Louisville and Jefferson County Metropolitan Sewer District
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502-540-6000
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August 7, 2015

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

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

Chief, NPDES Permitting and Enforcement Branch
Water Protection Division
US EPA Region 4
Atlanta Federal Center
61 Forsyth Street SW
Atlanta, GA 30303

Subject: Southwestern Parkway Storage Basin
Minor Project Modification
IOAP Project No. L_OR_MF_105_M_13_B_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 Southwestern Parkway Storage Basin project (IOAP Project No. L_OR_MF_105_M_13_B_A_0). This request is part of the ongoing adaptive management review of the approved Integrated Overflow Abatement Plan (IOAP) dated May 2014.

2009 IOAP Project Description

The original Southwestern Parkway Storage Basin project involved the construction of a 5.08 million gallon (MG) storage basin to be completed by December 31, 2018, with a 0 overflows per typical year level of control.

2012 Project Modification

As a result of the system-wide recalibration of the hydraulic model completed in 2010, the basin size was revised, and level of control analysis was redone using the basin sizes resulting from the recalibrated model. The level of control analysis based on the benefit cost evaluation determined that the level of control should remain at 8 overflows per year in the typical year. The basin size increased from 5.08 MG to 11.07. This is the basin size included in the approved 2012 IOAP Modification dated May, 2014.

2015 Project Modification Request

This project modification request includes increasing the Southwestern Parkway Storage Basin size from 11.07 MG to 20.0 MG. This basin size assumes the continued use of in-line storage in the Western Outfall and the Northwest Interceptor, and a proactive approach to green infrastructure in the sewershed aimed at reducing impervious area by at least 2% by the end of the year 2020. The level of control is proposed to change from 0 overflows per year in the typical year to 8 overflows per year in the typical year based on a revised level of control analysis performed in accordance with the procedures established as part of the 2009 approved IOAP. No change in project completion date is proposed.

Technical Justification

Since the 2009 IOAP and 2012 IOAP Modification submittals, 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. Furthermore, the drainage boundary and connectivity of the upstream areas was revised and validated using additional desktop features and field reconnaissance.

In 2012 MSD began reviewing and updating the geometric and hydrologic parameters of the InfoWorks Combined Sewer System Model. Additionally, a consistent, standardized procedure was developed for using the enhanced flow monitoring data to calibrate the combined sewer area models.

In 2014, subsequent to the approval of the 2012 IOAP Modification, MSD completed detailed hydrologic reviews for the Southwestern Parkway Storage Basin project. The detailed hydrologic review resulted in the Southwestern Parkway Storage Basin drainage area hydrologic parameters changing substantially. Changing these parameters changed the size and operational parameters for the storage basin and MSD's understanding of how the entire combined sewer system performs.

Because of this significant change in the project size, and per previous direction from EPA/KDEP, MSD conducted a complete level of control analysis for the Southwestern Parkway Storage Basin in accordance with the procedure established in the approved IOAP dated September 2009. The results of that new level of control analysis using new basin sizes for 0, 2, 4, and 8 overflows per year in the typical year are shown in the table below.

Southwestern Parkway Storage Basin - Summary of Level of Control Analyses

Level of Control (Overflows per Year in a Typical Year)	Storage Basin Volume (MG)	Benefit Score	Estimated Capital Cost	Benefit/Cost Ratio
0	43.0	1242	$101,072,000	12.29
2	39.3	1026	$93,932,000	10.92
4	25.5	972	$66,208,000	14.68
8	**20.0**	**738**	**$49,841,000**	**14.81**

With the new basin sizes, a level of control of 8 overflows per year represents the best benefit/cost ratio. In order to achieve an overall "no net increase" in the AAOV for these hydraulically connected areas, MSD resized the four upstream CSO basins to collectively mitigate the change in residual AAOV.

For your reference, a copy of the project fact sheets and maps from the original approved IOAP dated September 2009, and the recently approved 2012 IOAP Modification dated May 2014 are included in Attachment A. New project fact sheets and maps addressing this new project modification request have been provided in Attachment B.

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 me at (502) 540-6136.

Sincerely,

Angela L. Akridge, PE
Chief Engineer

cc: G. Heitzman P. Purifoy

Attachments

X:\Data\IOAP\2014 IOAP\2014 Modification\Mod Letters\ Southwestern Parkway – Aug 7, 2015.docx

Appendix A

CSO Project Fact Sheet
2012 IOAP Project Modification

Project Name: Southwestern Parkway Storage Basin

Project Number: L_OR_MF_105_M_13_B_A_0

Project Type: In-Line & Off-Line Storage

Rec Stream: Ohio River

Project Description: This project includes a 11.07 MG underground covered concrete basin for CSO104, 105, and 189 and in-line storage in the Western Outfall and the Northwest Interceptor for an an additional 8.8 MG using adjustable gates to reduced overflows to zero overflows per typical year.

Design Assumption: Available CSS storage capacity is based on June, 2001 BPR RTC Study. Model Run with RTC Coded in confirms available storage. Flow Control assumes inflatable dams are available at the time of construction.

Capital Cost: $30,937,000

Capital Benefit/Cost: 22.14

Present Worth Benefit Cost: 24.06

		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
CSO104	SW PKWY SEWER @ BROADWAY	3.90	16	3.90	16
CSO105	WESTERN OUTFALL @ BROADWAY	59.69	30	59.67	30
CSO189	NORTHWESTERN SAN DIV	51.19	28	43.98	28

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

Ohio River

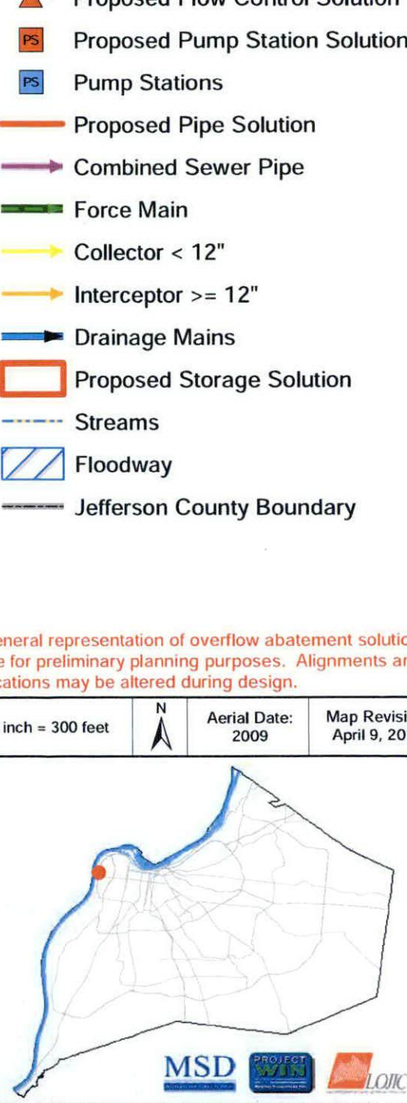
Southwestern Parkway Storage Basin

Preliminary - For Budget Development Only

- Active CSO
- Eliminated CSO
- Proposed Flow Control Solution
- Proposed Pump Station Solution
- Pump Stations
- Proposed Pipe Solution
- Combined Sewer Pipe
- Force Main
- Collector < 12"
- Interceptor >= 12"
- Drainage Mains
- Proposed Storage Solution
- 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 = 300 feet	N	Aerial Date: 2009	Map Revision: April 9, 2012



11.07 MG
Underground, Covered, Off-Line Storage Basin

Automated Gates on Northwestern Interceptor

Upgrade & Automation of existing 60" FC Gate

Automated Gates on the Western Interceptor

CSO189
SHAWNEE FLOOD PS
CSO104
CSO105

Ohio River
SHAWNEE CROSSROADS
SHAWNEE PARK RD
SHAWNEE LOOP RD
SHAWNEE PARK CIR
SHAWNEE PARK CT
DIRTBOWL DR
RIVER PARK DR
SOUTHWESTERN PKY
VERMONT AVE
DEL PARK TER
ELLIOTT AVE
S 44TH ST
S 43RD ST
S 42ND ST
W BROADWAY
S 47TH ST
S 45TH ST
VARBLE AVE

J:\msd\SharedMaps\IOAP\2012 Revision\MXD\Southwestern_Parkway_Storage_Basin.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.

Appendix B

CSO Project Fact Sheet
2015 IOAP Project Modification

Project Name: Southwestern Parkway Storage Basin

Project Number: L_OR_MF_105_M_13_B_A_0

Project Type: In-Line & Off-Line Storage

Rec Stream: Ohio River

Project Description: This project includes a 20 MG underground covered concrete basin for CSO104, 105, and 189 and in-line storage in the Western Outfall and the Northwest Interceptor for an additional 8.8 MG using adjustable gates to reduce overflows to eight overflows per typical year.

Design Assumption: Available CSS storage capacity is based on June, 2001 BPR RTC Study. Model Run with RTC Coded in confirms available storage. Flow Control assumes inflatable dams are available at the time of construction.

Capital Cost: $49,841,000

Capital Benefit/Cost: 14.81

Present Worth Benefit Cost: 24.06

		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
CSO104	SW PKWY SEWER @ BROADWAY	3.90	16	3.90	16
CSO105	WESTERN OUTFALL @ BROADWAY	59.69	30	59.67	30
CSO189	NORTHWESTERN SAN DIV	51.19	28	43.98	28

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

Ohio River

Southwestern Parkway Storage Basin

Preliminary - For Budget Development Only

- Active CSO
- Eliminated CSO
- Proposed Flow Control Solution
- Proposed Pump Station Solution
- Pump Stations
- Proposed Pipe Solution
- Combined Sewer Pipe
- Force Main
- Collector < 12"
- Interceptor >= 12"
- Drainage Mains
- Proposed Storage Solution
- 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 = 300 feet	N	Aerial Date: 2012	Map Revision: July 16,2015

20 MG Underground, Covered, Off-Line Storage Basin

Automated Gates on Northwestern Interceptor

Upgrade & Automation of existing 60" FC Gate

Automated Gates on the Western Interceptor

CSO189

SHAWNEE FLOOD PS

CSO105

CSO104

SHAWNEE CROSSROADS

SHAWNEE PARK RD

SHAWNEE LOOP RD

SHAWNEE PARK CIR

SHAWNEE PARK CT

DIRTBOWL DR

RIVER PARK DR

SOUTHWESTERN PKY

VERMONT AVE

DEL PARK TER

ELLIOTT AVE

S 44TH ST

S 43RD ST

S 42ND ST

S 47TH ST

S 45TH ST

W BROADWAY

VARBLE AVE

Ohio River

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

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