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 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: Story Avenue and Main Street Storage Basin
Minor Project Modification
IOAP Project No. L_OR_MF_020_S_09B_B_A_8
DOJ Case No. 90-5-1-1-08254

Attention Chiefs and Director:

MSD is requesting approval of a proposed minor project modification to the Story Avenue and Main Street Storage Basin project (IOAP Project No. L_OR_MF_020_S_09B_B_A_8). 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 Story Avenue and Main Street Storage Basin project involved the construction of a 0.13 million gallon (MG) storage basin to be completed by December 31, 2013, with an eight overflows per typical year level of control.

2012 Project Modification

The project modification proposed in 2012 involved the construction of a 5.4 MG storage basin to be completed by December 31, 2020, with an eight overflows per typical year level of control. Given the significant increase in proposed size, moving the scheduled completion to 2020 was proposed, and accepted in the approved IOAP dated May 2014..

2015 Project Modification Request

This project modification request includes increasing the Story Avenue and Main Street Storage Basin size from 5.4 MG to 8.3 MG. The level of control is proposed to remain at 8 overflows per year in the typical year. The larger size does not reduce CSO occurrences significantly, but does provide a reduced residual AAOV. No change in project completion date is proposed.

Technical Justification

Since the 2009 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. 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 resulted in 8 overflows per year being selected as the preferred level of control for the Southwestern Parkway Storage Basin. 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.

MSD recognized that, despite using the approved benefit/cost approach that determined the level of control for all IOAP projects, the proposed level of control change for the Southwestern Parkway Storage Basin considered in isolation could be challenging for regulatory reviewers to approve. MSD decided to voluntarily reconsider the size of several other hydraulically connected projects. This analysis was initiated to optimize the project sizes and provide the same or better overall CSO volume reduction as that resulting from the project sizing in the approved 2012 IOAP Modification. The results of the analysis are documented in our letter of July 20, 2015 with a subject of "Integrated Overflow Abatement Plan Modifications". This requested change in the size of the Story Avenue and Main Street Storage Basin is a direct result of that sizing optimization.

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) 540-6000.

Sincerely,

Angela L. Akridge, PE
Chief Engineer

cc: G. Heitzman P. Purifoy

Attachments

X:\Data\IOAP\2014 IOAP\2014 Modification\Mod Letters\ Story and Main – Aug 7 2015.docx

Appendix A

CSO Project Fact Sheet
2012 IOAP Project Modification

Project Name: Story Avenue and Main Street Storage Basin

Project Number: L_OR_MF_020_S_09B_B_A_8

Project Type: Off-Line Storage

Rec Stream: Ohio River

Project Description: This project includes the construction of a 5.42 MG off-line underground covered storage basin for CSO020 to reduce overflows to 8 overflows per typical year. Project assumes that the Starkey Pump Station has a typical, minimum pumping rate of 108 MGD. Additional storage or a higher pump-out rate may be added if deemed advantageous to operational and maintenance flexibility as well as impacts to other downstream CSO control projects.

Design Assumption: Basins are designed to the 9th overflow event volume, resulting in 8 CSO overflows per typical year. Type of basin based on hydraulics and surroundings. Starkey PS must be able to maintain a minimum pumping rate of 108 MGD.

Capital Cost: $12,576,000

Capital Benefit/Cost: 18.78

Present Worth Benefit Cost: 20.37

		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
CSO020	BUCHANAN PS	436.87	51	143.94	37

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.

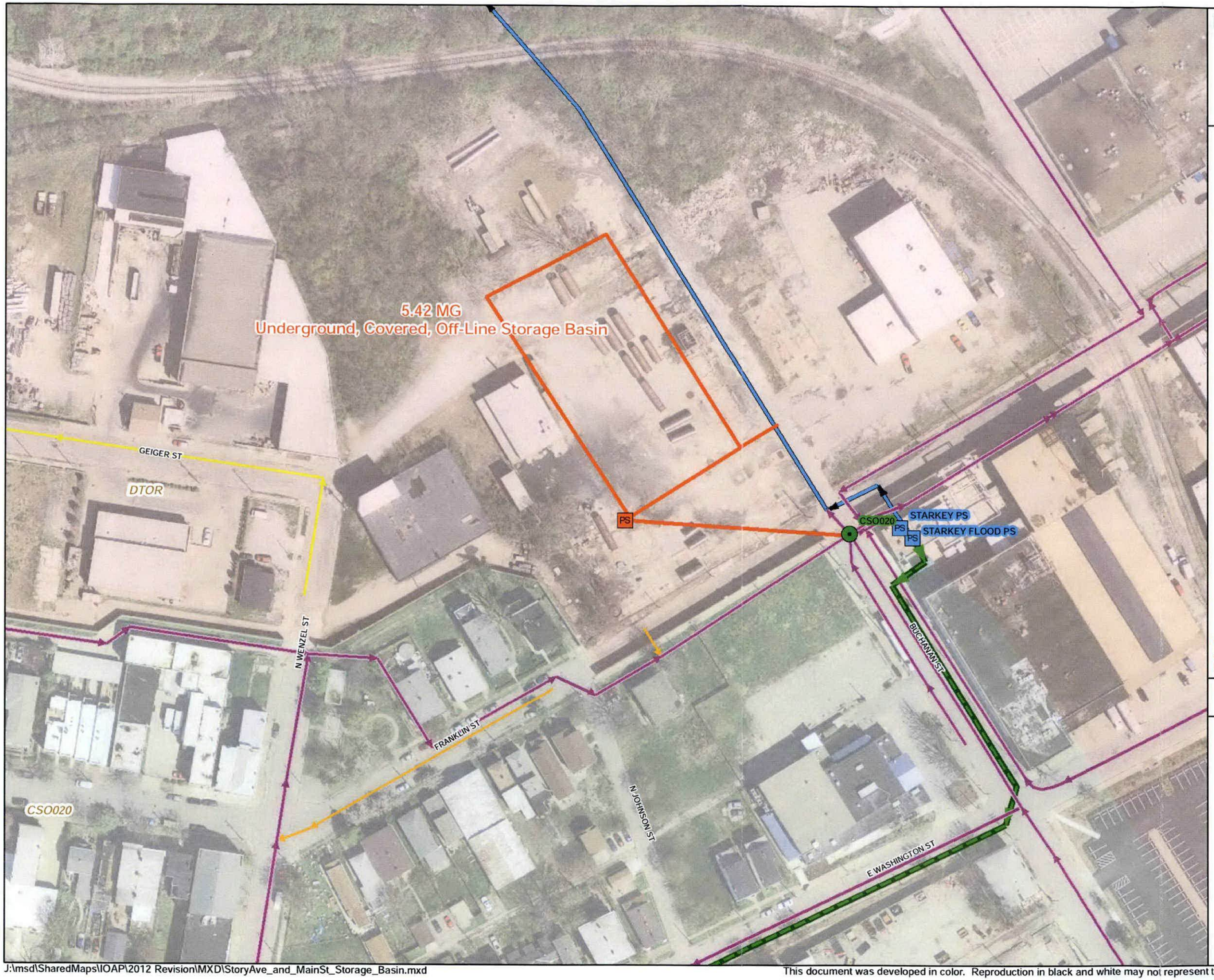
Integrated Overflow Abatement Plan

Vol. 2 - Final CSO Long Term Control Plan

Ohio River

Story Ave & Main St 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\StoryAve_and_MainSt_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: Story Avenue and Main Street Storage Basin

Project Number: L_OR_MF_020_S_09B_B_A_8

Project Type: Off-Line Storage

Rec Stream: Ohio River

Project Description: This project includes the construction of a 8.3 MG off-line underground covered storage basin for CSO020 to reduce overflows to 8 overflows per typical year. Project assumes that the Starkey Pump Station has a typical, minimum pumping rate of 108 MGD. Additional storage or a higher pump-out rate may be added if deemed advantageous to operational and maintenance flexibility as well as impacts to other downstream CSO control projects.

Design Assumption: Basins are designed to the 9th overflow event volume, resulting in 8 CSO overflows per typical year. Type of basin based on hydraulics and surroundings. Starkey PS must be able to maintain a minimum pumping rate of 108 MGD.

Capital Cost: $17,570,000

Capital Benefit/Cost: 18.78

Present Worth Benefit Cost: 20.37

		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
CSO020	BUCHANAN PS	436.87	51	143.94	37

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.

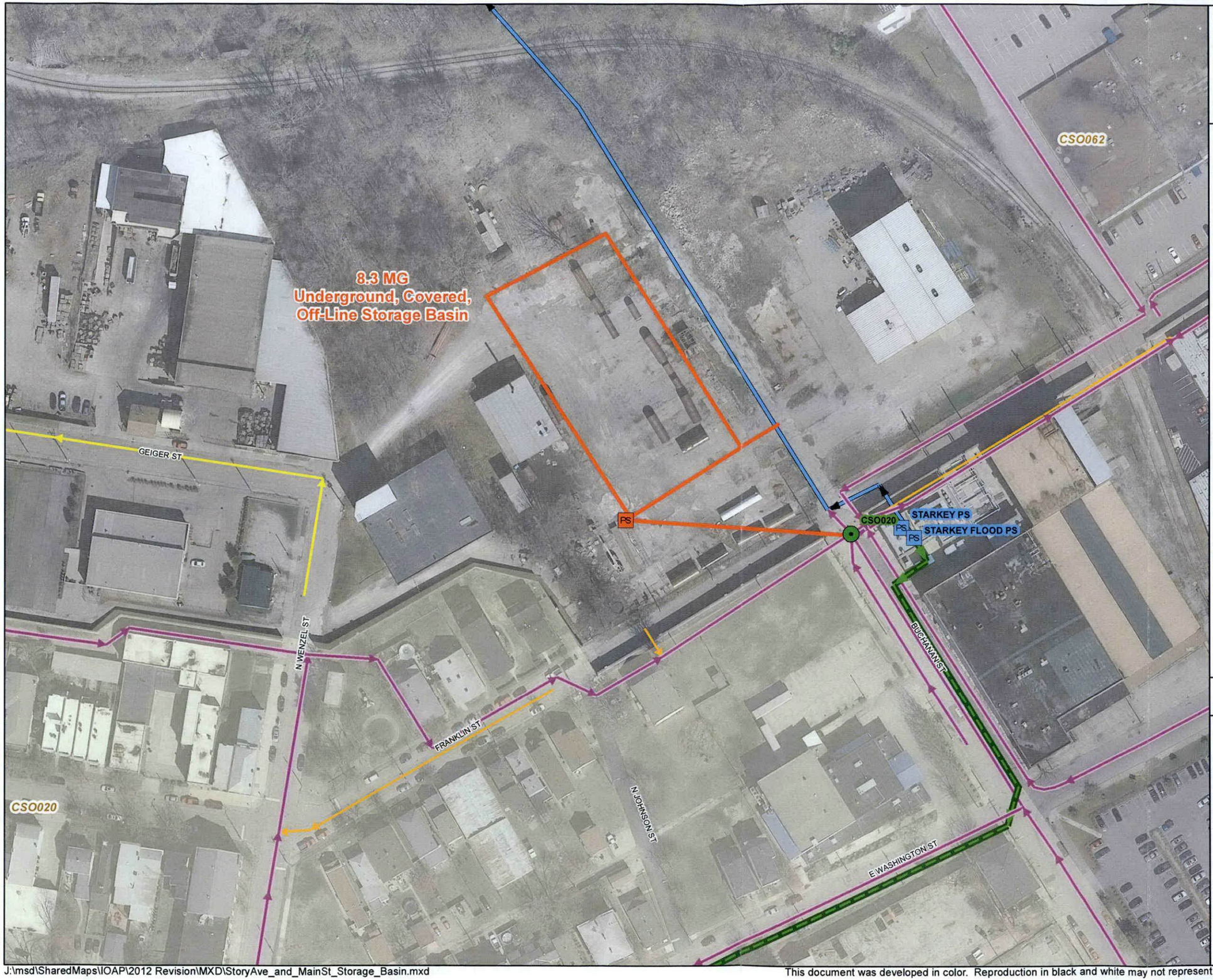
Integrated Overflow Abatement Plan

Vol. 2 - Final CSO Long Term Control Plan

Ohio River

Story Ave & Main St 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: 2012	Map Revision: June 19,2015

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