communities within the MWRD corporate limits
- Municipalities can fund their Short Term Requirements and Long Term O&M Program via local sewer service fees or other funding options



### I/I Webpage

[ii.mwr.org](http://ii.mwr.org)







### ATP Tasks

#### Priority 1 – complete mid-2014

- Sewer system inspection, assessment, and prioritization standards
- Private Sector Program Outline
- Annual reporting forms

#### Priority 2 – complete by end of 2014

- Long Term Program Outline
- Interceptor Capacity Analysis
- MWRD assistance with flow monitoring and rainfall data

#### Priority 3 – complete beyond 2014

- Development of outcome based metrics



### Public Comments/Questions

- Funding (sources, debt forgiveness, etc.)
- SRF Loan administration through MWRD
- Green Infrastructure initiative funding for I/I reduction projects
- Exemption of the combined sewer area
- Access to properties for inspections
- Inspection of properties at time of sale
- Components and Goals of Long Term O&M Program
- Regulators opinion on a 5-year window to meet the Short Term Requirements



### Questions