MSD
Metropolitan Sewer District

Louisville and Jefferson County Metropolitan Sewer District
700 West Liberty Street
Louisville Kentucky 40203-1911
502-540-6000
www.msdlouky.org

August 17, 2012 (Revised September 20, 2012)

Chief, Environmental Enforcement Section
Environmental and Natural Resources Division
U.S. Department of Justice
Post Office Box 7611
Washington DC 20044-7611

Jeff Cummins, Acting Director
Division of Enforcement
Department of Environmental Protection
300 Fair Oaks Lane
Frankfort, KY 40601

Chief, Water Programs Enforcement Branch
Water Management Program
US EPA Region 4
Atlanta Federal Center
61 Forsyth Street SW
Atlanta, GA 30303

Subject: CSO 093 Sewer Separation
Minor Project Modification
IOAP Project No. L_SO_MF_093_S_08_A_A_0
DOJ Case No. 90-5-1-1-08254

Attention Chiefs and Director:

MSD is requesting approval of a proposed minor project modification to the CSO 093 Sewer Separation project (IOAP Project No. L_SO_MF_093_S_08_A_A_0). This modification is part of an overall adaptive management review of the approved 2009 IOAP that will be documented in proposed 2012 IOAP Modification to be formally submitted in 2013. Since the project modifications will affect MSD's implementation activities prior formal submittal of the revision documentation, approval of the proposed modification is requested at this time.

2009 IOAP Project Description

The original CSO 093 Sewer Separation project included the separation of 2,975 linear feet of combined sewer line, with a completion date of December 31, 2015.

Proposed Project Modification

The project modification involves the re-construction of the CSO structure to replace the existing leaping weir with a more conventional overflow weir. The project completion date will remain at December 31, 2015. Based on benefit/cost analysis, the level of control will remain at zero CSO events in a typical year. Note also that the original sewer separation project would have allowed "first flush" urban stormwater runoff to reach the waters of the US with virtually every rain event. It is likely that capturing

first flush stormwater runoff represents an improvement in capture of contaminant loadings as compared to sewer separation, even if the level of control does not appear to change.

These modifications are part of an overall adaptive management review of the approved 2009 IOAP. Additional sewer system monitoring, hydraulic modeling recalibration and enhancements to the physical representation of the sewer system resulted in a redistribution of the flow in individual sewer lines, thus affecting project approach and sizing in some cases. Each proposed change will be justified in detail through minor modification letters. Detailed benefits, costs and program implementation refinements to the overflow abatement program will be documented in proposed 2012 IOAP Modification to be submitted in 2013.

Technical Justification

Since the last IOAP submittal, additional flow monitors have been installed in the system and on the overflow structures. Detailed topographic surveys were conducted at many of the CSO structures. The combined sewer system model was updated with the new survey data and re-calibrated based on the data from the additional flow monitors. The flows in the re-calibrated model differed from the original model and required changes to some of the IOAP projects.

The existing CSO structure consists of a leaping weir which will be removed, and a conventional weir will be constructed that will enable MSD to properly monitor the overflow line. The elimination of the leaping weir will allow higher peak flows from the CSO basin to remain in the system if the downstream system has sufficient capacity. MSD also intends to potentially incorporate green infrastructure components in the sewershed to account for any potential future model re-calibration impacts as additional flow monitoring data is obtained. The project will be renamed 'CSO 093 Structural Modifications & Green Infrastructure' and will maintain a December 31, 2015, completion date as previously submitted.

For your reference, a copy of the original project fact sheet and map from the IOAP are in Attachment A. New project fact sheets and maps have been provided in Attachment B. Additional documentation on the costs and level of control analysis will be included in the 2012 IOAP Modification.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering such information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If you have questions or need additional information, please contact Ms. Angela Akridge, Project WIN Program Manager, or myself at (502) 540-6000.

Sincerely,

W. Brian Bingham
Regulatory Services Director

cc: Greg Heitzman Paula Purifoy

Attachments

Louisville and Jefferson County Metropolitan Sewer District
700 West Liberty Street
Louisville Kentucky 40203-1911
502-540-6000
www.msdlouky.org

August 17, 2012 (Revised September 20, 2012)

Chief, Environmental Enforcement Section
Environmental and Natural Resources Division
U.S. Department of Justice
Post Office Box 7611
Washington DC 20044-7611

Jeff Cummins, Acting Director
Division of Enforcement
Department of Environmental Protection
300 Fair Oaks Lane
Frankfort, KY 40601

Chief, Water Programs Enforcement Branch
Water Management Program
US EPA Region 4
Atlanta Federal Center
61 Forsyth Street SW
Atlanta, GA 30303

Subject: CSO 093 Sewer Separation
Minor Project Modification
IOAP Project No. L_SO_MF_093_S_08_A_A_0
DOJ Case No. 90-5-1-1-08254

Attention Chiefs and Director:

MSD is requesting approval of a proposed minor project modification to the CSO 093 Sewer Separation project (IOAP Project No. L_SO_MF_093_S_08_A_A_0). This modification is part of an overall adaptive management review of the approved 2009 IOAP that will be documented in proposed 2012 IOAP Modification to be formally submitted in 2013. Since the project modifications will affect MSD's implementation activities prior formal submittal of the revision documentation, approval of the proposed modification is requested at this time.

2009 IOAP Project Description

The original CSO 093 Sewer Separation project included the separation of 2,975 linear feet of combined sewer line, with a completion date of December 31, 2015.

Proposed Project Modification

The project modification involves the re-construction of the CSO structure to replace the existing leaping weir with a more conventional overflow weir. The project completion date will remain at December 31, 2015. Based on benefit/cost analysis, the level of control will remain at ~~be changed from~~ zero ~~to eight~~ CSO events in a typical year. Note also ~~however~~ that the original sewer separation project would have allowed "first flush" urban stormwater runoff to reach the waters of the US with virtually every rain event. It is likely that capturing first flush stormwater runoff ~~and allowing combined sewage to overflow~~

~~only eight times in a typical year~~ represents an improvement in capture of contaminant loadings as compared to sewer separation, even if the level of control does not appear to change.

~~As part of an internal modeling review and recalibration, MSD initiated a detailed review of the previously submitted project. Upon completion of this review, MSD discovered that per the revised model, less than eight overflows occur for the 2001 typical year.~~

These modifications are part of an overall adaptive management review of the approved 2009 IOAP. Additional sewer system monitoring, hydraulic modeling recalibration and enhancements to the physical representation of the sewer system resulted in a redistribution of the flow in individual sewer lines, thus affecting project approach and sizing in some cases. Each proposed change will be justified in detail through minor modification letters. Detailed benefits, costs and program implementation refinements to the overflow abatement program will be documented in proposed 2012 IOAP Modification to be submitted in 2013.

Technical Justification

Since the last IOAP submittal, additional flow monitors have been installed in the system and on the overflow structures. Detailed topographic surveys were conducted at many of the CSO structures. The combined sewer system model was updated with the new survey data and re-calibrated based on the data from the additional flow monitors. The flows in the re-calibrated model differed from the original model and required changes to some of the IOAP projects.

~~Although less than eight overflows occur in a typical rainfall year, the~~ The existing CSO structure consists of a leaping weir which will be removed, and a conventional weir will be constructed that will enable MSD to properly monitor the overflow line. The elimination of the leaping weir will allow higher peak flows from the CSO basin to remain in the system if the downstream system has sufficient capacity. MSD also intends to potentially incorporate green infrastructure components in the sewershed to account for any potential future model re-calibration impacts as additional flow monitoring data is obtained. The project will be renamed 'CSO 093 Structural Modifications & Green Infrastructure' and will maintain a December 31, 2015, completion date as previously submitted.

For your reference, a copy of the original project fact sheet and map from the IOAP are in Attachment A. New project fact sheets and maps have been provided in Attachment B. Additional documentation on the costs and level of control analysis will be included in the 2012 IOAP Modification.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering such information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If you have questions or need additional information, please contact Ms. Angela Akridge, Project WIN Program Manager, or myself at (502) 540-6000.

Sincerely,

W. Brian Bingham
Regulatory Services Director

cc: Greg Heitzman Paula Purifoy

Attachments

MSD

Metropolitan Sewer District

ATTACHMENT A

CSO LTCP
Project Fact Sheet

LTCP Project Number: *L_SO_MF_093_S_08_A_A_0*

Project Name: CSO093 Sewer Separation

Project Type: Sewer Separation

Receiving Stream: South Fork Beargrass Creek

Project Description: This project includes the construction of a new storm water system consisting of 2,975 LF of 12" pipe in street plus 350 LF of 12" out of street.

Design Parameters / Assumptions: There are approx. 87 properties impacted by this project. The design flow would be developed in accordance with the MSD Design Manual. New stomwater outfall will minimize the erosion impact to receiving stream.

Surrounding Area Land Use: The project area includes 'General Comm. & Office', 'Vacant & Undeveloped', 'Industrial' & 'Single Family Residential' properties.

Apparent Utilities Description: Sec. OH elec. Running SE 6.5 ft. NE, Prim. OH elec. 22 ft. NE; proposed piping passes over gas, electric, and water lines

Capital Projects: 2007~Middle Fork Rehabilitation Phase 2 - Awaiting Start; 2013~USI Inspection Program - Awaiting Start; 2006~East Region Pump Station Modifications - Under Construction

Advanced Site Restoration: The stormwater outfall to Beargrass Creek will include design of flow control measures to minimize or prevent erosion impact to the receiving stream.

Estimated Capital Cost (2008): $952,000

Capital Cost / Gallon Overflow Removed: $0.72

Weighted Benefit / Cost Ratio (Capital Cost): 56.93

Overflow Points Addressed:

CSO Number	CSO Name	CSO Area (Acres)	2008 AAOV (MG / Yr)	# of Overflows / Yr	Post LTCP AAOV (MG/Yr)	Post LTCP # Overflows / Year
CSO093	Spring Street	20.79	1.81	37	0	0

NOTE: CSO hydraulic statistics are predicted based on InfoWorks model results.

Integrated Overflow Abatement Plan

Vol. 2 - Final CSO Long Term Control Plan

South Fork Beargrass Creek
Solution ID # L_SO_MF_093_S_08_A_A_0
CSO093 Sewer Separation

Preliminary - For Budget Development Only

Legend

- Proposed Storm Catch Basin
- Proposed Sanitary Manhole
- Proposed Storm Manhole
- Active CSO
- Eliminated CSO
- Pump Station
- Proposed Sanitary Pipe Solution
- Proposed Storm Pipe Solution
- Existing Drainage Line
- Force Main
- Collector < 12"
- Interceptor => 12"
- Combined Sewer Pipe
- Streams
- Floodway
- 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 equals 300 feet
Scalable when printed on 11" X 17" paper

Some boundaries are uniquely symbolized within the map.

Map Revision
December 3, 2008

Aerial Date: 2006

N

This document was developed in color. Reproduction in black and white may not represent the data as intended.

MSD

Metropolitan Sewer District

ATTACHMENT B

Project Name: CSO093 Structural Modifications & Green Infrastructure

Project Type: Structural Modifications & Green Infrastructure

Rec Stream: South Fork Beargrass Creek

Project Description: Modify existing structure to eliminate 'leaping weir'. Implement cost effective green infrastructure practices to reinforce overflow control level. Project will reduce overflows to zero overflows in a typical year.

Design Assumption:

Capital Cost: $488,000

Capital Benefit/Cost: 81.97

Present Worth Benefit Cost: 91.53

		Existing May 2012[1]		Baseline May 2012[2]	
CSO	CSO Name	Avg. Annual Overflow Volume	Avg. Annual Frequency	Avg. Annual Overflow Volume	Avg. Annual Frequency
CSO093	SPRING STREET	0.00	0	0.00	0

1. Existing May 2012 conditions reflect existing system operating conditions as of that date.

2. Baseline May 2012 assumes all SSDP projects are complete and critical combined sewer facilities (e.g. Morris Forman WQTC Southwestern Pump Station, Starkey Pump Station) are operating at optimal, sustainable levels.

Integrated Overflow Abatement Plan

Vol. 2 - Final CSO Long Term Control Plan

South Fork Beargrass Creek

CSO093 Inline Storage and Increased Dry Flow Capacity at CSO

Preliminary - For Budget Development Only

Rebuild CSO structure to remove leaping weir and increase hydraulic capacity of low flow pipe.

CSO093

SOUTH FORK BEARGRASS CREEK

N SPRING ST

MELLWOOD AVE

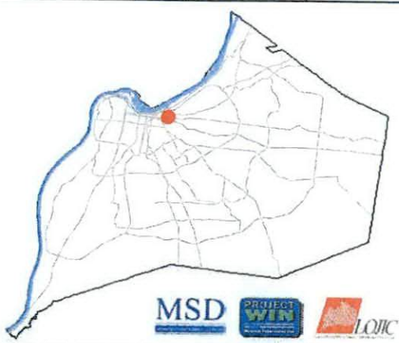
QUILL ST

64

- Active CSO
- Eliminated CSO
- Haulop Locations
- Proposed Pump Station Solution
- Pump Stations
- MSD
- Proposed Pipe Solution
- Combined Sewer Pipe
- Force Main
- Collector < 12"
- Interceptor >= 12"
- Proposed Off-line Storage
- Streams
- Floodway
- Jefferson 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	N	Aerial Date: 2009	Map Revision: April 9, 2012



J:\msd\SharedMaps\IOAP\2012 Revision\MXD\CSO093_SewerSeparation.mxd

This document was developed in color. Reproduction in black and white may not represent the data as intended. Scalable when printed on 11"x17" paper.