Kansas City’s Overflow Control Program

Post-Construction Stormwater Management Workshop
March 21, 2013

Developed to meet regulatory requirements related to reducing and preventing sewer overflows

$2.5 Billion (2008 Dollars)
25-year completion schedule

Over 653,000 people are served by Kansas City’s sewer system
27 satellite communities
Two types of sewer systems

Combined Sewer System
7 Basins
58 Square Miles
1,050 miles of pipe
Planned Improvements:
• Separation Projects
• Neighborhood Sewer Rehabilitation
• Storage Projects
• Green Infrastructure
• System Improvements

Middle Blue River Basin
2 Watersheds
3.5 Million Gallons of Anticipated Overflow
744 Acres in Total
Green Infrastructure

$28 million for green infrastructure pilot projects and partnerships

$40 million for the Middle Blue River Green Infrastructure Project

Work includes:

• Sewer repairs
• Curbs and sidewalks
• Raingardens and bioswales
• Utility relocation
• Street repair

The Pilot Area

Commercial Corridor – Troost Avenue

Residential Street

The Pilot Project Process

Public Involvement = Informed Designs

Neighborhood Involvement

On the street meetings
Breakfast meetings
Door-to-Door Outreach
Rain Barrel Workshops
Mailers and Signage

We came to talk about a Combined Sewer Overflow Project

They came to talk about:

Curbs
Sidewalks
Traffic Speed
Trash Collection
Snow Removal
Safety
**Coordination and Collaboration**
Within the department, with other city departments and with outside agencies and organizations.
Allowed for the City to:
- be efficient with its resources;
- share ideas; and
- reduce the impacts on residents and business owners.

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**We Installed**
- Rain gardens
- Bioretention gardens
- Cascades
- Curb extensions
- Porous pavers
- Porous sidewalk

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**Rain Gardens**
- Retrofit between existing curb & sidewalk

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**Rain Gardens**
- Rain Garden (Wayne Avenue, north of 75th Street)
Curb Extensions with Below Grade Storage

Stormwater Storage
Traffic Calming
Sidewalks (porous)

Photos Courtesy of URS Corporation

Curb Extension Rain Garden

Porous Paver Sidewalks

Porous Concrete Sidewalks
Porous Concrete Sidewalks

Evaluating Green Infrastructure Designs

Photos Courtesy of URS Corporation

The good things we thought about in advance

Involved the Neighborhood

Diversified the Types of BMPs

Detention Storage

Porous Pavements

Vegetated Infiltration
Water Services Department

Used readily available materials and flexible design

Pipes were used on residential streets.

Cubes used on commercial streets with lots of utilities.

Combined Native and Ornamentals

Education

Coordination of Projects

Overlapped Construction with other City Departments for maximum efficiency and use of resources

Coordination with utility companies resulted in moving up neighborhood gas line work to coincide with project area construction.

Lessons Learned...

Construction Sequencing

Late plantings mixed with drought and high heat required extra watering and plant replacement costs.
Porous Pavement Issues
Wooded Neighborhoods and Construction Projects Pose Maintenance Challenges

Trash
Ended up in the gardens... or ended up in the storm drains

Theft
Plants, Metals, Underground Storage

Vandalism
Crate Storm 2010
River Rocks, Underground Storage Crates, Permeable Pavers

Commercial Corridor Utility Conflicts
Even when they tell you where they are, they are somewhere else

Managing Expectations
Transforming the Neighborhood

Before - Photo Courtesy of URS Corporation

Transforming the Neighborhood

After - Photo Courtesy of URS Corporation

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Next Phases of the Project

Design Professionals: Burns & McDonnell, CDM Smith, CH2M Hill, Phronesis
Contractor: TDB
Description:
Total Area: 644 Acres
Total Volume Capture: 2.52 MG
Design Storm: 1.4 inch/hour
Design Competition underway to determine contractor selection
Design Competition Completion: March 2013

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