



## CSO LTCP Green Infrastructure Project Fact Sheet



**LTCP Project Number:** L\_OR\_MF\_028\_S\_12\_A

---

**Project Name:** Sixth and Broadway Rain Garden

**Project Type:** Rain Garden

**Receiving Stream:** Ohio River

**Project Description:** Project includes a perimeter rain garden at the parking lot across from the Courier Journal.

**Design Parameters /  
Assumptions:**

- Project assumes 66,000 sq ft of impervious parking area will drain to 2,400 sq ft of rain garden.
- The contributing drainage area is 100% impervious.
- The contributing drainage area would generate approximately 1.45 million gallons of runoff during a typical year of rainfall.
- Depth of engineered soil layer would be 12 to 24 inches.
- Depth of gravel base layer would be 12 to 24 inches.
- Estimated infiltration rate is 3.5 in/hr.
- Typical rain garden cost is approximately \$20 per sq ft.
- The rain garden could completely capture and reduce approximately 10 times the footprint area of the rain garden during a typical year of rainfall.

**Surrounding Area  
Land Use:** Project located within 'General Commercial and Office' at the corner of Broadway and Sixth Street.

**Apparent Utilities  
Description:** No major utility conflicts

**Estimated Capital Cost  
(2008 dollars):** \$48,000

**Capital Cost / Stormwater  
Reduction:** \$0.09/gal

**Overflow Points Addressed:**

<u>CSO Number</u>	<u>CSO Name</u>	<u>2008 AAOV (MG/Yr)</u>	<u>Number of Overflow / Yr</u>	<u>CSO Area (Acres)</u>
CSO028	CRD Sixth & York	0.00	0	6.11

**Integrated Overflow Abatement Plan  
Vol. 2 - Final CSO Long-Term Control Plan**

Ohio River Sewershed  
Solution ID # L\_OR\_MF\_028\_S\_12\_A  
Sixth and Broadway Rain Garden

**Preliminary - for Budget Development Only**

**Legend**

- Active CSO
- Eliminated CSO
- PS Pump Station
- WWTP
- BMP Footprint
- BMP Drainage Area
- Force Main
- Collector < 12"
- Interceptor => 12"
- Combined Sewer Pipe
- Existing Drainage Line
- Streams
- Metro Parks
- County Boundary

General representation of overflow abatement solutions are for preliminary planning purposes. Alignments and locations may be altered during design.

1 inch = 100 feet  
Scalable when printed on 11"x17" paper

Some boundaries are uniquely symbolized within the map.

Map Revision  
August 19, 2008

Aerial Date: 2006



Copyright © 2008 LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT (MSD), LOUISVILLE WATER COMPANY, LOUISVILLE METRO GOVERNMENT, and JEFFERSON COUNTY PROPERTY VALUATION ADMINISTRATOR (PVA). All Rights Reserved.



**BMP Footprint: 2,400 sf**  
BMP Drainage Area: 66,000 sf

**CSO LTCP  
Green Infrastructure  
Project Fact Sheet**



**LTCP Project Number:** L\_OR\_MF\_015\_S\_12\_A

---

**Project Name:** Seventeenth and W Hill Permeable Alley

**Project Type:** Permeable alley

**Receiving Stream:** Ohio River

**Project Description:** This project includes retrofitting an existing 23,200 sq ft alley with permeable pavement, to capture runoff from 264,000 sq ft of surrounding area. The alley is bounded by S Seventeenth Street and Dixie Highway on the east and west and W Hill Street and Gaulbert Street on the north and south.

**Design Parameters / Assumptions:**

- Permeable pavement will span the entire width of the alley, or a Type B design.
- Perforated pipe will run down the center of the alley, connecting to a dry well type structure.
- The back half of the surrounding parcels and the back corner downspouts of the buildings will be directed to the alley.
- The contributing drainage area, including the alley footprint of 23,200 sq ft, is 264,000 sq ft.
- The contributing drainage area is approximately 75% impervious.
- The contributing drainage area would generate approximately 4.70 million gallons of runoff during a typical year of rainfall.
- Depth of permeable pavement layer would be 6 to 8 inches.
- Depth of gravel base would be 12 inches, with deeper pockets placed periodically along the length of the alley to promote additional infiltration.
- Estimated infiltration rate is 3.5 in/hr.
- Typical permeable pavement cost is approximately \$12 per sq ft.
- The permeable pavement system could completely capture and reduce approximately 75 gallons of stormwater runoff per sq ft of permeable pavement during a typical year of rainfall.

**Surrounding Area Land Use:** Project is located within 'Single Family Residential'

**Apparent Utilities Description:** No major utility conflicts

**Estimated Capital Cost (2008 dollars):** \$278,000

**Capital Cost / Stormwater Reduction:** \$0.16/gal



# CSO LTCP Green Infrastructure Project Fact Sheet



**LTCP Project Number:** L\_OR\_MF\_015\_S\_12\_A

---

**Overflow Points Addressed:**

<u>CSO Number</u>	<u>CSO Name</u>	<u>2008 AAOV (MG/Yr)</u>	<u>Number of Overflow / Yr</u>	<u>CSO Area (Acres)</u>
CSO015	Southwestern Pump Station	494.56	61	7,496.70

**Integrated Overflow Abatement Plan  
Vol. 2 - Final CSO Long-Term Control Plan**

Ohio River Sewershed  
Solution ID # L\_OR\_MF\_015\_S\_12\_A  
Seventeenth and W Hill Permeable Alley

**Preliminary - for Budget Development Only**

**Legend**

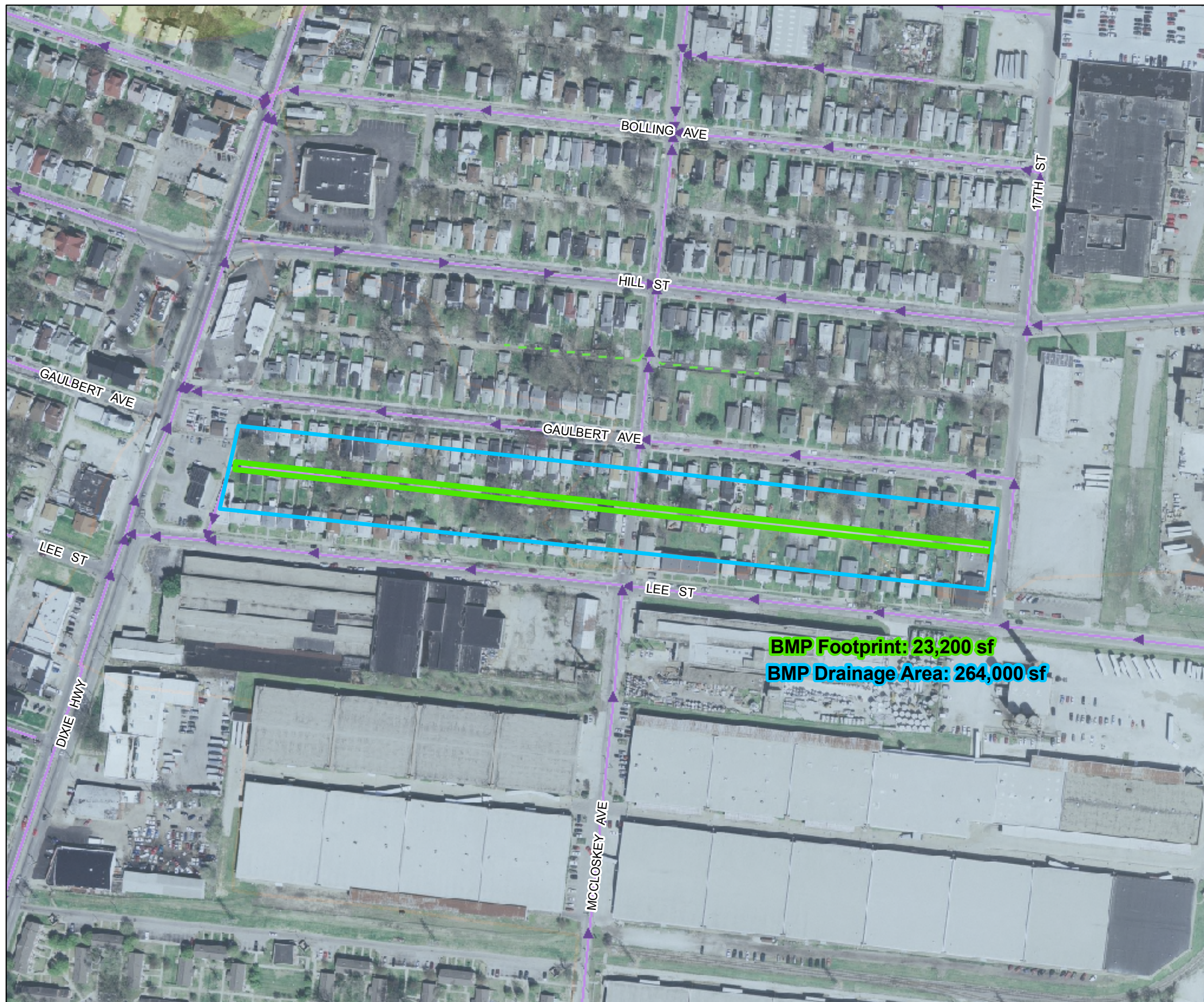
- Active CSO
- Eliminated CSO
- PS Pump Station
- WWTP
- BMP Footprint
- BMP Drainage Area
- Force Main
- Collector < 12"
- Interceptor => 12"
- Combined Sewer Pipe
- Existing Drainage Line
- Streams
- MP Metro Parks
- CB County Boundary

**General representation of overflow abatement solutions are for preliminary planning purposes. Alignments and locations may be altered during design.**

1 inch = 200 feet  
Scalable when printed on 11"x17" paper  
Some boundaries are uniquely symbolized within the map.  
Map Revision  
August 19, 2008  
Aerial Date: 2006



Copyright © 2008 LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT (MSD), LOUISVILLE WATER COMPANY, LOUISVILLE METRO GOVERNMENT, and JEFFERSON COUNTY PROPERTY VALUATION ADMINISTRATOR (PVA). All Rights Reserved.



**CSO LTCP  
Green Infrastructure  
Project Fact Sheet**



**LTCP Project Number:** L\_OR\_MF\_053\_S\_12\_A\_C

---

**Project Name:** Seventh and Market Permeable Alley

**Project Type:** Permeable alley

**Receiving Stream:** Ohio River

**Project Description:** Project includes retrofitting Congress Alley, an existing 12,900 sq ft alley, with permeable pavement to capture runoff from 357,000 sq ft of surrounding impervious area. Congress Alley is bounded by Market St and Jefferson St to the north and south and Seventh Street and Roy Wilkens Ave to the east and west.

**Design Parameters /  
Assumptions:**

- Permeable pavement will run as the center strip down the alley with traditional concrete along the sides for heavy vehicle travel, also known as a 'Type A' alley.
- Perforated pipe will run down the center of the alley, connecting to a dry well type structure.
- Runoff from the entire surrounding block will be directed to the alley.
- The contributing drainage area, including the alley footprint of 12,900 sq ft, is 357,000 sq ft.
- The contributing drainage area is approximately 95% impervious.
- The contributing drainage area would generate approximately 7.50 million gallons of runoff during a typical year of rainfall.
- Depth of permeable pavement layer would be 6 to 8 inches.
- Depth of gravel base would be 12 inches, with deeper pockets placed periodically along the length of the alley to promote additional infiltration.
- Estimated infiltration rate is 3.5 in/hr.
- Typical permeable pavement cost is approximately \$12 per sq ft.
- The permeable pavement system could completely capture and reduce approximately 75 gallons of stormwater runoff per sq ft of permeable pavement during a typical year of rainfall.

**Surrounding Area  
Land Use:**

The project is surrounding by 'General Commercial and Office' to the north and southwest and 'Public and Semi-Public' to the southeast.

**Apparent Utilities  
Description:**

No major utility conflicts

**Estimated Capital Cost  
(2008 dollars):**

\$155,000

**Capital Cost / Stormwater  
Reduction:**

\$0.16/gal



**CSO LTCP  
Green Infrastructure  
Project Fact Sheet**



**LTCP Project Number:** L\_OR\_MF\_053\_S\_12\_A\_C

---

**Overflow Points Addressed:**

<u>CSO Number</u>	<u>CSO Name</u>	<u>2008 AAOV (MG/Yr)</u>	<u>Number of Overflow / Yr</u>	<u>CSO Area (Acres)</u>
CSO053	Eighth Street	4.52	23	34.10

**Integrated Overflow Abatement Plan  
Vol. 2 - Final CSO Long-Term Control Plan**

Ohio River Sewershed  
Solution ID # L\_OR\_MF\_053\_S\_12\_A\_C  
Seventh and Market Permeable Alley

**Preliminary - for Budget Development Only**

**Legend**

- Active CSO
- Eliminated CSO
- PS Pump Station
- WWTP
- BMP Footprint
- BMP Drainage Area
- Force Main
- Collector < 12"
- Interceptor => 12"
- Combined Sewer Pipe
- Existing Drainage Line
- Streams
- M Metro Parks
- C County Boundary

**General representation of overflow abatement solutions are for preliminary planning purposes. Alignments and locations may be altered during design.**

1 inch = 100 feet  
Scalable when printed on 11"x17" paper



Some boundaries are uniquely symbolized within the map.

Map Revision  
August 19, 2008

Aerial Date: 2006



Copyright © 2008 LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT (MSD), LOUISVILLE WATER COMPANY, LOUISVILLE METRO GOVERNMENT, and JEFFERSON COUNTY PROPERTY VALUATION ADMINISTRATOR (PVA). All Rights Reserved.



**BMP Footprint: 12,900 sf**  
**BMP Drainage Area: 357,000 sf**



## CSO LTCP Green Infrastructure Project Fact Sheet



**LTCP Project Number:** L\_SO\_MF\_121\_S\_12\_A

---

**Project Name:** Campbell and Main Permeable Alley

**Project Type:** Permeable alley

**Receiving Stream:** South Fork Beargrass Creek

**Project Description:** The proposed project area, along Billy Goat Strut Alley, is bounded by Main St and Market St to the north and south and Campbell St and Shelby St to the east and west.

**Design Parameters /  
Assumptions:**

- Permeable pavement will run as the center strip down the alley with traditional concrete along the sides for heavy vehicle travel, also known as a 'Type A' alley.
- Perforated pipe will run down the center of the alley, connecting to a dry well type structure.
- The back half of the surrounding parcels and the back corner downspouts of the buildings will be directed to the alley.
- The contributing drainage area, including the alley footprint of 5,400 sq ft, is 78,000 sq ft.
- The contributing drainage area is approximately 90% impervious.
- The contributing drainage area would generate approximately 1.60 million gallons of runoff during a typical year of rainfall.
- Depth of permeable pavement layer would be 6 to 8 inches.
- Depth of gravel base would be 12 inches, with deeper pockets placed periodically along the length of the alley to promote additional infiltration.
- Estimated infiltration rate is 3.5 in/hr.
- Typical permeable pavement cost is approximately \$12 per sq ft.
- The permeable pavement system could completely capture and reduce approximately 75 gallons of stormwater runoff per sq ft of permeable pavement during a typical year of rainfall.

**Surrounding Area  
Land Use:**

Billy Goat Strut Alley is surrounded on the north by 'Industrial', 'Multi-Family Residential', 'General Commercial and Office', and 'Public and Semi-Public' land. South of the project site is all 'General Commercial and Office'.

**Apparent Utilities  
Description:**

There is a 12" combined sewer running along a portion of the alley.

**Estimated Capital Cost  
(2008 dollars):**

\$65,000

**Capital Cost / Stormwater  
Reduction:**

\$0.16/gal



# CSO LTCP Green Infrastructure Project Fact Sheet



**LTCP Project Number:** L\_SO\_MF\_121\_S\_12\_A

---

**Overflow Points Addressed:**

<u>CSO Number</u>	<u>CSO Name</u>	<u>2008 AAOV (MG/Yr)</u>	<u>Number of Overflow / Yr</u>	<u>CSO Area (Acres)</u>
CSO121	Reg NO 18 – Green Street	11.22	28	107.20

**Integrated Overflow Abatement Plan  
Vol. 2 - Final CSO Long-Term Control Plan**

South Fork Beargrass Creek Sewershed  
Solution ID # L\_SO\_MF\_121\_S\_12\_A  
Campbell and Main Permeable Alley

**Preliminary - for Budget Development Only**

**Legend**

- Active CSO
- Eliminated CSO
- PS Pump Station
- WWTP
- BMP Footprint
- BMP Drainage Area
- Force Main
- Collector < 12"
- Interceptor => 12"
- Combined Sewer Pipe
- Existing Drainage Line
- Streams
- M Metro Parks
- C County Boundary

General representation of overflow abatement solutions are for preliminary planning purposes. Alignments and locations may be altered during design.

1 inch = 100 feet  
Scalable when printed on 11"x17" paper



Some boundaries are uniquely symbolized within the map.

Map Revision  
August 19, 2008

Aerial Date: 2006



Copyright © 2008 LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT (MSD), LOUISVILLE WATER COMPANY, LOUISVILLE METRO GOVERNMENT, and JEFFERSON COUNTY PROPERTY VALUATION ADMINISTRATOR (PVA). All Rights Reserved.



**BMP Footprint: 5,400 sf**  
**BMP Drainage Area: 78,000 sf**



**CSO LTCP  
Green Infrastructure  
Project Fact Sheet**



**LTCP Project Number:** L\_OR\_MF\_208\_S\_12\_A

---

**Project Name:** Twelfth and Jefferson Green Street

**Project Type:** Green Street

**Receiving Stream:** Ohio River

**Project Description:** Project is located along Baxter Park and Twelfth Street at Jefferson Street

**Design Parameters / Assumptions:**

- Project includes 2,400 sq ft of biofiltration techniques along Twelfth Street that will drain approximately 44,000 sq ft, including 6,300 sq ft of roadway.
- The contributing drainage area is approximately 50% impervious.
- The contributing drainage area would generate approximately 0.60 million gallons of runoff during a typical year of rainfall.
- Depth of engineered soil layer would be 12 to 24 inches.
- Depth of gravel base layer would be 12 to 24 inches.
- Estimated infiltration rate is 3.5 in/hr.
- Typical biofiltration swale cost is approximately \$20 per sq ft.
- The biofiltration swale could completely capture and reduce approximately 10 times the footprint area of the biofiltration swale during a typical year of rainfall.

**Surrounding Area Land Use:** Project is located within 'Parks and Cemeteries, etc.', with 'Multi-Family Residential' to the west and 'Public and Semi-Public' to the north.

**Apparent Utilities Description:** No major utility conflicts

**Estimated Capital Cost (2008 dollars):** \$48,000

**Capital Cost / Stormwater Reduction:** \$0.09/gal

**Overflow Points Addressed:**

<u>CSO Number</u>	<u>CSO Name</u>	<u>2008 AAOV (MG/Yr)</u>	<u>Number of Overflow / Yr</u>	<u>CSO Area (Acres)</u>
CSO208	Twelfth & Jefferson	0.33	11	11.19

**Integrated Overflow Abatement Plan  
Vol. 2 - Final CSO Long-Term Control Plan**

Ohio River Sewershed  
Solution ID # L\_OR\_MF\_208\_S\_12\_A  
Twelfth and Jefferson Green Street

**Preliminary - for Budget Development Only**

**Legend**

- Active CSO
- Eliminated CSO
- PS Pump Station
- WWTP
- BMP Footprint
- BMP Drainage Area
- Force Main
- Collector < 12"
- Interceptor => 12"
- Combined Sewer Pipe
- Existing Drainage Line
- Streams
- Metro Parks
- County Boundary



**BMP Footprint: 2,400 sf**  
**BMP Drainage Area: 44,000 sf**

**General representation of overflow abatement solutions are for preliminary planning purposes. Alignments and locations may be altered during design.**

1 inch = 100 feet  
Scalable when printed on 11"x17" paper



Some boundaries are uniquely symbolized within the map.

Map Revision  
August 19, 2008

Aerial Date: 2006



Copyright © 2008 LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT (MSD), LOUISVILLE WATER COMPANY, LOUISVILLE METRO GOVERNMENT, and JEFFERSON COUNTY PROPERTY VALUATION ADMINISTRATOR (PVA). All Rights Reserved.