

# New Administration, Same Wet Weather Challenges

**NACWA**

July 15, 2009

**MSD**  
Metropolitan Sewer District



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# Best Source of Information

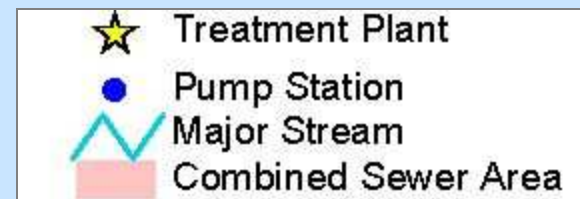
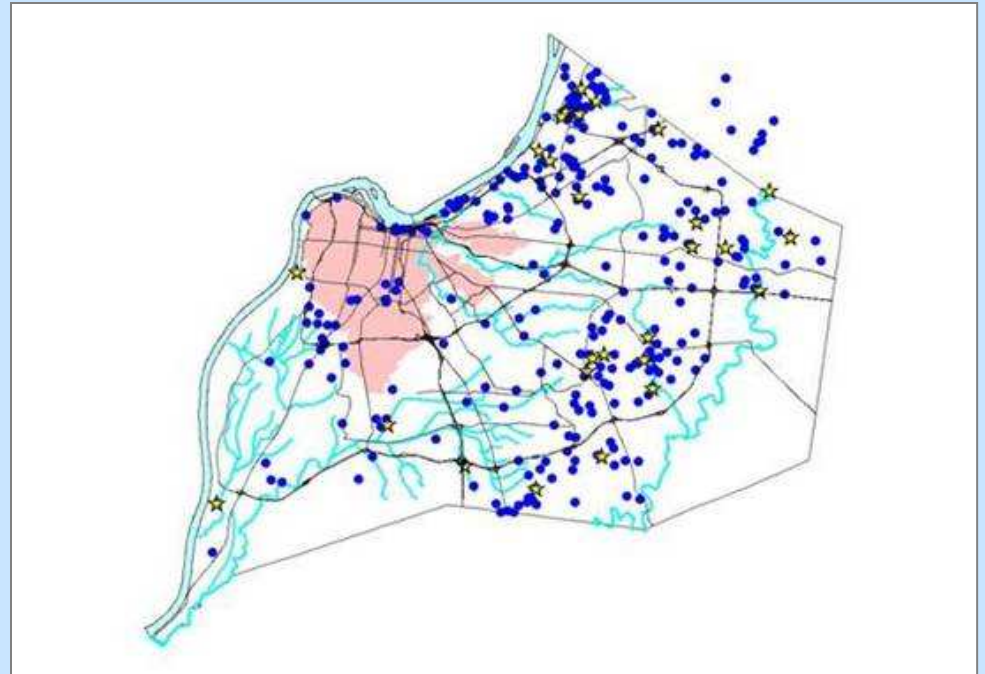
[www.msdlouky.org](http://www.msdlouky.org)



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## Infrastructure

- 21 WWTP
  - 6 regional facilities
  - 15 small plants
- 300+ pump stations
- 3,200 mi of sewer
  - 2,430 mi sanitary
  - 670 mi combined
  - 100 mi force main
- 790 mi of streams
- Ohio River Flood Protection System
  - 16 Flood pump stations
  - 29 mi of floodwall



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# Regulatory Requirements

- Impact on programs, initiatives, and actions
  - Minimizing negative
  - Maximizing positive
- Strategies associated with Enforcement Actions
  - Prior to enforcement
  - During negotiation
  - Under enforcement order



# History, a Benefit or a Curse?

- Understand System and Components
- Understand Problems and Influencing Factors
- Understand what you do and why you do it
- Develop Typical Solutions
- Develop Creative Solutions
- Involved and Understand the Ratepayers



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# Regulatory Enforcement MSD's Consent Decree

## Consent Decree - August 12, 2005

- Early Action Plan (Capital Program)
- SORP
- CMOM
- NMC
- Discharge Abatement Plans
  - Reduce and control CSOs in conformance with the CSO Policy by December 31, 2020
  - Eliminate additional SSOs by December 31, 2024



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# Regulatory Enforcement

## MSD's Consent Decree

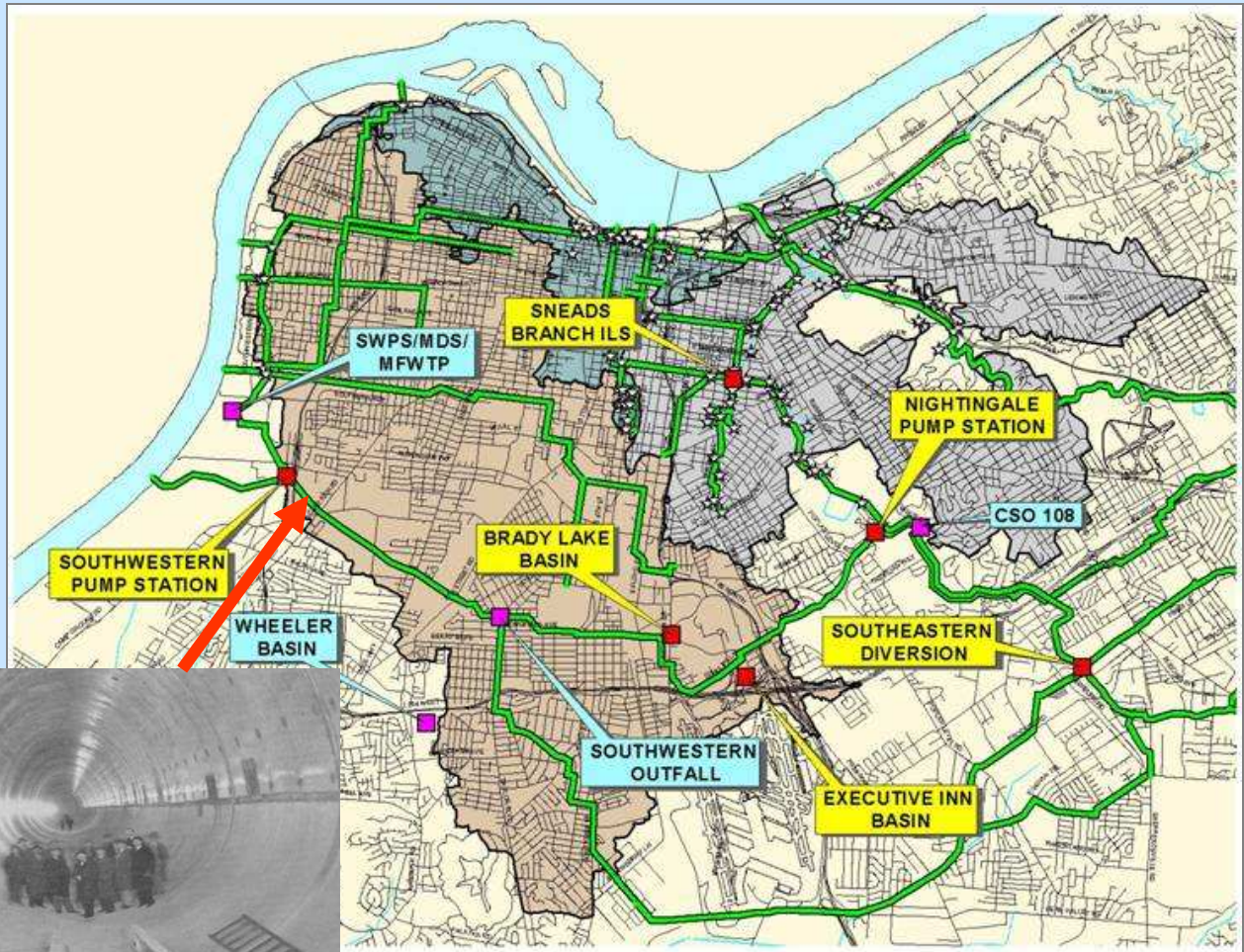
- Amended Consent Decree - April 15, 2009
  - Incorporates all of 2005 Consent Decree plus:
    - SSS Peak Wet Weather Flow Management (Blending) Elimination
    - Small WWTP Elimination
    - CPE / CCP
    - Additional Reporting and Monitoring



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# Real Time Control

- Combined sewer area
  - 24,000 acres
  - 324,000 people
- 107 active CSOs
- Separate sewer area tributary to CSS
- 3 distinct CSS drainage basins
- 2 receiving streams
- System inter-connectivity
- Flow limitations



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# RTC Overview

## Beargrass Creek Region

- 8 RTC Control Points increases capture rate from 54% to 74%
- 5 off-line storage basins achieves a 84% capture rate

## Ohio River Regions

- 70% of all CSO discharge volume
- 8 RTC Control points increase capture rate from 41% to 62%



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# RTC Overview

## Phase 1

- Operational August 2006
- 1.1 BG reduction in AAOV
- Cost - \$13 M

## Phase 2

- Operational December 2008
- 19 MG storage plus integration
- 800 MG reduction in AAOV
- Cost - \$8 M

**2001 AAOV 5.2 BG / 2009 AAOV 3.3 BG**



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Impervious Surface and BMP Type	Implementation Level over 15 Year Planning Horizon	Estimated Storm water Reduction over a 15 Year Planning Horizon	Annual Cost
<b>Public Roofs</b>			
Extensive Vegetated Roofs	7%	21,326,704	\$427,000
Tray System Vegetated Roofs	3%	5,624,625	\$112,000
<b>Commercial Roofs</b>			
Extensive Vegetated Roofs	1%	4,375,836	\$88,000
Tray System Vegetated Roofs	1%	2,692,822	\$54,000
<b>Industrial Roofs</b>			
Extensive Vegetated Roofs	1%	6,532,083	\$131,000
Tray System Vegetated Roofs	1%	4,019,743	\$80,000
<b>Single Family Residential Roofs</b>			
Downspout Disconnection	10%	123,792,136	\$386,000
Rain Barrel Program	N/A	0	\$165,000
<b>Local Roads</b>			
Green Street	1%	245,900,715	\$3,070,000
Urban Reforestation	14,000 trees	11,200,000	\$224,000
<b>Highways</b>			
Biofiltration	0.5%	10,691,335	\$7,000
<b>Alleys</b>			
Type A Alley (porous strip)	5%	11,885,294	\$238,000
Type B Alley (porous entire width)	5%	11,885,294	\$238,000
<b>Public Parking/Driveways</b>			
Biofiltration	5%	305,541,071	\$191,000
<b>Commercial Parking/Driveways</b>			
Biofiltration	1%	84,097,514	\$52,000
<b>Industrial Parking/Driveways</b>			
Biofiltration	0.5%	44,716,333	\$28,000
<b>Single Family Residential Property</b>			
Biofiltration	0.5%	52,034,648	\$32,000
<b>Subtotal</b>		<b>946,316,153 gallons</b>	<b>\$5,523,000</b>
<b>Program Administration</b>			<b>\$276,000</b>
<b>Total</b>			<b>\$5,799,000</b>
<b>Green Cost Per Gallon Removed</b>			<b>\$0.09</b>

# LTCP Source Control Investments

## Front-Loaded to Maximize Gray Reductions

- \$47 M Green Infrastructure Program
- \$40 M budgeted for first 6 years
- Annual program includes demonstration projects, subsidies, and incentives
- Program includes line items for:
  - Downspout disconnects, rain gardens, rain barrels
  - Green roofs
  - Green streets & dry wells
  - Pervious pavement
  - Urban reforestation
- **Adaptive management allows greater investment based on demonstrated performance**



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## CSO Long Term Control Plan (LTCP)

- **19 Gray Infrastructure Projects**
  - 4 Sewer Separations
  - 13 Storage basins and associated interceptors (up to 72")
  - Replacement and expansion from 20 MGD to 60 MGD
  - 1 High-Rate Wet Weather Treatment Facility
- **Green Infrastructure Projects – 17% of Gray Program**
  - Demonstration projects
    - Bioswale / biofiltration
    - Rain garden
    - Pervious alleys
    - Infiltration dry wells and sink holes
- **5 Flood Pump Station Projects** - to abate dry weather overflows



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# Sanitary Sewer Discharge Plan (SSDP)

- Gray infrastructure Program (includes ISSDP)
  - 24 conveyance capacity
  - 12 storage basins
  - 11 pump station upgrades, expansions or replacements
  - 16 pump station eliminations
  - 6 WWTPs eliminated
  - 1 WWTP expansion
- Source control program – 15% of Gray Program (I/I removal & pipe rehab)



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# MSD IOAP Program Benefits

## Regulatory Performance

Metropolitan Sewer District

### Combined Sewer Plan

- 95% wet weather capture supported by “knee of the curve” evaluation
- Remaining CSOs alone (no background sources) do not cause significant WQ standards violations, complying with EPA “demonstrative approach”

### Sanitary Sewer Plan Eliminates

- 167 documented SSOs
- 8 small WWTPs
- 100 tons BOD5, nearly 200 tons solids
- Correction of Jeffersontown WWTP



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# Current Status

- IOAP submitted June 19, 2009
- Current estimated cost is \$850M
- EPA/KDEP currently reviewing
- Informational discussions ongoing to assist regulators with review
- Source control and green infrastructure front-end loaded to allow performance demonstration



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Brian Bingham

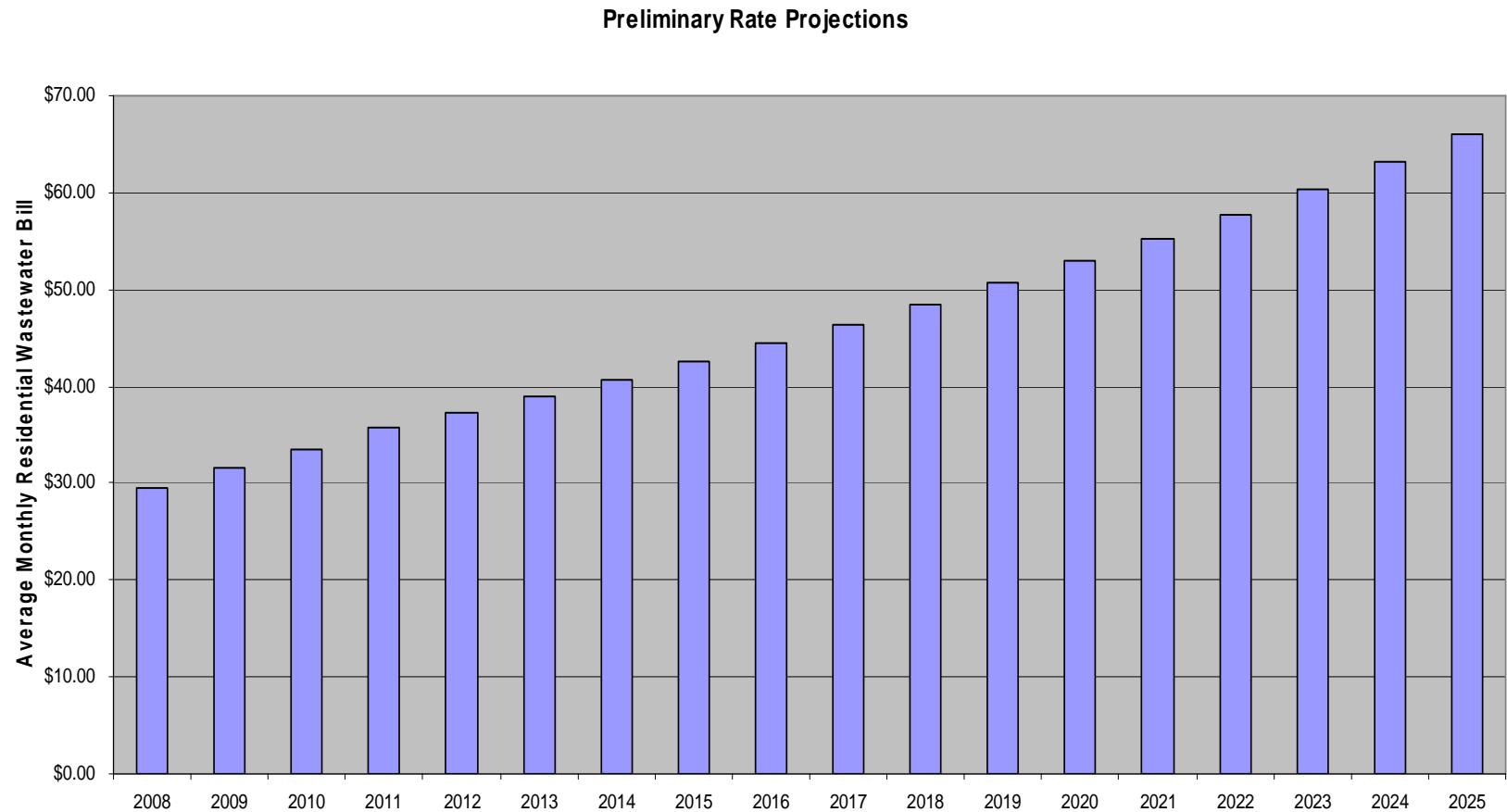
[bingham@msdlouky.org](mailto:bingham@msdlouky.org)

[www.msdlouky.org](http://www.msdlouky.org)



# Preliminary Rate Projections

Confirms Previous Estimates




Project WIN - Microsoft Internet Explorer provided by Metropolitan Sewer District

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Integrated Overflow Abatement Plan (IOAP)


CSO/SSO Overflow Location Maps

Public Document Repository

Wastewater Treatment Plant Reports

Wet Weather Team Document Repository

Project WIN E-mail Notification System

OVERFLOW ADVISORY LEVEL 

For more information, go to [www.msdlouky.org/projectwin](http://www.msdlouky.org/projectwin) or call MSD Customer Relations at 502-587-0603.

Welcome to Project WIN

A Message from H. J. Schardein, Jr.,  
MSD Executive Director

Clean water is essential for our well-being and continued growth. Over the past eighteen months, I have spoken to almost 150 community and civic groups about the challenges of protecting our streams and the Ohio River. There is a direct link between clean water and healthy communities.

To address the challenges of improving our water quality, MSD is about to embark on a comprehensive sewer improvement program that will eliminate major sources of water pollution throughout Louisville Metro. The new initiative is called "Project WIN" (Waterway Improvements Now). Planned upgrades under Project WIN will allow us to comply with Clean Water Act regulations.

read more

Jeffersontown Wastewater Treatment Plant  
Blended Flow Data

As of 2/12/08, MSD is providing near real time flow information on blended flow from this plant. Up to 60 days of historical data is presented below. You may also [view all historical data](#)

Start Date/Time	End Date/Time	Amount (Gal.)
04/03/2009 5:54 AM	ongoing	—
02/11/2009 4:26 PM	02/11/2009 9:01 PM	51,684
02/10/2009 8:57 PM	02/10/2009 9:22 PM	440

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**Current RFPs, RFQs, Bids**

- Purchasing, Engineering, Construction, and Other

Bid on surplus materials and supplies at MSD's online auction site

GovDeals

Check local rainfall

National Weather Service - Ohio River Levels at Louisville  
Upper Gauge  
Lower Gauge

Online Customer Service  
MSD's Online Customer Service is now available. Submit your service requests online

Customer First

**Draft of Wastewater Discharge Regulations (WDR) Revisions**  
An Industrial User meeting on Wastewater Discharge Regulations (WDR) Revisions will be held on Wednesday, April 8, 2009 from 10 am to noon at MSD's Central Maintenance Facility located at 3050 Commerce Center Place. The DRAFT WDR's to be discussed, with changes annotated, may be [downloaded from here](#). (187K)

**MSD Comprehensive Annual Financial Report 2008**  
The Comprehensive Annual Financial Report 2008 is presented in three sections: Introductory, Financial and Statistical. The Introductory section includes this transmittal letter, MSD's organizational chart and a list of principal officers. The Financial section includes MSD's basic financial statements, together with the independent auditors' report concerning them and management's discussion and analysis of the operating and financial results of the agency. We encourage readers to review the narrative introduction, overview, and analysis found in management's discussion and analysis (MD&A). The Statistical section includes selected financial and demographic information, generally presented on a multi-year comparative basis. [Download Comprehensive Annual Financial Report 2008](#) (2.8M)

**2007 Sustainability Report**  
MSD strives to provide clean water, a green environment and a healthy, growing community. These principles are based on a commitment that MSD made in 1990 to uphold the principles of the Coalition for Environmentally Responsible Economies, (Ceres). The report was designed to give stakeholders a source for accessing the things MSD is or is not doing for the environment and other sustainability issues.

**PROJECT WIN**  
Waterway Improvements Now

Check this area for important updates about flooding and sewer overflows. [Learn more](#)

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WET WEATHER & WATER QUALITY

- Watershed Management
- Resource Management

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