



Updating the MWRD's Excessive Infiltration and Inflow Control Program

February 19, 2014

Southwest Conference of Mayors


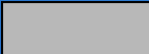
Chicago Ridge, Illinois

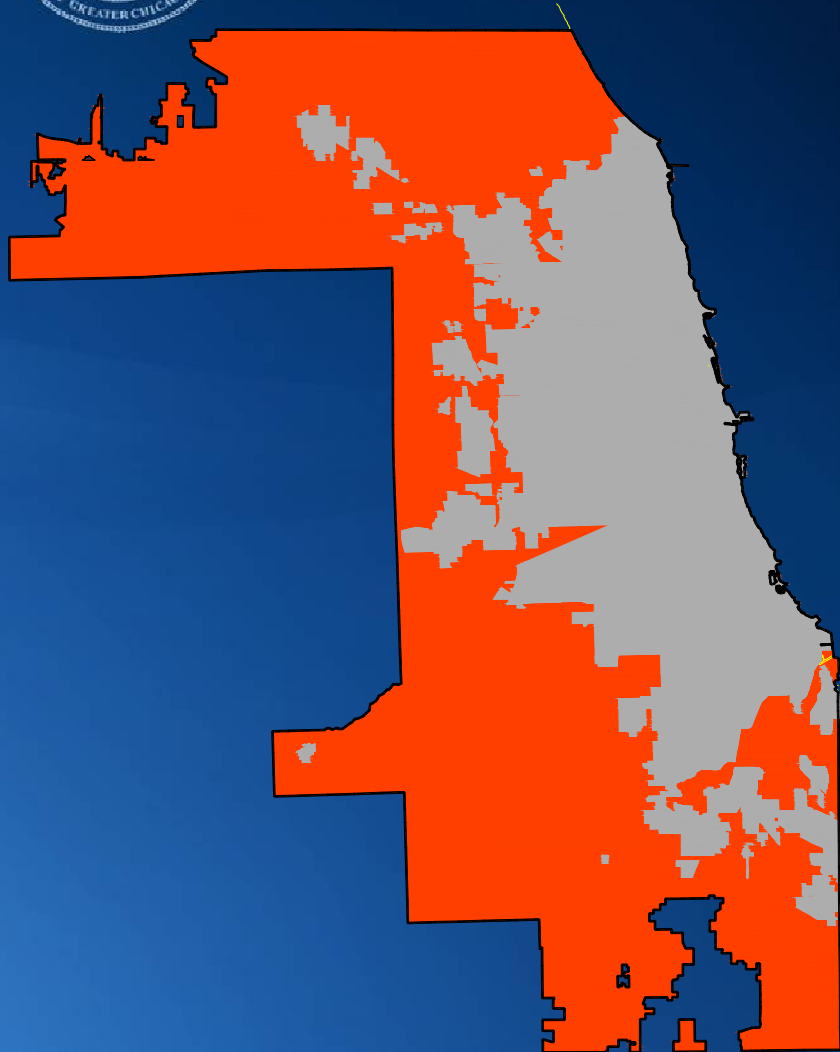


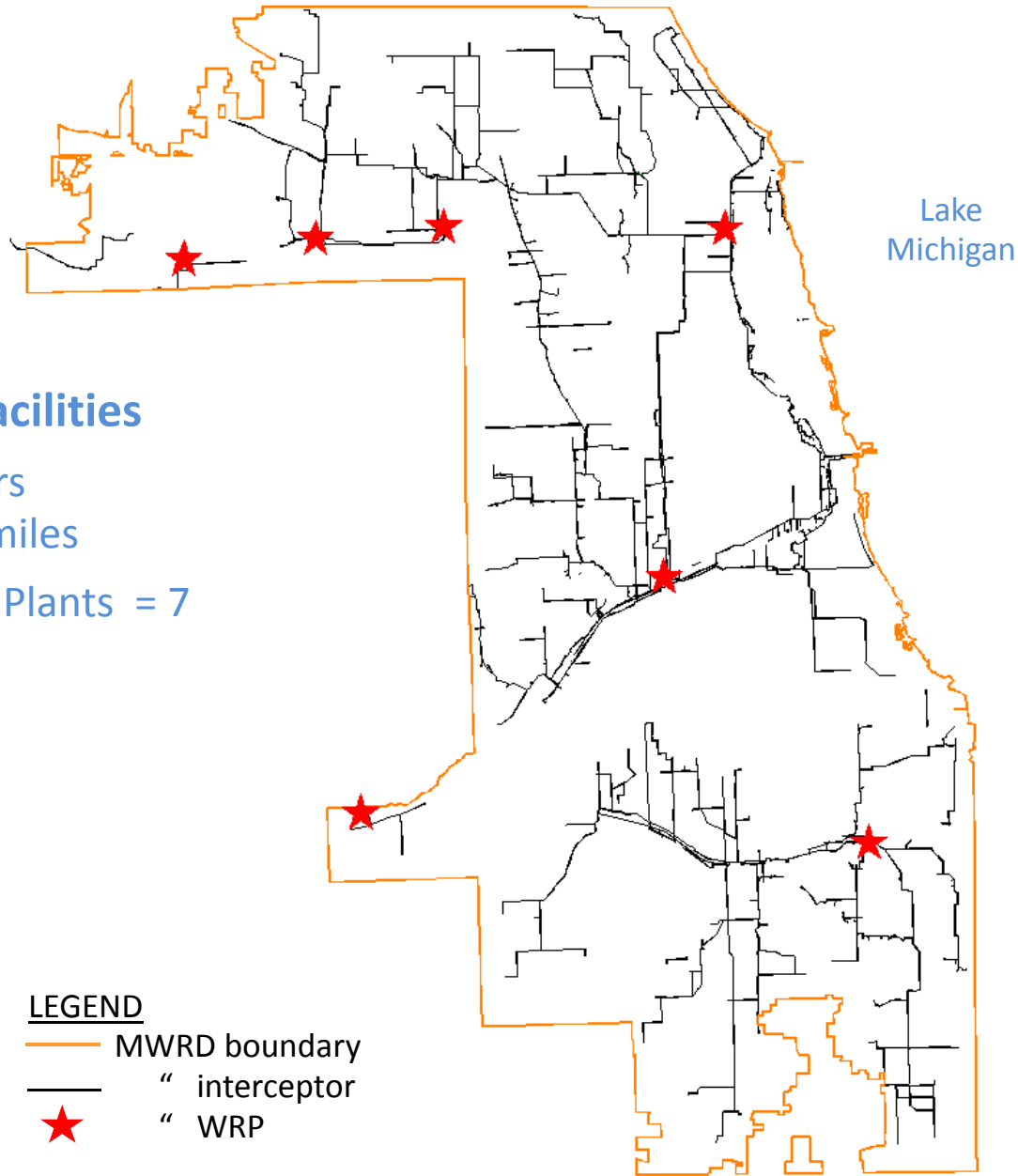


MWRD SEPARATE SEWER AND COMBINED SEWER AREAS

LEGEND:

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





MWRD Facilities

Interceptors
= 554 miles

Treatment Plants = 7

LEGEND

- MWRD boundary
- " interceptor
- ★ " WRP



What is I/I?

- It is groundwater **infiltration** and stormwater **inflow** into a separate sanitary sewer system
- **Infiltration:** Groundwater that enters a sewer system through sewer system defects (cracks, open joints, etc.)
- **Inflow:** Stormwater that enters a sewer system through illegal connections (downspouts, storm-sanitary cross-connections, yard drains, etc.) and system deficiencies (manhole covers with damage or open joints, cleanouts with missing caps, etc.)
- **Excessive I/I:** Separate sanitary sewer systems and receiving MWRD systems are designed to convey legitimate domestic and commercial/industrial wastewater and a small amount of unavoidable groundwater infiltration. Therefore, entry of excessive I/I robs 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
- Negotiations with the tributary agencies and COGs resulting in enactment of Sewer Summit Agreement in 1985 with endorsement from the 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

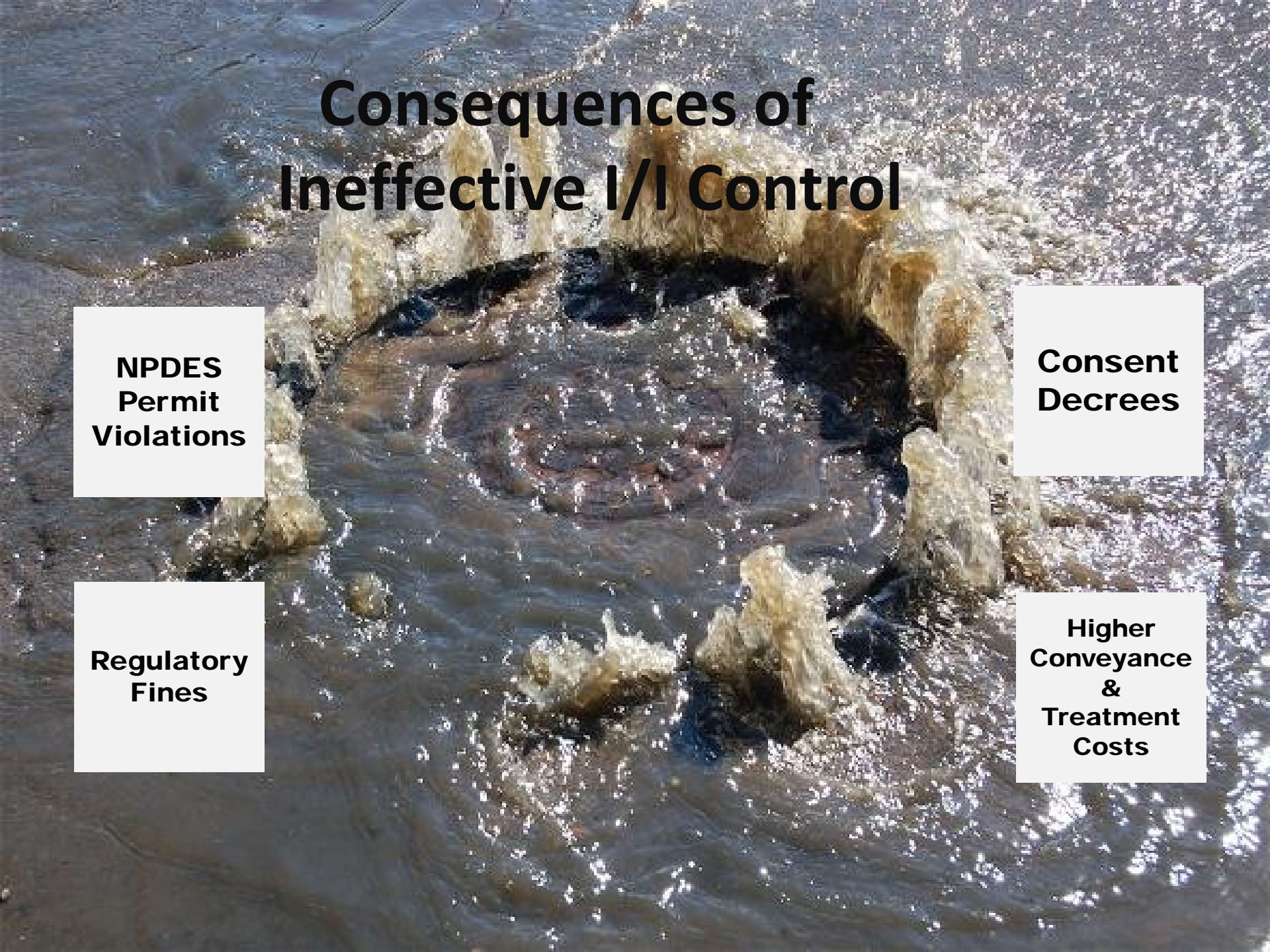
- IEPA has imposed a special condition in the NPDES permits that requires the system owners to implement measures in addition to the Sewer Summit Agreement if excessive wet weather flow causes or contributes to basement backup or SSOs
- There has been increase in wet weather flows to the MWRD facilities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

Regulatory
Fines

Consent
Decrees

Higher
Conveyance
&
Treatment
Costs

Consequences of Ineffective I/I Control





New I/I Control Program Elements

- Applicability
- Scope & Goals
- Short Term Plan
- 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 Plan

- 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



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 Plan
- 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
 - Establish incentives/enforcement actions for compliance with the Short Term Plan, Long Term O&M Program and submittal of the Annual Report
 - Qualifications for funding assistance
 - Excess flow charge
- 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 Plan and Long Term O&M Program via local sewer service fees or other funding options



Follow-up Tasks – 1st Quarter 2014

- Establish incentives/enforcement penalties
- Standards for sewer and manhole testing and inspections
- Refinement of “High Priority” defect definition
- Condition Assessment prioritization based on peaking factors



Follow-up Tasks – 2014-2019

- Outcome-based and flow-based metrics
- CMOM service levels (dry/wet weather performance)
- Interceptor capacity analysis and distribution
- Private Sector Program template – MWRD/ATP
- Long Term O&M Program template – MWRD/ATP
- GIS/CMMS assistance by MWRD
- Private Sector Program policy decisions on lateral rehabilitation/replacement
- Funding Program details/implementation
- MWRD assistance on flow monitoring
- Approval of Municipalities Plans/Programs



Schedule

- February/March 2014 – Public Meetings with COGs
- March 2014 – MWRD Board of Commissioners Study Session
- April 2014 – Adoption
- May 1, 2014 – Effective Date
- ATP will continue to meet to develop technical guidance



I/I Webpage

ii.mwrd.org

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Questions