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

February 16, 2015

Dennis J. Sayre
NPDES Permitting and Enforcement Branch
U.S. EPA Region 4
61 Forsyth St., SW
Atlanta, Georgia 30303

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

SUBJECT: 18th and Northwestern Parkway Storage Basin
Minor Project Modification
IOAP Project No. L_SO_MF_190_S_09B_B_A_8

Attention Dennis and Jeff:

MSD is providing this letter as certification of the need for a minor project modification to the 18th and Northwestern Parkway Storage Basin project (IOAP Project No. L_SO_MF_190_S_09B_B_A_8), which has a required completion date of December 31, 2017 in order to mitigate the combined sewer overflow (CSO) at CSO190 to a level of control of eight overflows per typical year. An area map that displays the location of the combined sewer overflow for CSO190 can be reviewed in Attachment A.

2009 IOAP Project Description

The original IOAP project for this basin specifies the construction of a 1.31 million gallon (MG) off-line underground covered storage basin located north of CSO190. Additional model calibrations in 2010 predicted a volume reduction for the basin of 1.24 MG, which is the size proposed in the approved 2012 IOAP Modification. Volume 2, Section 5.4.1.4 of the 2013 IOAP Modification presents a detailed evaluation of an extensive suite of green infrastructure practices to achieve the same level of control as provided by the storage basin. The evaluation showed that the green infrastructure approach has a lower life cycle cost than the storage basin. At the time the 2012 IOAP Modification was submitted, MSD had not yet decided whether to implement the storage basin solution or a green infrastructure approach due to concerns about the logistics of implementing such a large number of green infrastructure practices in the CSO basin.

Project Modification Request

With the success of the green infrastructure solution for CSO 130, MSD has carefully considered the life cycle savings and the other community benefits of a green infrastructure approach, and has decided to implement green infrastructure to control CSO 190. Hydraulic modeling has confirmed that the proposed green infrastructure solutions could reduce the 54 current overflows per typical year to eight. As the design process continues, MSD will have the opportunity to optimize the specific approach and implement a variety of green infrastructure practices including open tree boxes, rain gardens, bioswales, downspout disconnections, and underground infiltration to reduce the volume of flow and pollutants to CSO190.

Technical Justification

MSD's evaluation of the life cycle costs of green infrastructure included consideration of the maintenance costs to sustain performance. All of the green infrastructure practices will be installed on public land, public right of way, or permanent easements, giving MSD access and authority to maintain the practices. All designed practices will include inlet control to capture solids and floatables before they enter the practice. The inlet control will be some form of baffled catch basins or manholes with sumps to allow MSD crews to vactor out the debris. Maintenance schedules will be established based on tracking the amount of material captured, but will initially be performed twice per year. Maintenance of practices with vegetation will be contracted out, with mulching, weeding, pruning and plant replacement initially performed on a monthly basis during the growing season. MSD will also install piezometers at most of the practices to allow periodic monitoring of infiltration rates. If infiltration rates indicate a loss of capacity below the threshold required for effective stormwater management, that could trigger a rebuild of the practice. It is anticipated that practices like infiltration trenches could require removal and replacement of the media every 10 years.

Depending on the results of additional flow monitoring and modeling, MSD may also choose to raise the weir height at the outfall. Depending on the model results the weir may be raised using either a fixed plate or a bending weir to provide additional in-line storage without impacting the drainage and flood control function of the sewer.

A revised project fact sheet and map is included as Attachment B to illustrate how MSD intends to achieve the level of control through green infrastructure practices, potential modifications to the diversion structure, and/or distributed storage throughout the CSO190 sewershed. The project will be renamed, 'CSO 190 Green Infrastructure Solution'. For your reference, copies of the project fact sheets and maps from the 2009 IOAP and 2012 IOAP Modification are enclosed in Attachment c.

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 any questions or need additional information, please contact me at (502) 540-6000

Sincerely,

Angela L. Akridge, PE
Infrastructure Planning and Environmental Compliance Director

Cc: Paula Purifoy Greg Heitzman

Attachments

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Attachment A

MSD

CSO Project Fact Sheet
2012 IOAP Project Modification

PROJECT WIN

Project Name: 18th and Northwestern Pky. Storage Basin

Project Number: L_OR_MF_190_S_09B_B_A_8

Project Type: Off-Line Storage

Rec Stream: Ohio River

Project Description: This project includes a 1.24 MG underground covered concrete basin for CSO190 to reduce overflows to 8 overflows per typical year. The basin is located in a vacant lot near I-64. The project includes a 1.86 MGD pump out facility. Green right-sizing will be performed at this basin and evaluated in-lieu of the proposed project.

Design Assumption: Basins are designed to the 9th overflow event volume, resulting in 8 CSO overflows per typical year.

Capital Cost: $4,486,000

Capital Benefit/Cost: 52.79

Present Worth Benefit Cost: 54.33

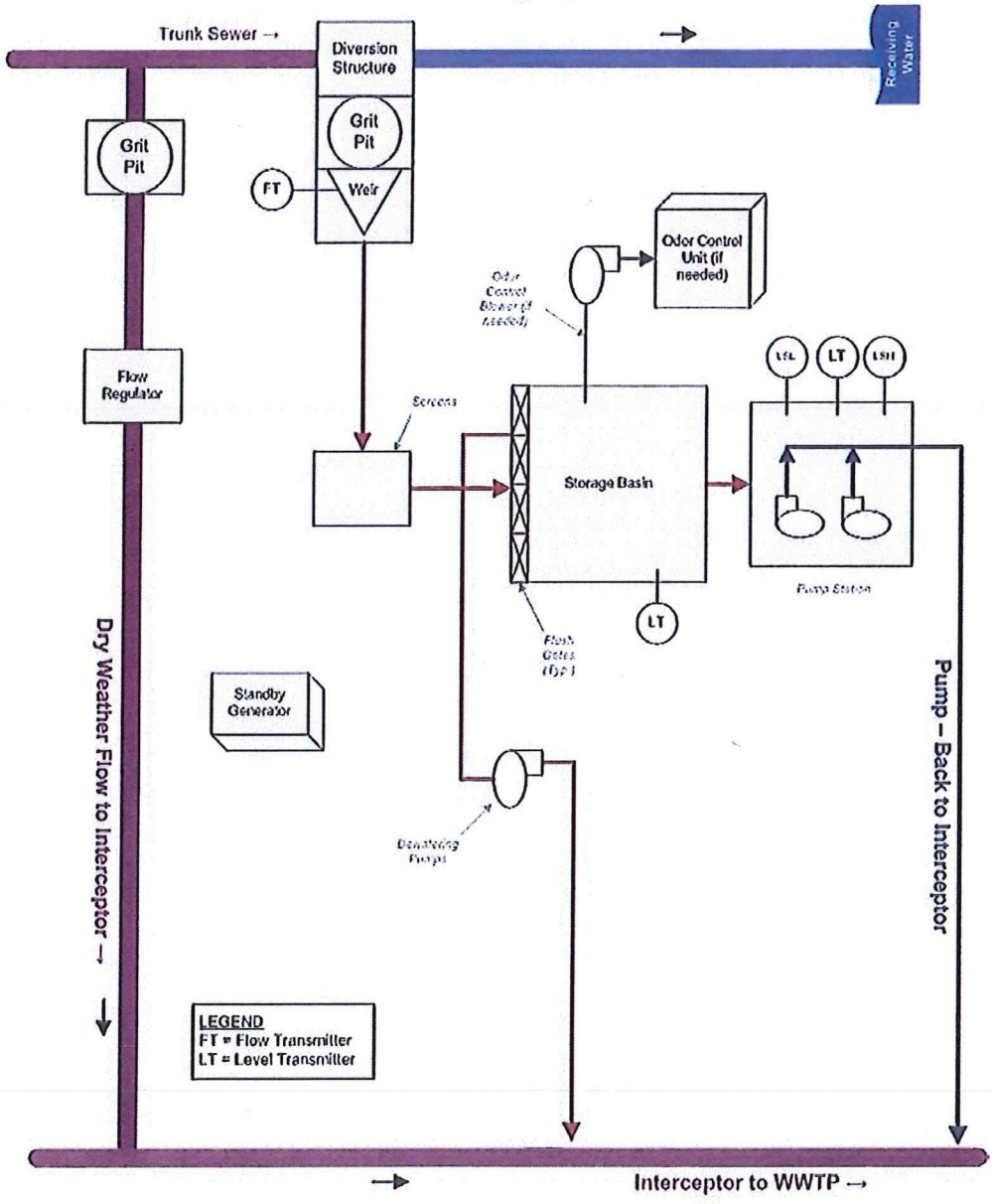
		Existing May 2012[1]		Baseline May 2012[2]	
CSO	CSO Name	Avg. Annual Overflow Volume	Avg. Annual Frequency	Avg. Annual Overflow Volume	Avg. Annual Frequency
CSO190	SEVENTEENTH ST SAN DIV	35.40	54	35.40	54

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.

CSO LTCP
Project Fact Sheet

Off-Line Storage Pumped Effluent Flow Diagram



Integrated Overflow Abatement Plan

Vol. 2 - Final CSO Long Term Control Plan

Ohio River

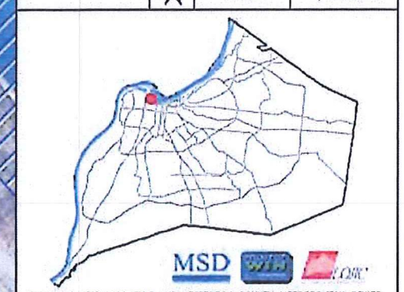
18th St & Northwestern Pky Storage Basin

Preliminary - For Budget Development Only

- Active CSO
- Eliminated CSO
- 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 = 100 feet	N	Aerial Date: 2009	Map Revision: April 9, 2012



J:\msd\SharedMaps\IOAP\2012 Revision\MXD\18thSt_and_NorthwesternPky_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.

Attachment B

CSO Project Fact Sheet

2012 IOAP Project Modification

Project Name: CSO190 Green Infrastructure Solution

Project Number: L_OR_MF_190_S_09B_B_A_8

Project Type: Green Infrastructure

Rec Stream: Ohio River

Project Description: This project is a suite of green infrastructure practices sized and located to reduce the number of overflows from CSO190 to 8 per year in a typical year. The practices include 6 areas of targeted tree plantings, 5 rain gardens, 9 vegetated infiltration trenches (including 1 with additional tree plantings) and 130 underground infiltration galleries. Practice locations are illustrated on the project map.

Design Assumption: Green Infrastructure Practices are designed to the 9th overflow event volume, resulting in 8 CSO overflows per typical year.

Capital Cost: $4,110,000

Capital Benefit/Cost: 72.75

Present Worth Benefit Cost: 104.45

		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
CSO190	SEVENTEENTH ST SAN DIV	35.40	54	35.40	54

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.

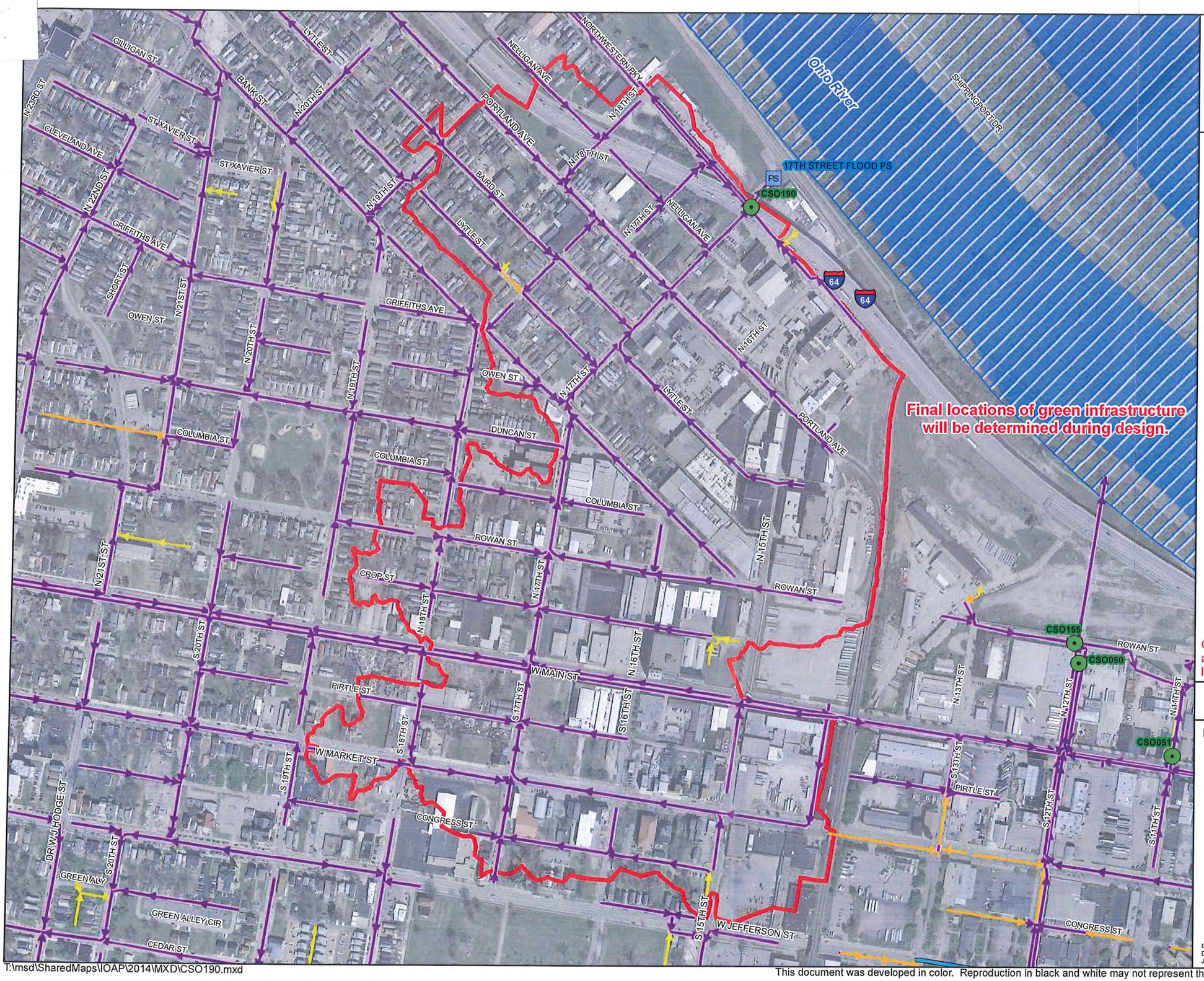
Integrated Overflow Abatement Plan

Vol. 2 - Final CSO Long Term Control Plan

Ohio River

CSO190 Green Infrastructure Solution

Preliminary - For Budget Development Only

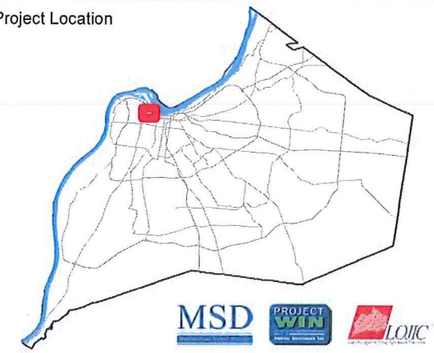


- Active CSO
- Eliminated CSO
- Pump Stations (PS)
- Combined Sewer Pipe
- Force Main
- Collector < 12"
- Interceptor >= 12"
- Drainage Mains
- Streams
- Jefferson County Boundary
- Floodway
- CSO 190 basin boundary

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

1 inch = 415 feet	N	Aerial Date: 2012	Map Revision: Date: 10/20/2014

Project Location



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