PROJECT WIN

Waterway Improvements Now

Fall 2007 Public Meetings

MSD

Meeting Objectives

- To update you about Project WIN, MSD's response to significant challenges facing our community relative to clean waterways

- To listen to your ideas and concerns about potential solutions to the problems, and how they affect you

Clean Waterways
Essential to Our Quality of Life

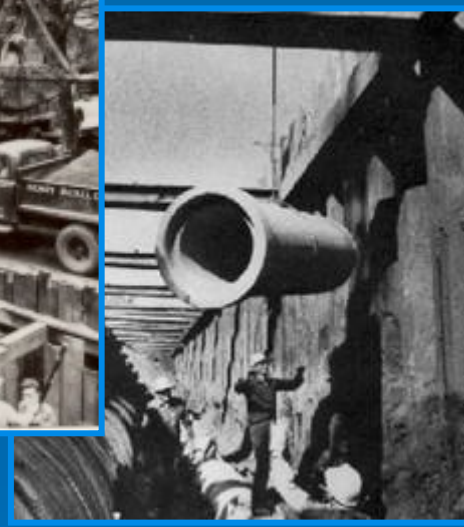
- Jefferson County blessed with abundance of waterways
  - 40 miles of Ohio River
  - 790 miles of tributary streams and channels
- Waterways provide many recreational amenities
  - Fishing
  - Boating
  - Swimming/wading
- Federal regulations have specific goals for these waterways
  - Fishable
  - Swimmable

Jefferson County Streams Face Typical Urban Challenges

- The Challenges – Stormwater Runoff & Sewer Overflows
  - Bacteria
  - Lack of oxygen in water
  - High temperatures
  - Toxic and non-toxic chemicals
- Stormwater Runoff
  - Lawn and garden care products
  - Grease, oil and metals from cars
  - Litter and trash
  - Construction runoff
  - Pet and wildlife waste
  - Paved stormwater channels
  - Loss of waterway vegetation

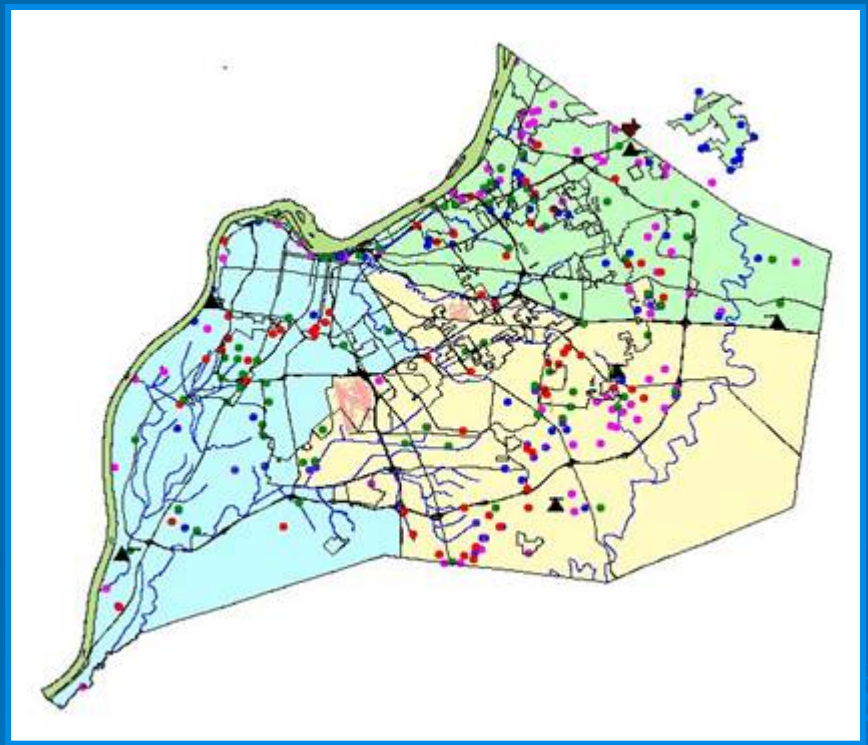
Louisville's Aging Infrastructure Contributes to Current Challenges

- **1850** – First underground sewers constructed in Louisville (some still in service)
- **1906** – Commissioners of Sewerage begin constructing combined sewer system (most still in service)
- **1906 – 1944** Sewer service extended to Watterson
- **1946** – MSD formed by State legislature
- **1958** – Fort Southworth Wastewater Treatment plant (now Morris Forman) begins operation
- **1946 - 1980s** – Building results in sewer system expansion by land development companies
- **1980 – 2000s** – MSD begins service area expansion, elimination of remote treatment plants

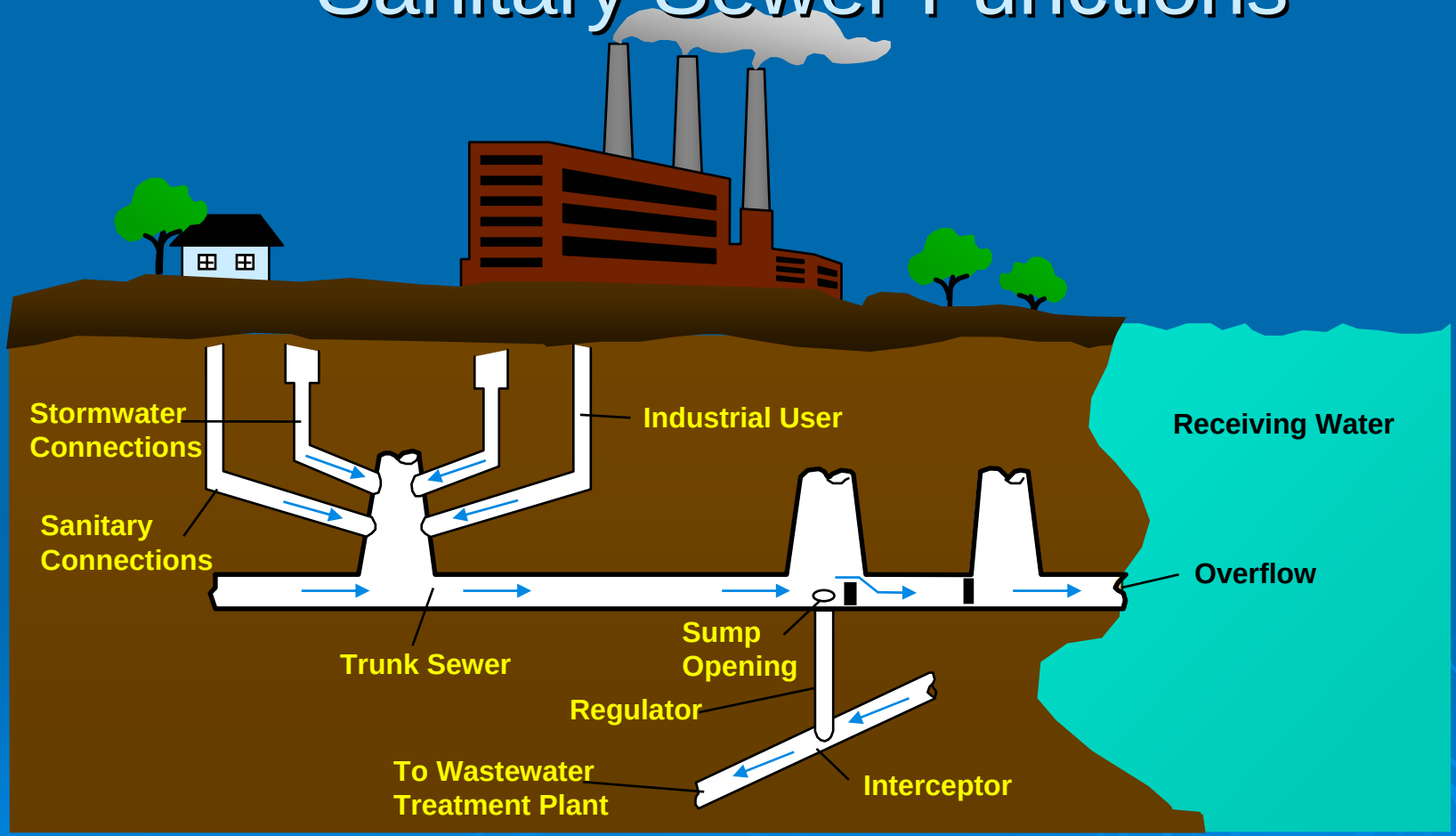


Major MSD Facilities

- 6 Regional Wastewater Treatment Facilities
- 17 Small Wastewater Treatment Plants
- 304 Pump Stations
- 3,200 miles of Sewers, both “combined” and “separate”

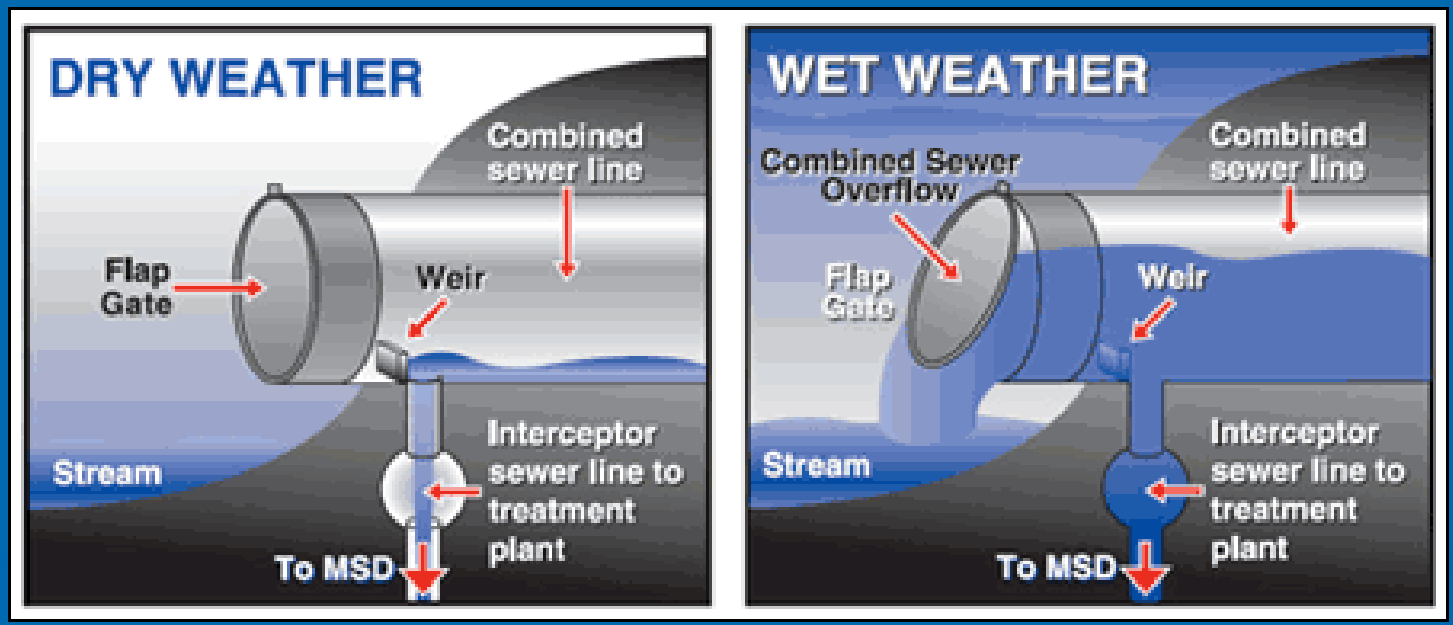


Combined Sewer System Provides both Drainage and Sanitary Sewer Functions



During wet weather, combined sewers overflow to receiving waters, contributing to pollution of our rivers and streams

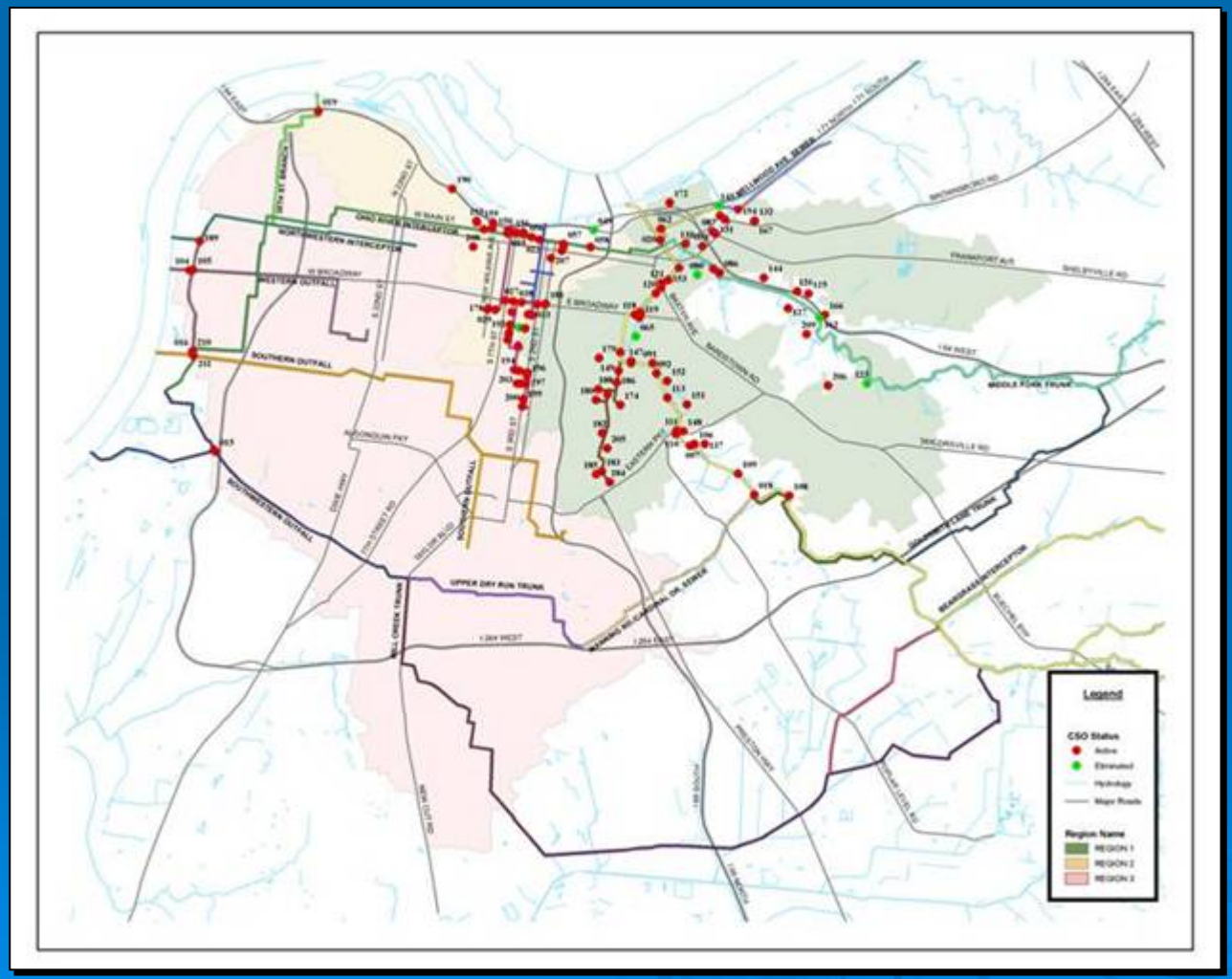
Typical Combined Sewer System Configuration



What's a Combined Sewer Overflow (CSO)?
A constructed release point on a pipe that carries both stormwater & wastewater

wet weather = legal, but should be minimized
dry weather = illegal

Combined Sewer System Provides Sewer and Drainage for Most of Old Louisville



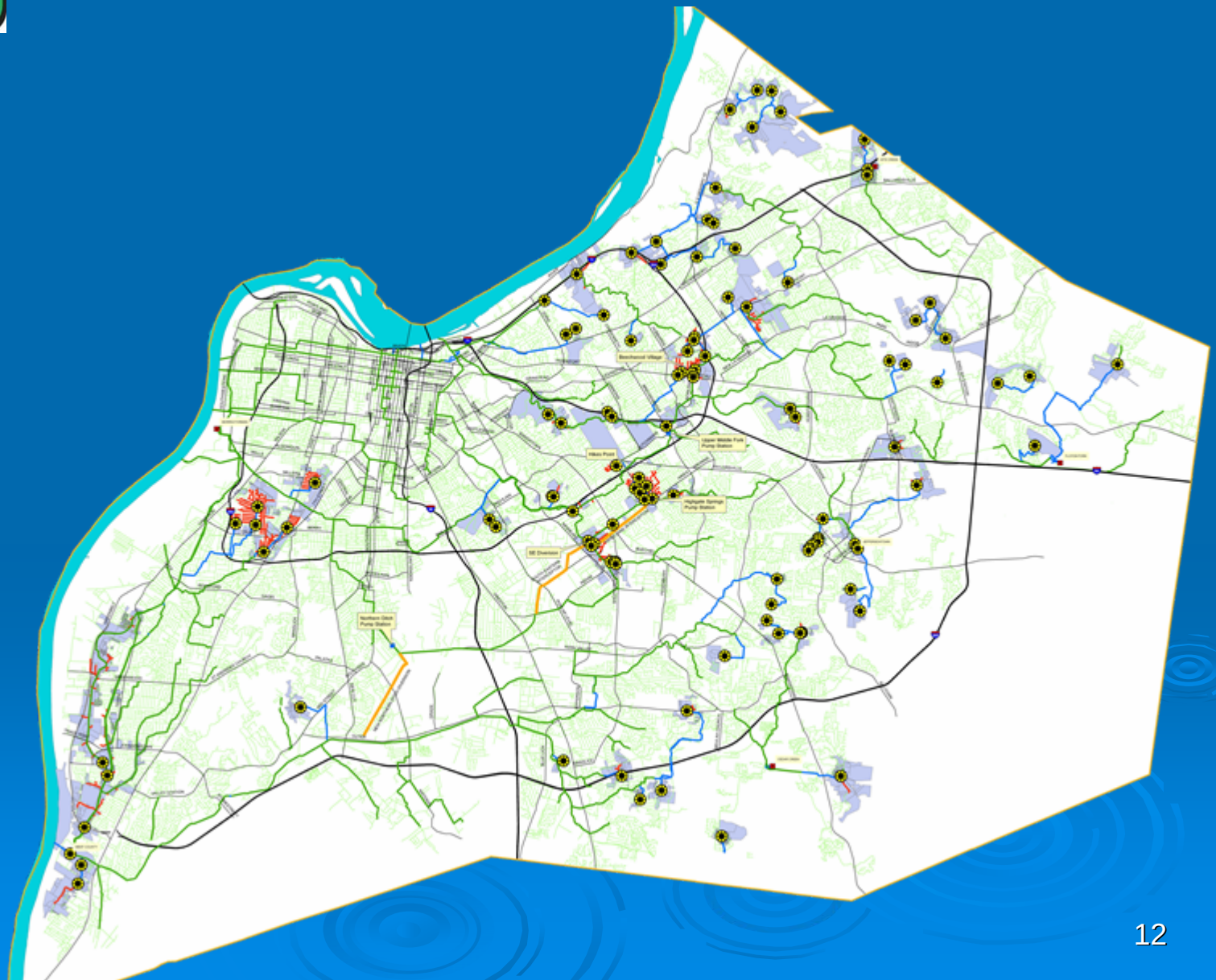
- **Approximately 70% of the flow**
- **Several connections from sanitary system**
- **112 active CSOs along Beargrass Creek and Ohio River**

Separate Sanitary Sewers are Designed to Carry Only Sanitary Waste

Sanitary Sewer Overflows (SSOs) Affect Us in Many Ways

SSOs are considered unpermitted discharges, and are illegal

SSOs Occur Throughout MSD's Service Area



Regulatory Enforcement – Louisville's Consent Decree

- The Objectives
  - Control CSOs to mitigate water quality impacts
  - Eliminate SSOs, because they are not allowed
- The Process
  - EPA requests information – May 2003
  - Kentucky initiates enforcement actions – February 2004
  - Consent Decree entered into Federal Court – August 2005
- The Result
  - Fair Agreement
  - Good for the community and the environment
  - Lots of work for MSD
  - Deadline and Results Oriented

Regulatory Enforcement Louisville's Consent Decree

- Short Term Compliance Schedule
  - September 30, 2007 – Plan to eliminate 4 largest SSOs – complete and submitted on schedule
  - December 31, 2008 – Plan to abate CSOs and eliminate SSOs – under developement
- Long Term Compliance Schedule
  - December 31, 2020 – Complete Construction to Reduce and Mitigate Discharges from Combined Sewer System
  - December 31, 2024 – Complete Construction to Address Overflows From Separate Sewer System

MSD's Planning Process Uses Structured Decision-Making

- Benefit/Cost evaluation to provide "best value" to MSD customers
- Stakeholder group of community leaders developed evaluation criteria and continues to provide guidance to MSD
- Additional public input obtained through 3 rounds of public meetings (this is round 2) plus a formal public hearing
- Your input is important, and comments from tonight will be considered in the overall development, evaluation, and selection of our plan

Community Involvement Also Includes Education, Outreach, and Notification

- Mailings, newspaper pieces bill stuffers etc.
- Overflow advisory signs along river and streams
- Email notifications of overflow events
- Temporary overflow signs and doorcards
- Project WIN Website

Newspaper articles


SUNDAY, APRIL 29, 2007

MSD

OUR WATERWAYS
IT'S *TIME* TO IMPROVE THEM

The past year, 2006, was one of the busiest in MSD's history, and 2007 promises to be even busier. This year MSD is focusing attention on our three core businesses: waste water collection and treatment; stormwater drainage services; and flood protection, with special emphasis on our recent signed Consent Decree to improve local water quality.


WARNING
ADVERTENCIA
DURING AND AFTER RAIN EVENTS
The surface water in this area contains runoff contaminants and is subject to sewage overflows. Avoid contact with water, due to increased health risks, during these times. For more information, visit our website or call the telephone number below.

DURANTE Y DESPUES DE LLUVIA
El agua superficial en esta área contiene contaminantes de afluencia y está sujeta a desbordamientos de las alcantarillas. Evite todo contact con el agua bajo estas circunstancias, debido a riesgos de salud. Para mayor información, visite nuestro sitio web o llame al teléfono que aparece a continuación.

MSD (502) 587-0603
www.msdlouky.org SIGN/SEÑAL MSD0025

Signs on creeks and by overflows


SEWER OVERFLOW WARNING

A sewer overflow has occurred in this area. Water containing sewage has been discharged from the sewer and may be on the ground, in drainage ditches or in nearby streams.

You are advised to avoid contact with creeks, streams, drainage ditches and standing water, as they may contain sewage and stormwater runoff contaminants that could make you sick.

If you, your family or your pets come in contact with possibly contaminated water, wash with warm, soapy water, especially before handling food.

For the next 48 hours, DO NOT SWIM, FISH or WADE in outdoor waters!

For additional information, call (502) 587-0603 or visit the MSD Web site at www.msdlouky.org to register for automatic e-mail notifications.

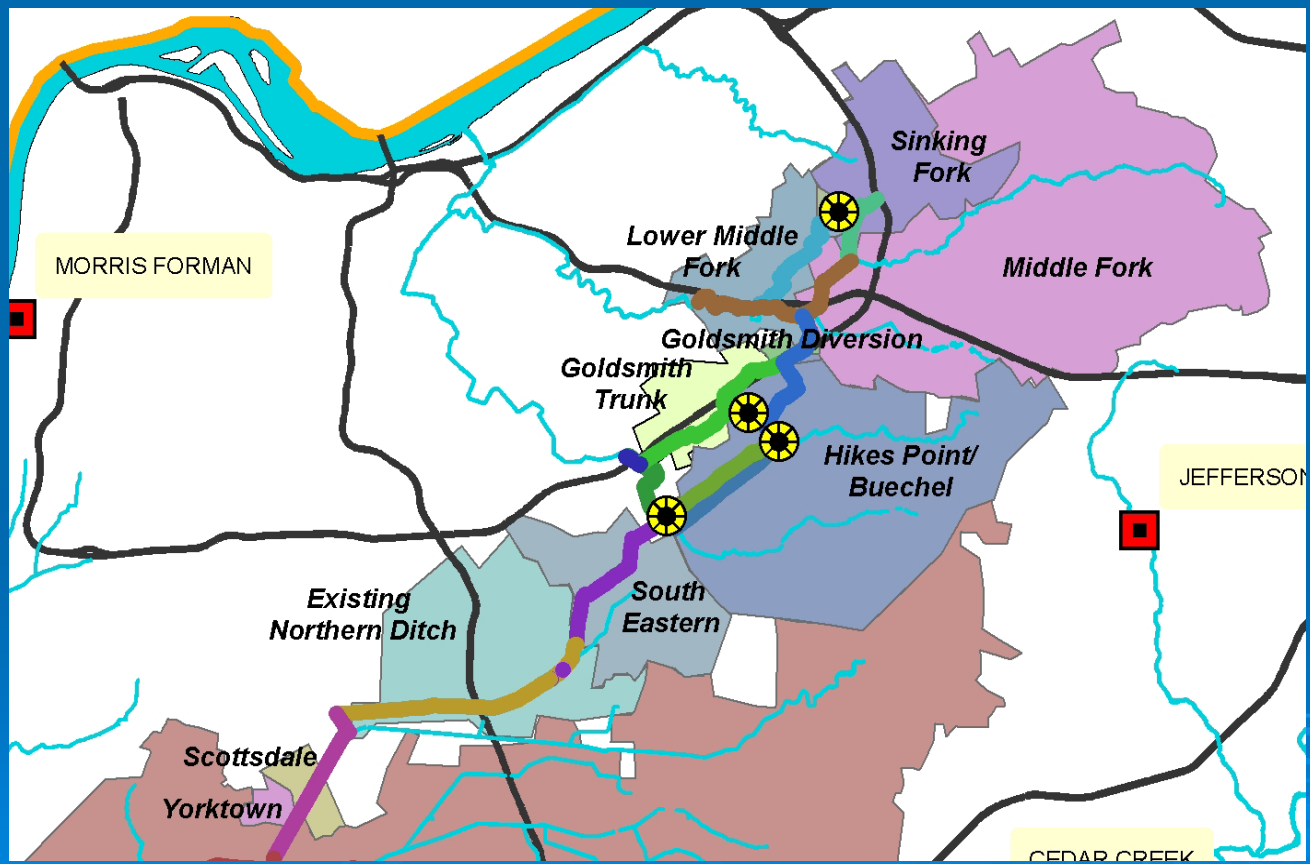
MSD
Louisville and Jefferson County Metropolitan Sewer District

Door cards

Consent Decree Schedule Required Early Action on Numerous Projects

- Upgrade or elimination of 3 wastewater treatment plants
- Elimination of 3 CSOs
- Nine relief sewers, 7 sewer rehabilitations, and 8 pump station upgrades to address several SSOs
- Control of large “trash” at almost all CSOs
- In-pipe storage to reduce overflows

Interim Sanitary Sewer Discharge Plan Submitted in September



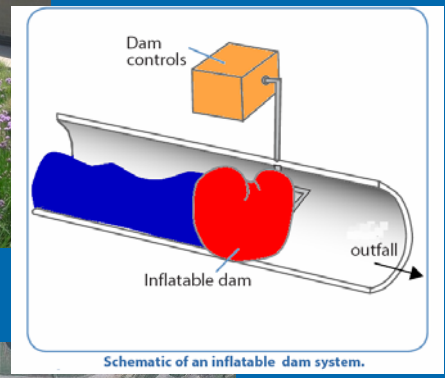
Consent Decree required early decisions on these major SSO problems

Next Step – Alternative Solution Development

- Tonight's approach to obtaining your input on alternative development
  - Review available technologies for CSO and SSO control
  - Illustrate a county-wide view of the problem areas
  - Show more specific maps for the area we are in tonight
  - Q&A and one-on-one discussions to obtain your input to help guide the development and evaluation of solutions

CSO Control Accomplished Through Many Approaches

- Sewer Separation
- Source control and “green infrastructure”
- Storage
  - In-line Storage
  - Off-line Storage
- Conveyance and Treatment
  - Centralized at Morris Forman plant
  - Regional
  - Local

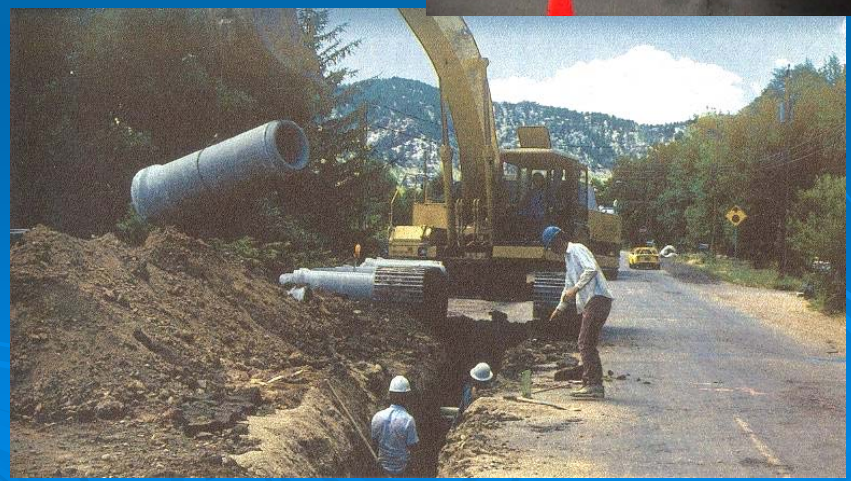


Schematic of an inflatable dam system.

Optimal solution usually involves a combination of all these approaches

Sewer Separation Achieves Regulatory Compliance

- Sanitary sewage eliminated from stormwater overflow
- Stormwater formerly captured and treated is now discharged directly
- Often results in water quality degradation, not improvement
- Partial separation often implemented
- Separation requires construction on private property



Green Infrastructure Slows Runoff, Reduces Overflow Volumes

- Reduce impervious surfaces
  - Pervious pavement
  - Green roofs
- Provide storage in natural systems
  - Constructed wetlands
  - Rain gardens
  - Rain barrels

Individual effect is often small, but cumulative effect can be significant

Storage Captures Peak Flows for Treatment After the Storm is Over

- Storage Configuration Varies
  - In-line
  - Open basin
  - Covered basin
- Selection based on site considerations
  - Buffer zone
  - Frequency of use
  - Storage time

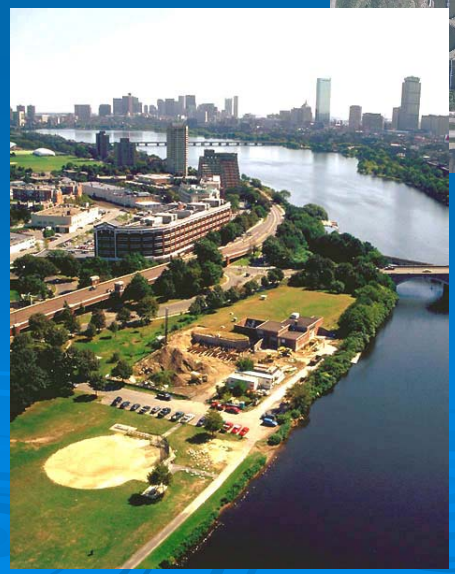
Open basin may be acceptable with sufficient buffer zone

Storage basins can be completely underground if sufficient buffer is not available

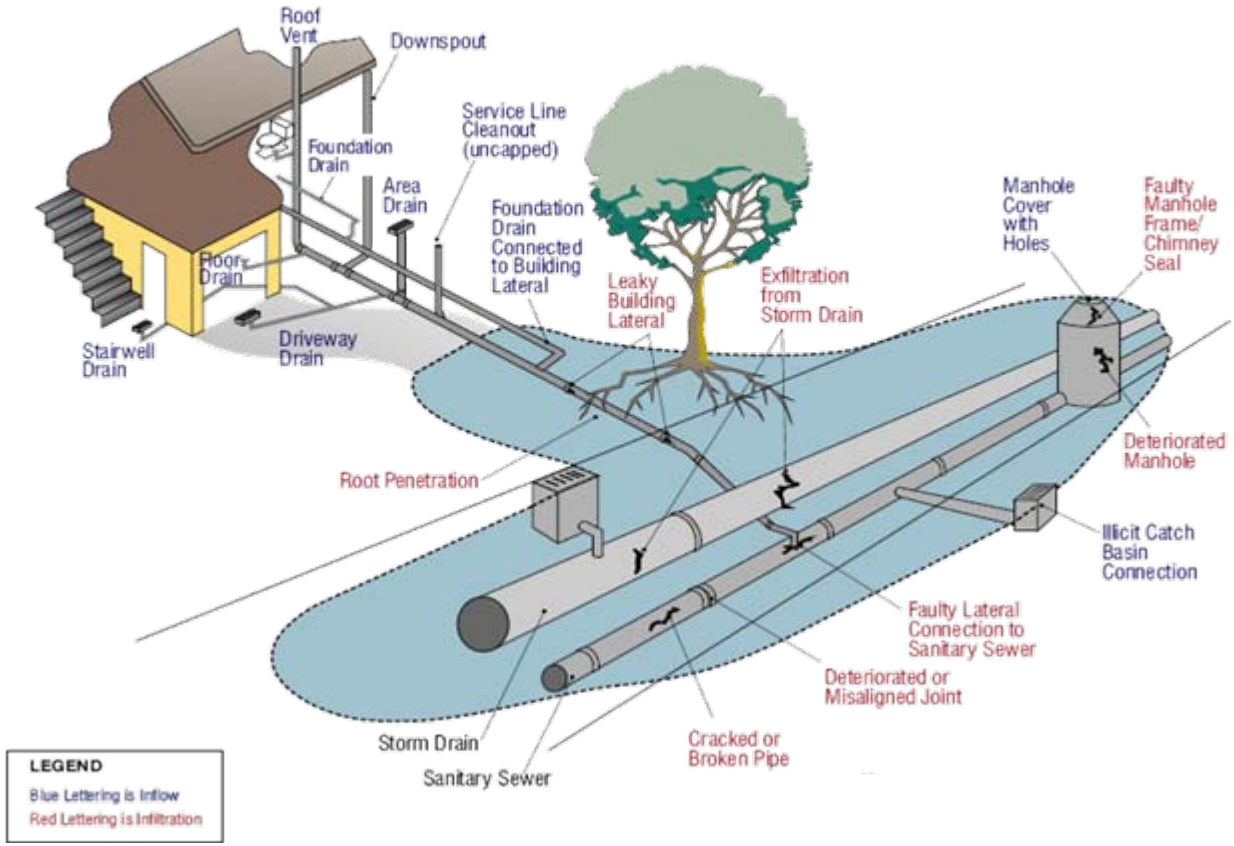
Storage basins may have concrete bottoms if needed for cleaning

Conveyance and Treatment Provide Capacity for Runoff

- Pipeline construction may be disruptive
- Centralized treatment facilities may require expansion
- Remote facilities can be designed to be attractive

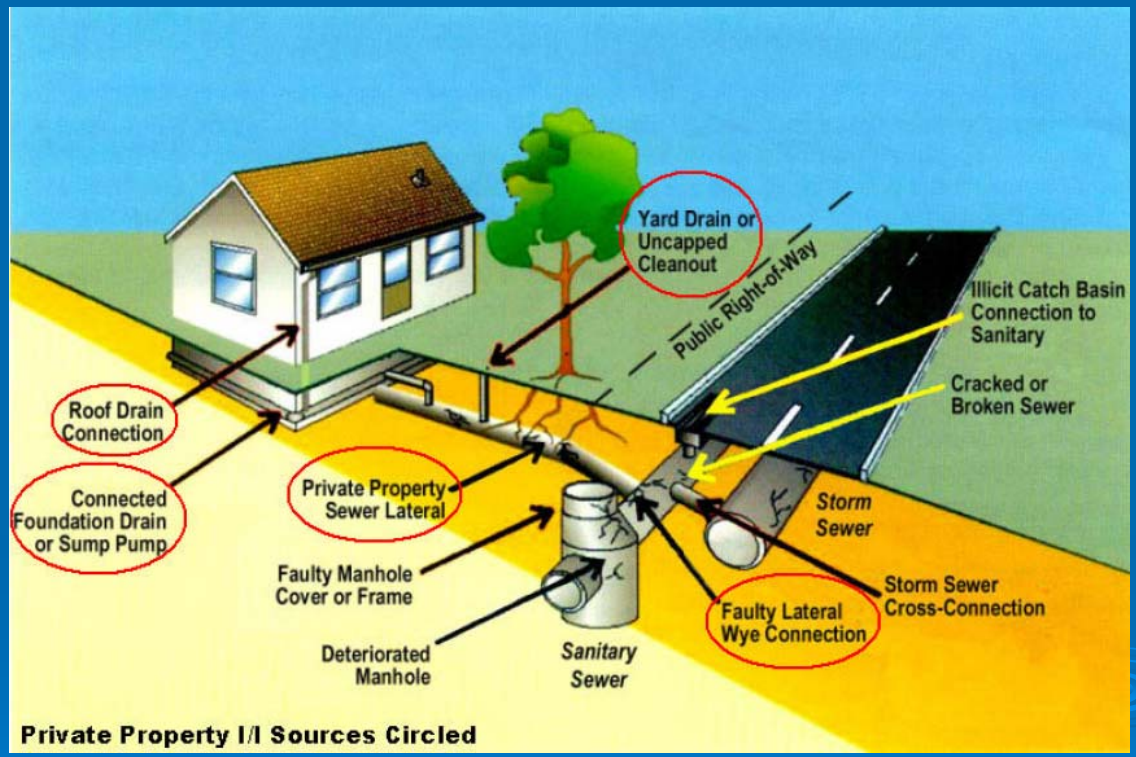


SSO Control Addresses Infiltration and Inflow (I&I) Management



Controlling I&I From Private Sources Presents Unique Challenges

- Clear water discharge violates MSD's Waste Discharge Regulations
- I&I from private sources is typically 50% of the total I&I problem
- Correcting private I&I sources requires cooperation of property owner



Source Control Is Usually Not Sufficient to Eliminate SSOs

- Industry experience shows storage and/or conveyance facilities also needed to eliminate significant SSOs
- Conveyance and storage options similar to CSO control facilties

What You Can Do To Help

Dispose of grease properly

- Do not dump it down the drain!!!!

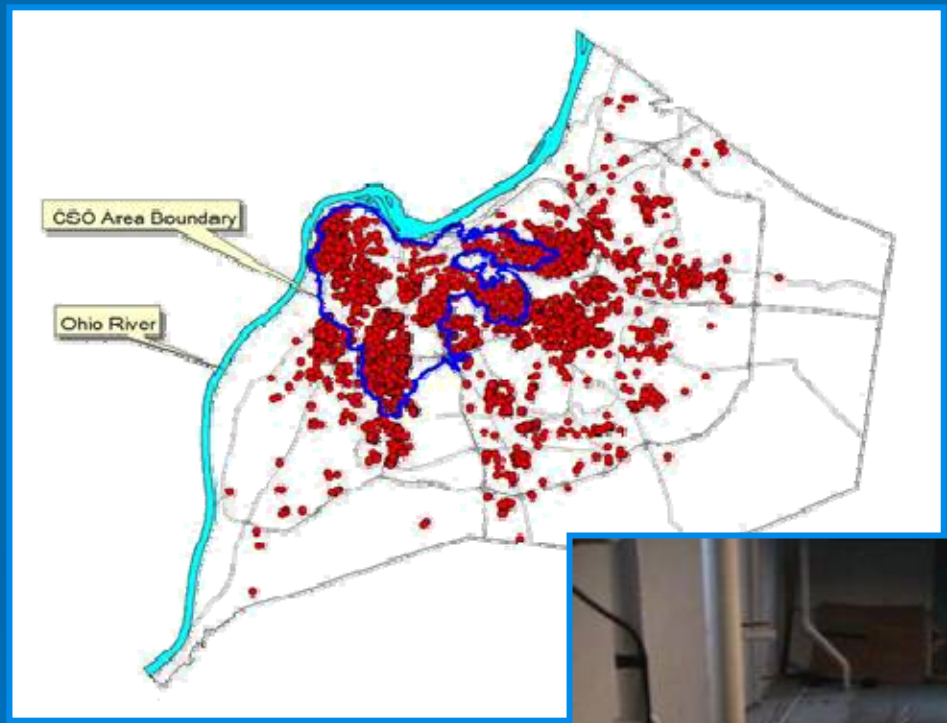
Put grease in metal container

Pickup brochure

Grease accumulates in pipes

What You Can Do To Help

Disconnect sump pumps and downspouts from the sewer system



Plumbing Modification Program

587-0603

What You Can Do To Help

- Capture rain to use for watering your gardens and landscaping
  - Rain barrels
  - Rain gardens
- Plant trees and native vegetation

What You Can Do To Help

- Participate in “Clean Sweeps” and litter control programs

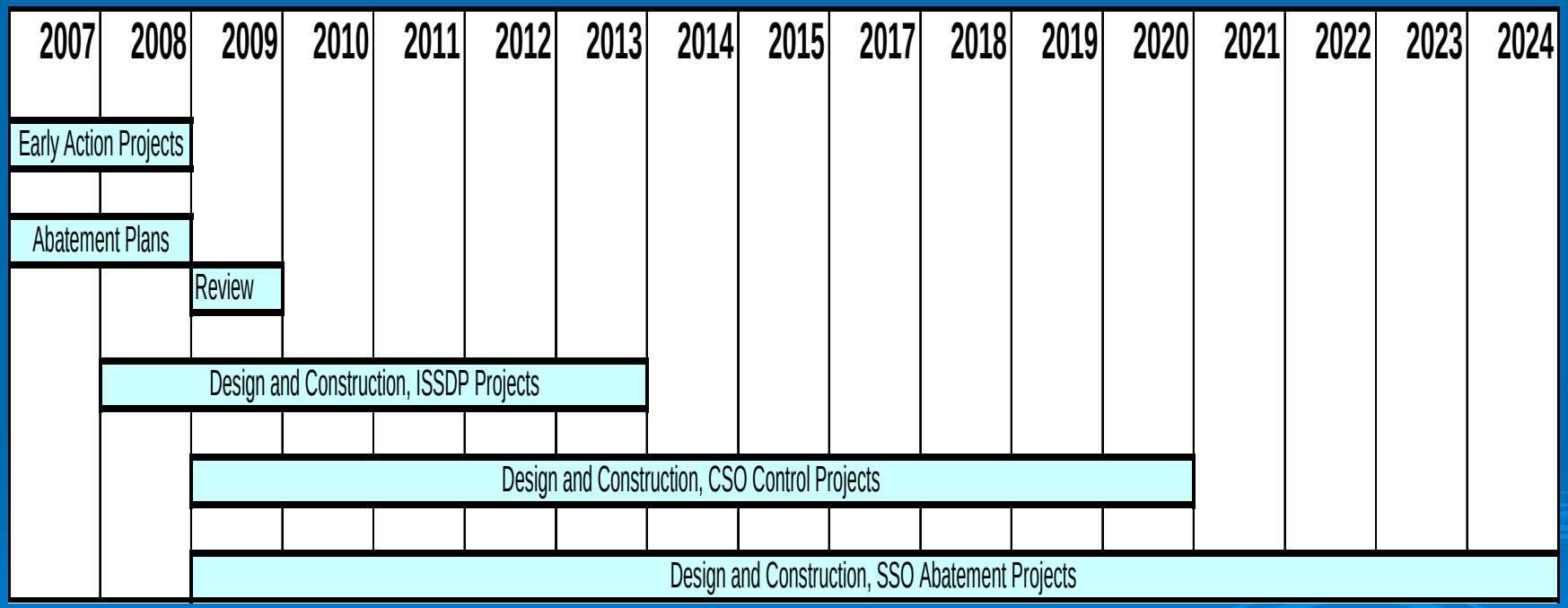
- Put trash in designated receptacles

- Dispose of yard wastes properly

What You Can Do To Help

If we take personal responsibility for our part of the problem, the solutions will be less expensive for all

What's Next?
Our Schedule for Completion



We’ve Talked Enough!
Time to Listen to You

Find the Station With Maps of Your Neighborhood

- Find your home, school, or place of business on the map
- Find the nearby overflows
- Look at the associated pipeline routes and potential sites for storage, pumping, or treatment facilities
- Tell us what you think about the potential solutions
- If you have drainage questions or concerns, see the MSD staff identified to discuss drainage

Thank you for your participation tonight Be sure to sign-in and complete the survey (both sides) before you leave

PROJECT WIN
Waterway Improvements Now