Kansas City’s Overflow Control Program
Kansas City Water Services

Water

Wastewater

Stormwater
Water Services Department

- 1000 Positions
- 835 Employees
- 3 Utilities
- FY 13/14 Budget = $307 million
  - Water $148 million
  - Wastewater $144 million
  - Stormwater $15 million

Average Residential Bill
- Water $40.52
- WW $39.44
- SW $ 2.50
- $82.46
Kansas City Water Services: Assets

2 Water Treatment Plants
6 Pump Stations
2,800 Miles of Water Main
35,000 Valves
23,000 Fire Hydrants

6 Wastewater Treatment Plants
18 Pump Stations
2,800 Miles of Sewer Main
67,000 Manholes

630 Miles of Storm Sewer
53,000 Storm Inlets
11 Stormwater Pump Stations
13 Miles of Levee
What is the Overflow Control Program?

- Developed plan to meet regulatory requirements related to reducing and preventing sewer overflows
- City-wide approach
- Address overflows in combined and separate sewer systems
- $4.5 to $5 billion when complete (year 2035)
- Largest infrastructure project in Kansas City history
Kansas City’s Sewer System

- Over 650,000 people served

- 58 sq. miles of Combined Sewer: State Line east to the Blue River & Missouri River south to 85th St. plus the downtown airport

- 260 sq. miles of Separate Sewer: North of the river, south of 85th Street and east of the Blue River
Combined Sewer System – How It Works
Combined Sewer System - How It Works

- Rainwater flows through pipes and streets.
- Combined sewer system carries both stormwater and wastewater.
- If the system overflows, water goes directly into nearby rivers or streams.
- Flow is directed to wastewater treatment plants for treatment.
Separate Sanitary Sewer System - How It Works
Kansas City’s Challenge

- Sewer overflows during wet weather
- Aging wastewater infrastructure
- Sewer backups
- Poor water quality in local streams, urban lakes, and rivers
- Past rates did not reflect the true cost of maintaining wastewater infrastructure
The Overflow Control Plan (OCP)

“The Right Plan for Kansas City”

Adopted in 2009, the plan:

- Reflects community priorities
- Meets regulations at a minimum cost
- Is adaptive and flexible
- Addresses water quality on a regional basis
- Organized by basin (watershed)
Why Basins?

- Areas of drainage to specific streams, lakes, and rivers
- Defines individual project area boundaries
- Rain and stormwater runoff in a basin are the source of wet weather overflows
- Activities in a watershed affect water quality in streams and rivers in that watershed
OCP Strategy

Maximize Benefit to our Customers

Fix The System We Have

Reduce The Problem Before Solving it

Facilitate Green Infrastructure Development

Measure Performance and Adjust the Plan

Build Only What is Needed
Combined Sewer System

- 7 basins covering 58 sq. miles
- 1,060 miles of pipe
- 90 outfalls
- 2,500 manholes
- 6.4 billion gallons of overflow in a typical year

Overflow Control Plan Goals:
- Evaluate green infrastructure
- Capture 88% of wet weather flows
- Reduce number of overflows by 65%
CSS Planned Improvements

- 10 sewer separation areas
- 310 million gallons per day of wet weather treatment capacity
- Neighborhood sewer rehabilitation
- 25 million gallons of in-line storage
- Pump station and treatment plant modifications
- Green infrastructure development
Separate Sewer System

• 9 Basins over 260 sq. miles
• 1,750 miles of pipe
• Over 66,000 manholes

Overflow Control Plan Goals:
- Reduce Inflow and Infiltration (I&I) by 30 to 45% depending on the basin
- Public and private side programs
- Eliminate sanitary sewer overflows during a 5-year, 24 hour storm event (approximately 4.68 inches of rain)
Separate Sewer System - I & I
SSS Planned Improvements

• Inflow and infiltration reduction
• Pump station rehabilitation and upgrades
• 50 million gallon per day high rate treatment facility north of the river
• 112 million gallons of storage
• 24 in. force mains in north and south
Estimated Cost and Funding

- **Unfunded federal mandate** - Kansas City must comply

- **$4.5- $5 billion in capital costs**
  - $2.8 billion in the combined sewer system
  - $2.0 Billion in separate sewer system

- **O&M costs of $72 million per year by 2035**

- **50% bonds, 50% cash based over life of program**
Where are we now?

- Year 3 of 25 year timeline
- First 10 years focus on reducing the problem and improving service
- Most early projects ramping up in planning and design phases
- First green infrastructure pilot complete
- Disinfection projects near completion
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<thead>
<tr>
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<th>Description</th>
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<tbody>
<tr>
<td><strong>$14.8</strong></td>
<td>Cost of Completed Projects (in millions)</td>
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<tr>
<td><strong>162</strong></td>
<td>Green Infrastructure Installations</td>
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<td><strong>6.85</strong></td>
<td>Miles of Replaced or Rehabilitated Pipe</td>
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<td><strong>0.6</strong></td>
<td>Miles of New Force Main</td>
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<td><strong>25</strong></td>
<td>Miles of Sewer Investigated and Cleaned</td>
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<td><strong>48</strong></td>
<td>Flow Meters Installed</td>
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For More Information

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