2012 IOAP Project Modification

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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)

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U.S. Department of Justice
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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: 13th Street and Rowan Street Storage Basin
Minor Project Modification
IOAP Project No. L_OR_MF_155_M_09B_B_B_4
DOJ Case No. 90-5-1-1-08254

Attention Chiefs and Director:

MSD is providing advanced notification of a proposed minor project modification to the 13th Street and Rowan Street Storage Basin project (IOAP Project No. L_OR_MF_155_M_09B_B_B_4). 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. No action is requested at this time.

2009 IOAP Project Description

The original project included a 14.44 million gallon (MG) storage basin controlling a number of CSOs to 4 overflows per year, with a scheduled completion date of December 31, 2020.

Proposed Project Modification

The modifications requested include a change in project approach, size of the storage basin and conveyance as well as the combined sewer overflows (CSOs) to be controlled by the project.

The modifications requested include the following:

1. Splitting off the CSOs that discharge into the Central Relief Drain into a separate project due to constructability concerns in conveying these CSOs to the 13th Street location (see separate project

modification letter for the Central Relief Drain CSO In-line Storage, Green Infrastructure and Distributed Storage for a description of this newly defined project);
2. Incorporating in-line storage at CSOs 023 and 058 as part of the 13th and Rowan project;
3. Reducing the size of the storage basin from 14.44 million gallons (MG) to 4.36 MG as a result of sewer model re-calibration, splitting out of the aforementioned CSOs and a more detailed understanding of system functionality in this area. While the completion date of the storage basin is proposed to remain the same, some of the new projects for the Central Relief Drain CSOs will have earlier completion dates, thereby accelerating the reduction of CSO control in this area; and
4. Revising the level of control for the CSOs controlled by the storage basin to eight overflows in a typical year due to a revised benefit/cost analysis.

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 2012 proposed IOAP revisions to be submitted in 2013. No action is requested at this time.

Technical Justification

As a result of the creation of the new project to mitigate the Central Relief Drain CSO and a better understanding of the sewer system functionality, the CSO volume captured by the 13th Street and Rowan Street Storage Basin is greatly reduced. A level of control analysis was conducted to determine if the revised sizing would result in a revised level of control based on the benefit/cost analysis approach used in the approved IOAP. This analysis demonstrated that the level of control with the highest benefit/cost ratio for the reconfigured project is eight overflows per year in the typical year, which results in a new basin size of 4.36 MG. MSD proposes that this project completion date remain on December 31, 2020, in accordance with the schedule of the approved IOAP.

For your reference, a copy of the original project fact sheet and map from the 2009 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_OR_MF_155_M_09B_B_B_4*

Project Name: 13th Street and Rowan Street Storage Basin

Project Type: Off-Line Storage

Receiving Stream: Ohio River

Project Description: This project includes a 66" collector and 14.44 MG underground covered concrete basin for CSO022, 023, 050, 051, 052, 053, 054, 055, 056, 150, 155, 156, 208, and CRD to reduce overflows to 4 overflows per year.The facility requires a 14.44 MGD PS.

Design Parameters / Assumptions: Basins are designed to the 5th overflow event volume, resulting in 4 CSO overflows/year. The 5th peak flowrate is evaluated to compare gravity vs. pumped conveyance. Design for pump-back is 24 hours. Type of basin based on hydraulics and surroundings.

Surrounding Area Land Use: The project is located within 'Vacant & Undeveloped' property North of Rowan St. The project is located approx. 50' NW of CSO155. Area to the immediate South is mainly 'Industrial'.

Apparent Utilities Description: Lateral running through the designed area of the basin, Gas Main 24' S of the basin, Water Main 28' S of the basin, Water Main running through the basin, CB about 27' N of the basin

Capital Projects: 2007~ORI Flow Installation Project- Under Construction

Advanced Site Restoration: N/A

Estimated Capital Cost (2008): $49,680,000

Capital Cost / Gallon Overflow Removed: $0.54

Weighted Benefit / Cost Ratio (Capital Cost): 30.40

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
CSO036	Central Relief Drain - 3rd Street and Broadway	23.08	0.02	4	0.03	4
CSO202	Central Relief Drain - South Ormsby Avenue, West of 3rd Street	5.32	0.00	0	0	0
CSO203	Central Relief Drain - South 4th Street and Ormsby Avenue	14.24	0.00	0	0	0
CSO181	Central Relief Drain - 2nd Street and Broadway Number 2	22.63	0.01	3	0.05	4
CSO198	Central Relief Drain - South 3rd Street and Ormsby Avenue	4.40	0.00	2	0.01	1
CSO022	4th Street Pump Station	100.89	0.95	4	0.62	4
CSO023	Ohio River Interceptor @ 4th Street Pump Station	0.00	74.00	28	18.52	4
CSO050	12th Street	36.32	38.87	41	5.95	4
CSO051	11th Street	6.34	3.84	28	1.2	4
CSO052	10th Street	8.70	8.43	27	1.44	4

CSO LTCP
Project Fact Sheet

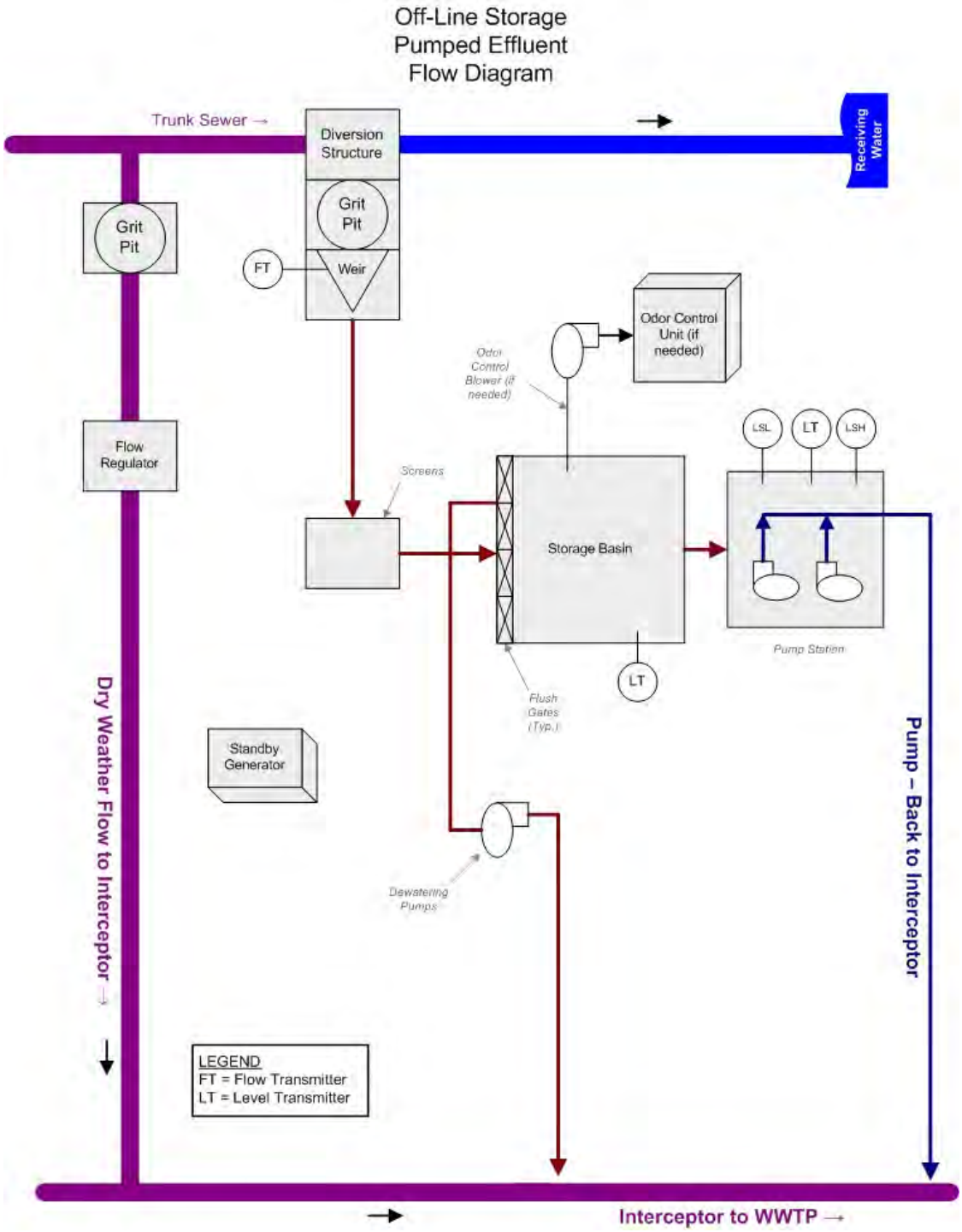
LTCP Project Number: *L_OR_MF_155_M_09B_B_B_4*

CSO053	8th Street	34.12	4.52	23	0.31	4
CSO054	7th Street	7.06	0.11	23	0.01	4
CSO055	6th Street	18.03	18.44	28	2.72	4
CSO056	5th Street	22.03	2.74	18	0.55	4
CSO150	8th Street @ Common Place	1.79	7.81	31	0.66	4
CSO155	Rowan Street and 12th Street	11.93	2.05	39	0.14	4
CSO156	6th Street & Washington Sanitary Diversion	0.00	0.09	10	0.04	4
CSO208	12th Street and Jefferson Street	11.19	0.33	11	0.04	4
CSO029	Central Relief Drain - 8th Street and York Street	34.78	4.53	33	0.46	4
CSO035	Central Relief Drain - 2nd Street and Broadway Number 1	14.26	0.21	11	0.04	4
CSO178	Central Relief Drain - 9th Street and York Street "B"	58.02	0.60	11	0.26	4
CSO193	Central Relief Drain - South 6th Street and Kentucky Street	22.69	0.04	5	0.02	4
CSO195	Central Relief Drain - South 4th Street and Oak Street	7.28	2.19	55	0.04	4
CSO196	Central Relief Drain - South 3rd Street and Oak Street	2.18	0.13	11	0.02	4
CSO197	Central Relief Drain - South 3rd Street, South of Oak Street	4.54	3.02	47	0.1	4
CSO199	Central Relief Drain - South 3rd Street, North of Magnolia Street	8.64	0.46	45	0.03	4
CSO200	Central Relief Drain - South 3rd Street and Magnolia Street	10.28	4.91	65	0.26	4

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

CSO LTCP
Project Fact Sheet

LTCP Project Number: *L_OR_MF_155_M_09B_B_B_4*



Integrated Overflow Abatement Plan

Volume 2 - Final CSO Long-Term Control Plan

Ohio River
Solution ID # L_OR_MF_155_M_09B_B_B_4
13th Street and Rowan Street Storage Basin

Preliminary - For Budget Development Only

Legend

- Active CSO
- Eliminated CSO
- Proposed Pump Station Solution
- Pump Station
- Proposed Pipe Solution
- Force Main
- Combined Sewer Pipe
- Flood Wall
- Proposed Storage Solution
- Floodway
- Metro Parks
- Streams

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

1 inch = 500 feet
Scaleable when printed on 11"x17" paper

Some boundaries are uniquely symbolized within the map.

Map Revision
Mar 13, 2009

Aerial Date: 2006

N

LTCP Map Series: I:\projects\10777_ MSD\40109_CSO LTCP Development\LTCP PROJECT\GIS\MXDs\11x17template_final_msd_19.mxd

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MSD

Metropolitan Sewer District

ATTACHMENT B

Project Name: 13th Street and Rowan Street Storage Basin

Project Type: Off-Line Storage

Rec Stream: Ohio River

Project Description: This project includes a large conveyance line from multiple CSOs and 4.36 MG underground covered concrete basin to reduce overflows to 8 overflows per typical year. This project also includes weir modification sto CSO 023 and 058. Two routes and costs for the conveyance line have been identified. The first route involves micro-tunnelling along Main Street, and the alternate route involves traditional open cut sewer installation along River Road. A right-sizing analysis may be used to potentially reduce the size of the basins or eliminate some of the conveyance lines.

Design Assumption: Conveyance Line along Main Street will be able to stay under existing utilities and over existing stormwater outfall lines. All CSOs are connected to the conveyance line near the weir, and no overflow pipes are used for conveaynce due to the potential of additional direct storwmater runoff.

Capital Cost: $29,180,000

Capital Benefit/Cost: 40.71

Present Worth Benefit Cost: 47.7

		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
CSO022	FOURTH ST PS	3.13	7	3.13	7
CSO023	ORI @ 4th ST PS	3.95	6	16.15	15
CSO050	12th STREET	8.58	30	15.13	32
CSO051	11th STREET	1.18	13	1.89	15
CSO052	10th STREET	2.51	18	4.31	25
CSO053	8th STREET	4.62	38	4.62	38
CSO054	7th STREET	0.72	12	1.54	18
CSO055	6th STREET	2.66	14	6.53	21
CSO056	5th STREET	1.41	11	1.96	13
CSO058	PRESTON ST OVFL WEIR	1.29	13	69.55	51
CSO150	8th ST @ COMMON PLACE	0.86	14	1.88	21
CSO155	ROWAN ST @ 12th ST	2.36	38	2.36	38

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.

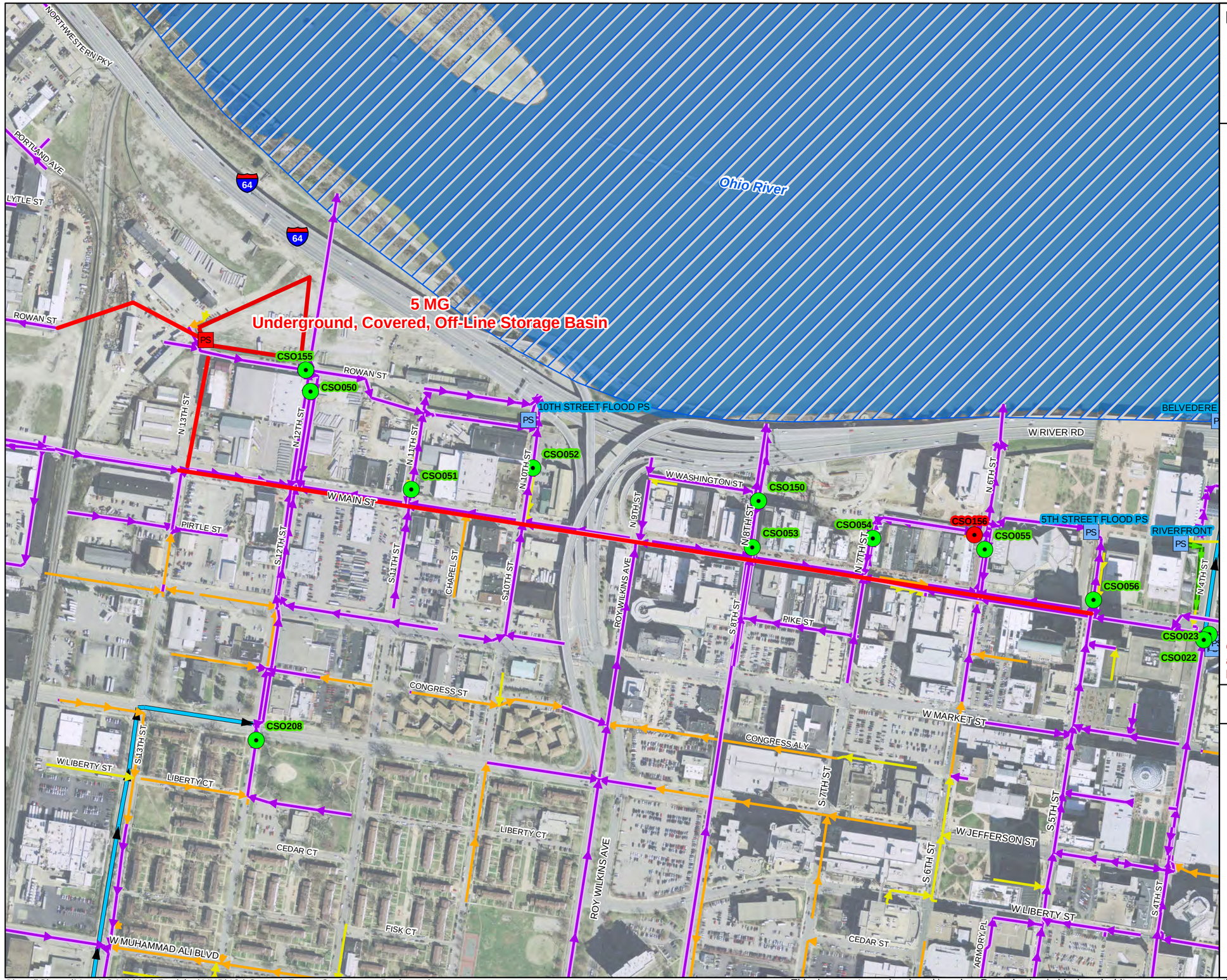
Integrated Overflow Abatement Plan

Vol. 2 - Final CSO Long Term Control Plan

Ohio River

N 13th St and Rowan St Storage Basin

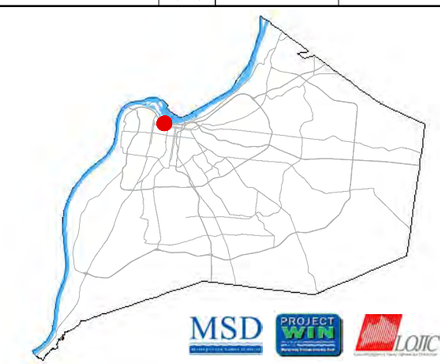
Preliminary - For Budget Development Only



- 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 = 400 feet	N	Aerial Date: 2009	Map Revision: April 9, 2012



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August 17, 2012

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

Subject: Algonquin Parkway Storage Basin
Minor Project Modification
IOAP Project No. L_OR_MF_211_M_13_B_A_8
DOJ Case No. 90-5-1-1-08254

Attention Chiefs and Director:

MSD is providing advanced notification of a proposed minor project modification to the Algonquin Parkway Storage Basin project (IOAP Project No. L_OR_MF_211_M_13_B_A_8). 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. No action is requested at this time.

2009 IOAP Project Description

The original Algonquin Parkway Storage Basin project included a 4.84 million gallon (MG) storage basin downstream from the Main Diversion Structure and two in-line storage facilities in the Southern Outfall, with a scheduled completion date of December 31, 2018.

Proposed Project Modification

The modifications requested includes the elimination of the 4.84 MG Algonquin Parkway storage basin due to operational strategy revisions at the Morris Forman Water Quality Treatment Center (WQTC) and reduction of pumped flows from the Southwestern Pump Station and increased storage at the planned Paddys Run Wet Weather Treatment Facility. Two new projects have been established to construct two in-line storage facilities in the Southern Outfall that were described in the original project. Project names are the Southern Outfall In-line Storage - 43rd St (SOR1) project and Southern Outfall

In-line Storage 12th St & Wilson Ave (SOR2) project. The project schedule is proposed to remain at December 31, 2018. The project will maintain the same level of control at eight overflows in a typical year, based on a revised benefit/cost analysis.

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. No action is requested at this time.

Technical Justification

The approved 2009 IOAP includes a 4.84 MG storage basin downstream from the Main Diversion Structure (MDS) along with in-line storage at two different locations in the Southern Outfall. The MDS is one of two main routes that deliver combined sewage into the Morris Forman WQTC.

As originally modeled, the MDS allowed up to 225 million gallons per day (MGD) into the Morris Forman WQTC during major rain events. Any flow delivered to the MDS in excess of 225 MGD would overflow from the CSOs connected to the MDS network, (CSOs 016, 210, and 211). The Southwestern Pump Station was originally modeled to deliver an additional 100 MGD to the Morris Forman WQTC, to bring the wet weather flow rate up to 325 MGD, which is the sustainable wet weather capacity of the plant.

During model recalibration, the real time control (RTC) rules controlling flow to the Morris Forman WQTC were reviewed and a decision made to modify those rules to take up to the full 325 MGD of capacity from the gravity-driven MDS, if sufficient flow is available. Pumping from Southwestern Pump Station would only occur during wet weather if treatment capacity were available after all flow from MDS was routed to the Morris Forman WQTC. As a result of this rule change, less CSO volume is discharged from the MDS CSOs, and an equivalent amount more is discharged from the Southwestern Pump Station CSOs (CSO 015 and 191).

As a result of this operational strategy revision, the storage volume needed to control CSOs at the MDS decreased, and the 4.84 MG basin is no longer needed to manage CSOs to the approved level of control. The two in-line storage projects along the Southern Outfall outlined in the original 2009 IOAP, however, are still necessary. The storage volume provided at the Southwestern Pump Station has increased, which is the subject of a separate request for a minor modification to the Paddy's Run Wet Weather Treatment Facility.

For your reference, a copy of the original project fact sheet and map from the 2009 IOAP are in Attachment A. New project fact sheets and maps reflecting the creation of separate projects for the two in-line storage facilities on the Southern Outfall 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_OR_MF_211_M_13_B_A_8*
Project Name:	Algonquin Parkway Storage Basin
Project Type:	RTC with Storage
Receiving Stream:	Ohio River
Project Description:	This project includes a 4.84 MG underground open concrete basin and ILS at two locations within the SO for CSO016, 210, and 211 to reduce overflows to 8 overflows per year. The facility will be a gravity in-gravity out operation.
Design Parameters / Assumptions:	Available CSS storage capacity is based on June, 2001 BPR RTC Study. Flow Control assumes inflatable dams are available at the time of construction. Down-sized storage basin design with Flow Control assumptions are same as Off-line Storage technology.
Surrounding Area Land Use:	The project is located within 'Industrial' property. The project is located approximately 1000' Southeast of CSO211 and 100' North of Gibson Lane near Algonquin Pky.
Apparent Utilities Description:	Prim. OH elec. Approx. 23 ft. S. of proposed basin, multi. Lights approx 32 ft. S. of the proposed basin, Secondary OH elec. Located approx. 37 ft. S. of proposed basin
Capital Projects:	2009~FY08/09 CD-1 Drainage Improvement - Awaiting Start; 2007~ORI Flow Meter Installation Project - Under Construction
Advanced Site Restoration:	N/A
Estimated Capital Cost (2008):	$17,300,000
Capital Cost / Gallon Overflow Removed:	$0.04
Weighted Benefit / Cost Ratio (Capital Cost):	34.16

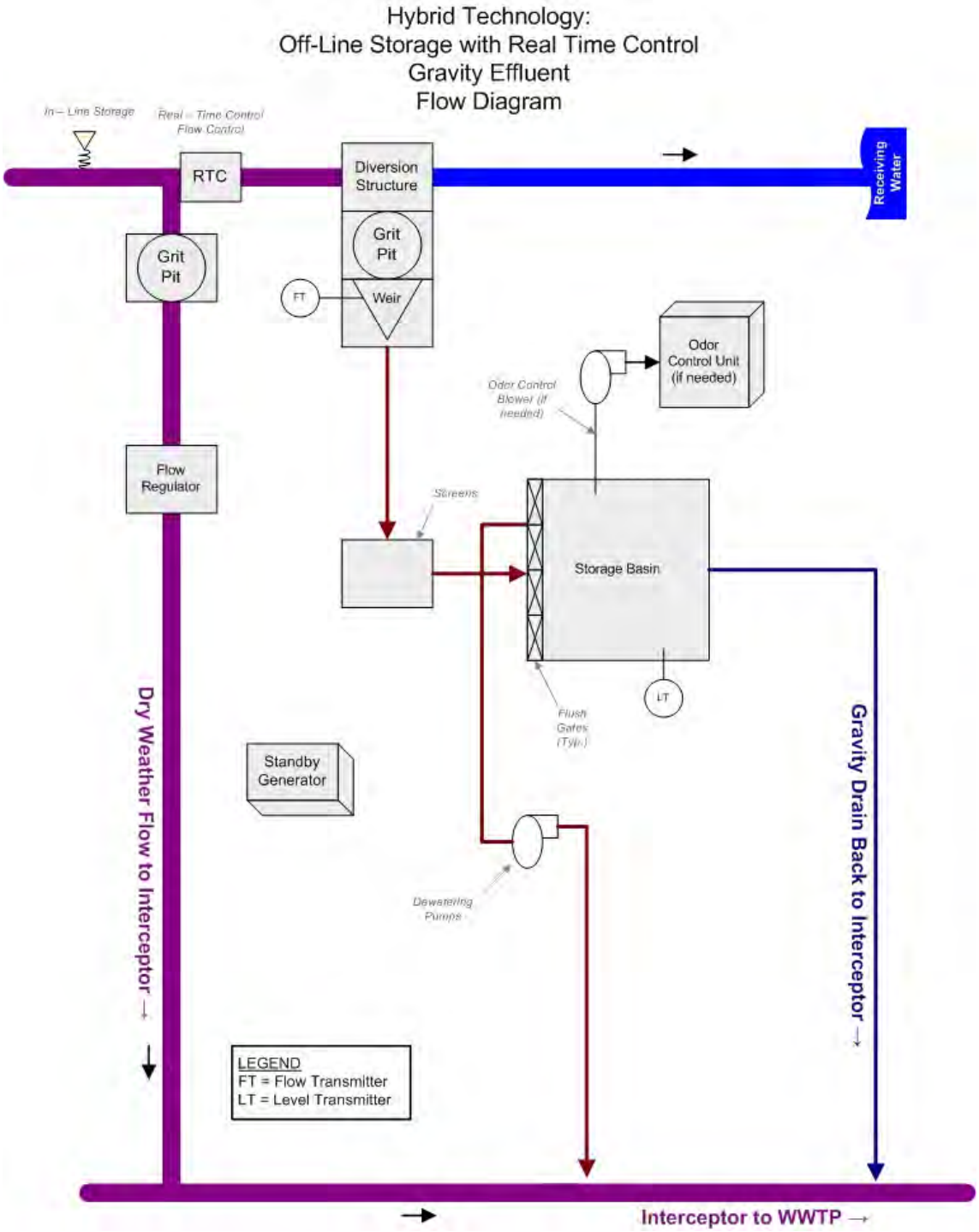
Overflow Points Addressed:

CSO Number	CSO Name	CSO Area (Acres)	2008 AAOV (MG / Yr)	# of Overflows / Yr	Post LTCP AAOV (MG/Yr)	Post LTCP # Overflows / Year
CSO016	Miles Park Bypass	0.00	29.65	29	1.92	8
CSO210	45th Street - Greenwood	166.67	195.57	51	42.99	8
CSO211	Main Diversion Structure	3,554.89	373.17	29	7.98	8

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

CSO LTCP
Project Fact Sheet

LTCP Project Number: *L_OR_MF_211_M_13_B_A_8*



Integrated Overflow Abatement Plan

Volume 2 - Final CSO Long-Term Control Plan

Ohio River
Solution ID # L_OR_MF_211_M_13_B_A_8
Algonquin Parkway Storage Basin

Preliminary - For Budget Development Only

Legend

- Active CSO
- Eliminated CSO
- Proposed Flow Control Solution
- Proposed Pump Station Solution
- Pump Station
- Proposed Pipe Solution
- Force Main
- Combined Sewer Pipe
- Flood Wall
- Proposed Storage Solution
- Floodway
- Metro Parks
- Streams

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

1 inch = 400 feet
Scaleable when printed on 11"x17" paper

Some boundaries are uniquely symbolized within the map.

Map Revision
Mar 13, 2009

Aerial Date: 2006

N

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Metropolitan Sewer District

ATTACHMENT B

Project Name: Southern Outfall In-line Storage at 43rd St (SOR1)

Project Type: In-Line Storage

Rec Stream: Ohio River

Project Description: In-line storage using an actuated gate or inflatable dam in the Southern Outfall (11.4 MG) linked to Real Time Control near the end of 43rd Street and the existing Whayne Supply property. Project will reduce overflows to 8 overflows in a typical year.

Design Assumption: Inflatable dam must be available for manufacture at the necessary size.

Capital Cost: $3,898,500

Capital Benefit/Cost: 109.27

Present Worth Benefit Cost: 113.96

		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
CSO016	MILES PARK BYPASS	47.90	28	13.86	29
CSO210	45th STREET-GREENWOOD	71.45	50	61.89	50
CSO211	MAIN DIVERSION STRUCTURE	348.50	24	283.12	22

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.

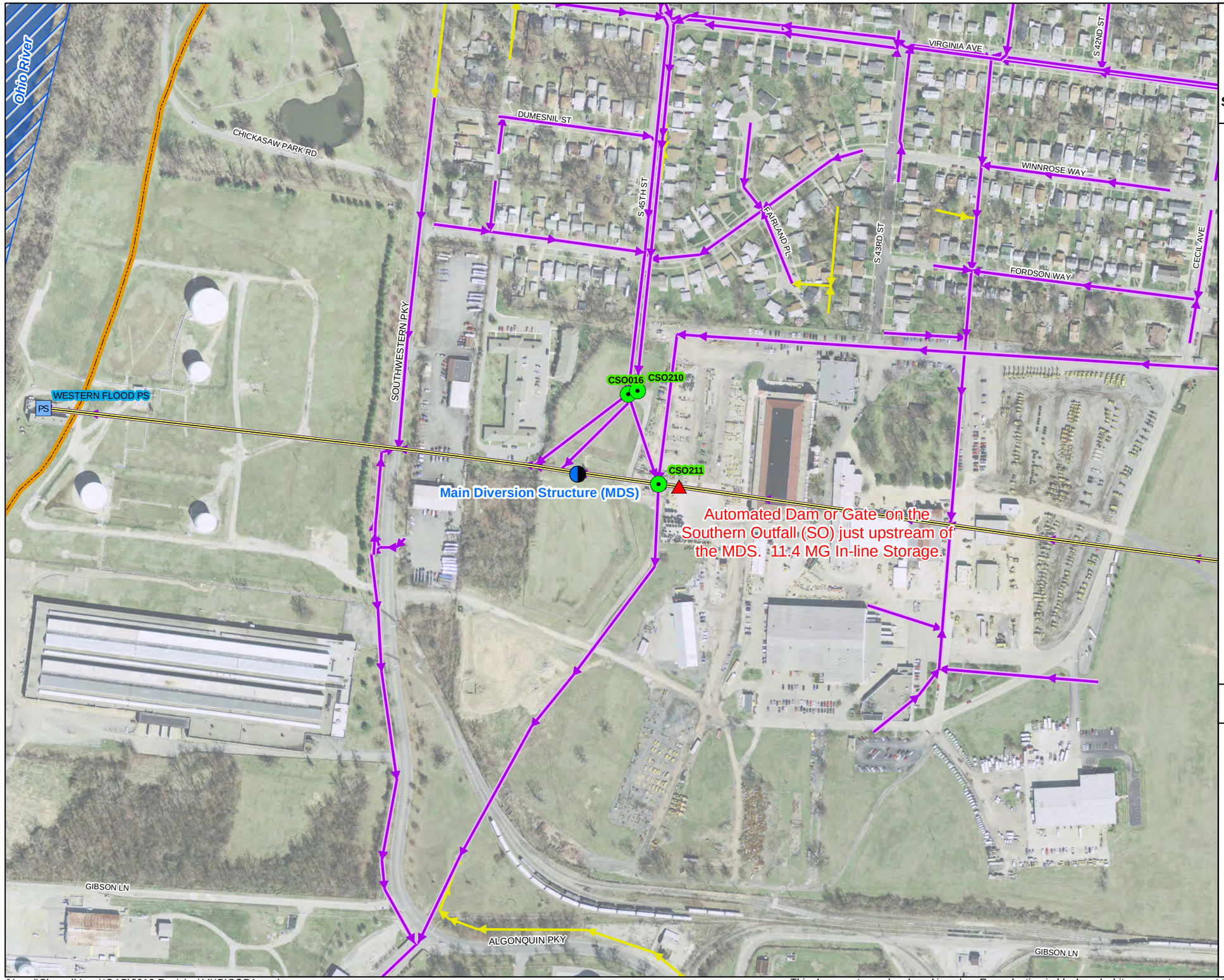
Integrated Overflow Abatement Plan

Vol. 2 - Final CSO Long Term Control Plan

Ohio River

Southern Outfall In-line Storage - 43rd St (SOR1)

Preliminary - For Budget Development Only



- Active CSO
- Eliminated CSO
- Proposed Flow Control Solution
- Pump Stations
- MSD
- Proposed Pipe Solution
- Southern Outfall
- Combined Sewer Pipe
- Force Main
- Collector < 12"
- Interceptor >= 12"
- Proposed Off-line Storage
- Streams
- Floodway
- Flood Wall
- 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

J:\msd\SharedMaps\IOAP\2012 Revision\MXD\SOR1.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.

Project Name: Southern Outfall In-line Storage at 12th St & Wilson Ave (SOR2)

Project Type: In-Line Storage

Rec Stream: Ohio River

Project Description: In-line storage using an actuated gate or inflatable dam in the Southern Outfall (4.7 MG) linked to Real Time Control near the intersection of 12th Street and Wilson Avenue.Project will reduce overflows to 8 overflows in a typical year.

Design Assumption: Inflatable dam must be available for manufacture at the necessary size.

Capital Cost: $3,898,500

Capital Benefit/Cost: 109.27

Present Worth Benefit Cost: 113.96

		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
CSO016	MILES PARK BYPASS	47.90	28	13.86	29
CSO210	45th STREET-GREENWOOD	71.45	50	61.89	50
CSO211	MAIN DIVERSION STRUCTURE	348.50	24	283.12	22

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.

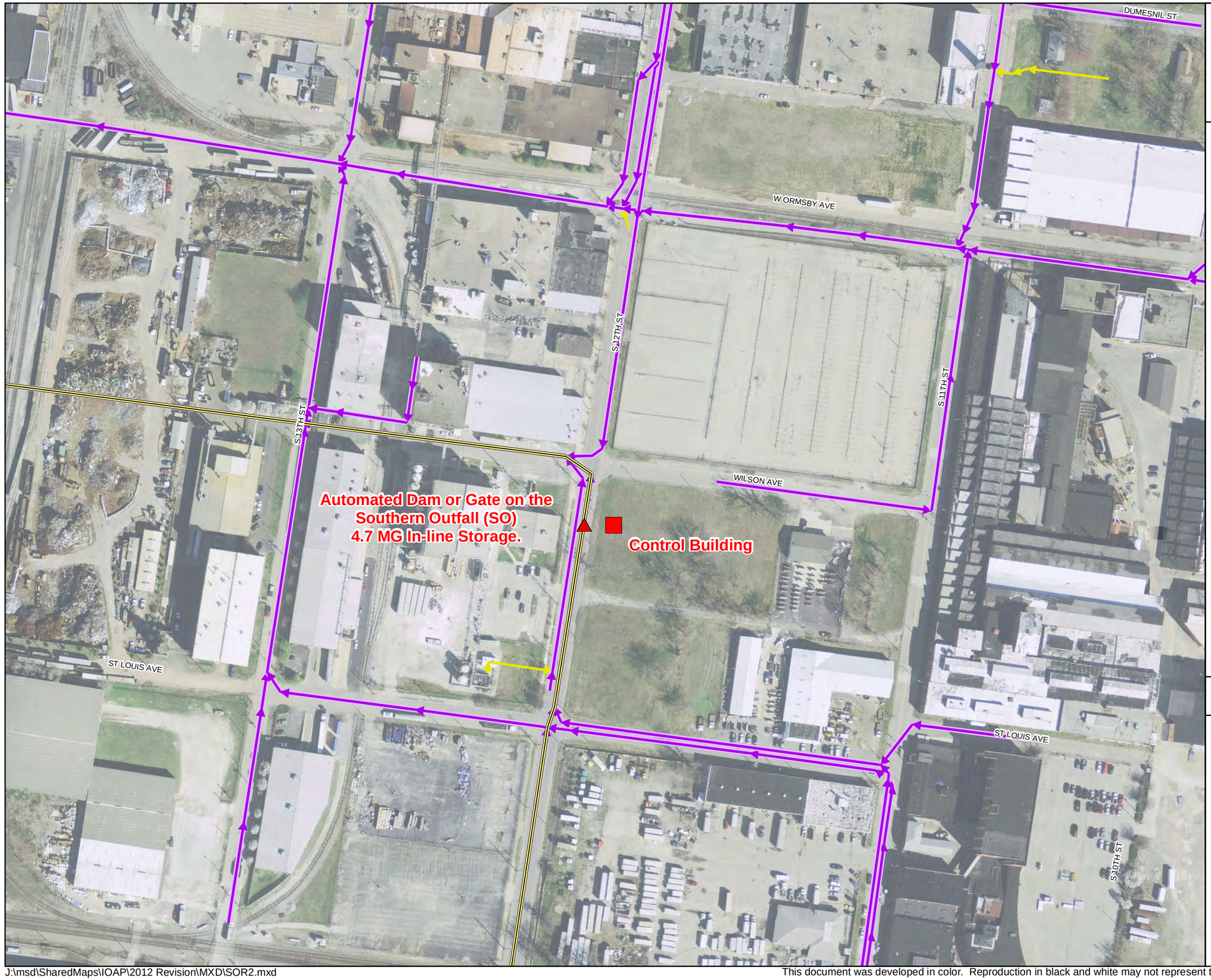
Integrated Overflow Abatement Plan

Vol. 2 - Final CSO Long Term Control Plan

Ohio River

Southern Outfall In-line Storage
12th St & Wilson Ave (SOR2)

Preliminary - For Budget Development Only



- Active CSO
- Eliminated CSO
- Proposed Flow Control Solution
- Pump Stations
- MSD
- Proposed Pipe Solution
- Southern outfall
- Combined Sewer Pipe
- Force Main
- Collector < 12"
- Interceptor >= 12"
- Proposed Off-line Storage
- Streams
- Floodway
- Flood Wall
- Jefferson County Boundary

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

1 inch = 157 feet	N	Aerial Date: 2009	Map Revision: April 9, 2012

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August 17, 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: Beargrass Creek Parallel Interceptor
Project Elimination
IOAP Project No. L_SO_MF_097_M_13_A_A_8
DOJ Case No. 90-5-1-1-08254

Attention Chiefs and Director:

MSD is providing advanced notification of a proposed minor project modification to eliminate the Beargrass Creek Parallel Interceptor project (IOAP Project No. L_SO_MF_097_M_13_A_A_8). This modification is part of an overall adaptive management review of the approved 2009 IOAP that will be documented in the proposed 2012 IOAP Modification to be formally submitted in 2013. No action is requested at this time.

2009 IOAP Project Description

The Beargrass Creek Parallel Interceptor project included a 48-inch diameter gravity sewer and a 15-inch diameter force main installed along the South Fork of Beargrass Creek, with a scheduled completion date of December 31, 2017. The purpose of the pipe additions was to provide additional conveyance capacity for basin draining.

Proposed Project Modification

The project modification involves the elimination of this project, as other proposed project changes related to the Nightingale Pump Station and the proposed Calvary Creekside Storage Basin have made the new conveyance unnecessary.

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 2012 IOAP Modification to be submitted in 2013. No action is requested at this time.

Technical Justification

The original project includes 8,900 LF of 48-inch gravity interceptor from the Logan Street Storage Basin to the Starkey Pump Station, and 3,600 LF of 15-inch force main from the Calvary/Creekside Storage Basin to the Nightingale Pump Station. As part of the IOAP modifications, the Calvary Creekside Storage Basin is being eliminated by the construction of a reach of gravity sewer to convey sewer overflow to the proposed Logan Street Storage Basin. This new interceptor eliminates the need for the force main to the Nightingale Pump Station.

Several other project changes are proposed for the South Fork system, including resizing the Nightingale Pump Station from 60 million gallons per day (MGD) to 33 MGD with increased storage and changing the operating rules for the Starkey Pump Station from 140 MGD maximum flow to 108 MGD maximum flow. As a result of these changes and model recalibration based on expanded flow monitoring, MSD has determined that that the 48-inch interceptor is not needed either. The deletion of this project will not have any effect on wet weather capture or any other level of CSO control.

For your reference, a copy of the original project fact sheet and map from the IOAP in Attachment A are attached. No new projects have been provided as this project is proposed for elimination. 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_097 _M_13_A_A_8*
Project Name:	Beargrass Creek South Fork Parallel Interceptors - Upper and Lower Reaches
Project Type:	Miscellaneous
Receiving Stream:	Beargrass Creek
Project Description:	This project includes 8,900 L.F. of 48" gravity interceptor in the upper reach from Logan Street & Breckinridge Street Storage Basin to Starkey Pumping Plant & 3,600 L.F. of 15" force main from Calvary / Creekside Storage Basin to Nightingale Pump Station
Design Parameters / Assumptions:	Force main velocity set at 5 feet per second for 24 hour pump out of basin at CSO097.
Surrounding Area Land Use:	South Fork Stream Corridor, Including Improved Channel
Apparent Utilities Description:	No apparent conflict
Capital Projects:	N/A
Advanced Site Restoration:	N/A
Estimated Capital Cost (2008):	$12,994,000
Capital Cost / Gallon Overflow Removed:	N/A
Weighted Benefit / Cost Ratio (Capital Cost):	N/A

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

Integrated Overflow Abatement Plan

Volume 2 - Final CSO Long-Term Control Plan
South Fork Beargrass Creek
Solution ID # L_SO_MF_097_M_13_A_A_8
Beargrass Creek South Fork Parallel Interceptors Upper and Lower Reaches

Preliminary - For Budget Development Only

Legend

- Active CSO
- Eliminated CSO
- Pump Station
- Proposed Pipe Solution
- Flood Wall
- Floodway
- Metro Parks
- Streams

- 8,900 L.F. of 48" gravity interceptor in the upper reach from the Logan Street and Breckinridge Street Storage Basin to Starkey Pumping Plan

- 3,600 L.F. of 15" force main from the Calvary / Creekside Storage Basin to Nightingale Pump Station.

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

1 inch = 1,700 feet
Scaleable when printed on 11"x17" paper

Some boundaries are uniquely symbolized within the map.

Map Revision
May 8, 2009

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 Eliminated or Combined with Another

No Attachment B

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

August 17, 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: Calvary Creekside Storage Basin
Project Elimination
IOAP Project No. L_SO_MF_097_M_09B_B_D_8
DOJ Case No. 90-5-1-1-08254

Attention Chiefs and Director:

MSD is providing advanced notification of a proposed minor project modification to eliminate the Calvary Creekside Storage Basin project (IOAP Project No. L_SO_MF_097_M_09B_B_D_8). This modification is part of an overall adaptive management review of the approved 2009 IOAP that will be documented in the proposed 2012 IOAP Modification to be formally submitted in 2013. No action is requested at this time.

2009 IOAP Project Description

The Calvary Creekside Storage Basin involved the construction of a 3.46 million gallon (MG) storage basin to control six combined sewer overflows to be completed by December 31, 2017.

Proposed Project Modification

The project modification involves the elimination of this project, as other proposed project changes related to the Nightingale Pump Station and the proposed Logan Street and Breckenridge Street Basin have made the basin unnecessary.

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. No action is requested at this time.

Technical Justification

Reviews of project approach and benefit/cost results indicate that the elimination of the Calvary/Creekside Storage Basin is justified. The consolidation of its storage volume in the Logan Street and Breckenridge Street Storage Basin (IOAP Project No. L_SO_MF_092_M_09B_B_D_8) has proven to be a more cost-effective option than the original design for two separate storage basin projects.

Details on the modification of the Logan Street and Breckenridge Street Storage Basin to compensate for the consolidation of flows from the Calvary/Creekside Storage Basin are available in the Logan Street and Breckenridge Street Storage Basin project modification letter. This consolidated project will maintain the same completion date of December 31, 2017, as each of the original solutions.

For your reference, copies of the original project fact sheet and map from the 2009 IOAP have been provided in Attachment A. A revised project fact sheet and map is attached to the Logan Street modification letter reflecting the new project size and conveyance alignment.

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_097_M_09B_B_D_8*

Project Name: Calvary / Creekside Storage Basin

Project Type: Off-Line Storage

Receiving Stream: South Fork Beargrass Creek

Project Description: This project includes an 3.46 MG underground covered storage basin for CSO097, 106, 110, 111, 137, 148, and 151 to reduce overflows to 8 overflows per year. The facility will require an 3.46 MGD PS to return flow to the interceptor.

Design Parameters / Assumptions: Basins are designed to the 9th overflow event volume, resulting in 8 CSO overflows/year. The 9th peak flowrate is evaluated to compare gravity vs. pumped conveyance. Design for pump-back is 24 hours. Type of basin based on hydraulics and surroundings.

Surrounding Area Land Use: This project is located within 'Parks, Cemeteries, etc.'. The project is located between Calvary Cemetery and Saint Xavier High School. It is located approx. 1000' Southeast of CSO097 & CSO106.

Apparent Utilities Description: No major utilities conflict within the area of the proposed basin

Capital Projects: 2013~Elimination of CSO106; 2007~Middle Fork Rehab Phase 2 & 2013~RTC @ CSO097, 110 & 151 - Awaiting Start

Advanced Site Restoration: N/A

Estimated Capital Cost (2008): $10,900,000

Capital Cost / Gallon Overflow Removed: $0.07

Weighted Benefit / Cost Ratio (Capital Cost): 81.77

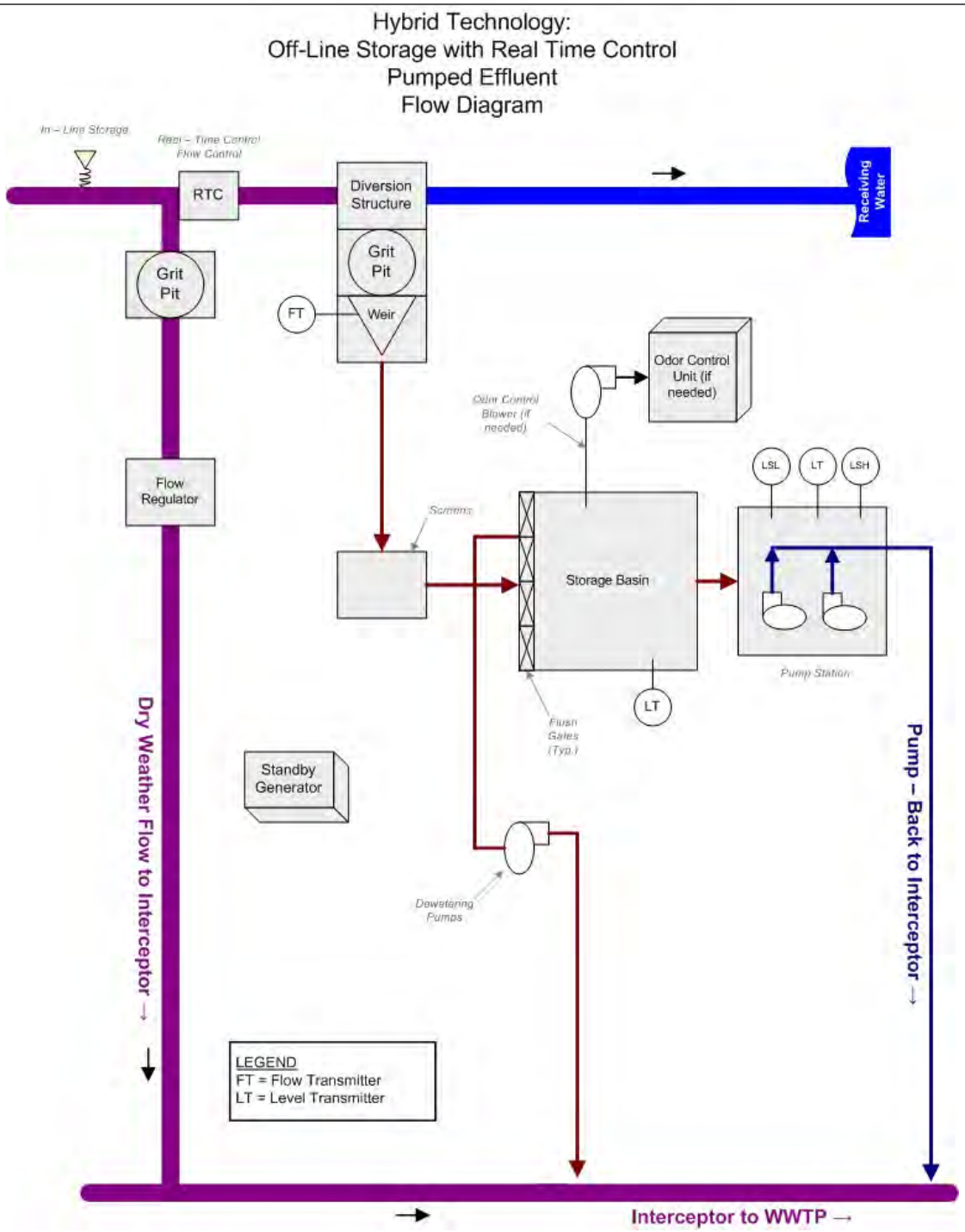
Overflow Points Addressed:

CSO Number	CSO Name	CSO Area (Acres)	2008 AAOV (MG / Yr)	# of Overflows / Yr	Post LTCP AAOV (MG/Yr)	Post LTCP # Overflows / Year
CSO097	Cantonment Siphon Number 2	0.00	12.31	44	1.35	8
CSO106	Royal - Neff	11.80	0.33	17	0.17	8
CSO110	Regulator Number 3 - Goss Avenue	73.04	27.53	44	2.51	8
CSO137	Calvary Cemetery	26.65	3.97	37	0.51	8
CSO148	Eastern Parkway Diversion	24.89	1.26	26	0.37	8
CSO151	Regulator Number 5 - Castlewood	219.74	80.26	57	8.23	8

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

CSO LTCP
Project Fact Sheet

LTCP Project Number: *L_SO_MF_097_M_09B_B_D_8*



Integrated Overflow Abatement Plan

Vol. 2 - Final CSO Long Term Control Plan

South Fork Beargrass Creek

SolutionID # L_SO_MF_097_M_09B_B_D_8

Calvary / Creekside Storage Basin

Preliminary - For Budget Development Only

Legend

- PS — Proposed Pump Station Solution
- Active CSO
- Eliminated CSO
- PS — Pump Station
- Proposed Pipe Solution
- Force Main
- Collector < 12"
- Interceptor => 12"
- Combined Sewer Pipe
- Streams
- Proposed Storage Solution
- Floodway
- Metro Parks
- County Boundary

CSO113 CSO151 CSO152 CSO146 CSO113 CSO151 CASTLEWOOD AVE BAXTER AVE BARRET AVE EASTERN PKY CSO137 CSO148 CSO174 GOSS AVE CSO111 CSO148 CSO110 DTC CSO106 CSO137 CSO106 CSO097 SOUTH FORK BEARGRASS CREEK 3.46 MG Underground, Covered, Off-Line Storage Basin PS CSO111 CSO110 CLARKS LN CSO184 CSO109

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

1 inch equals 500 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

LOJIC Louisville/Jefferson County Information Consortium

MSD Metropolitan Sewer District

PROJECT WIN Waterway Improvements Now

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 Eliminated or Combined with Another

No Attachment B

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

August 17, 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: Camp Taylor System Improvements
Minor Project Modification
IOAP Project No. S_HC_HC_MSD1082_S_09A_C
DOJ Case No. 90-5-1-1-08254

Attention Chiefs and Director:

MSD is providing advanced notification of a proposed minor project modification to the suite of Camp Taylor System Improvement Projects. 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. No action is requested at this time.

2009 IOAP Project Description

2009 IOAP Project Suite	2009 IOAP Completion Date	Status
Camp Taylor #1 - SSES	December 31, 2011	Completed, July 2011
Camp Taylor #2 - Replace Sewers	December 31, 2013	Design/Construction
Camp Taylor #3 - Replace & Rehabilitation	December 31, 2017	Planning
Camp Taylor #4 – Rehab & Off Line Storage	December 31, 2023	Planning

Proposed Project Modification

The modification requested involves the combination of the previous Phase 2 and 3 Sewer Replacement and Rehabilitation projects and the expansion of the project area. A full sanitary sewer evaluation study (SSES) for Camp Taylor and surrounding contributing sewer service area was completed in July 2011 and significant sewer defects were identified. For the SSES and this project, the project area was expanded to include Camp Taylor and the surrounding neighborhood connected to the Camp Taylor Interceptor. The new project area includes approximately 144,000 linear feet (LF) of sanitary sewer. Areas 1 and 2 represent the City of Camp Taylor and the original IOAP project area. The SSES recommended full replacement of approximately 53,400 LF of sewer and rehabilitation of approximately 29,000 LF.

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. No action is requested at this time.

Technical Justification

Rehabilitation activities will be completed in Areas 3, 4 and 5 by December 2013 as well as a portion of the sewer replacement activities, based on severity, in the immediate Camp Taylor Areas 1 and 2. Remaining sewer replacement and rehabilitation needs identified in the SSES will be completed by December 31, 2017. Once these activities have been completed, three years of flow monitoring will determine if the appropriate level of control has been met to support the elimination of the additional off line storage Phase 4 project. If the storage basin in Phase 4 is still necessary, it will be completed by December 31, 2023. The original project area has been expanded to encompass a larger sewer area (see Attachment B).

2012 IOAP Project Suite	2012 Completion Date	Status
Camp Taylor #1 - SSES	December 31, 2011	Completed, July 2011
Camp Taylor #2 & #3 – Replace & Rehabilitate Sewers	December 31, 2017	Design/Construction
Camp Taylor #4 –Off Line Storage	December 31, 2023	Planning

Sincerely,

W. Brian Bingham
Regulatory Services Director

cc: G. Heitzman P. Purifoy

Attachments

MSD

Metropolitan Sewer District

ATTACHMENT A

SSO SSDP
Project Fact Sheet

SSO Project Number:	S_SF_MF_30917_M_09_A
Project Name:	Camp Taylor System Improvements 1 - SSES
Modeled Area:	Combined Sewer System
Branch or SSO ID:	30917
Project Type:	SSES
Receiving Stream:	South Fork Beargrass Creek, Muddy Fork Beargrass Creek, and Camp Taylor Ditch
Project Description:	This phase is a special study which includes a full SSES of the entire Camp Taylor system
Reason for Overflow:	System capacity and poor system conditions in some areas
Design Parameters / Assumptions:	This solution is based on a 2.60 inch cloudburst rain event
Project Constraints:	Some overflow volumes were estimated using regression equation not a hydraulic model.
Estimated Capital Cost (2008 dollars):	$2,279,000
Weighted Benefit/Cost Ratio (Present Worth):	68.47

Overflow Points Addressed:

SSO	SSO Name	Service Area	Overflow Type	Discharge To	Average Overflow / Incident (gallons)
08717	Fincastle #2	Morris Forman	Manhole	Ground	100
13931	Camp Taylor #4	Morris Forman	Manhole	No Data	6,000
13943	Camp Taylor #3	Morris Forman	Manhole	Ground	250
36763	3520 Fincastle Road	Morris Forman	Manhole	Ground	Suspected- no data
44396	Fincastle #4	Morris Forman	Manhole	Ground	79,500

44397	Fincastle #3	Morris Forman	Manhole	Ground	41,420
66349	Fincastle #1	Morris Forman	Manhole	Ground	15
104223	Camp Taylor #1	Morris Forman	Manhole	Ground	40
104231	Camp Taylor #2	Morris Forman	Manhole	Ground	1,217

SSO SSDP
Project Fact Sheet

SSO Project Number:	S_SF_MF_30917_M_09_A
Project Name:	Camp Taylor System Improvements 2 - Phase 1 Sewer Replacement
Modeled Area:	Combined Sewer System
Branch or SSO ID:	30917
Project Type:	Sewer Replacement
Receiving Stream:	South Fork Beargrass Creek, Muddy Fork Beargrass Creek, and Camp Taylor Ditch
Project Description:	This alternative includes replacement of target sewers baed on past studies and historical work orders.
Reason for Overflow:	System capacity and poor system conditions in some areas
Design Parameters / Assumptions:	This solution is based on a 2.60 inch cloudburst rain event
Project Constraints:	Some overflow volumes were estimated using regression equation not by a hydraulic model.
Estimated Capital Cost (2008 dollars):	$6,500,000
Weighted Benefit/Cost Ratio (Present Worth):	68.47

Overflow Points Addressed:

SSO	SSO Name	Service Area	Overflow Type	Discharge To	Average Overflow / Incident (gallons)
08717	Fincastle #2	Morris Forman	Manhole	Ground	100
13931	Camp Taylor #4	Morris Forman	Manhole	No Data	6,000
13943	Camp Taylor #3	Morris Forman	Manhole	Ground	250
36763	3520 Fincastle Road	Morris Forman	Manhole	Ground	Suspected- no data
44396	Fincastle #4	Morris Forman	Manhole	Ground	79,500

44397	Fincastle #3	Morris Forman	Manhole	Ground	41,420
66349	Fincastle #1	Morris Forman	Manhole	Ground	15
104223	Camp Taylor #1	Morris Forman	Manhole	Ground	40
104231	Camp Taylor #2	Morris Forman	Manhole	Ground	1,217

SSO SSDP
Project Fact Sheet

SSO Project Number:	S_SF_MF_30917_M_09_A
Project Name:	Camp Taylor System Improvements 3 - Phase 2 Sewer Replacement & Phase 1 Sewer Rehab
Modeled Area:	Combined Sewer System
Branch or SSO ID:	30917
Project Type:	Sewer Replacement and Sewer Rehabilitation
Receiving Stream:	South Fork Beargrass Creek, Muddy Fork Beargrass Creek, and Camp Taylor Ditch
Project Description:	Phase 2 of replacement of target sewers after full SSES is complete. Additional rehabilitation of sewers based on SSES findings.
Reason for Overflow:	System capacity and poor system conditions in some areas
Design Parameters / Assumptions:	This solution is based on a 2.60 inch cloudburst rain event
Project Constraints:	Some overflow volumes were estimated using regression equation not by a hydraulic model.
Estimated Capital Cost (2008 dollars):	$9,750,000
Weighted Benefit/Cost Ratio (Present Worth):	68.47

Overflow Points Addressed:

SSO	SSO Name	Service Area	Overflow Type	Discharge To	Average Overflow / Incident (gallons)
08717	Fincastle #2	Morris Forman	Manhole	Ground	100
13931	Camp Taylor #4	Morris Forman	Manhole	No Data	6,000
13943	Camp Taylor #3	Morris Forman	Manhole	Ground	250
36763	3520 Fincastle Road	Morris Forman	Manhole	Ground	Suspected- no data
44396	Fincastle #4	Morris Forman	Manhole	Ground	79,500

44397	Fincastle #3	Morris Forman	Manhole	Ground	41,420
66349	Fincastle #1	Morris Forman	Manhole	Ground	15
104223	Camp Taylor #1	Morris Forman	Manhole	Ground	40
104231	Camp Taylor #2	Morris Forman	Manhole	Ground	1,217

SSO SSDP
Project Fact Sheet

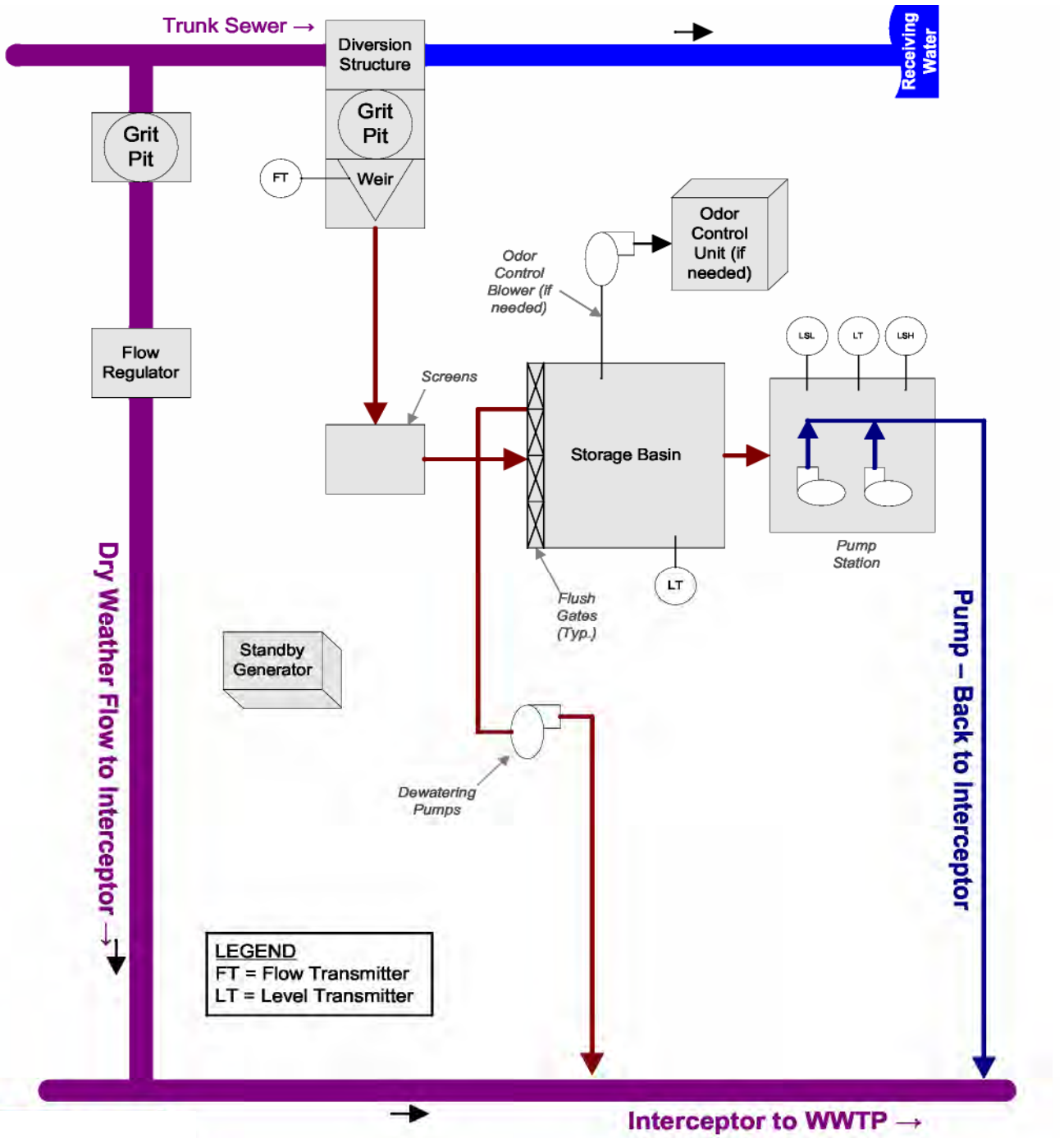
SSO Project Number:	S_SF_MF_30917_M_09_A
Project Name:	Camp Taylor System Improvements 4 - Phase 2 Sewer Rehab
Modeled Area:	Combined Sewer System
Branch or SSO ID:	30917
Project Type:	Sewer Rehabilitation & Offline Storage
Receiving Stream:	South Fork Beargrass Creek, Muddy Fork Beargrass Creek, and Camp Taylor Ditch
Project Description:	This alternative includes additional rehabilitation of sewers based on SSES findings and constructing an off-line pumped 0.038 MG storage basin at the PS to store excess wet weather flows, 3,395 LF of 8" sewer to convey flow to basin. Flow monitoring and system monitoring will be performed in the Camp Taylor system after rehab is complete. If the system is operating with no overflows at a 1.82-inch storm, no storage basin will be constructed. Documentation of this analysis will be submitted to the appropriate regulatory agencies.
Reason for Overflow:	System capacity and poor system conditions in some areas
Design Parameters / Assumptions:	This solution is based on a 2.60 inch cloudburst rain event
Project Constraints:	Some overflow volumes were estimated using regression equation not by a hydraulic model.
Estimated Capital Cost (2008 dollars):	$9,750,000
Weighted Benefit/Cost Ratio (Present Worth):	68.47

Overflow Points Addressed:

SSO	SSO Name	Service Area	Overflow Type	Discharge To	Average Overflow / Incident (gallons)
08717	Fincastle #2	Morris Forman	Manhole	Ground	100
13931	Camp Taylor #4	Morris Forman	Manhole	No Data	6,000
13943	Camp Taylor #3	Morris Forman	Manhole	Ground	250

36763	3520 Fincastle Road	Morris Forman	Manhole	Ground	Suspected- no data
44396	Fincastle #4	Morris Forman	Manhole	Ground	79,500
44397	Fincastle #3	Morris Forman	Manhole	Ground	41,420
66349	Fincastle #1	Morris Forman	Manhole	Ground	15
104223	Camp Taylor #1	Morris Forman	Manhole	Ground	40
104231	Camp Taylor #2	Morris Forman	Manhole	Ground	1,217

Off-Line Storage
Pumped Effluent
Flow Diagram



Integrated Overflow Abatement Plan

Vol. 3 - Sanitary Sewer Discharge Plan

Combined Sewer System

Solution ID # S_SF_MF_30917_M_09_A

Camp Taylor System Improvements

Preliminary - For Budget Development Only

Legend

- Documented SSO
- Suspected SSO
- Haul Operation
- Proposed Pump Station Solution
- Pump Station
- WWTP
- Proposed Pipe Solution
- Force Main
- Collector < 12"
- Interceptor => 12"
- Combined Sewer Pipe
- Proposed Off-line Storage
- Road
- Streams
- Floodway
- Small WWTP Service Area
- Large WWTP Service Area
- CSO Area
- Metro Parks

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

1 inch equals 500 feet
Scalable when printed on 11" X 17" paper

Some boundaries are uniquely symbolized within the map.

Map Revision
May 7, 2009

Aerial Date: 2006

N

MSD

Metropolitan Sewer District

ATTACHMENT B

Project Name Camp Taylor System Improvements - SSES

Modeled Area	CSO
Branch or SSO ID	30917
Project Type	SSES
Receiving Stream	South Fork Beargrass Creek, Muddy Fork Beargrass Creek, and Camp Taylor Ditch
Project Description	This phase is a special study which includes a full SSES of the entire Camp Taylor area.
Reason for Overflow	System capacity and poor system conditions in some areas
Design Parameters	
Project Constraints	Some overflow volumes were estimated using regression equation not by a hydraulic
Estimated Capital Cost	$2,279,000
Weighted Benefit/Cost Rati	68.47

Asset-ID	SSO Start Date	Volume (Gal)
08717	12/15/2007 3:40:00 PM	100
08717	8/4/2009 10:43:00 AM	144,000
08717	4/27/2011 3:03:00 AM	72,000
08717	6/22/2011 11:15:00 PM	15,000
104223	5/20/2005 4:02:00 PM	40
104223	5/2/2010 5:35:00 AM	36,000
104231	10/23/2007 6:30:00 PM	3,000
104231	12/15/2007 11:00:00 AM	600
104231	5/8/2009 6:32:00 PM	27,000
104231	7/29/2009 7:12:00 AM	75,000
104231	8/4/2009 10:21:00 AM	351,360
104231	9/20/2009 9:15:00 PM	52,500
104231	10/9/2009 4:55:00 AM	108,000
104231	5/1/2010 8:55:00 AM	573,120
104231	5/12/2010 11:20:00 AM	1,300
104231	5/21/2010 2:42:00 PM	105,000
104231	11/25/2010 5:28:00 PM	1,200
104231	11/30/2010 4:00:00 AM	9,000
104231	2/24/2011 8:45:00 PM	11,950
104231	2/28/2011 7:20:00 AM	10,900
104231	3/9/2011 12:10:00 AM	264,000
104231	4/11/2011 6:08:00 PM	385,500
104231	4/23/2011 4:30:00 AM	845,000
104231	5/1/2011 6:10:00 AM	152,000
104231	5/23/2011 8:32:00 PM	36,000
104231	5/26/2011 4:20:00 AM	5,500
104231	6/22/2011 11:05:00 PM	96,000
104231	7/20/2011 12:07:00 AM	4,500
104231	8/7/2011 5:48:00 AM	18,000
104231	9/26/2011 2:15:00 AM	4,800
104231	11/22/2011 11:01:00 AM	27,000

Project Name Camp Taylor System Improvements - SSES

104231	11/28/2011 11:34:00 AM	39,000
104231	12/5/2011 4:43:00 AM	399,000
13931	3/4/2008 2:38:00 PM	6,000
13931	8/4/2009 10:27:00 AM	77,760
13943	3/19/2008 10:30:00 AM	250
13943	4/4/2008 10:30:00 PM	250
13943	5/8/2009 6:30:00 PM	360
13943	8/4/2009 10:22:00 AM	4,320
13943	9/20/2009 9:16:00 PM	3,000
13943	10/9/2009 4:57:00 AM	554
13943	5/21/2010 9:27:00 PM	4,500
13943	11/25/2010 5:29:00 PM	780
13943	2/24/2011 10:20:00 PM	6,000
13943	3/9/2011 9:13:00 AM	327,500
13943	4/11/2011 6:55:00 PM	345,500
13943	4/23/2011 4:29:00 AM	17,000
13943	5/1/2011 6:05:00 AM	32,000
13943	5/23/2011 8:32:00 PM	1,200
13943	6/22/2011 11:06:00 PM	4,500
13943	7/20/2011 12:08:00 AM	420
13943	8/7/2011 5:30:00 AM	1,500
13943	9/26/2011 2:14:00 AM	1,100
13943	11/28/2011 11:35:00 AM	31,000
13943	12/5/2011 4:40:00 AM	21,000
36763	7/29/2009 7:35:00 AM	1,800
36763	8/4/2009 11:07:00 AM	77,760
36763	4/23/2011 3:42:00 PM	194,000
44396	4/4/2008 3:02:00 AM	79,500
44396	7/29/2009 7:26:00 AM	15,000
44396	8/4/2009 10:35:00 AM	144,000
44396	5/2/2010 5:45:00 AM	77,760
44396	3/9/2011 9:17:00 AM	31,250
44396	4/11/2011 6:58:00 PM	365,250
44396	4/23/2011 4:13:00 PM	5,500
44396	5/3/2011 12:44:00 AM	162,000
44396	9/26/2011 5:41:00 AM	5,550
44397	1/3/2005 11:30:00 AM	266,800
44397	5/19/2005 9:45:00 PM	210,000
44397	8/30/2005 4:45:00 PM	9,200
44397	1/17/2006 6:22:00 PM	6,800
44397	1/23/2006 1:40:00 AM	2,300
44397	3/12/2006 2:30:00 PM	52,900
44397	4/21/2006 4:53:00 PM	36,800
44397	6/2/2006 11:55:00 AM	50,600

Project Name Camp Taylor System Improvements - SSES

44397	7/14/2006 9:55:00 PM	9,720
44397	9/22/2006 12:50:00 PM	9,900
44397	1/14/2007 2:00:00 PM	9,000
44397	2/13/2007 5:50:00 PM	1,980
44397	3/1/2007 7:18:00 PM	2,160
44397	4/3/2007 8:00:00 PM	5,940
44397	4/14/2007 7:30:00 AM	6,210
44397	7/19/2007 7:33:00 PM	1,620
44397	10/23/2007 7:45:00 AM	8,640
44397	12/15/2007 9:25:00 AM	7,020
44397	3/4/2008 4:00:00 AM	10,800
44397	3/19/2008 5:25:00 AM	27,540
44397	3/27/2008 8:41:00 AM	16,740
44397	4/4/2008 3:07:00 AM	79,500
44397	5/15/2008 10:00:00 PM	12,750
51301	8/4/2009 10:27:00 AM	144,000
51301	9/20/2009 9:10:00 PM	21,000
51301	10/9/2009 5:00:00 AM	540
51301	5/2/2010 5:30:00 AM	144,000
51301	5/21/2010 9:35:00 AM	9,000
66349	8/4/2009 10:44:00 AM	77,760
66349	4/27/2011 3:02:00 AM	36,000
66349	6/22/2011 11:14:00 PM	15,000
99259	7/29/2009 7:36:00 AM	1,800
99259	8/4/2009 11:08:00 AM	144,000
99259	5/2/2010 2:37:00 PM	4,320
99259	4/27/2011 3:13:00 AM	36,000

Project Name Camp Taylor System Improvements 2 - Sewer Replacement

Modeled Area	CSO
Branch or SSO ID	30917
Project Type	Sewer Replacement
Receiving Stream	South Fork Beargrass Creek, Muddy Fork Beargrass Creek, and Camp Taylor Ditch
Project Description	This alternative includes replacement of target sewers based on past studies and historical work orders.
Reason for Overflow	System capacity and poor system conditions in some areas
Design Parameters	This solution is based on a 2.60 inch cloudburst rain event
Project Constraints	Some overflow volumes were estimated using regression equation not by a hydraulic
Estimated Capital Cost	$6,500,000
Weighted Benefit/Cost Rati	68.47

Asset-ID	SSO Start Date	Volume (Gal)
08717	12/15/2007 3:40:00 PM	100
08717	8/4/2009 10:43:00 AM	144,000
08717	4/27/2011 3:03:00 AM	72,000
08717	6/22/2011 11:15:00 PM	15,000
104223	5/20/2005 4:02:00 PM	40
104223	5/2/2010 5:35:00 AM	36,000
104231	10/23/2007 6:30:00 PM	3,000
104231	12/15/2007 11:00:00 AM	600
104231	5/8/2009 6:32:00 PM	27,000
104231	7/29/2009 7:12:00 AM	75,000
104231	8/4/2009 10:21:00 AM	351,360
104231	9/20/2009 9:15:00 PM	52,500
104231	10/9/2009 4:55:00 AM	108,000
104231	5/1/2010 8:55:00 AM	573,120
104231	5/12/2010 11:20:00 AM	1,300
104231	5/21/2010 2:42:00 PM	105,000
104231	11/25/2010 5:28:00 PM	1,200
104231	11/30/2010 4:00:00 AM	9,000
104231	2/24/2011 8:45:00 PM	11,950
104231	2/28/2011 7:20:00 AM	10,900
104231	3/9/2011 12:10:00 AM	264,000
104231	4/11/2011 6:08:00 PM	385,500
104231	4/23/2011 4:30:00 AM	845,000
104231	5/1/2011 6:10:00 AM	152,000
104231	5/23/2011 8:32:00 PM	36,000
104231	5/26/2011 4:20:00 AM	5,500
104231	6/22/2011 11:05:00 PM	96,000
104231	7/20/2011 12:07:00 AM	4,500
104231	8/7/2011 5:48:00 AM	18,000
104231	9/26/2011 2:15:00 AM	4,800

Project Name Camp Taylor System Improvements 2 - Sewer Replacement

104231	11/22/2011 11:01:00 AM	27,000
104231	11/28/2011 11:34:00 AM	39,000
104231	12/5/2011 4:43:00 AM	399,000
13931	3/4/2008 2:38:00 PM	6,000
13931	8/4/2009 10:27:00 AM	77,760
13943	3/19/2008 10:30:00 AM	250
13943	4/4/2008 10:30:00 PM	250
13943	5/8/2009 6:30:00 PM	360
13943	8/4/2009 10:22:00 AM	4,320
13943	9/20/2009 9:16:00 PM	3,000
13943	10/9/2009 4:57:00 AM	554
13943	5/21/2010 9:27:00 PM	4,500
13943	11/25/2010 5:29:00 PM	780
13943	2/24/2011 10:20:00 PM	6,000
13943	3/9/2011 9:13:00 AM	327,500
13943	4/11/2011 6:55:00 PM	345,500
13943	4/23/2011 4:29:00 AM	17,000
13943	5/1/2011 6:05:00 AM	32,000
13943	5/23/2011 8:32:00 PM	1,200
13943	6/22/2011 11:06:00 PM	4,500
13943	7/20/2011 12:08:00 AM	420
13943	8/7/2011 5:30:00 AM	1,500
13943	9/26/2011 2:14:00 AM	1,100
13943	11/28/2011 11:35:00 AM	31,000
13943	12/5/2011 4:40:00 AM	21,000
36763	7/29/2009 7:35:00 AM	1,800
36763	8/4/2009 11:07:00 AM	77,760
36763	4/23/2011 3:42:00 PM	194,000
44396	4/4/2008 3:02:00 AM	79,500
44396	7/29/2009 7:26:00 AM	15,000
44396	8/4/2009 10:35:00 AM	144,000
44396	5/2/2010 5:45:00 AM	77,760
44396	3/9/2011 9:17:00 AM	31,250
44396	4/11/2011 6:58:00 PM	365,250
44396	4/23/2011 4:13:00 PM	5,500
44396	5/3/2011 12:44:00 AM	162,000
44396	9/26/2011 5:41:00 AM	5,550
44397	1/3/2005 11:30:00 AM	266,800
44397	5/19/2005 9:45:00 PM	210,000
44397	8/30/2005 4:45:00 PM	9,200
44397	1/17/2006 6:22:00 PM	6,800
44397	1/23/2006 1:40:00 AM	2,300
44397	3/12/2006 2:30:00 PM	52,900
44397	4/21/2006 4:53:00 PM	36,800

Project Name Camp Taylor System Improvements 2 - Sewer Replacement

44397	6/2/2006 11:55:00 AM	50,600
44397	7/14/2006 9:55:00 PM	9,720
44397	9/22/2006 12:50:00 PM	9,900
44397	1/14/2007 2:00:00 PM	9,000
44397	2/13/2007 5:50:00 PM	1,980
44397	3/1/2007 7:18:00 PM	2,160
44397	4/3/2007 8:00:00 PM	5,940
44397	4/14/2007 7:30:00 AM	6,210
44397	7/19/2007 7:33:00 PM	1,620
44397	10/23/2007 7:45:00 AM	8,640
44397	12/15/2007 9:25:00 AM	7,020
44397	3/4/2008 4:00:00 AM	10,800
44397	3/19/2008 5:25:00 AM	27,540
44397	3/27/2008 8:41:00 AM	16,740
44397	4/4/2008 3:07:00 AM	79,500
44397	5/15/2008 10:00:00 PM	12,750
51301	8/4/2009 10:27:00 AM	144,000
51301	9/20/2009 9:10:00 PM	21,000
51301	10/9/2009 5:00:00 AM	540
51301	5/2/2010 5:30:00 AM	144,000
51301	5/21/2010 9:35:00 AM	9,000
66349	8/4/2009 10:44:00 AM	77,760
66349	4/27/2011 3:02:00 AM	36,000
66349	6/22/2011 11:14:00 PM	15,000
99259	7/29/2009 7:36:00 AM	1,800
99259	8/4/2009 11:08:00 AM	144,000
99259	5/2/2010 2:37:00 PM	4,320
99259	4/27/2011 3:13:00 AM	36,000

Project Name Camp Taylor System Improvements 3 - Sewer Replacement & Sewer Rehabilitation

Modeled Area	CSO
Branch or SSO ID	30917
Project Type	Sewer Replacement and Sewer Rehabilitation
Receiving Stream	South Fork Beargrass Creek, Muddy Fork Beargrass Creek, and Camp Taylor Ditch
Project Description	Phase 2 of replacement of target sewers after full SSES. Additional rehabilitation of sewers based on SSES findings.
Reason for Overflow	System capacity and poor system conditions in some areas
Design Parameters	This solution is based on a 2.60 inch cloudburst rain event
Project Constraints	Some overflow volumes were estimated using regression equation not by a hydraulic
Estimated Capital Cost	$9,750,000
Weighted Benefit/Cost Rati	68.47

Asset-ID	SSO Start Date	Volume (Gal)
08717	12/15/2007 3:40:00 PM	100
08717	8/4/2009 10:43:00 AM	144,000
08717	4/27/2011 3:03:00 AM	72,000
08717	6/22/2011 11:15:00 PM	15,000
104223	5/20/2005 4:02:00 PM	40
104223	5/2/2010 5:35:00 AM	36,000
104231	10/23/2007 6:30:00 PM	3,000
104231	12/15/2007 11:00:00 AM	600
104231	5/8/2009 6:32:00 PM	27,000
104231	7/29/2009 7:12:00 AM	75,000
104231	8/4/2009 10:21:00 AM	351,360
104231	9/20/2009 9:15:00 PM	52,500
104231	10/9/2009 4:55:00 AM	108,000
104231	5/1/2010 8:55:00 AM	573,120
104231	5/12/2010 11:20:00 AM	1,300
104231	5/21/2010 2:42:00 PM	105,000
104231	11/25/2010 5:28:00 PM	1,200
104231	11/30/2010 4:00:00 AM	9,000
104231	2/24/2011 8:45:00 PM	11,950
104231	2/28/2011 7:20:00 AM	10,900
104231	3/9/2011 12:10:00 AM	264,000
104231	4/11/2011 6:08:00 PM	385,500
104231	4/23/2011 4:30:00 AM	845,000
104231	5/1/2011 6:10:00 AM	152,000
104231	5/23/2011 8:32:00 PM	36,000
104231	5/26/2011 4:20:00 AM	5,500
104231	6/22/2011 11:05:00 PM	96,000
104231	7/20/2011 12:07:00 AM	4,500
104231	8/7/2011 5:48:00 AM	18,000
104231	9/26/2011 2:15:00 AM	4,800

Project Name Camp Taylor System Improvements 3 - Sewer Replacement & Sewer Rehabilitation

104231	11/22/2011 11:01:00 AM	27,000
104231	11/28/2011 11:34:00 AM	39,000
104231	12/5/2011 4:43:00 AM	399,000
13931	3/4/2008 2:38:00 PM	6,000
13931	8/4/2009 10:27:00 AM	77,760
13943	3/19/2008 10:30:00 AM	250
13943	4/4/2008 10:30:00 PM	250
13943	5/8/2009 6:30:00 PM	360
13943	8/4/2009 10:22:00 AM	4,320
13943	9/20/2009 9:16:00 PM	3,000
13943	10/9/2009 4:57:00 AM	554
13943	5/21/2010 9:27:00 PM	4,500
13943	11/25/2010 5:29:00 PM	780
13943	2/24/2011 10:20:00 PM	6,000
13943	3/9/2011 9:13:00 AM	327,500
13943	4/11/2011 6:55:00 PM	345,500
13943	4/23/2011 4:29:00 AM	17,000
13943	5/1/2011 6:05:00 AM	32,000
13943	5/23/2011 8:32:00 PM	1,200
13943	6/22/2011 11:06:00 PM	4,500
13943	7/20/2011 12:08:00 AM	420
13943	8/7/2011 5:30:00 AM	1,500
13943	9/26/2011 2:14:00 AM	1,100
13943	11/28/2011 11:35:00 AM	31,000
13943	12/5/2011 4:40:00 AM	21,000
36763	7/29/2009 7:35:00 AM	1,800
36763	8/4/2009 11:07:00 AM	77,760
36763	4/23/2011 3:42:00 PM	194,000
44396	4/4/2008 3:02:00 AM	79,500
44396	7/29/2009 7:26:00 AM	15,000
44396	8/4/2009 10:35:00 AM	144,000
44396	5/2/2010 5:45:00 AM	77,760
44396	3/9/2011 9:17:00 AM	31,250
44396	4/11/2011 6:58:00 PM	365,250
44396	4/23/2011 4:13:00 PM	5,500
44396	5/3/2011 12:44:00 AM	162,000
44396	9/26/2011 5:41:00 AM	5,550
44397	1/3/2005 11:30:00 AM	266,800
44397	5/19/2005 9:45:00 PM	210,000
44397	8/30/2005 4:45:00 PM	9,200
44397	1/17/2006 6:22:00 PM	6,800
44397	1/23/2006 1:40:00 AM	2,300
44397	3/12/2006 2:30:00 PM	52,900
44397	4/21/2006 4:53:00 PM	36,800

Project Name Camp Taylor System Improvements 3 - Sewer Replacement & Sewer Rehabilitation

44397	6/2/2006 11:55:00 AM	50,600
44397	7/14/2006 9:55:00 PM	9,720
44397	9/22/2006 12:50:00 PM	9,900
44397	1/14/2007 2:00:00 PM	9,000
44397	2/13/2007 5:50:00 PM	1,980
44397	3/1/2007 7:18:00 PM	2,160
44397	4/3/2007 8:00:00 PM	5,940
44397	4/14/2007 7:30:00 AM	6,210
44397	7/19/2007 7:33:00 PM	1,620
44397	10/23/2007 7:45:00 AM	8,640
44397	12/15/2007 9:25:00 AM	7,020
44397	3/4/2008 4:00:00 AM	10,800
44397	3/19/2008 5:25:00 AM	27,540
44397	3/27/2008 8:41:00 AM	16,740
44397	4/4/2008 3:07:00 AM	79,500
44397	5/15/2008 10:00:00 PM	12,750
51301	8/4/2009 10:27:00 AM	144,000
51301	9/20/2009 9:10:00 PM	21,000
51301	10/9/2009 5:00:00 AM	540
51301	5/2/2010 5:30:00 AM	144,000
51301	5/21/2010 9:35:00 AM	9,000
66349	8/4/2009 10:44:00 AM	77,760
66349	4/27/2011 3:02:00 AM	36,000
66349	6/22/2011 11:14:00 PM	15,000
99259	7/29/2009 7:36:00 AM	1,800
99259	8/4/2009 11:08:00 AM	144,000
99259	5/2/2010 2:37:00 PM	4,320
99259	4/27/2011 3:13:00 AM	36,000

Project Name Camp Taylor System Improvements 4

Modeled Area	CSO
Branch or SSO ID	30917
Project Type	Sewer Replacement
Receiving Stream	South Fork Beargrass Creek, Muddy Fork Beargrass Creek, and Camp Taylor Ditch
Project Description	This alternative includes additional rehab of sewers based on SSES findings and constructing an off-line pumped 0.038 MG storage basin at the PS to store excess wet weather flows, 3,395 LF of 8" sewer to convey flow to basin. Flow monitoring and system monitoring will be performed in the Camp Taylor system after rehab is complete. If the system is operating with no overflows at a 1.82-inch storm, no storage basin will be constructed. Documentation of this analysis will be submitted to the appropriate regulatory agencies.
Reason for Overflow	System capacity and poor system conditions in some areas
Design Parameters	This solution is based on a 2.60 inch cloudburst rain event
Project Constraints	Some overflow volumes were estimated using regression equation not by a hydraulic
Estimated Capital Cost	$9,750,000
Weighted Benefit/Cost Rati	68.47

Asset-ID	SSO Start Date	Volume (Gal)
08717	12/15/2007 3:40:00 PM	100
08717	8/4/2009 10:43:00 AM	144,000
08717	4/27/2011 3:03:00 AM	72,000
08717	6/22/2011 11:15:00 PM	15,000
104223	5/20/2005 4:02:00 PM	40
104223	5/2/2010 5:35:00 AM	36,000
104231	10/23/2007 6:30:00 PM	3,000
104231	12/15/2007 11:00:00 AM	600
104231	5/8/2009 6:32:00 PM	27,000
104231	7/29/2009 7:12:00 AM	75,000
104231	8/4/2009 10:21:00 AM	351,360
104231	9/20/2009 9:15:00 PM	52,500
104231	10/9/2009 4:55:00 AM	108,000
104231	5/1/2010 8:55:00 AM	573,120
104231	5/12/2010 11:20:00 AM	1,300
104231	5/21/2010 2:42:00 PM	105,000
104231	11/25/2010 5:28:00 PM	1,200
104231	11/30/2010 4:00:00 AM	9,000
104231	2/24/2011 8:45:00 PM	11,950
104231	2/28/2011 7:20:00 AM	10,900
104231	3/9/2011 12:10:00 AM	264,000
104231	4/11/2011 6:08:00 PM	385,500
104231	4/23/2011 4:30:00 AM	845,000
104231	5/1/2011 6:10:00 AM	152,000
104231	5/23/2011 8:32:00 PM	36,000
104231	5/26/2011 4:20:00 AM	5,500

Project Name Camp Taylor System Improvements 4

104231	6/22/2011 11:05:00 PM	96,000
104231	7/20/2011 12:07:00 AM	4,500
104231	8/7/2011 5:48:00 AM	18,000
104231	9/26/2011 2:15:00 AM	4,800
104231	11/22/2011 11:01:00 AM	27,000
104231	11/28/2011 11:34:00 AM	39,000
104231	12/5/2011 4:43:00 AM	399,000
13931	3/4/2008 2:38:00 PM	6,000
13931	8/4/2009 10:27:00 AM	77,760
13943	3/19/2008 10:30:00 AM	250
13943	4/4/2008 10:30:00 PM	250
13943	5/8/2009 6:30:00 PM	360
13943	8/4/2009 10:22:00 AM	4,320
13943	9/20/2009 9:16:00 PM	3,000
13943	10/9/2009 4:57:00 AM	554
13943	5/21/2010 9:27:00 PM	4,500
13943	11/25/2010 5:29:00 PM	780
13943	2/24/2011 10:20:00 PM	6,000
13943	3/9/2011 9:13:00 AM	327,500
13943	4/11/2011 6:55:00 PM	345,500
13943	4/23/2011 4:29:00 AM	17,000
13943	5/1/2011 6:05:00 AM	32,000
13943	5/23/2011 8:32:00 PM	1,200
13943	6/22/2011 11:06:00 PM	4,500
13943	7/20/2011 12:08:00 AM	420
13943	8/7/2011 5:30:00 AM	1,500
13943	9/26/2011 2:14:00 AM	1,100
13943	11/28/2011 11:35:00 AM	31,000
13943	12/5/2011 4:40:00 AM	21,000
36763	7/29/2009 7:35:00 AM	1,800
36763	8/4/2009 11:07:00 AM	77,760
36763	4/23/2011 3:42:00 PM	194,000
44396	4/4/2008 3:02:00 AM	79,500
44396	7/29/2009 7:26:00 AM	15,000
44396	8/4/2009 10:35:00 AM	144,000
44396	5/2/2010 5:45:00 AM	77,760
44396	3/9/2011 9:17:00 AM	31,250
44396	4/11/2011 6:58:00 PM	365,250
44396	4/23/2011 4:13:00 PM	5,500
44396	5/3/2011 12:44:00 AM	162,000
44396	9/26/2011 5:41:00 AM	5,550
44397	1/3/2005 11:30:00 AM	266,800
44397	5/19/2005 9:45:00 PM	210,000
44397	8/30/2005 4:45:00 PM	9,200

Project Name Camp Taylor System Improvements 4

44397	1/17/2006 6:22:00 PM	6,800
44397	1/23/2006 1:40:00 AM	2,300
44397	3/12/2006 2:30:00 PM	52,900
44397	4/21/2006 4:53:00 PM	36,800
44397	6/2/2006 11:55:00 AM	50,600
44397	7/14/2006 9:55:00 PM	9,720
44397	9/22/2006 12:50:00 PM	9,900
44397	1/14/2007 2:00:00 PM	9,000
44397	2/13/2007 5:50:00 PM	1,980
44397	3/1/2007 7:18:00 PM	2,160
44397	4/3/2007 8:00:00 PM	5,940
44397	4/14/2007 7:30:00 AM	6,210
44397	7/19/2007 7:33:00 PM	1,620
44397	10/23/2007 7:45:00 AM	8,640
44397	12/15/2007 9:25:00 AM	7,020
44397	3/4/2008 4:00:00 AM	10,800
44397	3/19/2008 5:25:00 AM	27,540
44397	3/27/2008 8:41:00 AM	16,740
44397	4/4/2008 3:07:00 AM	79,500
44397	5/15/2008 10:00:00 PM	12,750
51301	8/4/2009 10:27:00 AM	144,000
51301	9/20/2009 9:10:00 PM	21,000
51301	10/9/2009 5:00:00 AM	540
51301	5/2/2010 5:30:00 AM	144,000
51301	5/21/2010 9:35:00 AM	9,000
66349	8/4/2009 10:44:00 AM	77,760
66349	4/27/2011 3:02:00 AM	36,000
66349	6/22/2011 11:14:00 PM	15,000
99259	7/29/2009 7:36:00 AM	1,800
99259	8/4/2009 11:08:00 AM	144,000
99259	5/2/2010 2:37:00 PM	4,320
99259	4/27/2011 3:13:00 AM	36,000

Integrated Overflow Abatement Plan

Vol. 3 - Sanitary Sewer Discharge Plan

Combined Sewer System

Camp Taylor System Improvements

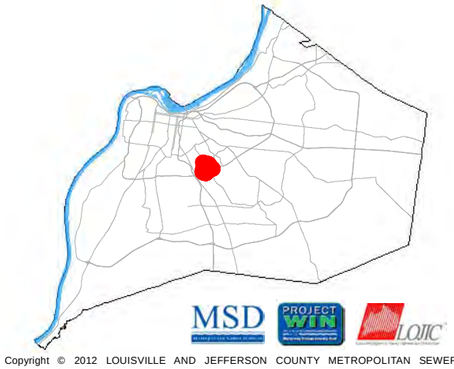
Preliminary - For Budget Development Only

Perform full SSES of entire collection system. Replace and rehabilitate targeted sewers based on past studies and SSES findings

- Documented SSO
- Suspected SSO
- Haulop Locations
- Proposed Pump Station Solution
- Pump Stations
- MSD
- Streams
- Floodway
- SSES Area
- Jefferson County Boundary

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

1 inch = 1,123 feet	N	Aerial Date: 2009	Map Revision: April 9, 2012



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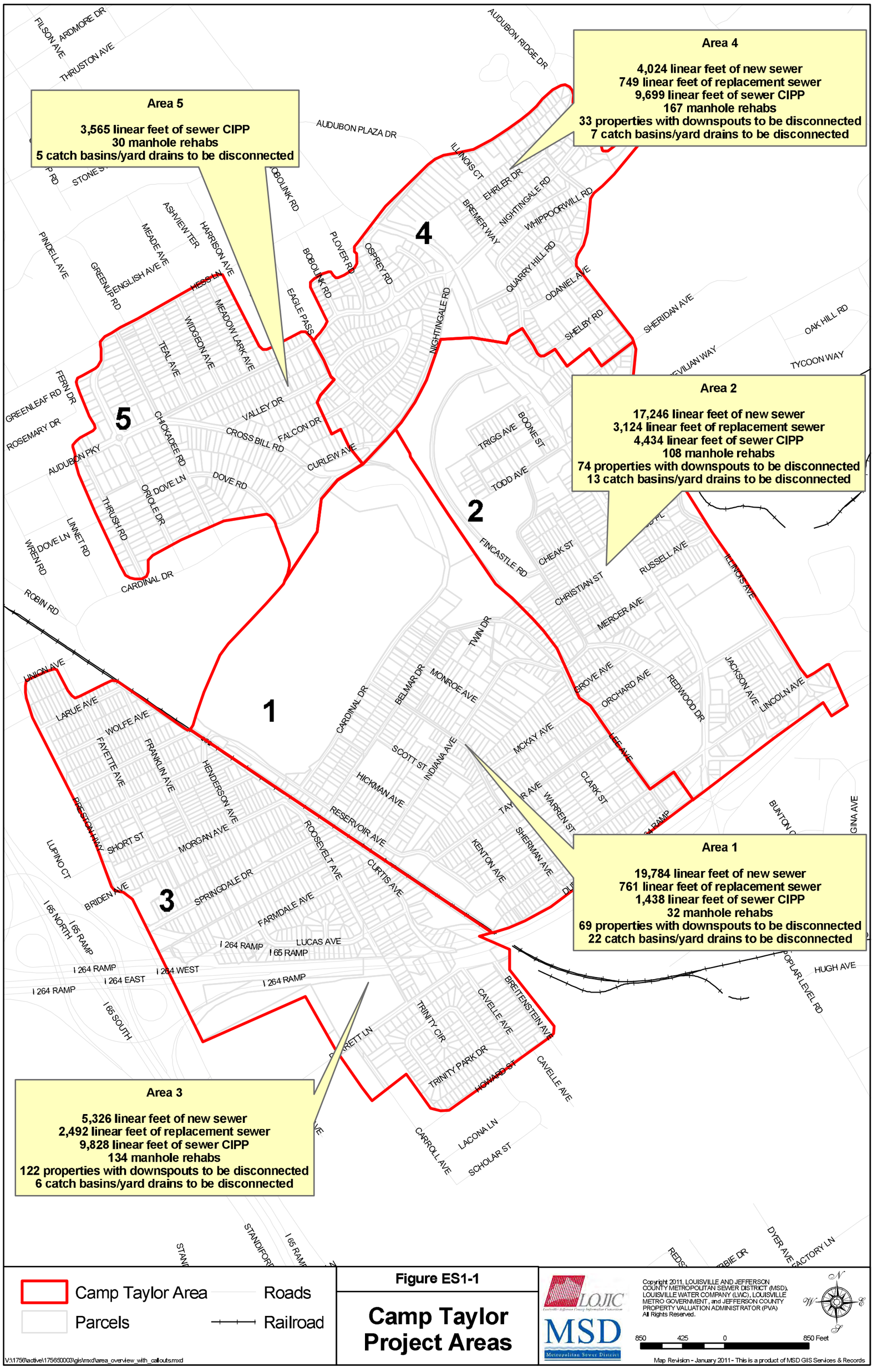
Area 4
4,024 linear feet of new sewer
749 linear feet of replacement sewer
9,699 linear feet of sewer CIPP
167 manhole rehabs
33 properties with downspouts to be disconnected
7 catch basins/yard drains to be disconnected
Area 5
3,565 linear feet of sewer CIPP
30 manhole rehabs
5 catch basins/yard drains to be disconnected
Area 2
17,246 linear feet of new sewer
3,124 linear feet of replacement sewer
4,434 linear feet of sewer CIPP
108 manhole rehabs
74 properties with downspouts to be disconnected
13 catch basins/yard drains to be disconnected
Area 1
19,784 linear feet of new sewer
761 linear feet of replacement sewer
1,438 linear feet of sewer CIPP
32 manhole rehabs
69 properties with downspouts to be disconnected
22 catch basins/yard drains to be disconnected
Area 3
5,326 linear feet of new sewer
2,492 linear feet of replacement sewer
9,828 linear feet of sewer CIPP
134 manhole rehabs
122 properties with downspouts to be disconnected
6 catch basins/yard drains to be disconnected
1
2
3
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AUDUBON RIDGE DR
AUDUBON PLAZA DR
FILSON AVE
ARDMORE DR
THRUSTON AVE
ILLINOIS CT
EHRLER DR
BREMER WAY
NIGHTINGALE RD
WHIPPOORWILL RD
QUARRY HILL RD
ODANIEL AVE
SHELBY RD
SHERIDAN AVE
OAK HILL RD
TYCOON WAY
OSPREY RD
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MEADE AVE
GREENUP ENGLISH AVE
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PINDELL AVE
MEADOW LARK AVE
WIDGEON AVE
TEAL AVE
VALLEY DR
CROSS BILL RD
FALCON DR
CURLEW AVE
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DOVE RD
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ORIOLE DR
THRUSH RD
LINNET RD
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CARDINAL DR
FERN DR
GREENLEAF RD
ROSEMARY DR
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ROBIN RD
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BOONE ST
TODD AVE
FINCASTLE RD
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CHRISTIAN ST
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ILLINOIS AVE
MERCER AVE
TWIN DR
BELMAR DR
MONROE AVE
CARDINAL DR
GROVE AVE
ORCHARD AVE
REDWOOD DR
JACKSON AVE
LINCOLN AVE
LEE AVE
MCKAY AVE
SCOTT ST
INDIANA AVE
HICKMAN AVE
CLARK ST
WARREN ST
SHERMAN AVE
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CURTIS AVE
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WOLFE AVE
FAYETTE AVE
FRANKLIN AVE
HENDERSON AVE
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SHORT ST
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BRIDEN AVE
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FARMDALE AVE
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I 65 RAMP
I 264 RAMP
LUCAS AVE
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I 264 RAMP
I 264 EAST
I 264 WEST
I 264 RAMP
I 65 SOUTH
BUNTON
GINA AVE
POPLAR LEVEL RD
HUGH AVE
BREITENSTEIN AVE
CAVELLE AVE
TRINITY CIR
TRINITY PARK DR
HOWARD ST
CAVELLE AVE
CARROLL AVE
LACONA LN
SCHOLAR ST
STANDIFORD
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DYER AVE
FACTORY LN
Camp Taylor Area
Parcels
Roads
Railroad
Figure ES1-1
Camp Taylor Project Areas
LOJIC
MSD
Metropolitan Sewer District
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Map Revision - January 2011 - This is a product of MSD GIS Services & Records

Louisville and Jefferson County Metropolitan Sewer District
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August 17, 2012

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

Subject: Caven Ave PS Elimination
Outer Loop and Caven Ave Wet Weather Storage 3
Minor Project Modification
IOAP Project No. S_PO_WC_PC09_M_09B_C

Attention Chiefs and Directors:

MSD is providing advanced notification of a proposed minor project modification to the Outer Loop and Caven Ave Wet Weather Storage 3 project (IOAP Project No. S_PO_WC_PC09_M_09B_C). This modification is part of an overall adaptive management review of the approved 2009 IOAP that will be documented in the proposed 2012 IOAP Modification to be formally submitted in 2013. No action is requested at this time.

2009 IOAP Project Description

The Outer Loop and Caven Ave Wet Weather Storage 3 project included the construction of a 0.21 million gallon (MG) covered, off-line gravity storage basin at Caven Avenue pump station that would require a small pump station to return stored flow to the interceptor and be completed by December 31, 2016. Based on 2008 calibration of the Pond Creek model, the storage basin was proposed to eliminate overflows at manhole 27116 and the Caven Avenue Pump Station during a 1.82 inch cloudburst storm.

Proposed Project Modification

Due to the construction of new conveyance infrastructure near the Caven Avenue Pump Station, the elimination of the station and diversion into this new conveyance line is now the most cost effective overflow solution. The Caven Avenue Pump Station Elimination will be completed by December 31, 2016, and will eliminate overflows to a 10-year cloudburst level of control.

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

In 2012, the Mud Creek Interceptor Sanitary Project was added to MSD's capital plan to construct a 24-inch diameter gravity interceptor from the Silver Heights Water Quality Treatment Center (WQTC) to the Fishpool Interceptor. The project was initiated to eliminate the Silver Heights WQTC. The construction of this interceptor provides an alternative solution to eliminating SSOs at the Caven Ave Pump Station by diverting flows from the pump station to the Silver Heights WQTC system and eventually through the Mud Creek Interceptor, thus eliminating the Caven Ave Pump Station.

For your reference, a copy of the original project fact sheet and map from the 2009 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: G. Heitzman P. Purifoy

Attachments

MSD

Metropolitan Sewer District

ATTACHMENT A

SSO SSDP
Project Fact Sheet

SSO Project Number:	S_PO_WC_PC09_M_09B_C
Project Name:	Outer Loop and Caven Ave. Wet Weather Storage 3 - Caven Ave Wet Weather Storage
Modeled Area:	Pond Creek
Branch or SSO ID:	PC09
Project Type:	Off-line Storage
Receiving Stream:	Pond Creek and Mud Creek
Project Description:	This alternative includes an off-line gravity storage (covered 0.21 MG) at Caven Avenue PS
Reason for Overflow:	System capacity
Design Parameters / Assumptions:	This solution is based on a 1.82 inch cloudburst rain event
Project Constraints:	None
Estimated Capital Cost (2008 dollars):	$1,073,000
Weighted Benefit/Cost Ratio (Present Worth):	7.08

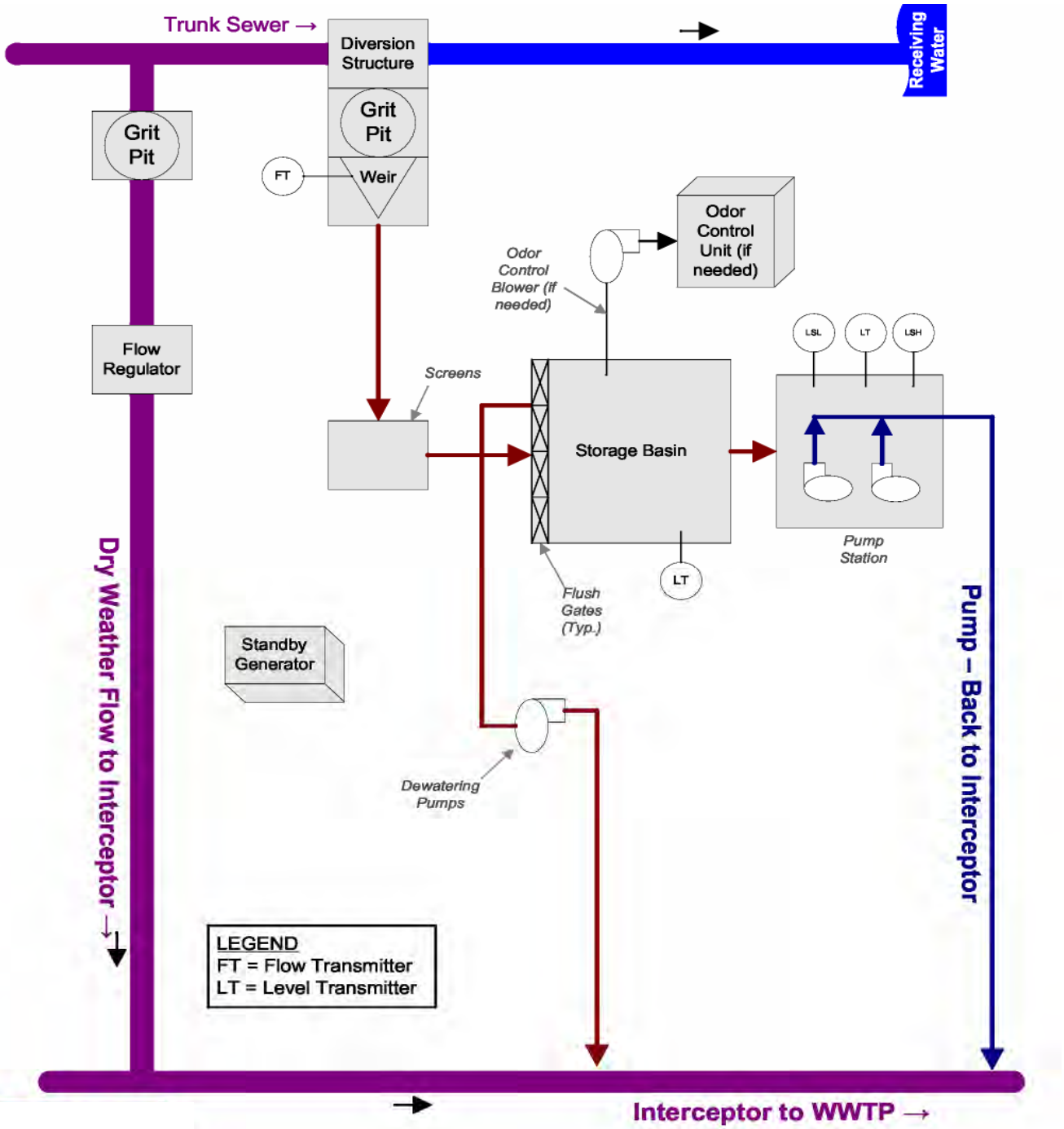
Overflow Points Addressed:

SSO	SSO Name	Service Area	Overflow Type	Discharge To	Average Overflow / Incident (gallons)
17724	1096 Springview Drive	West County	Manhole	Ditch	33
27116	10306 Caven Avenue	West County	Manhole	Stream	Suspected-no data
70212	1095 Springview Drive	West County	Manhole	Stream	Suspected-no data
MSD0133-PS	Caven Avenue	West County	Pumped	Ground	15,250

SSO SSDP
Project Fact Sheet

SSO Project Number: S_PO_WC_PC09_M_09B_C

Off-Line Storage
Pumped Effluent
Flow Diagram



Integrated Overflow Abatement Plan

Vol. 3 - Sanitary Sewer Discharge Plan
Pond Creek Sewershed

Solution ID # S_PO_WC_PC09_M_09B_C

Outer Loop & Caven Ave Wet Weather Storage 3
Caven Ave. Wet Weather Storage

Preliminary - For Budget Development Only

Legend

- Documented SSO
- Suspected SSO
- Haul Operation
- Proposed Pump Station Solution
- Pump Station
- WWTP
- Proposed Pipe Solution
- Force Main
- Collector < 12"
- Interceptor => 12"
- Combined Sewer Pipe
- Proposed Off-line Storage
- Road
- Streams
- Floodway
- Small WWTP Service Area
- Large WWTP Service Area
- CSO Area
- Metro Parks

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" X 17" paper

Some boundaries are uniquely symbolized within the map.

Map Revision
May 07, 2009

Aerial Date: 2006

N

MSD

Metropolitan Sewer District

ATTACHMENT B

Project Name Caven Ave Pump Station Elimination

Modeled Area	Pond Creek
Branch or SSO ID	PC09
Project Type	Off-line Storage
Receiving Stream	Pond Creek and Mud Creek
Project Description	This project includes the inspection and rehabilitation of the Caven Avenue Pump Station service area. The pump station will be eliminated and flow will diverted into newly constructed 10-inch sewer line to be connected to the Mud Creek Interceptor.
Reason for Overflow	System Capacity
Design Parameters	This solution is based on a 2.6 inch cloudburst rain event
Project Constraints	
Estimated Capital Cost	$320,000
Weighted Benefit/Cost Rati	137.5

Asset-ID	SSO Start Date	Volume (Gal)
17724	5/22/2005 4:25:00 PM	60
27116	11/15/2011 4:27:00 PM	103,500
27116	11/22/2011 10:00:00 AM	135,000
27116	11/28/2011 6:50:00 AM	212,225
27116	12/5/2011 7:52:00 AM	217,000
27116	12/27/2011 12:50:00 PM	20,000
MSD0133-PS	4/4/2008 10:50:00 AM	25,500
MSD0133-PS	8/4/2009 7:20:00 PM	21,250

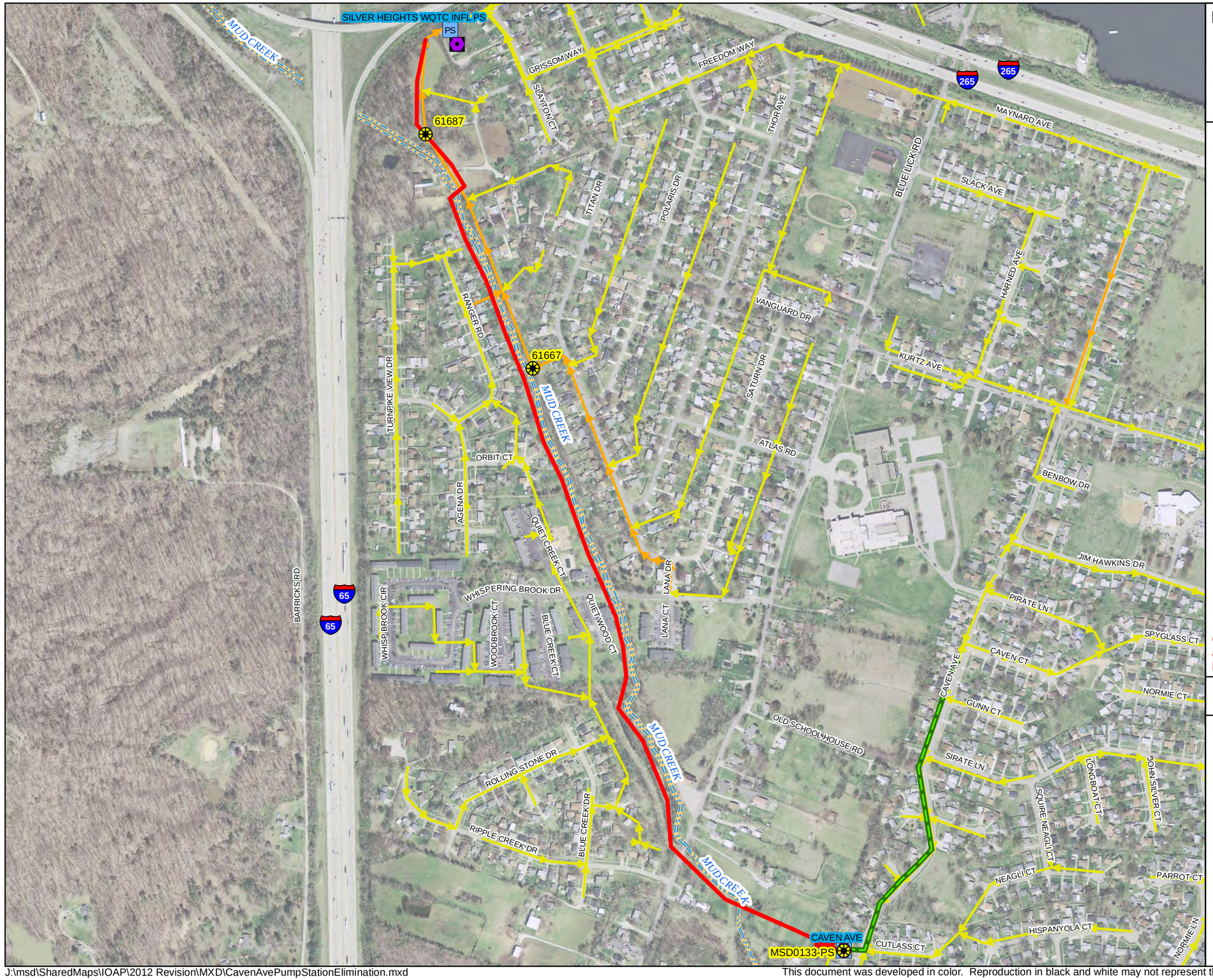
Integrated Overflow Abatement Plan

Vol. 3 - Sanitary Sewer Discharge Plan

Derek R. Guthrie Sewershed

Caven Ave Pump Station Elemination

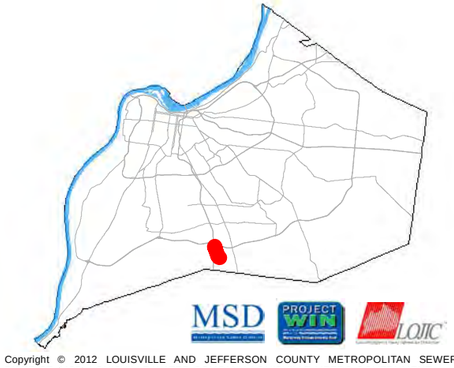
Preliminary - For Budget Development Only



- Documented SSO
- Suspected SSO
- 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 = 500 feet	N	Aerial Date: 2009	Map Revision: April 9, 2012



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Metropolitan Sewer District

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August 17, 2012 (Revised September 20, 2012)

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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: Central Relief Drain CSO In-line Storage, Green Infrastructure, and Distributed Storage New Project
DOJ Case No. 90-5-1-1-08254

Attention Chiefs and Director:

MSD is providing advanced notification of a proposed new project be added to the IOAP with the name Central Relief Drain (CRD) CSO In-line Storage, Green Infrastructure, and Distributed Storage project. This new project is the result of an overall adaptive management review of the approved 2009 IOAP that will be documented in the proposed 2012 IOAP Modification to be formally submitted in 2013. No action is requested at this time.

New Project Description

The new project involves the use of in-line storage, green infrastructure, flow diversion and localized storage to control overflows within the Central Relief Drain to eight overflows in a typical year and a completion date of December 31, 2018.

As part of an internal modeling review and re-calibration, MSD initiated a detailed review of the combined sewer system hydraulic model. Upon completion of this review, MSD determined that the CSOs associated with the CRD should be removed from the 13th Street and Rowan Street Storage Basin solution and controlled through in-line storage, green infrastructure and distributed storage. Additional information regarding the separation of these projects can be found in the 13th and Rowan modification letter.

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. No action is requested at this time.

Technical Justification

Since the last IOAP submittal, additional flow monitors have been installed in the system and on the overflow structures. In addition, 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.

Based on the results of the re-calibration, a new benefit cost analysis was performed on the CRD solutions, and a level of control analysis was conducted on the selected solution. The benefit cost analysis and the level of control analysis showed that diverting the flow at CSO 200 and raising the weirs at CSOs 028, 029, 034, 178, 181, 195, 197, 200, and 202 to create in-line storage would limit the number of overflows to eight per year while providing the best benefit/cost ratio. Therefore, MSD proposes to remove the CSOs associated with the Central Relief Drain from the 13th Street and Rowan Street Storage Basin solution and create a new project called 'Central Relief Drain CSO In-line Storage, Green infrastructure, and Distributed Storage'.

A total of 21 CSOs discharge into the Central Relief Drain (CRD). Of these, only 9 CSOs discharge during the typical year, and most of the others have very small average annual overflow volumes (AAOV). The CRD is a very deep pipe, and including the CRD into the 13th and Rowan Storage Basin project made the new interceptor sewer and the storage basin deeper than would otherwise be required, thereby increasing the overall project cost. Monitoring equipment is currently being installed on the CRD CSOs to verify the behavior of this system, as the overflows are heavily hydraulically interconnected with one another.

During model recalibration MSD decided to investigate alternative approaches to handling the CRD CSOs. MSD determined that CSO200 could be most cost effectively controlled by diverting the overflow to the Sneads Branch system, which is currently controlled through in-line storage. For the remaining CRD CSOs a localized approach that addressed only the CRD CSOs is more cost-effective than keeping them included in the 13th and Rowan Storage Basin project.

MSD will use a highly interactive adaptive management approach to controlling CSOs in the CRD. The first round of projects will include expanding the use of in-line storage, either through fixed weirs, bending weirs or active real time control (RTC) elements. Given the interconnectivity of the CRD system, MSD must ensure that new in-line storage in one location does not activate or negatively impact another CSO. In-line storage projects will start as early as 2013, with implementation of projects on individual CSOs expected to be completed over the time frame of 2015 through 2018. These in-line storage projects will be designed to achieve an AAOV frequency of eight overflows in a typical rainfall year.

In parallel with the in-line storage projects, MSD will implement a focused approach to construct stormwater control in this area through green infrastructure and distributed storage. Given the small volumes of AAOV associated with several of these CSOs, MSD will couple green infrastructure projects with the aforementioned inline storage. The focused approach to green infrastructure projects will begin in 2013, and continue through 2018. Recurring flooding issues in this area at several viaducts near the University of Louisville's main campus will also be considered through these projects. AAOV reductions achieved by this approach will factor into "right-sizing" additional off-line storage systems if required.

If the combination of in-line storage and green infrastructure cannot be demonstrated to meet at least eight overflows per year in the typical year, a "right-sized" suite of gray infrastructure projects will be implemented. This storage may be one or two centralized underground tanks or a system of off-line pipes connected to the system to provide distributed storage where needed. If off-line storage is required, an updated level of control analysis will be performed to ensure that the right-sized storage facilities are sized in accordance with the benefit/cost approach used in the 2009 IOAP. If off-line storage facilities are required, they will be complete and in-service not later than December 31, 2020, which was the original approved date for control of these CSOs.

The in-line storage portion of the project will have a completion date of December 31, 2018, which is before the completion date of the original 13th Street and Rowan Street solution to which these CSOs were originally attached. MSD also intends to potentially use green infrastructure and off-line storage if future flow monitoring and re-calibration efforts indicate the need for additional controls.

For your reference, a copy of the original project fact sheet and map from the 2009 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
Attachment

MSD

Metropolitan Sewer District

ATTACHMENT A

New Project

No Attachment A

MSD

Metropolitan Sewer District

ATTACHMENT B

Project Name: Central Relief Drain CSO In-line Storage, Green Infrastructure & Distributed Storag

Project Type: Diversion, Inline Storage and Green Infrastructure

Rec Stream: Ohio River

Project Description: Weir raises on existing CSO structures to reduce overflows to 8 per typical year. CSO 200 is diverted to the east into the Sneads Branch Relief. Additional Green Infrastructure is accounted for in cost to reduce runoff to offset potential flooding concerns at viaducts. Bending weirs may also be used in lieu of traditional static weirs.

Design Assumption: Assumes weir raises will be acceptable. Additional evaluating of potential flooding at weir raise level will need to be evaluated based on the configuration of each CSO structure. Green Infrastructure or bending weirs may be used to mitigate potential increase of flooding risks.

Capital Cost: $2,184,000

Capital Benefit/Cost: 543.96

Present Worth Benefit Cost: 581.21

		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
CSO028	CRD 6th & YORK	1.28	26	1.28	26
CSO029	CRD 8th & YORK	5.30	37	5.30	37
CSO034	CRD 4th & YORK	0.29	21	0.29	21
CSO036	CRD 3rd & BROADWAY	0.00	0	0.00	0
CSO178	CRD 9th & YORK "B"	18.58	48	18.58	48
CSO181	CRD 2nd & BROADWAY NO 2	15.70	61	15.70	61
CSO193	CRD S 6th & KENTUCKY	0.02	4	0.02	4
CSO195	CRD S 4th & OAK	1.55	42	1.55	42
CSO196	CRD S 3rd & OAK	0.00	1	0.00	1
CSO197	CRD S 3rd S OF OAK	1.87	45	1.87	45
CSO199	CRD S 3rd N OF MAGNOLIA	0.19	27	0.19	27
CSO200	CRD S 3rd & MAGNOLIA	2.54	57	2.54	57
CSO202	CRD S ORMSBY W OF 3rd	0.05	9	0.05	9

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

Central Relief Drain CSO Service Area

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
- CRD CSO Service Area
- Jefferson County Boundary

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

1 inch = 1,000 feet	N	Aerial Date: 2009	Map Revision: April 9, 2012

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

Subject: Clifton Heights Storage Basin
Minor Project Modification
IOAP Project No. L_MU_MF_154_M_09B_B_A_8
DOJ Case No. 90-5-1-1-08254

Attention Chiefs and Director:

MSD is providing advanced notification of a proposed minor project modification to the Clifton Heights Storage Basin project (IOAP Project No. L_MU_MF_154_M_09B_B_A_8). This modification is part of an overall adaptive management review of the approved 2009 IOAP that will be documented in the proposed 2012 IOAP Modification to be formally submitted in 2013. No action is requested at this time.

2009 IOAP Project Description

The Clifton Heights Storage Basin project originally involved the construction of a 6.55 million gallon (MG) storage basin to be completed by December 31, 2018, with an eight overflow per typical year level of control.

Proposed Project Modification

MSD proposes to change the Clifton Heights Storage Basin solution from a 6.55 MG basin to a 4.28 MG basin, and revise the level of control from eight overflows per typical year to four overflows per typical year.

These changes are part of an overall adaptive management review of the IOAP that resulted in several changes that are being documented in a on-going revisions to the 2009 IOAP that will be submitted for regulatory consideration. Each proposed change will be justified in detail through minor modification letters like this. Detailed benefits, costs and program implementation refinements to the overflow

abatement program will be documented in the proposed 2012 IOAP Modification to be submitted in the first quarter of 2013. No action is requested at this time.

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.

Based on the results of the re-calibration, a level of control analysis was conducted on the Clifton Heights Storage Basin. The level of control analysis showed that the basin size of 4.28 MG would meet a level of control of four overflows per year and provide the highest benefit/cost ratio. Therefore, MSD proposes to change the Clifton Heights Storage Basin solution from a 6.55 MG basin to a 4.28 MG basin. These improvements will maintain the same completion date of December 31, 2018, as the original solution.

For your reference, a copy of the original project fact sheet and map from the 2009 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_MU_MF_154_M_09B_B_A_8*
Project Name:	Clifton Heights Storage Basin
Project Type:	Off-Line Storage
Receiving Stream:	Muddy Fork Beargrass Creek
Project Description:	This project includes a 6.55 MG underground covered storage basin for CSO132, 154 and 167 to reduced overflows to reduce overflows to eight overflows per year. The facility will require a 6.55 MGD PS to return the stored flow back to the interceptor.
Design Parameters / Assumptions:	Basins are designed to the 9th overflow event volume, resulting in 8 CSO overflows/year. The 9th peak flowrate is evaluated to compare gravity vs. pumped conveyance. Design for pump-back is 24 hours. Type of basin based on hydraulics and surroundings.
Surrounding Area Land Use:	Project is located within 'Vacant & Undeveloped' property East of Mellwood Ave, and is approximately 40' East of CSO154. Adjacent property includes 'Multi Family Residential', 'Industrial' and 'Single Family Residential'.
Apparent Utilities Description:	Prim. UG elec. ln. < 25 ft. from NE corner of basin, Secondary UG elec. ln. <4 ft. from NE corner of basin, Secondary OH elec. ln. < 2 ft. from NW corner of basin
Capital Projects:	2007~East Region Automation FY05-06 & Solids & Floatables Project - In progress; 2007~East Region PS Modification - Under Construction; 2011~RTC @ CSO154 - Awaiting Start
Advanced Site Restoration:	MSD will work with Neighborhood council to select and plant native Kentucky species during restoration.
Estimated Capital Cost (2008):	$13,870,000
Capital Cost / Gallon Overflow Removed:	$0.15
Weighted Benefit / Cost Ratio (Capital Cost):	29.46

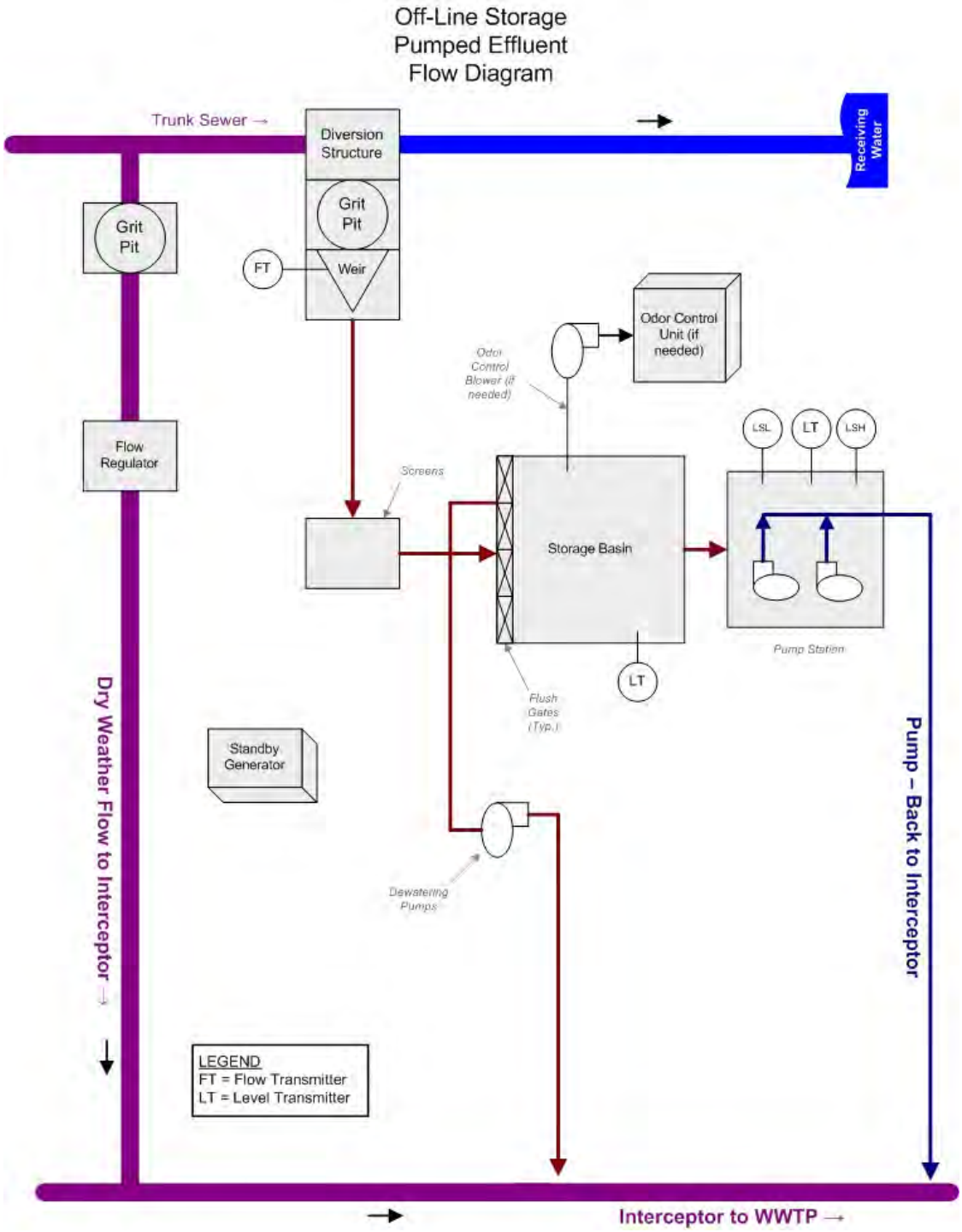
Overflow Points Addressed:

CSO Number	CSO Name	CSO Area (Acres)	2008 AAOV (MG / Yr)	# of Overflows / Yr	Post LTCP AAOV (MG/Yr)	Post LTCP # Overflows / Year
CSO132	Regulator Number 35 - Brownsboro	674.01	149.77	56	15.91	8
CSO154	Mellwood Avenue @ Schoeffle	31.02	1.92	15	0.83	8
CSO167	Brownsboro Lat Number 2	11.00	0.96	12	0.83	8

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

CSO LTCP
Project Fact Sheet

LTCP Project Number: *L_MU_MF_154_M_09B_B_A_8*



Integrated Overflow Abatement Plan

Volume 2 - Final CSO Long-Term Control Plan

Muddy Fork Beargrass Creek
Solution ID # L_MU_MF_154_M_09B_B_A_8
Clifton Heights Storage Basin

Preliminary - For Budget Development Only

Legend

- Active CSO
- Eliminated CSO
- Proposed Pump Station Solution
- Pump Station
- Proposed Pipe Solution
- Force Main
- Collector < 12"
- Interceptor => 12"
- Combined Sewer Pipe
- Flood Wall
- Proposed Storage Solution
- Floodway
- Metro Parks
- Streams

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

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

Some boundaries are uniquely symbolized within the map.

Map Revision
Mar 13, 2009

Aerial Date: 2006

N

LTCP Map Series: I:\projects\10777_ MSD\40109_CSO LTCP Development\LTCP PROJECT\GIS\MXDs\11x17\template_final_msd_19.mxd

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MSD

Metropolitan Sewer District

ATTACHMENT B

Project Name: Clifton Heights Storage Basin

Project Type: Off-Line Storage

Rec Stream: Middle Fork Beargrass Creek

Project Description: This projet includes a 4.28 MG storage basin and conveyance from each CSO to achieve 4 overflows in a typical year.

Design Assumption: Basin is designed to the 5th Overflow volume. Portions of the existing oveflow pipe from CSO 132 may be used for CSO conveyance depending on potential direct stormwater contibutions.

Capital Cost: $15,331,000

Capital Benefit/Cost: 68.88

Present Worth Benefit Cost: 76.85

		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
CSO088	MELLWOOD AVE INT	21.25	38	19.36	36
CSO131	REG NO 33 - MELWD & FRANKFORT	2.42	20	2.42	20
CSO132	REG NO 35 - BROWNSBORO	30.97	36	25.41	34
CSO154	MELLWOOD @ SCHOEFFEL	26.33	40	27.32	38
CSO167	BROWNSBORO LAT NO 2	0.00	1	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.

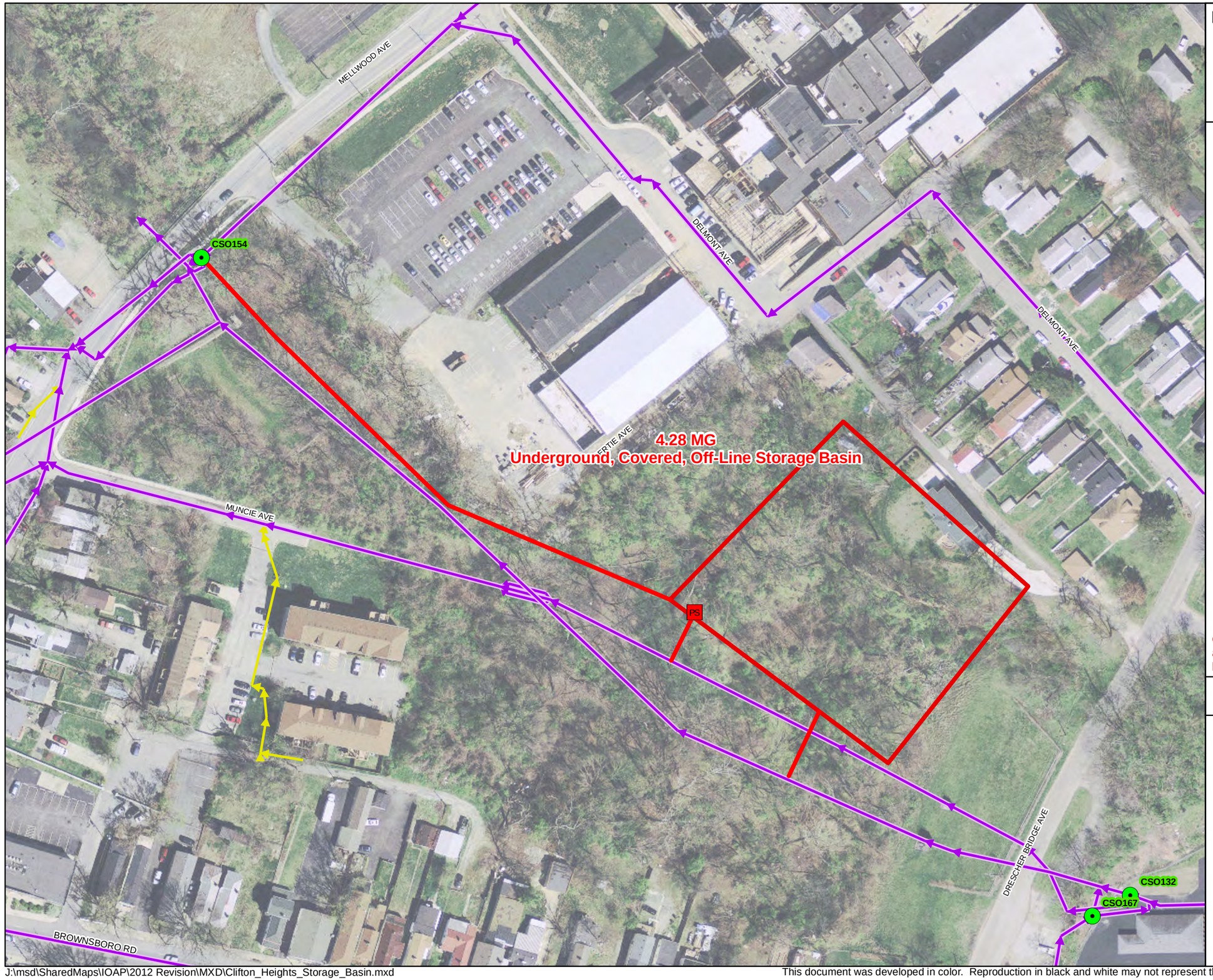
Integrated Overflow Abatement Plan

Vol. 2 - Final CSO Long Term Control Plan

Muddy Fork Beargrass Creek

Clifton Heights Storage Basin

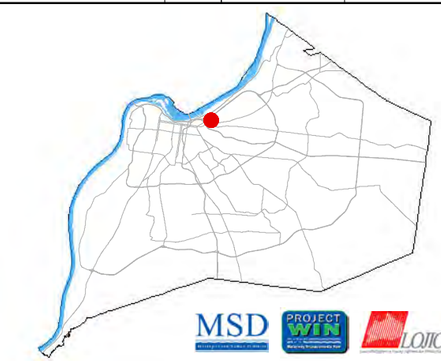
Preliminary - For Budget Development Only



- 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 = 102 feet	N	Aerial Date: 2009	Map Revision: April 9, 2012



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Louisville and Jefferson County Metropolitan Sewer District
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Louisville Kentucky 40203-1911
502-540-6000
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August 17, 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: Eden Care PS SSO Investigation
Project Elimination
IOAP Project No. S_FF_FF_NB02_S_13_C
DOJ Case No. 90-5-1-1-08254

Attention Chiefs and Directors:

MSD is providing advanced notification of a proposed minor project modification to eliminate the Eden Care PS Sanitary Sewer Overflow (SSO) Investigation project (IOAP Project No. S_FF_FF_NB02_S_13_C). This modification is part of an overall adaptive management review of the approved 2009 IOAP that will be documented in the proposed 2012 IOAP Modification to be formally submitted in 2013. No action is requested at this time.

2009 IOAP Project Description

The Eden Care PS SSO Investigation project included monitoring the location during rain events for three years following Sewer Overflow Response Protocols.

Proposed Project Modification

MSD has been monitoring the Eden Care PS (MSD1105-PS) over the past three years during wet weather and determined that overflows do not occur at this location. As a result, under the Sewer Overflow Response Protocol (SORP), MSD is no longer required to monitor the location and no remedial project is necessary.

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. No action is requested at this time.

Technical Justification

The inline storage solution alternative originally developed for the 2008 IOAP (IOAP Project No. S_FF_FF_NB02_S_13_C), which has a required completion date of December 31, 2021, consisted of upsizing 90 LF of 8-inch diameter pipe to 48-inches. This solution is not necessary based on monitoring according to SORP protocols at Eden Care PS. The only historical overflow documented at Eden Care Pump Station (MSD1105-PS) related to system capacity was 200 gallons on March 18, 2006. This overflow was caused by a blockage and no overflows have been recorded since that date six years ago.

Table 1 – Recorded overflows at Eden Care PS

ID	Overflow Date	Cause	Volume (gal)
MSD1105-PS	3/18/2006	Capacity	200

Given these results, MSD proposes to eliminate the Eden Care Pump Station project. For your reference, the original project fact sheet and map from the IOAP are enclosed in Attachment A.

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 or Ms. Angela Akridge, Project WIN Program Manager at (502) 540-6000.

Sincerely,

W. Brian Bingham
Regulatory Services Director

Cc: G. Heitzman P. Purifoy
Attachment

MSD

Metropolitan Sewer District

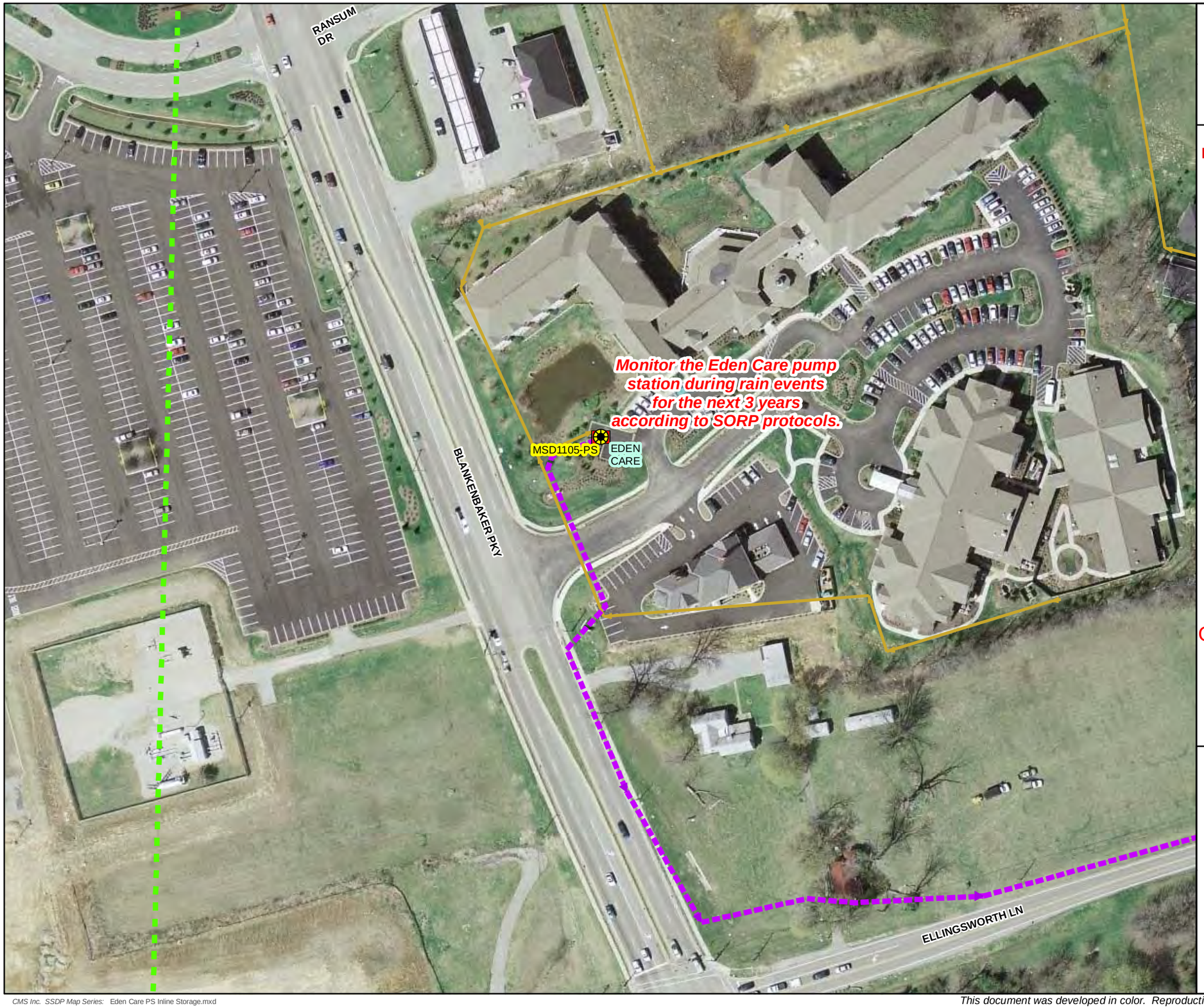
ATTACHMENT A

SSO SSDP
Project Fact Sheet

SSO Project Number:	S_FF_FF_NB02_S_13_C
Project Name:	Eden Care PS SSO Investigation
Modeled Area:	Floyds Fork
Branch or SSO ID:	NB02
Project Type:	Monitor
Receiving Stream:	Floyds Fork
Project Description:	Monitor the Eden Care PS during rain events for the next three years according to SORP protocols .
Reason for Overflow:	Pump station capacity / suspected blockage
Design Assumptions:	The only overflow record for this location occurred on March 18, 2006 and is suspected to have been caused by a blockage.
Project Constraints:	None
Estimated Capital Cost (2008 dollars):	This work will be performed under the SORP/CMOM programs
Weighted Benefit/Cost Ratio (Present Worth):	--

Overflow Points Addressed:

SSO	SSO Name	Service Area	Overflow Type	Discharge To	Average Overflow / Incident (gallons)
MSD1105-PS	Eden Care	Floyds Fork	Lift Station	Ground	200



Integrated Overflow Abatement Plan

Vol. 3 - Sanitary Sewer Discharge Plan

Floyds Fork Sewershed

Solution ID # S_FF_FF_NB02_S_13_C

Eden Care PS SSO Investigation

Preliminary - For Budget Development Only

Legend

- Documented SSO
- Suspected SSO
- Haul Operation
- Proposed Pump Station Solution
- Pump Station
- WWTP
- Proposed Pipe Solution
- Force Main
- Collector < 12"
- Interceptor => 12"
- Combined Sewer Pipe
- Proposed Off-line Storage
- Road
- Streams
- Floodway
- Small WWTP Service Area
- Large WWTP Service Area
- CSO Area
- Metro Parks

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

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Scalable when printed on 11" X 17" paper

Some boundaries are uniquely symbolized within the map.

Map Revision
May 07, 2009

Aerial Date: 2006

N

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Metropolitan Sewer District

ATTACHMENT B

Project Eliminated or Combined with Another

No Attachment B

Louisville and Jefferson County Metropolitan Sewer District
700 West Liberty Street
Louisville Kentucky 40203-1911
502-540-6000
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August 17, 2012

Chief, Environmental Enforcement Section
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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: Fairmount Road Storage Basin
New Project
DOJ Case No. 90-5-1-1-08254

Attention Chiefs and Director:

MSD is providing advanced notification of a proposed new project to create sewage storage adjacent to the Fairmount Road Pump Station. The original 2009 IOAP project for upgrading Fairmount Road Pump Station (IOAP Project No. S_FF_CC_81316_M_03_C_A) was completed in April 2012. This is the result of a an overall adaptive management review of the approved 2009 IOAP that will be documented in the proposed 2012 IOAP Modification to be formally submitted in 2013. No action is requested at this time.

Proposed New Project

The Fairmount Road Pump Station plays a vital role in the Jeffersontown Water Quality Treatment Center (WQTC) Blending Elimination Plan. A 3.4 million gallon (MG) storage basin is needed adjacent to the basin to accommodate new development and peak wet weather flows being diverted through the station from Jeffersontown WQTC. MSD proposes that this new project be completed by December 31, 2015, and mitigate overflows to a 1.86-inch rainfall level of control.

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. No action is requested at this time.

Technical Justification

On March 31, 2010, MSD submitted a letter to the Kentucky Department for Environmental Protection and the Environmental Protection Agency informing them of the selected alternative for the Jeffersontown WQTC Blending Elimination Plan. Elimination Alternative 3 was selected as it diverts the northwest area of the Jeffersontown WQTC service area to the Morris Forman WQTC, a small portion of the eastern service to the Floyds Fork WQTC, and the remaining area to the Cedar Creek WQTC. Multiple projects are proposed to convey flows to the Cedar Creek WQTC including the Upper Billtown Road Interceptor, Billtown Road Interceptor, Billtown Road Pump Station and Force Main, and Fairmount Road Pump Station Improvements.

Alternative 3 proposes to upsize the Fairmount Road Pump Station to 25.9 million gallons per day (MGD) and install 9,935 feet of 36-inch diameter force main to convey the increased flow. Because the Cedar Creek WQTC has an average daily flow of approximately 6 MGD with a rated dry weather capacity of 7.5 MGD, MSD planned to increase storage capacity at Fairmount Road to better balance flows into the treatment center, rather than further upgrade the pump station.

The solution analyzed is a storage basin at the Fairmount Road Pump Station site to reduce the peak flow to the WQTC. A benefit/cost analysis was conducted based on the storage needed for a 2-yr, 5-yr, and 10-yr CB Storage storm. The 2-yr solution had the best benefit/cost ratio and consisted of a 3.4 MG storage basin at the Fairmount Road Pump Station. Therefore, MSD proposes to maintain the Original IOAP capacity improvements at the Fairmount Road Pump Station, in addition to constructing a minimum 3.4 MG storage basin at the pump station.

For your reference, copies of the completed project fact sheet and map from the 2009 IOAP are in Attachment A. A new project fact sheet and map detailed the planned storage project have been provided in Appendix 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 Ms. Angela Akridge, Project WIN Program Manager, or myself at (502) 540-6000.

Sincerely,

W. Brian Bingham
Regulatory Services Director

cc: G. Heitzman P. Purifoy

Attachments

MSD

Metropolitan Sewer District

ATTACHMENT A

New Project

No Attachment A

MSD

Metropolitan Sewer District

ATTACHMENT B

Project Name Fairmount Road Storage Basin

Modeled Area	Cedar Creek
Branch or SSO ID	81316
Project Type	Inline Storage
Receiving Stream	Big Run
Project Description	This project involves the construction of a 3.4 MG storage basin adjacent to the existing Fairmount Road Pump Station.
Reason for Overflow	Pump station capacity
Design Parameters	This solution is based on a 1.82 inch cloudburst rain event
Project Constraints	Project is located in Glenmary Subdivision Section 1, but work will occur in MSD ease
Estimated Capital Cost	$11,285,000
Weighted Benefit/Cost Rati	11.11

Asset-ID	SSO Start Date	Volume (Gal)
MSD1065-PS	3/19/2008 10:40:00 AM	8,400

Integrated Overflow Abatement Plan

Vol. 3 - Sanitary Sewer Discharge Plan

Cedar Creek Sewershed

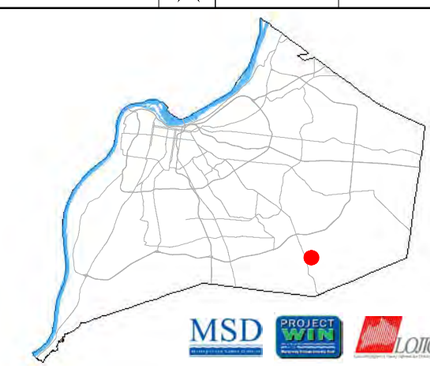
Fairmount Rd. PS Off-line Storage Basin

Preliminary - For Budget Development Only

- Documented SSO
- Suspected SSO
- 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



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Louisville and Jefferson County Metropolitan Sewer District
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Louisville Kentucky 40203-1911
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August 17, 2012

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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 Lea Ann Way System Improvements
Minor Project Modification
IOAP Project No. S_PO_WC_PC08_M_01_C
DOJ Case No. 90-5-1-1-08254

Attention Chiefs and Directors:

MSD is providing advanced notification of a proposed minor project modification to the Lea Ann Way System Improvements project (IOAP Project No. S_PO_WC_PC08_M_01_C). This modification is part of an overall adaptive management review of the approved 2009 IOAP that will be documented in the proposed 2012 IOAP Modification to be formally submitted in 2013. No action is requested at this time.

2009 IOAP Project Description

The original Lea Ann Way System Improvements Project includes the construction of 3,255 linear feet of 12-inch to 18-inch diameter sewer pipe to increase capacity in the collection system upstream of the Lea Ann Way Pump Station.

Proposed Project Modification

The project modification involves mitigation of new wet weather capacity problems near the Lea Ann Way Pump Station that have arisen since the approval of the 2009 IOAP. MSD turned to sewer inspection and rehabilitation alternatives to correct potential inflow and infiltration sources in the collection system. MSD completed a full sanitary sewer evaluation study (SSES) of the service area upstream of the Lea Ann Way Pump station in 2011. The evaluation found significant opportunities for reducing inflow and infiltration.

Given these circumstances, MSD is proposing to combine the 2009 IOAP recommended sewer improvements to address overflows in the upstream portion of the Lea Ann Way service area, rehabilitation work identified through the SSES and post-construction monitoring into one project.

Following the completion of this work, MSD will monitor the system for two years. If the rehabilitation does not mitigate overflows to the specified level of control, MSD will construct off-line storage at the pump station and possibly divert the lowest lying neighborhood, which susceptible to severe basement back-ups, out of the Lea Ann Way service area by constructing a small pump station and force main.

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. No action is requested at this time.

Technical Justification

As part of MSD's Sewer Overflow Response Protocol and continual review of overflows since approval of the 2009 IOAP, significant wet weather issues directly upstream of the Lea Ann Way Pump Station were identified. In 2011, MSD performed a complete Sanitary Sewer Evaluation Study (SSES) and is currently performing subsequent rehabilitation in the collection system upstream of the Lea Ann Way PS and Interceptor to reduce inflow and infiltration in 2012 and 2013.

The work was split into two areas: Lea Ann Way East and Lea Ann Way West. Recommendations from the East and West sewer evaluations include $5.25 Million of rehabilitation over the next two years for a grand total of $6.45 Million in rehabilitation upstream of the Lea Ann Way PS. This effort includes $1.2 million of interceptor rehabilitation and sewer lining, which is currently under construction. Overall, the estimate capacity credits for planned rehabilitation is 4.2 million gallons per day (MGD).

In addition to rehab work in the Lea Ann Way collection system, MSD is also evaluating an alternative storage solution as well as an alternative to divert flows from the Mile of Sunshine neighborhood (the western portion of the collection system upstream of Lea Ann Way PS) through a new pump station and force main. This neighborhood is historically flooded during wet weather due to surcharging in the interceptor upstream of the Lea Ann Way PS.

MSD recommends that post-rehabilitation monitoring be performed to assess the reduction in flows in the pipe system and at the pump station before any alternative solution, such as a storage basin, is evaluated any further. If the rehabilitation achieves the required level of protection, no further action will be taken. If hydraulic modeling still predicts surcharging in the system, MSD will revisit additional pipe upgrades, the off-line storage basin and Mile of Sunshine diversion.

Table 1 below represents the cost breakdown and totals for the Lea Ann Way PS and the upstream collection system alternatives.

Table 1 – Lea Ann Way PS and Collection System Alternatives

Alternative	Existing Conditions	Proposed Conditions	Construction Cost	Capital Cost
2008 IOAP Collection System Upgrades (3,255 LF)	10" – 15"	12" – 18"	**$636,000**	**$827,000**
Lea Ann Way Interceptor Rehab	N/A	N/A	--	**$1,200,000**
Lea Ann Way East & West Collection System Rehab	N/A	N/A	--	**$5,250,000**
2012 Project Modification TOTAL				**$7,277,000**
Mile of Sunshine Diversion (Optional A)			**$2,235,799**	**$2,907,000**
Pump Station capacity	N/A	2.5 MGD	$1,374,160	
Force Main (1700 LF)	N/A	12"	$271,834	
Downstream Interceptor (2400 LF)	15"	18"	$589,805	
Storage Basin (Optional B)			**$3,100,724**	**$4,200,000**
Current Basin Size (based on 2010 data)	N/A	1 MG	$2,364,247	
Interceptor to convey flow to basin (900 LF)	N/A	24"	$736,477	

For your reference, a copy of the original project fact sheet and map from the 2009 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.

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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: G. Heitzman P. Purifoy

Attachments

MSD

Metropolitan Sewer District

ATTACHMENT A

SSO SSDP
Project Fact Sheet

SSO Project Number:	S_PO_WC_PC08_M_01_C
Project Name:	Lea Ann Way System Improvements
Modeled Area:	Pond Creek
Branch or SSO ID:	PC08
Project Type:	Pipe Upgrades
Receiving Stream:	Fern Creek and Northern Ditch
Project Description:	This alternative includes using the restored Lea Ann Way PS with 3,255 LF of open cut sewer (12" to 18") upstream improvements to prevent the overflows.
Reason for Overflow:	Pump station capacity
Design Parameters / Assumptions:	This solution is based on a 1.82 inch cloudburst rain event
Project Constraints:	None at this time
Estimated Capital Cost (2008 dollars):	$827,000
Weighted Benefit/Cost Ratio (Present Worth):	49.01

Overflow Points Addressed:

SSO	SSO Name	Service Area	Overflow Type	Discharge To	Average Overflow / Incident (gallons)
19360	Rockwood Dr / Monaco	West County	Manhole	Stream	Suspected-no data
19369	5221 Layne Road	West County	Manhole	Stream	Suspected-no data
29933	6926 Sandstone Blvd	West County	Manhole	Stream	Suspected-no data
29943	6906 Sandstone Blvd	West County	Manhole	Stream	Suspected-no data

29948	Sandstone Blvd	West County	Manhole	Ground	75
31083	6924 Sandstone Blvd	West County	Manhole	Stream	Suspected-no data
31084	6916 Sandstone Blvd	West County	Manhole	Stream	Suspected-no data
79076	6308 Hanses Drive	West County	Manhole	Ditch	Suspected-no data
MSD1010-PS	Lea Ann Way	West County	Pumped	Stream	3,024,040

Integrated Overflow Abatement Plan

Vol. 3 - Sanitary Sewer Discharge Plan

Pond Creek Sewershed

Solution ID # S_PO_WC_PC08_M_01_C

Lea Ann Way System Improvements

Preliminary - For Budget Development Only

Legend

- Documented SSO
- Suspected SSO
- Haul Operation
- Proposed Pump Station Solution
- Pump Station
- WWTP
- Proposed Pipe Solution
- Force Main
- Collector < 12"
- Interceptor => 12"
- Combined Sewer Pipe
- Proposed Off-line Storage
- Road
- Streams
- Floodway
- Small WWTP Service Area
- Large WWTP Service Area
- CSO Area
- Metro Parks

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

1 inch = 400 feet
Scalable when printed on 11" X 17" paper

Some boundaries are uniquely symbolized within the map.

Map Revision
May 07, 2009

Aerial Date: 2006

N

Upsize 3255 LF of gravity main upstream of Lea Ann Way PS (12"-18")

BAHAMA LN
E BAHAMA CT
COPRA LN
CARRIBEAN LN
SUNDAY DR
MILE OF SUNSHINE DR
MEDITERRANEAN CT
YE OLD POST RD
YANKEE LN
CONNECTICUT DR
NEW HAMPSHIRE BLVD
FERN CREEK
FLIRTATIOUS WALK
YELLOWSANDS DR
BLUESTONE RD
ROCKY MOUNTAIN DR
SANDSTONE BLVD
RED ROCK CT
ROCK HOLLOW DR
ROCK FOREST DR
29948
29943
31084
31083
29933
NORTHERN DITCH
CAROLINA CROSSINGS WAY
MARBLE CT
BILLIE LN
WHISPERING HILLS BLVD
MARY LAVERNE DR
GEORGIA LN
BARNES DR
MACO LN
BILLIE LN
BRIDLEWOOD PL
STABLEVIEW PL
LARIAT RD
BRIDLEVISTA RD
SADDLEVIEW CT
SADDLE BLANKET DR
WOODHILL LN
MONACO DR
ROCKWOOD RD
SAXON BLVD
PICO LN
EDENDERRY LN
BRISCOE RIDGE LN
19360
RONWOOD DR
19369
CHARMANE DR
LAYNE RD
LAYNE CT
SEEBOLT DR
PIKEWOOD RD
KELLERMAN RD
PATTIE LN

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 Lea Ann Way System Improvements

Modeled Area	Pond Creek
Branch or SSO ID	PC08
Project Type	Pipe Upgrades
Receiving Stream	Fern Creek and Northern Ditch
Project Description	This project includes the construction of 3,255 LF of open cut sewer (12" to 18") to prevent overflows upstream of Lea Ann Way Pump Station. A full SSES for the Lea Ann Way service will be performed and significant sewer defects will be addressed. Flow monitoring will determine if the appropriate level of control has been met. If not, a new pump station may be built to divert flow from the low-lying Mile of Sunshine Drive area where the homes are at the highest risk of flooding due to surcharging. Additionally, a storage basin near the Lea Ann Way Pump Station may be constructed to achieve the level of control.
Reason for Overflow	Pump station capacity
Design Parameters	This solution is based on a 1.82 inch cloudburst rain event
Project Constraints	
Estimated Capital Cost	$827,000
Weighted Benefit/Cost Rati	49.01

Asset-ID	SSO Start Date	Volume (Gal)
19360	5/2/2010 3:42:00 PM	23,000
19360	4/27/2011 8:09:00 AM	24,000
19369	5/2/2010 3:44:00 PM	12,000
19369	4/27/2011 6:20:00 AM	33,000
29943	4/23/2011 10:55:00 PM	1,890
29943	4/27/2011 7:45:00 AM	6,000
29948	3/4/2008 3:15:00 PM	100
29948	4/4/2008 9:00:00 PM	50
29948	5/8/2009 8:00:00 PM	360
29948	6/18/2009 11:50:00 AM	6,600
29948	5/2/2010 3:20:00 PM	23,000
29948	2/24/2011 10:10:00 PM	11,000
29948	3/9/2011 3:45:00 AM	40,875
29948	4/11/2011 10:38:00 PM	43,200
29948	4/23/2011 10:55:00 PM	1,890
29948	4/24/2011 8:44:00 PM	6,300
29948	4/27/2011	40,500
29948	5/3/2011 6:39:00 AM	18,700
29948	11/22/2011 9:00:00 AM	15,250
29948	11/28/2011 6:45:00 AM	87,310
29948	12/5/2011 8:50:00 AM	67,740
31084	4/23/2011 10:55:00 PM	1,890
79076	5/2/2010 2:30:00 PM	19,500
79076	4/12/2011 3:50:00 AM	12,750
79076	5/3/2011 10:33:00 AM	4,500
MSD1010-PS	12/15/2007 3:10:00 PM	1,995,000

Project Name Lea Ann Way System Improvements

MSD1010-PS	3/4/2008 5:20:00 AM	2,697,000
MSD1010-PS	3/19/2008 8:30:00 AM	3,855,000
MSD1010-PS	4/4/2008 1:30:00 AM	6,276,200
MSD1010-PS	5/16/2008 12:30:00 AM	297,000
MSD1010-PS	7/29/2009 10:00:00 AM	30,000
MSD1010-PS	8/4/2009 12:00:00 PM	468,000
MSD1010-PS	5/2/2010 8:00:00 AM	2,720,000
MSD1010-PS	2/25/2011 12:15:00 AM	552,000
MSD1010-PS	3/9/2011 5:00:00 AM	4,935,000
MSD1010-PS	4/12/2011 12:01:00 AM	1,143,000
MSD1010-PS	4/12/2011 2:35:00 AM	432,000
MSD1010-PS	4/12/2011 2:55:00 AM	432,000
MSD1010-PS	4/12/2011 6:50:00 AM	1,143,000
MSD1010-PS	4/23/2011 7:10:00 PM	350,000
MSD1010-PS	4/23/2011 7:45:00 PM	56,250
MSD1010-PS	4/23/2011 7:45:00 PM	315,000
MSD1010-PS	4/23/2011 7:45:00 PM	126,000
MSD1010-PS	4/24/2011 8:50:00 PM	1,800,000
MSD1010-PS	4/24/2011 9:00:00 PM	744,000
MSD1010-PS	4/24/2011 9:20:00 PM	1,860,000
MSD1010-PS	4/24/2011 9:40:00 PM	720,000
MSD1010-PS	5/3/2011 1:30:00 AM	738,000
MSD1010-PS	5/3/2011 1:30:00 AM	828,000
MSD1010-PS	5/3/2011 1:30:00 AM	1,230,000
MSD1010-PS	5/3/2011 5:20:00 AM	861,000
MSD1010-PS	6/23/2011 12:50:00 AM	193,500
MSD1010-PS	6/23/2011 12:50:00 AM	193,500
MSD1010-PS	6/23/2011 12:51:00 AM	193,500
MSD1010-PS	11/28/2011 1:40:00 PM	3,756,000
MSD1010-PS	12/5/2011 10:00:00 AM	2,964,000

Integrated Overflow Abatement Plan

Vol. 3 - Sanitary Sewer Discharge Plan

Pond Creek Sewershed

Lea Ann Way PS System Improvement

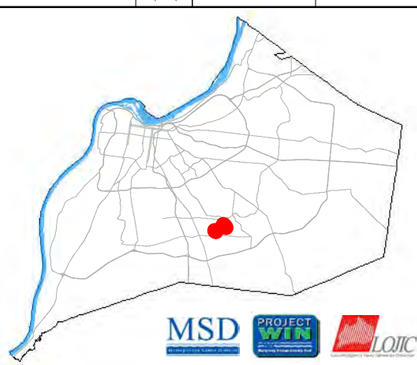
Preliminary - For Budget Development Only

Perform full SSES of entire collection system. Replace and rehabilitate targeted sewers based on past studies and SSES findings

- Documented SSO
- Suspected SSO
- Haulop Locations
- Proposed Pump Station Solution
- Pump Stations
- MSD
- Streams
- Floodway
- SSES Area
- Jefferson County Boundary

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

1 inch = 2,448 feet	N	Aerial Date: 2009	Map Revision: April 9, 2012



Lea Ann Way PS Analysis: PS Upgrades, Force Main, and Gravity Interceptor Upsizing

MSD Metropolitan Sewer District

LOJIC Louisville/Jefferson County Information Consortium

Legend

- Doc_SSO
- leaann_FM
- leaann_DSint
- 48-inchUSLeaAnn
- 54-inchUSLeaAnn
- Pond Creek Sewer

1 inch = 1,000 feet

N W E S

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

August 17, 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: Leland Road SSO Investigation
Project Elimination
IOAP Project No. S_OR_MF_NB02_S_13_C
DOJ Case No. 90-5-1-1-08254

Attention Chiefs and Directors:

MSD is providing advanced notification of a proposed minor project modification to eliminate the Leland Road Sanitary Sewer Overflow (SSO) Investigation project (IOAP Project No. L_SO_MF_018_S_03_A_A). This modification is part of an overall adaptive management review of the approved 2009 IOAP that will be documented in the proposed 2012 IOAP Modification to be formally submitted in 2013. No action is requested at this time.

2009 IOAP Project Description

The Leland Rd SSO Investigation Project included performing periodic condition assessments for three years and monitoring the location during rain events.

Proposed Project Modification

MSD has been monitoring the Leland Rd manhole number 96020 over the past three years during wet weather and determined that overflows do not occur at this location. The condition assessment has been performed under the SORP and CMOM programs according to the 2009 IOAP. As a result, under the Sewer Overflow Response Protocol (SORP), MSD is no longer required to monitor the location and no remedial project is necessary.

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. No action is requested at this time.

Technical Justification

The relief sewer solution alternative originally developed for the 2009 IOAP (IOAP Project No. S_OR_MF_NB02_S_13_C), consisted of constructing 325 LF of 8-inch diameter relief sewer. This solution is not necessary based on monitoring according to SORP protocols at Leland Rd. The only historical overflow documented at Leland Rd (manhole 96020) related to system capacity was 20 gallons on March 12, 2006. Sewers at this location have been cleaned and no additional overflows have occurred since that date six years ago. The overflow is believed to have occurred due to a maintenance issue.

Table 1 – Recorded overflows at Leland Rd MH# 96020

ID	Overflow Date	Cause	Volume (gal)
96020	3/12/2006	Capacity	20

Given these results, MSD proposes to eliminate the Leland Rd project. For your reference, the original project fact sheet and map from the IOAP are in Attachment A.

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 Ms. Angela Akridge, Project WIN Program Manager, or myself at (502) 540-6000.

Sincerely,

W. Brian Bingham
Regulatory Services Director

Cc: G. Heitzman P. Purifoy

Attachment

MSD

Metropolitan Sewer District

ATTACHMENT A

SSO SSDP
Project Fact Sheet

SSO Project Number:	S_OR_MF_NB02_S_13_C
Project Name:	Leland Rd. SSO Investigation
Modeled Area:	ORFM
Branch or SSO ID:	NB02
Project Type:	Condition Assessment
Receiving Stream:	Cherrywood Creek
Project Description:	Perform periodic condition assessment for three years and monitor location during rain events.
Reason for Overflow:	Hydraulic bottleneck - Suspected Blockage
Design Assumptions:	Cleaning/flushing has occurred twice since March 2006 (last documented overflow date) and no additional overflows have been reported since that date. Overflow is believed to be a maintenance issue.
Project Constraints:	None
Estimated Capital Cost (2008 dollars):	This work will be performed under the SORP/CMOM programs
Weighted Benefit/Cost Ratio (Present Worth):	--

Overflow Points Addressed:

SSO	SSO Name	Service Area	Overflow Type	Discharge To	Average Overflow / Incident (gallons)
96020	Leland Road	Morris Forman	Manhole	Ground	20

Integrated Overflow Abatement Plan

Vol. 3 - Sanitary Sewer Discharge Plan

Ohio River Force Main Sewershed
Solution ID # S_OR_MF_NB02_S_13_C
Leland Rd SSO Investigation

Preliminary - For Budget Development Only

Legend

- Documented SSO
- Suspected SSO
- Haul Operation
- Proposed Pump Station Solution
- Pump Station
- WWTP
- Proposed Pipe Solution
- Force Main
- Collector < 12"
- Interceptor => 12"
- Combined Sewer Pipe
- Proposed Off-line Storage
- Road
- Streams
- Floodway
- Small WWTP Service Area
- Large WWTP Service Area
- CSO Area
- Metro Parks

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
May 7, 2009

Aerial Date: 2006

N

Perform periodic condition assessment for three years and monitor location during rain events.

96020

24448

CHIPPEWA RD
DRUID HILLS RD
BROWNSBORO HILL RD
BROWNSBORO RD
HILL
CRESTVIEW RD
MARYHILL LN
WENDING CT
YANCY LN
FATIMA LN
ELFIN AVE
ORMOND RD
NAPANEE RD
CHERRYWOOD RD
TRINITY HILLS LN
ST MATTHEWS AVE
FLINT RD
RIDGEWAY COR
LELAND RD
ELMWOOD CT
ELMWOOD AVE
GILMAN AVE
CLOVER LN
CHELSEA GREEN CT
BROOKFIELD AVE

SDI Inc. SSDP Map Series: Leland Rd SSO Investigation.mxd

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 Eliminated or Combined with Another

No Attachment B

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

August 17, 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: Lexington Road and Payne Street Storage Basin
Minor Project Modification
IOAP Project No. L_SO_MF_083_M_09B_B_A_8
DOJ Case No. 90-5-1-1-08254

Attention Chiefs and Director:

MSD is providing advanced notification of a proposed minor project modification to the Lexington Road and Payne Street Storage Basin project (IOAP Project No. L_MI_MF_127_M_09B_B_A_8). This modification is part of an overall adaptive management review of the approved 2009 IOAP that will be documented in the proposed 2012 IOAP Modification to be formally submitted in 2013. No action is requested at this time.

2009 IOAP Project Description

The original Lexington Road and Payne Street Storage Basin project involved the construction of a 7.31 million gallon (MG) storage basin to be completed by December 31, 2020, with an eight overflows per typical year level of control.

Proposed Project Modification

The project modification involves the construction of an 8.18 MG storage basin to be completed by December 31, 2020, with a zero overflow per typical year level of control.

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. No action is requested at this time.

Technical Justification

Since the last IOAP submittal, additional flow monitors have been installed in the system and on the overflow structures and 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.

Based on the results of the re-calibration, a level of control analysis was conducted on the Lexington Road and Payne Street Storage Basin. The level of control analysis showed that the basin size of 8.18 MG would meet zero overflows in a typical year level of control while providing the best benefit/cost ratio. Therefore, MSD proposes to change the Lexington Road and Payne Street Storage Basin solution from 7.31 MG to 8.18 MG. These improvements will maintain the same completion date of December 31, 2020, as the original solution.

For your reference, a copy of the original project fact sheet and map from the 2009 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_083_M_09B_B_A_8*
Project Name:	Lexington Road and Payne Street Storage Basin
Project Type:	Off-Line Storage
Receiving Stream:	South Fork Beargrass Creek
Project Description:	This project includes an 7.31 MG off-line covered storage basin for CSO082, 84, 118, 119, 120, 121, 141, & 153 to reduce overflows to 8 overflows per year. The basin will require an 7.31 MGD PS to return the stored flow to the interceptor.
Design Parameters / Assumptions:	Basins are designed to the 9th overflow event volume, resulting in 8 CSO overflows/year. The 9th peak flowrate is evaluated to compare gravity vs. pumped conveyance. Design for pump-back is 24 hours. Type of basin based on hydraulics and surroundings.
Surrounding Area Land Use:	The project is located within 'Industrial' property. The project is located approx. 120 ft. SE from CSO082. The project is located N off of Lexington Rd.
Apparent Utilities Description:	Streetlights within proposed basin area, sewer line < 5 ft. from SE corner of proposed basin
Capital Projects:	2011~Solids & Floatables CSO118- Hidden2007~Middle Fork Rehab Phase 2; 2013~Solids & Floatables CSO084; 2013~RTC @ CSO118 & 2012~Real Time Control @ CSO118 (BGI1) - Awaiting Start
Advanced Site Restoration:	The area of the proposed tank is undeveloped green space. Current and previous public use or development proposals for these areas have identified potential environmental mitigations. The project budget includes a site restoration allowance.
Estimated Capital Cost (2008):	$25,200,000
Capital Cost / Gallon Overflow Removed:	$0.18
Weighted Benefit / Cost Ratio (Capital Cost):	45.60

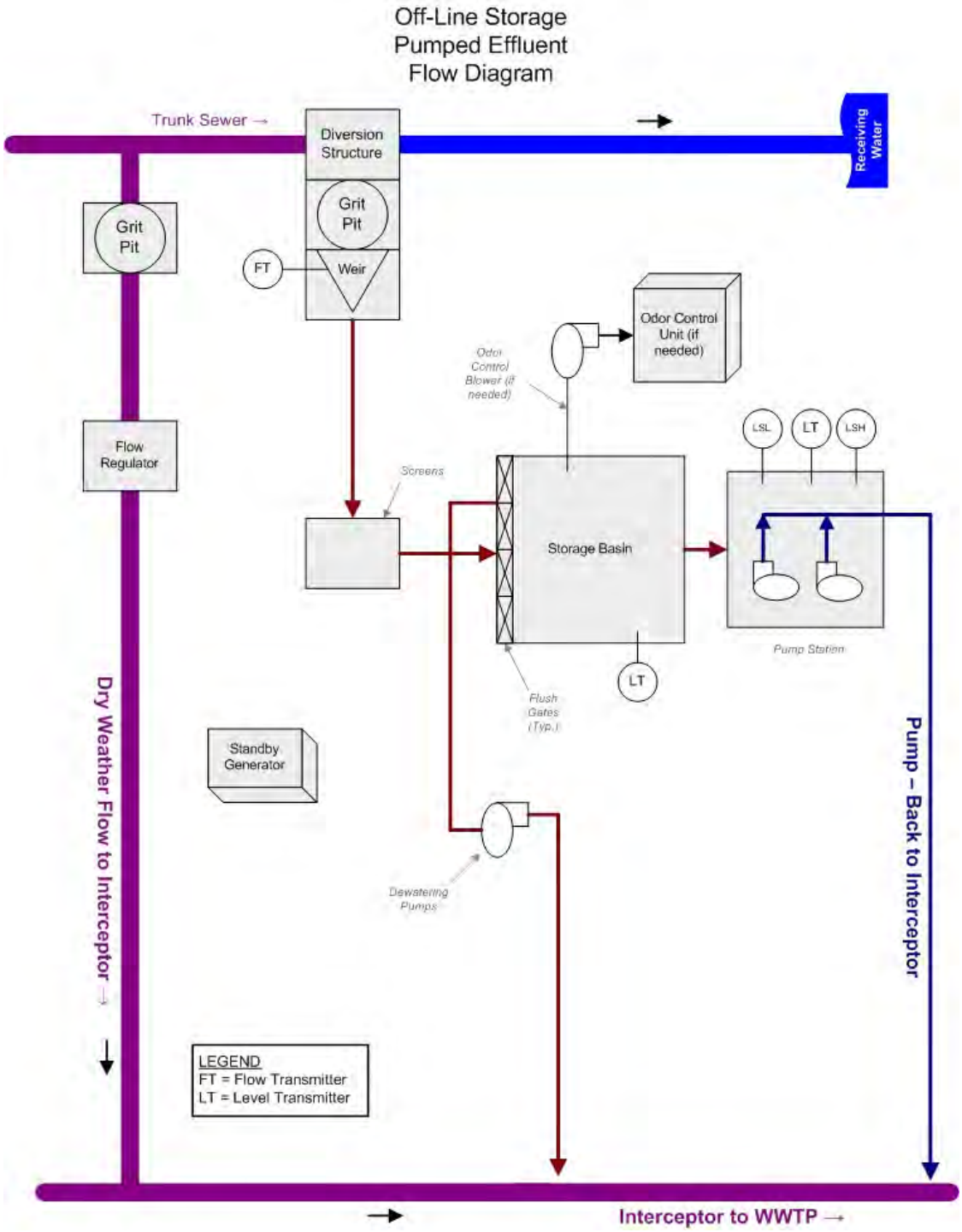
Overflow Points Addressed:

CSO Number	CSO Name	CSO Area (Acres)	2008 AAOV (MG / Yr)	# of Overflows / Yr	Post LTCP AAOV (MG/Yr)	Post LTCP # Overflows / Year
CSO082	Beargrass Interceptor Beargrass Creek	0.00	1.10	24	0.42	8
CSO084	Brent Street at Beargrass Creek	125.07	17.91	34	1.92	8
CSO118	Regulator Number 15 - East Broadway	354.12	99.69	39	13.37	8
CSO119	Brent Street Sewer	7.58	12.38	40	2.04	8
CSO120	Phoenix Hill Sewer	16.51	9.22	51	1.44	8
CSO121	Regulator Number 18 - Green Street	107.19	11.22	28	1.82	8
CSO141	Baxter Avenue at Beargrass Creek	7.72	5.06	27	0.94	8
CSO153	Cooper Street	41.65	15.59	56	1.44	8

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

CSO LTCP
Project Fact Sheet

LTCP Project Number: *L_SO_MF_083_M_09B_B_A_8*



Integrated Overflow Abatement Plan

Vol. 2 - Final CSO Long Term Control Plan

South Fork Beargrass Creek
SolutionID # L_SO_MF_083_M_09B_B_A_8
Lexington Rd and Payne St Storage Basin

Preliminary - For Budget Development Only

Legend

- PS Proposed Pump Station Solution
- Active CSO
- Eliminated CSO
- PS Pump Station
- Proposed Pipe Solution
- Force Main
- Collector < 12"
- Interceptor => 12"
- Combined Sewer Pipe
- Streams
- Proposed Storage Solution
- 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 400 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

7.31 MG
Underground, Covered, Off-Line Storage Basin

CSO082 CSO080 CSO153 CSO121 CSO141 CSO120 CSO118 CSO119 CSO083 CSO084

S CLAY ST · S JOHNSON ST · S WENZEL ST · S CAMPBELL ST · S SHELBY ST · SHELBY STREET MALL · E MARKET ST · NANNY GOAT STRUT · BALLARD ALY · BALLARD ST · MARSHALL ST · CLARKSDALE ST · E MADISON ST · SPRINGER ALY · E GRAY ST · FINZER ST · VINE ST · BRENT ST · MERCY WAY · ST ANTHONY PL · CAVE HILL RD · ROGERS ST · RUBEL AVE · LEXINGTON RD · BARRET AVE · HULL ST · BISHOP ST · COOPER ST · NEON WAY · FERN ST · PINE ST · PAYNE ST

MIDDLE FORK BEARGRASS CREEK · SOUTH FORK BEARGRASS CREEK

MSD

Metropolitan Sewer District

ATTACHMENT B

Project Name: Lexington Road and Payne Street Storage Basin

Project Type: Off-Line Storage

Rec Stream: Middle Fork Beargrass Creek

Project Description: This project includes an 8.18 MG off-line covered storage basin for CSO083, 84, 118, 119, 120, 121, 141, 153 & 082 to reduce overflows to zero overflows per typical year. The basin will require an 16.46 MGD PS to return the stored flow to the interceptor.

Design Assumption: Basins are designed to the largest overflow event volume, resulting in zero CSO overflows in a typical year. The peak flowrate is evaluated to compare gravity vs. pumped conveyance. Design for pump-back is 24 hours. Type of basin based on hydraulics and surroundings.

Capital Cost: $28,102,000

Capital Benefit/Cost: 67.61

Present Worth Benefit Cost: 75.46

		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
CSO082	BGI AT BGC	25.31	39	7.11	31
CSO083	BRENT ST & BROADWAY CONNECT	0.00	0	0.00	0
CSO084	BRENT ST @ BGC	3.27	18	3.26	18
CSO118	REG NO 15 - E BRDWY	41.27	33	38.88	33
CSO119	BRENT STREET SEWER	4.24	29	4.02	29
CSO120	PHOENIX HILL SEWER	15.51	51	15.36	52
CSO121	REG NO 18 - GREEN ST	1.06	6	0.92	6
CSO141	BAXTER AVE @ BGC	0.36	38	0.36	38
CSO153	COOPER STREET	9.72	47	8.63	46

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.

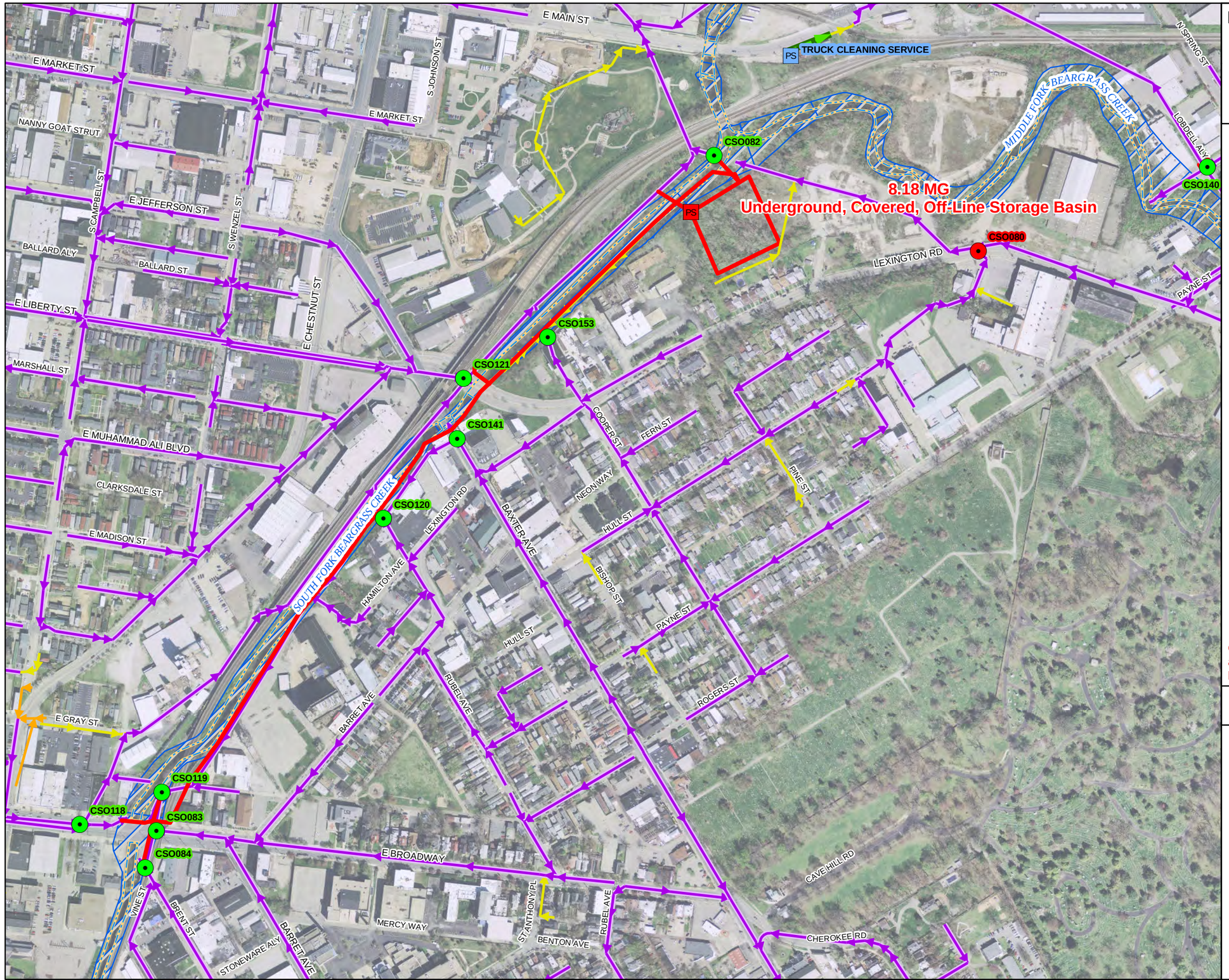
Integrated Overflow Abatement Plan

Vol. 2 - Final CSO Long Term Control Plan

South Fork Beargrass Creek

Lexington Rd and Payne St Storage Basin

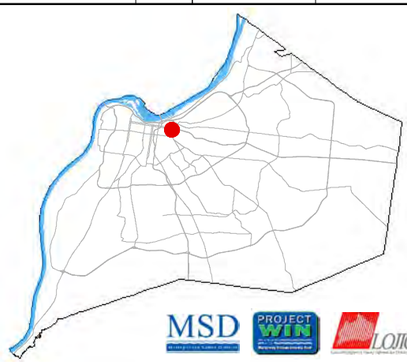
Preliminary - For Budget Development Only



- 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 = 400 feet	N	Aerial Date: 2009	Map Revision: April 9, 2012



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

August 17, 2012

Chief, Environmental Enforcement Section
Environmental and Natural Resources Division
U.S. Department of Justice
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Jeff Cummins, Acting Director
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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: Logan Street and Breckenridge Street Storage Basin
Minor Project Modification
IOAP Project No. L_SO_MF_092_M_09B_B_D_8
DOJ Case No. 90-5-1-1-08254

Attention Chiefs and Director:

MSD is providing advanced notification of a proposed minor project modification to the Logan Street and Breckenridge Street Storage Basin project (IOAP Project No. L_SO_MF_092_M_09B_B_D_8). This modification is part of an overall adaptive management review of the approved 2009 IOAP that will be documented in the proposed 2012 IOAP Modification to be formally submitted in 2013. No action is requested at this time.

2009 IOAP Project Description

The original Logan Street and Breckenridge Street Storage Basin project involved the construction of an 11.83 million gallon (MG) storage basin to be completed by December 31, 2017, with an eight overflows per typical year level of control.

Proposed Project Modification

The project modification involves the construction of a 16.6 MG storage basin to be completed by December 31, 2017, with an eight overflows per typical year level of control.

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. No action is requested at this time.

Technical Justification

A review of project approach and benefit/cost results indicated that the elimination of the Calvary Creekside Storage Basin (IOAP Project No. L_SO_MF_097_M_09B_B_D_8) and consolidation of its storage volume into the Logan Street and Breckenridge Street Storage Basin would prove to be a more cost-effective and constructible option than the original design for two separate storage basin projects.

Since the last IOAP submittal, additional flow monitors have been installed in the system. 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.

Based on the results of the re-calibration and the combination of the Calvery Creekside project, a level of control analysis was conducted on the Logan Street and Breckenridge Street Storage Basin. The level of control analysis showed that the basin size of 16.6 MG would limit the number of overflows to eight per year while providing the best benefit/cost ratio. Therefore, MSD proposes to change the Logan Street and Breckenridge Street Storage Basin solution from 11.83 MG to 16.6 MG. These improvements will maintain the same completion date of December 31, 2017, as the original solution.

For your reference, copies of the original project fact sheet and map from the IOAP are enclosed in Attachment A. A revised project fact sheet and map reflecting the project modifications 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 Ms. Angela Akridge, Project WIN Program Manager, or myself at (502) 540-6000.

Sincerely,

W. Brian Bingham
Regulatory Services Director

cc: G. Heitzman P. Purifoy
Attachments

MSD

Metropolitan Sewer District

ATTACHMENT A

CSO LTCP
Project Fact Sheet

LTCP Project Number: *L_SO_MF_092_M_09B_B_D_8*

Project Name: Logan Street and Breckinridge Street Storage Basin

Project Type: Off-Line Storage

Receiving Stream: South Fork Beargrass Creek

Project Description: This project includes a 11.83 MG underground covered storage basin for CSO091, 113, 117, 146, 149, & 152 to reduce overflows to 8 overflows per year. The facility will require a 11.83 MGD PS to return stored flow to the BGI.

Design Parameters / Assumptions: Basins are designed to the 9th overflow event volume, resulting in 8 CSO overflows/year. The 9th peak flowrate is evaluated to compare gravity vs. pumped conveyance. Design for pump-back is 24 hours. Type of basin based on hydraulics and surroundings.

Surrounding Area Land Use: The project is located within 'Public and Semi-Public', located at the corner of Logan St. and Breckinridge St. Adjacent land is 'Single Family Residential', 'Industrial' and 'Vacant and Undeveloped'.

Apparent Utilities Description: No major utilities conflict within the surrounding area of the proposed basin except for a few street lights

Capital Projects: 2007~Middle Fork Rehabilitation Phase 2 - Awaiting Start; 2013~RTC @ CSO146 & 117 - Awaiting Start

Advanced Site Restoration: N/A

Estimated Capital Cost (2008): $30,320,000

Capital Cost / Gallon Overflow Removed: $0.15

Weighted Benefit / Cost Ratio (Capital Cost): 44.12

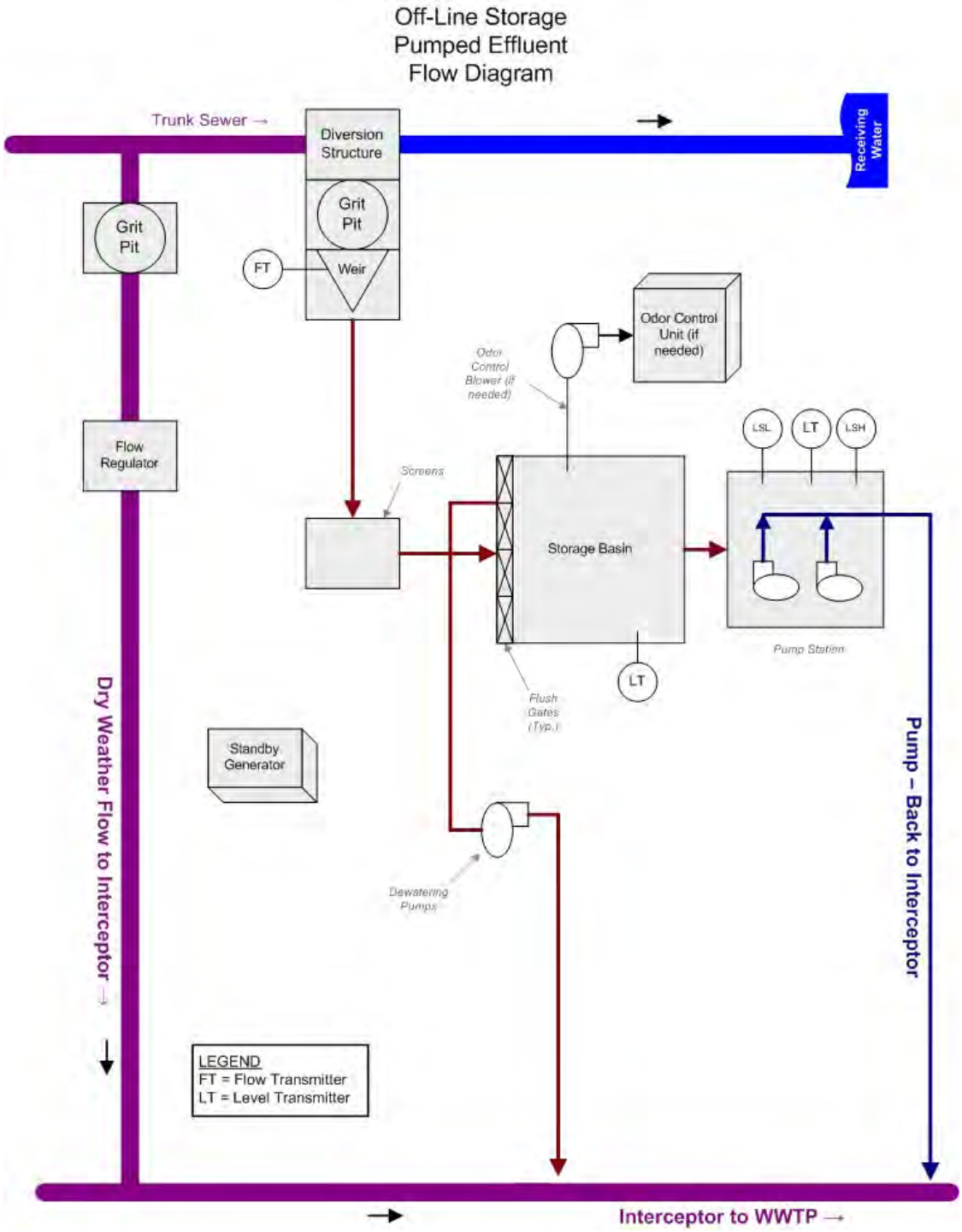
Overflow Points Addressed:

CSO Number	CSO Name	CSO Area (Acres)	2008 AAOV (MG / Yr)	# of Overflows / Yr	Post LTCP AAOV (MG/Yr)	Post LTCP # Overflows / Year
CSO091	Schiller Avenue Overflow	14.99	1.62	34	0.2	8
CSO113	Ellison Avenue Sewer	67.62	7.72	37	0.87	8
CSO117	Regulator Number 11 - Dry Run	74.17	92.76	39	12.67	8
CSO146	Sneads Branch Diversion	112.60	63.67	59	5.34	8
CSO149	Dry Run Diversion	226.53	56.35	37	5.96	8
CSO152	Regulator Number 7- Southeastern	260.56	75.35	51	7.37	8

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

CSO LTCP
Project Fact Sheet

LTCP Project Number: *L_SO_MF_092_M_09B_B_D_8*



Integrated Overflow Abatement Plan

Vol. 2 - Final CSO Long Term Control Plan

South Fork Beargrass Creek

SolutionID # L_SO_MF_092_M_09B_B_D_8

Logan St and Breckinridge St Storage Basin

Preliminary - For Budget Development Only

Legend

- PS — Proposed Pump Station Solution
- Active CSO
- Eliminated CSO
- PS — Pump Station
- Proposed Pipe Solution
- Force Main
- Collector < 12"
- Interceptor => 12"
- Combined Sewer Pipe
- Streams
- Proposed Storage Solution
- 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 400 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

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MSD

Metropolitan Sewer District

ATTACHMENT B

Project Name: Logan and Breckinridge Street Storage Basin

Project Type: Off-Line Storage

Rec Stream: South Fork Beargrass Creek

Project Description: This project includes a 16.6 MG underground covered storage basin to reduce overflows for a group of CSOs to 8 overflows per typical year.

Design Assumption: Basins are designed to the 9th overflow event volume, resulting in 8 CSO overflows per typical year. The 9th peak flowrate is evaluated to compare gravity vs. pumped conveyance. Design for pump-back is 24 hours. Type of basin based on hydraulics and surroundings.

Capital Cost: $52,165,000

Capital Benefit/Cost: 55.09

Present Worth Benefit Cost: 61.19

		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
CSO091	SCHILLER AVE OVFL	2.83	55	2.83	55
CSO097	CANTONMENT SIPHON NO 2	10.50	34	6.74	33
CSO106	ROYAL - NEFF	0.28	12	0.27	12
CSO110	REG NO 3 - GOSS AVE	9.56	33	7.45	33
CSO113	ELLISON AVENUE SEWER	4.79	19	4.71	18
CSO117	REG NO 11 - DRY RUN	47.87	35	46.66	35
CSO137	CALVARY CEMETARY	2.33	23	2.28	23
CSO146	SNEADS BRANCH DIVERSION	57.83	34	57.29	34
CSO148	EASTERN PKWY DIVERSION	1.11	22	1.10	22
CSO149	DRY RUN DIVERSION	45.77	29	44.82	29
CSO151	REG NO 5 - CASTLEWOOD	81.39	54	67.35	52
CSO152	REG NO 7 - SOUTHEASTERN	175.41	57	173.90	57

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
SolutionID # L_SO_MF_092_M_09B_B_D_8
Logan St and Breckinridge St Storage Basin

Preliminary - For Budget Development Only

16.6 MG
Underground, Covered, Off-Line Storage Basin

SNEADS BRANCH S&F PUMP STATION

- 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 = 700 feet	N	Aerial Date: 2009	Map Revision: April 9, 2012

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

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August 17, 2012

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

Subject: Nightingale Pump Station Replacement and Off-line Storage
Minor Project Modification
IOAP Project No. L_SO_MF_018_S_03_A_A
DOJ Case No. 90-5-1-1-08254

Attention Chiefs and Director:

MSD is providing advanced notification of a proposed minor project modification to the Nightingale Pump Station Replacement project (IOAP Project No. L_SO_MF_018_S_03_A_A). This modification is part of an overall adaptive management review of the approved 2009 IOAP that will be documented in the proposed 2012 IOAP Modification to be formally submitted in 2013. No action is requested at this time.

2009 IOAP Project Description

The Nightingale Pump Station Replacement project entailed the upgrade of the Nightingale Pump Station from 27 million gallons per day (MGD) to 60 MGD with a final completion date of December 31, 2016.

Proposed Project Modification

The project modification involves the replacement of the Nightingale Pump Station with a new 33 MGD facility and the construction of a 2.7 million gallons (MG) off-line storage basin. The sizing of the new pump station and off-line storage will mitigate existing wet weather issues to a zero overflow per year level of control and an accelerated completion date of December 31, 2015.

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. No action is requested at this time.

Technical Justification

The project was modified due to the re-calibrated, combined sewer model. The Calvary Creekside Storage Basin downstream of the Nightingale Pump Station is proposed to be eliminated. In addition, capacity constraints downstream of the Nightingale force main prohibits upgrades to the station in excess of 33 MGD. The 33 MGD station upgrade and 2.7 MG of off-line storage provides the optimal combination of pumping and storage to mitigate CSO 018 to the appropriate level of control.

For your reference, copies of the original project fact sheet and map from the IOAP are enclosed in Attachment A. A revised project fact sheet and map reflecting the project modifications 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 Ms. Angela Akridge, Project WIN Program Manager, or myself at (502) 540-6000.

Sincerely,

W. Brian Bingham
Regulatory Services Director

cc: G. Heitzman P. Purifoy

Attachments

MSD

Metropolitan Sewer District

ATTACHMENT A

CSO LTCP
Project Fact Sheet

LTCP Project Number: *L_SO_MF_018_S_03_A_A*

Project Name: Nightingale PS Replacement

Project Type: Pump Station Modification

Receiving Stream: Lower Beargrass Creek

Project Description: This project replaces the existing 27MGD NPS with a new 60 MGD NPS. Project includes 5780 LF of 42" force main.

Design Parameters / Assumptions: Pump Station is designed to divert flows from BGI and BGIR to the Southwestern Outfall.

Surrounding Area Land Use: This project area is located within 'Vacant & Undeveloped' property and southwest of CSO018.

Apparent Utilities Description: Proposed piping passes over gas, electric, and water lines

Capital Projects: 2007~Middle Fork Rehab Phase 2 - Awaiting Start

Advanced Site Restoration: The new pump station will incorporate green & LEED elements, plus include stream restoration adjacent to this facility. Though the hydraulic model predicts 0 CSO overflows, any relief structure will be designed to minimize erosion potential.

Estimated Capital Cost (2008): $15,710,000

Capital Cost / Gallon Overflow Removed: N/A

Weighted Benefit / Cost Ratio (Capital Cost): N/A

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
CSO018	Nightingale Pump Station	0.00	18.69	13	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_018_S_03_A_A

Nightingale Pump Station Replacement

Preliminary - For Budget Development Only

Legend

- Proposed Pump Station Solution
- Active CSO
- Eliminated CSO
- Pump Station
- Proposed Pipe Solution
- 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 700 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

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Metropolitan Sewer District

ATTACHMENT B

Project Name: Nightingale Pump Station Replacement & Storage

Project Type: Pump Station Modification & Offline Storage

Rec Stream: South Fork Beargrass Creek

Project Description: This project replaces the existing 27 MGD NPS with a new 33 MGD NPS and 2.7 MG in storage. Sewer rehabilitation upstream, including the Camp Taylor SSES, will performed on the appropriate sections of sewer line upstream of the station, which effect wet weather reaction. The CSO weir will be reconstructed and possibly raised to increase in-line storage. Optimization of storage between Nightingale and Logan Street basins may also effect the final sizing of each. Project will control overflows to zero overflows in a typical year.

Design Assumption: Pump Station is designed to divert flows from BGI and BGIR into the Upper Dry Run Trunk leading to the Southwestern Outfall. Real Time Control at BGI gate will function as it currently does. BGI Gate at SED will be closed, and UMFPS will be diverted to HLI. Sewershed upstream of NGPS will be rehabbed through SSES Work.

Capital Cost: $16,540,000

Capital Benefit/Cost: 14.63

Present Worth Benefit Cost: 15

		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
CSO018	NIGHTINGALE PS	107.04	23	18.70	16

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.

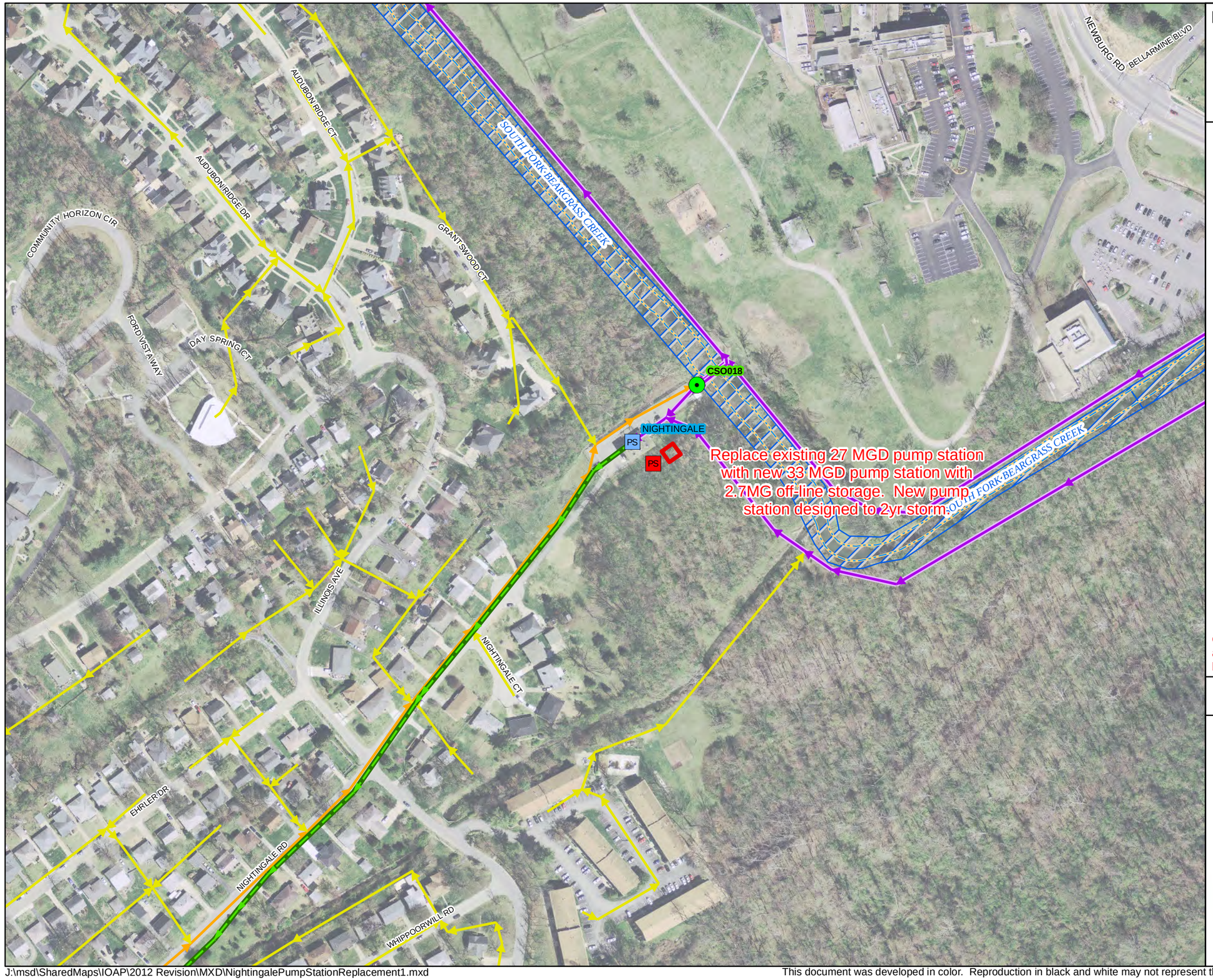
Integrated Overflow Abatement Plan

Vol. 3 - Sanitary Sewer Discharge Plan

South Fork Beargrass Creek

Nightingale Pump Station Replacement and Off-line Storage

Preliminary - For Budget Development Only



- Active CSO
- Eliminated CSO
- Documented SSO
- Suspected SSO
- Haulop Locations
- Proposed Pump Station Solution
- Pump Stations
- MSD
- 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 = 200 feet	N	Aerial Date: 2009	Map Revision: April 9, 2012

J:\msd\SharedMaps\IOAP\2012 Revision\MXD\NightingalePumpStationReplacement1.mxd

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Louisville and Jefferson County Metropolitan Sewer District
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August 17, 2012

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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: Outer Loop and Caven Ave Wet Weather Storage – Outer Loop Storage Basin Project Elimination
IOAP Project No. S_PO_WC_PC09_M_09B_C
DOJ Case No. 90-5-1-1-08254

Attention Chiefs and Director:

MSD is providing advanced notification of a proposed minor project modification to eliminate the Outer Loop Wet Weather Storage project (IOAP Project No. S_PO_WC_PC09_M_09B_C). This modification is part of an overall adaptive management review of the approved 2009 IOAP that will be documented in the proposed 2012 IOAP Modification to be formally submitted in 2013. No action is requested at this time.

2009 IOAP Project Description

The original 2008 IOAP project for this basin included the construction of a 1.42 million gallon (MG) off-line underground covered storage basin located behind the Meijer Store at Preston Highway and the Gene Snyder Freeway that would require a small pump station to return stored flow to the interceptor.

Project Elimination

MSD proposes to eliminate this project. Improved modeling and calibration support this proposal.

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. No action is requested at this time.

Technical Justification

Based on 2008 calibration of the Pond Creek model, the Outer Loop storage basin was proposed to alleviate suspected surcharging in the 36" diameter interceptor running along Fish Pool Creek during the 2-YR (1.82-inch) cloudburst storm. Monitoring, according to Sewer Overflow Response Protocols (SORP), over the past 6 years has indicated that no overflows have occurred along this interceptor since the IOAP submittal. . Additionally, in 2010, the Pond Creek model was re-calibrated to new flow monitoring data and two storm events were used to calibrate the model. Based on the re-calibration and no reported overflows, it has been determined that the storage basin is not necessary.

For your reference, a copy of the original project fact sheet and map from the 2009 IOAP are enclosed in Attachment A.

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: G. Heitzman P. Purifoy

Attachments

MSD

Metropolitan Sewer District

ATTACHMENT A

SSO SSDP
Project Fact Sheet

SSO Project Number:	S_PO_WC_PC09_M_09B_C
Project Name:	Outer Loop and Caven Ave. Wet Weather Storage 2 - Outer Loop Wet Weather Storage
Modeled Area:	Pond Creek
Branch or SSO ID:	PC09
Project Type:	Off-line Storage
Receiving Stream:	Pond Creek and Mud Creek
Project Description:	This alternative includes offline, pumped storage (closed 1.42 MG) behind the Meijer on Preston Highway. This facility may be necessary to alleviate future predicted overflows caused by upstream IOAP projects. The schedule allows for future consideration and investigation of alternate locations as well as re-evaluation of facility need based on future flow monitoring. If monitoring and modeling in the future proves this facility is not needed, documentation of the analysis will be submitted to appropriate regulatory agencies.
Reason for Overflow:	System capacity
Design Parameters / Assumptions:	This solution is based on a 1.82 inch cloudburst rain event
Project Constraints:	The excavation at the Meijer basin will occur in rock. Depth of rock at site is unknown.
Estimated Capital Cost (2008 dollars):	$4,280,000
Weighted Benefit/Cost Ratio (Present Worth):	7.08

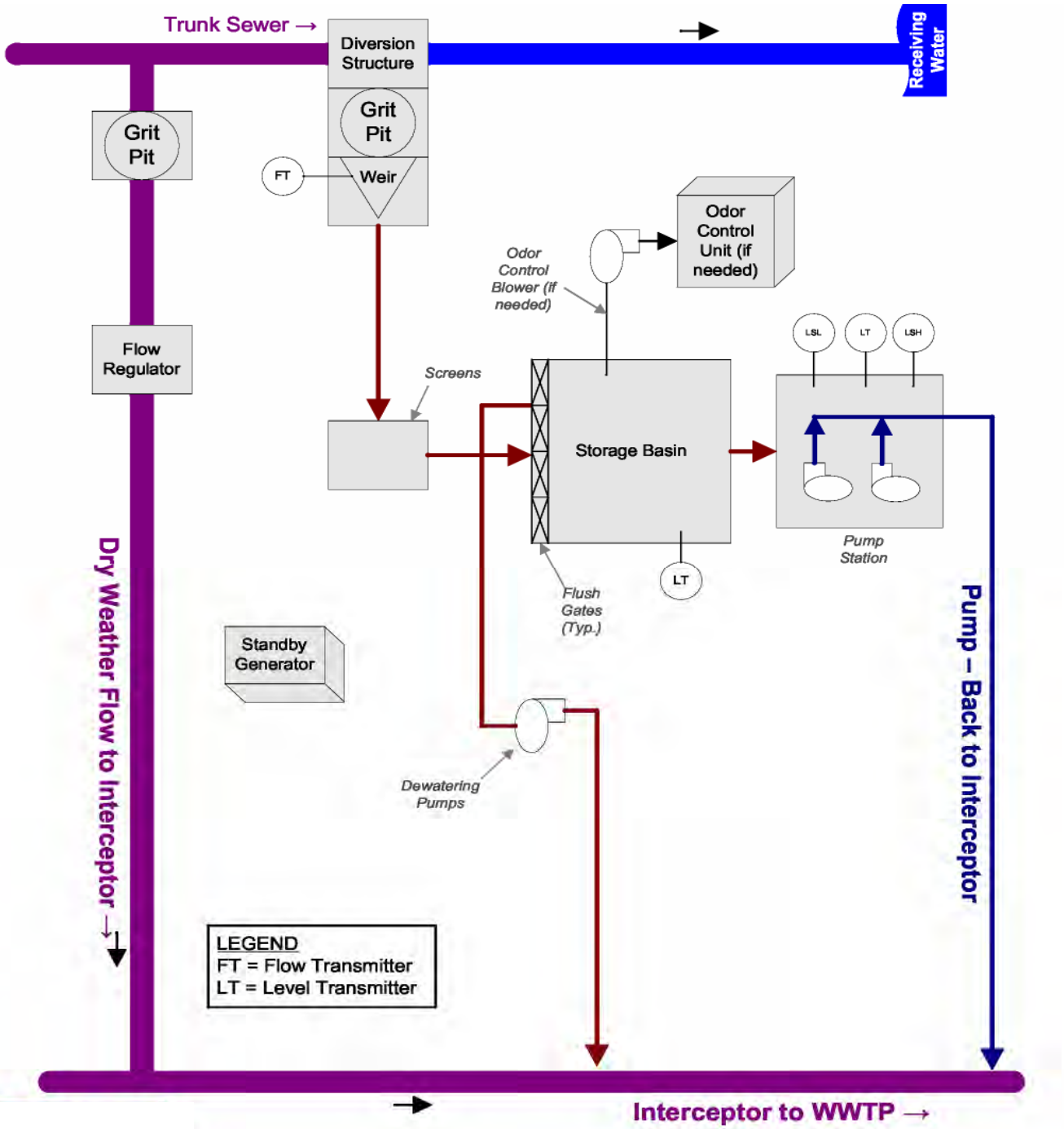
Overflow Points Addressed:

SSO	SSO Name	Service Area	Overflow Type	Discharge To	Average Overflow / Incident (gallons)
17724	1096 Springview Drive	West County	Manhole	Ditch	33
27116	10306 Caven Avenue	West County	Manhole	Stream	Suspected-no data
70212	1095 Springview Drive	West County	Manhole	Stream	Suspected-no data
MSD0133-PS	Caven Avenue	West County	Pumped	Ground	15,250

SSO SSDP
Project Fact Sheet

SSO Project Number: S_PO_WC_PC09_M_09B_C

Off-Line Storage
Pumped Effluent
Flow Diagram



Integrated Overflow Abatement Plan

Vol. 3 - Sanitary Sewer Discharge Plan

Pond Creek Sewershed

Solution ID # S_PO_WC_PC09_M_09B_C

Outer Loop & Caven Ave Wet Weather Storage 2

Outer Loop Wet Weather Storage

Preliminary - For Budget Development Only

Legend

- Documented SSO
- Suspected SSO
- Haul Operation
- Proposed Pump Station Solution
- Pump Station
- WWTP
- Proposed Pipe Solution
- Force Main
- Collector < 12"
- Interceptor => 12"
- Combined Sewer Pipe
- Proposed Off-line Storage
- Road
- Streams
- Floodway
- Small WWTP Service Area
- Large WWTP Service Area
- CSO Area
- Metro Parks

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" X 17" paper

Some boundaries are uniquely symbolized within the map.

Map Revision
May 07, 2009

Aerial Date: 2006

N

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MSD

Metropolitan Sewer District

ATTACHMENT B

Project Eliminated or Combined with Another

No Attachment B

Louisville and Jefferson County Metropolitan Sewer District
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August 17, 2012 (Revised September 20, 2012)

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Chief, Water Programs Enforcement Branch
Water Management Program
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 providing advanced notification 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 modification is part of an overall adaptive management review of the approved 2009 IOAP that will be documented in the proposed 2012 IOAP Modification to be formally submitted in 2013. No action is requested at this time.

2009 IOAP Project Description

The Southwestern Parkway Storage Basin project entailed the construction of 5.08 million gallons (MG) of offline storage coupled with 8.8 MG of in-line storage from two facilities to be constructed within the Western Outfall and the Northwestern Interceptor to a zero overflow per typical year level of control. The project completion date was set at December 31, 2018.

Proposed Project Modification

Due to the re-calibration of the sewer hydraulic model, the project modification includes the construction of 11.07 MG of offline storage along with the 8.8 MG of in-line storage at the two facilities described above with the project deadline remaining at December 31, 2018. The level of control is higher at zero overflows in a typical year based on a revised benefit/cost analysis.

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. No action is requested at this time.

Technical Justification

As part of an internal modeling review and re-calibration, MSD initiated a detailed review of the combined sewer system hydraulic model utilizing new sewer monitoring data. Upon completion of this review, MSD discovered that the Southwestern Parkway Storage Basin was undersized in the previous submittal.

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.

Based on the results of the re-calibration, a level of control analysis was conducted on the Southwestern Parkway Storage Basin. The level of control with the basin sized at 11.07 MG is higher at zero overflows in a typical year. Therefore, MSD proposes to change the Southwestern Parkway Storage Basin solution from 5.08 MG to 11.07 MG. This solution also includes the construction of an in-line control structure on the overflow line to create an additional 8.8 MG of in-line storage. These improvements will maintain the same completion date of December 31, 2018, as the original solution.

For your reference, a copy of the original project fact sheet and map from the 2009 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_OR_MF_105_M_13_B_A_0*

Project Name: Southwestern Parkway Storage Basin

Project Type: RTC with Storage

Receiving Stream: Ohio River

Project Description: This project includes a 5.08 MG underground covered concrete basin for CSO104, 105, and 189 and ILS in the WO and the NWI for a total of 8.8 MG using adjustable gates to reduced overflows to zero overflows per year.

Design Parameters / Assumptions: Available CSS storage capacity is based on June, 2001 BPR RTC Study. Flow Control assumes inflatable dams are available at the time of construction. Down-sized storage basin design with Flow Control assumptions are same as Off-line Storage technology.

Surrounding Area Land Use: Project is located within Shawnee Park and approximately 300' West of CSO189.

Apparent Utilities Description: No major utilities conflict

Capital Projects: 2013~Real Time Control @ Western Outfall (SOR1); 2012~Solids & Floatables CSO104; 2013~RTC - Western Interceptor - Awaiting Start

Advanced Site Restoration: The area of the proposed tank is park property. Current and previous public use or development proposals for these areas have identified potential environmental mitigations. The project budget includes a site restoration allowance.

Estimated Capital Cost (2008): $17,620,000

Capital Cost / Gallon Overflow Removed: $0.13

Weighted Benefit / Cost Ratio (Capital Cost): 28.75

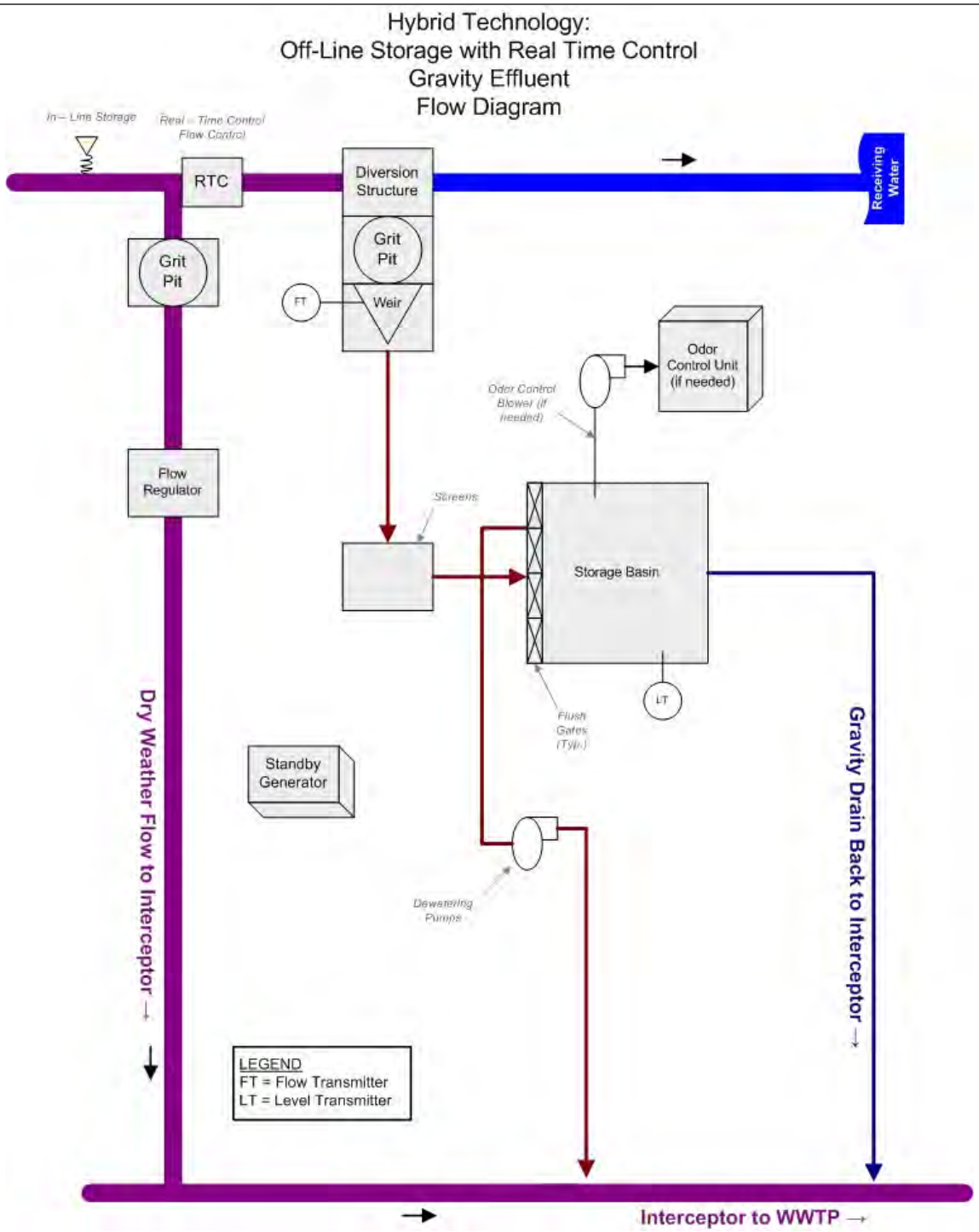
Overflow Points Addressed:

CSO Number	CSO Name	CSO Area (Acres)	2008 AAOV (MG / Yr)	# of Overflows / Yr	Post LTCP AAOV (MG/Yr)	Post LTCP # Overflows / Year
CSO104	Southwest Parkway Sewer @ Broadway	62.04	0.20	5	0	0
CSO105	Western Outfall @ Broadway	1,881.20	21.43	19	0	0
CSO189	Northwestern Sanitary Diversion	1,148.65	175.79	37	0	0

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

CSO LTCP
Project Fact Sheet

LTCP Project Number: *L_OR_MF_105_M_13_B_A_0*



Integrated Overflow Abatement Plan

Volume 2 - Final CSO Long-Term Control Plan

Ohio River
Solution ID # L_OR_MF_105_M_13_B_A_0
Southwestern Parkway Storage Basin

Preliminary - For Budget Development Only

Legend

- Active CSO
- Eliminated CSO
- Proposed Flow Control Solution
- Proposed Pump Station Solution
- Pump Station
- Proposed Pipe Solution
- Force Main
- Combined Sewer Pipe
- Flood Wall
- Proposed Storage Solution
- Floodway
- Metro Parks
- Streams

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

1 inch = 400 feet
Scaleable when printed on 11"x17" paper

Some boundaries are uniquely symbolized within the map.

Map Revision
Mar 13, 2009

Aerial Date: 2006

N

5.08 MG
Underground, Covered, Off-Line Storage Basin

Automated Gate on Northwestern Interceptor

Upgrade & Automation of Existing 60" FC Gate

Automated Gates on the Western Interceptor

CSO189
CSO104
CSO105
CSO210

SHAWNEE FLOOD PS

DIRTBOWL DR
W MUHAMMAD ALI BLVD
VERMONT AVE
S 43RD ST
RIVER PARK DR
S 44TH ST
ELLIOTT AVE
S 42ND ST
SHAWNEE LOOP RD
SHAWNEE PARK CIR
SHAWNEE PARK RD
SOUTHWESTERN PKY
S 47TH ST
VARBLE AVE
S 45TH ST
BREWSTER AVE
LORETTO AVE
DOERHOEFER AVE
GARLAND AVE
W BROADWAY
CECIL AVE

LTCP Map Series: I:\projects\10777_ MSD\40109_CSO LTCP Development\LTCP PROJECT\GIS\MXDs\11x17template_final_msd_19.mxd

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MSD

Metropolitan Sewer District

ATTACHMENT B

Project Name: Southwestern Parkway Storage Basin

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 WO and the NWI 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: $33,069,000

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

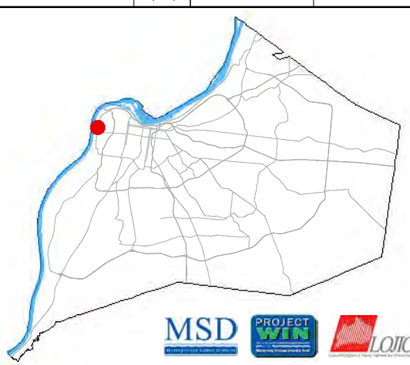
Southwestern Parkway Storage Basin

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

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