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

February 16, 2015

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

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

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

Attention Dennis and Jeff:

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

2009 IOAP Project Description

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

Project Modification Request

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

Technical Justification

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

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

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

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

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

Sincerely,

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

Cc: Paula Purifoy Greg Heitzman

Attachments

X:\...Final CSO190 minor mod February 2015 Modification.docx

Attachment A

MSD

CSO Project Fact Sheet

2012 IOAP Project Modification

PROJECT WIN

Project Name: 18th and Northwestern Pky. Storage Basin

Project Number: L_OR_MF_190_S_09B_B_A_8

Project Type: Off-Line Storage

Rec Stream: Ohio River

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

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

Capital Cost: $4,486,000

Capital Benefit/Cost: 52.79

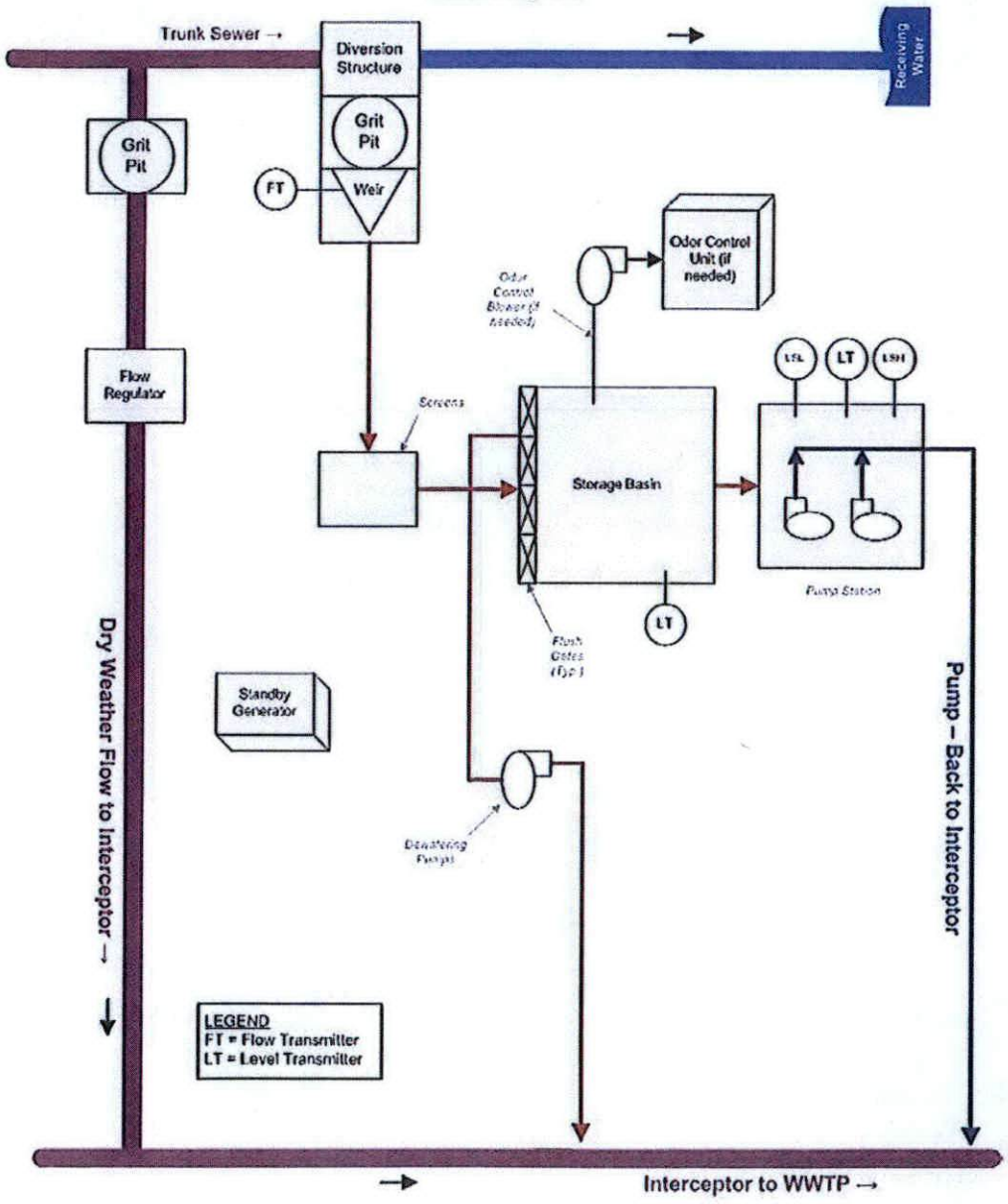
Present Worth Benefit Cost: 54.33

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

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

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

Off-Line Storage Pumped Effluent Flow Diagram



Integrated Overflow Abatement Plan

Vol. 2 - Final CSO Long Term Control Plan

Ohio River

18th St & Northwstern Pky Storage Basin

Preliminary - For Budget Development Only

- Active CSO
- Eliminated CSO
- Proposed Pump Station Solution
- Pump Stations
- Proposed Pipe Solution
- Combined Sewer Pipe
- Force Main
- Collector < 12"
- Interceptor >= 12"
- Drainage Mains
- Proposed Storage Solution
- Streams
- Floodway
- Jefferson County Boundary

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

1 inch = 100 feet	N	Aerial Date: 2009	Map Revision: April 9, 2012

J:\msd\SharedMaps\IOAP\2012 Revision\MXD\18thSt_and_NorthwesternPky_Storage_Basin.mxd

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

Attachment B

MSD

CSO Project Fact Sheet

2012 IOAP Project Modification

Project Name: CSO190 Green Infrastructure Solution

Project Number: L_OR_MF_190_S_09B_B_A_8

Project Type: Green Infrastructure

Rec Stream: Ohio River

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

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

Capital Cost: $4,110,000

Capital Benefit/Cost: 72.75

Present Worth Benefit Cost: 104.45

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

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

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

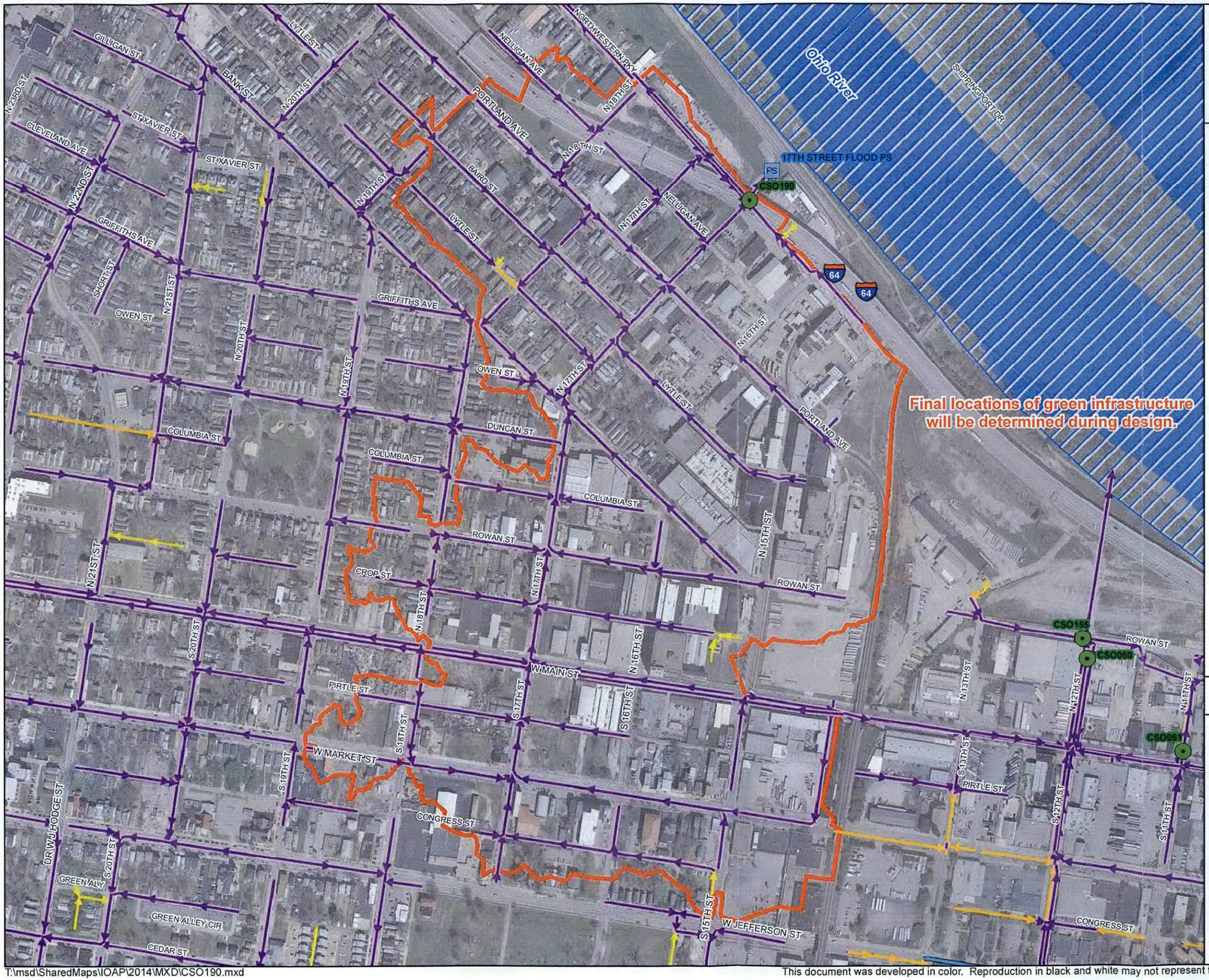
Integrated Overflow Abatement Plan

Vol. 2 - Final CSO Long Term Control Plan

Ohio River

CSO190 Green Infrastructure Solution

Preliminary - For Budget Development Only

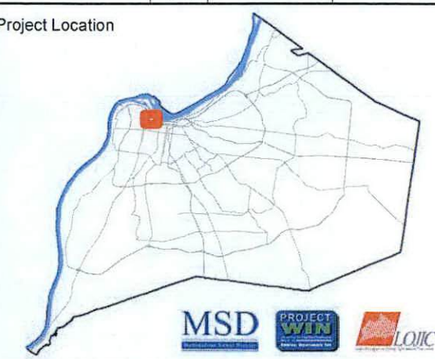


- Active CSO
- Eliminated CSO
- Pump Stations
- Combined Sewer Pipe
- Force Main
- Collector < 12"
- Interceptor >= 12"
- Drainage Mains
- Streams
- Jefferson County Boundary
- Floodway
- CSO 190 basin boundary

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

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

Project Location



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61 Forsyth St., SW
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Jeff Cummins, Director
Division of Enforcement
Department for Environmental Protection
300 Fair Oaks Lane
Frankfort, KY 40601

Subject: Chenoweth Hills WQTC Elimination, Chenoweth Run and Chippewa PS Improvements
Minor Project Modification
IOAP Project No. S_JT_JT_NB01A_M_03_C
DOJ Case No. 90-5-1-1-08254

Attention Dennis and Jeff:

MSD is requesting approval of a proposed minor project modification to the Chenoweth Hills WQTC Elimination & PS Improvements project (IOAP Project No. S_JT_JT_NB01A_M_03_C). This modification is part of an overall adaptive management review of the approved 2012 IOAP Modification.

2009 IOAP Project Description

The Chenoweth Hills WQTC Elimination & PS Improvements project originally involved upsizing the pumps at the Chenoweth Run Pump Station, and upsizing 8,030 LF of force main. Existing sewers were to be upsized and 1,995 LF of new sewer installed to allow diversion of the Chenoweth Hills Water Quality Treatment Center (WQTC) flow. The project also proposed upgrades to the pumps at the Chippewa Pump Station. This project has an IOAP completion date of December 31, 2015.

Project Modification Request

The project modification proposed constructs 2,800 LF of 15-inch and 1,200 LF of 8-inch diameter gravity sewer to allow elimination of the Chenoweth Hills WQTC, and also eliminate (not upsizing) the Chenoweth Run and the Chippewa Pump Stations. This provides the same level of protection as the original project, but at a greatly improved level of reliability since two existing pump stations are eliminated. No change in project schedule is proposed.

Technical Justification

The expansion of the Chenoweth Hills Pump Station was required to eliminate the Chenoweth Hills WQTC and the Chippewa Pump Station required expansion to eliminate an SSO caused by pump station capacity limitations.

The original Chenoweth Hills WQTC Elimination Project was developed prior to the completion of the final Jeffersontown WQTC elimination plan submitted for regulatory review in March, 2010. It calls for diverting approximately one-third of the Jeffersontown WQTC flow south to the Cedar Creek WQTC, with the remainder of the flow diverted north to the Hikes Lane interceptor. Part of the infrastructure required for the diversion to the Cedar Creek WQTC was the construction of the Billtown Road Interceptor. This interceptor provides an outlet for the gravity sewer elimination of the Chenoweth Hills WQTC and the Chenoweth Hills and Chippewa Pump Stations. This solution provides the same 1.82-inch 3-hour cloudburst level of protection as the original project, but with greatly improved reliability since two pump stations are eliminated. Flows from all three sites will be diverted to the Cedar Creek WQTC.

For your reference, a copy of the current project fact sheet and map from the 2012 IOAP Modification are in Attachment A. A new project fact sheet and map reflecting the location of the new pipeline routes have been provided in Attachment B.

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

If you have questions or need additional information, please contact me at (502) 540-6000.

Sincerely,

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

cc: Greg Heitzman Paula Purifoy

Attachments

X:\...Final Chenoweth Hills WQTC Elimination February 2015 Modification.docx

Attachment A

SSO Project Fact Sheet
2012 IOAP Project Modification

Project Name	Chenoweth Hills WQTC Elimination & PS Improvements
Project Number	S_JT_JT_NB01A_M_03_C
Modeled Area	Jeffersontown
Branch or SSO ID	NB01A
Project Type	Pump Station & Force Main Upgrades
Receiving Stream	Chenoweth Run
Project Description	This alternative includes upgrading pumps at Chenoweth Run PS to pump 2.7 MGD and upsizing the entire 8,030 LF of force main to 12". Chenoweth Hills WQTC will be eliminated. Pumps at Chippewa PS ugraded to 0.15 MGD. Install 1,995 LF of new 15" sewer and replace 600 LF of 8" with 18" sewer pipe for Chenoweth Hills WQTC diversion.
Reason for Overflow	System capacity, siphon, and WQTC
Design Parameters	This solution is based on a 1.82 inch cloudburst rain event.
Project Constraints	N/A
Estimated Capital Cost	$3,140,000
Weighted Benefit/Cost Ratio	20.05

Asset ID	SSO Start Date	Volume (Gal)
MSD0263	1/13/2013	26700
MSD0263	1/13/2013	45000
92061	1/13/2013	1300
MSD0263	1/13/2013	600625
MSD0263A-PS	10/23/2007	20000
MSD0263	10/6/2013	596
MSD0263	11/25/2010	77800
64096	11/26/2010	2600
MSD0263	12/1/2008	35333
64096	12/24/2008	6575
92061	12/5/2011	680
MSD0263	12/5/2011	1200
MSD0263	12/5/2011	12000
MSD0263	12/8/2009	67535
MSD0263	2/11/2009	8143
92061	2/15/2001	500
92061	2/25/2011	45
64096	3/19/2008	250
MSD0196-PS	3/19/2008	55350
64096	3/9/2011	31250
MSD1043-PS	3/9/2011	4500
MSD0196-PS	4/12/2011	5
92061	4/12/2011	20300
64096	4/23/2011	182550
64096	4/27/2011	137000
MSD0263A-PS	4/4/2008	306000
MSD0196-PS	4/4/2008	81000

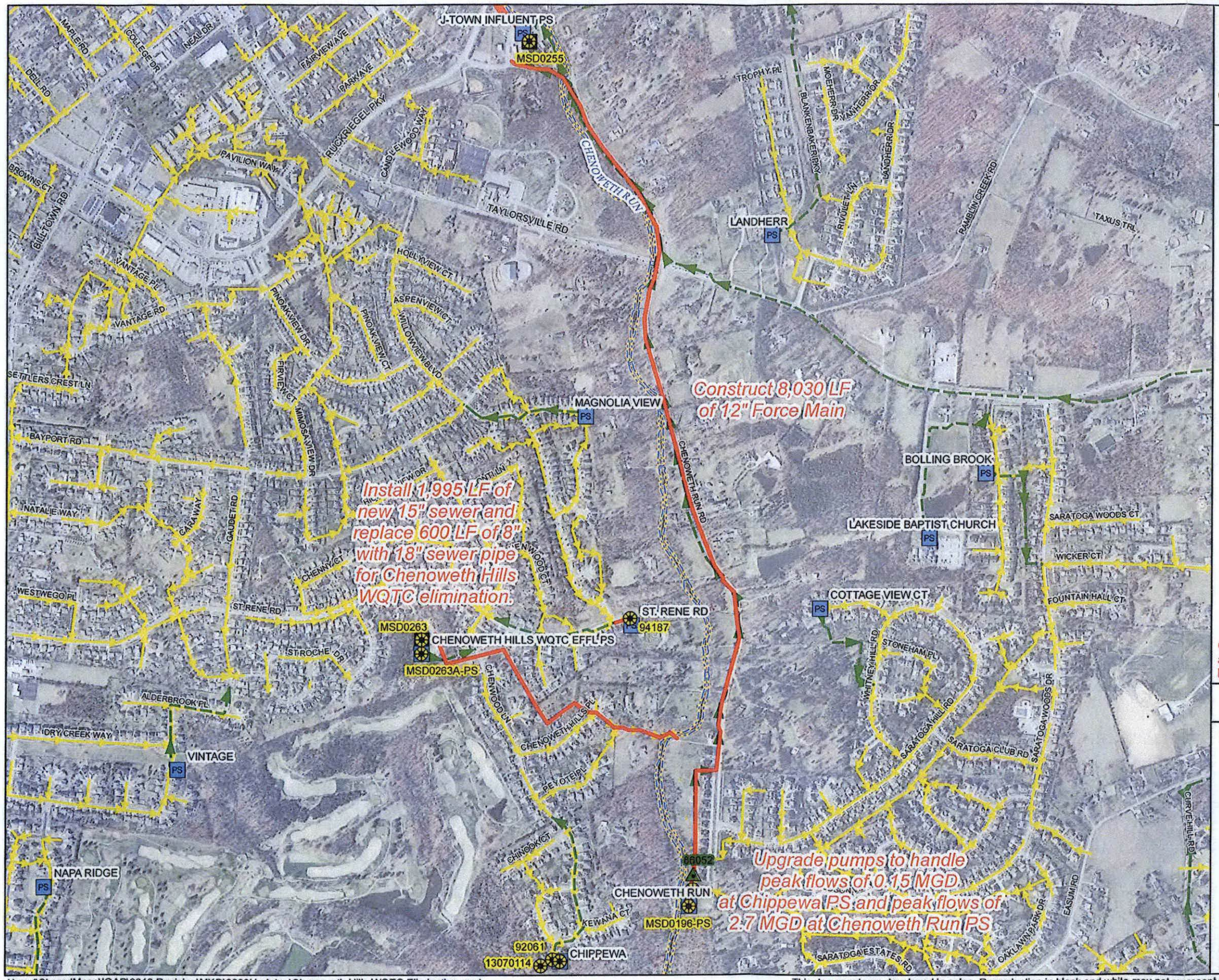
Integrated Overflow Abatement Plan

Vol. 3 - Sanitary Sewer Discharge Plan

Jeffersontown Sewershed

Chenoweth Hills WQTC Elimination, Chenoweth Run and Chippewa PS Improvements

Preliminary - For Budget Development Only

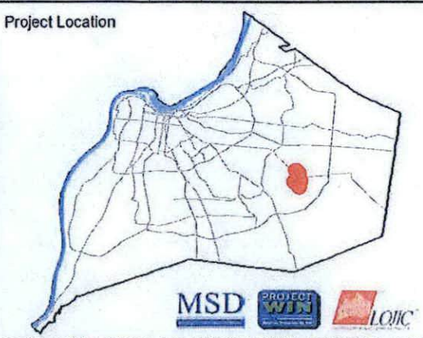


- Documented SSO
- Suspected SSO
- Haulop Locations
- Pump Stations
- Proposed Pipe Solution
- WQTC
- Combined Sewer Pipe
- Force Main
- Collector < 12"
- Interceptor >= 12"
- Streams
- Floodway
- Jefferson County Boundary

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

1 inch = 800 feet	N	Aerial Date: 2009	Map Revision: April 9, 2012

Project Location



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Attachment B

SSO Project Fact Sheet

2012 IOAP Project Modification

Project Name Elimintation of Chenoweth Hills WQTC, Chenoweth Run PS, and Chippewa PS

Modeled Area	Jeffersontown
Branch or SSO ID	NB01A
Project Type	Inline Storage & Pipe Upgrades
Receiving Stream	Chenoweth Run
Project Description	This alternative includes eliminating Chenoweth Hills WQTC, Chenoweth Hills PS, and Chippewa PS. Install 18,300 LF of new 36" sewer, 2800 LF of new 15" sewer for Chenoweth Hills WQTC diversion, and 1200 LF of new 8" gravity sewer to eliminate Chippewa pump station.
Reason for Overflow	System capacity, siphon, and WQTC
Design Parameters	This solution is based on a 1.82 inch cloudburst rain event.
Project Constraints	N/A
Estimated Capital Cost	$3,140,000
Weighted Benefit/Cost Rati	20.05

Asset-ID	SSO Start Date	Volume (Gal)
	No Data	No Data
64096	12/24/2008	6575
64096	6/23/2011	70000
64096	4/23/2011	182550
64096	3/9/2011	31250
64096	5/3/2011	235000
64096	11/26/2010	2600
64096	9/25/2006	0
64096	4/27/2011	137000
64096	7/29/2009	37500
64096	3/19/2008	250
92061	8/30/2005	300
92061	7/4/2008	6000
92061	5/2/2010	90750
92061	2/25/2011	45
92061	4/12/2011	20300
92061	12/5/2011	680
92061	5/13/2012	16750
92061	5/16/2008	5450
92061	2/15/2001	500
92061	1/13/2013	1300
MSD0196-PS	3/19/2008	55350
MSD0196-PS	4/12/2011	5
MSD0196-PS	4/4/2008	81000
MSD0263	11/25/2010	77800
MSD0263	12/5/2011	1200
MSD0263	12/5/2011	12000
MSD0263	1/13/2013	26700
MSD0263	10/6/2013	596

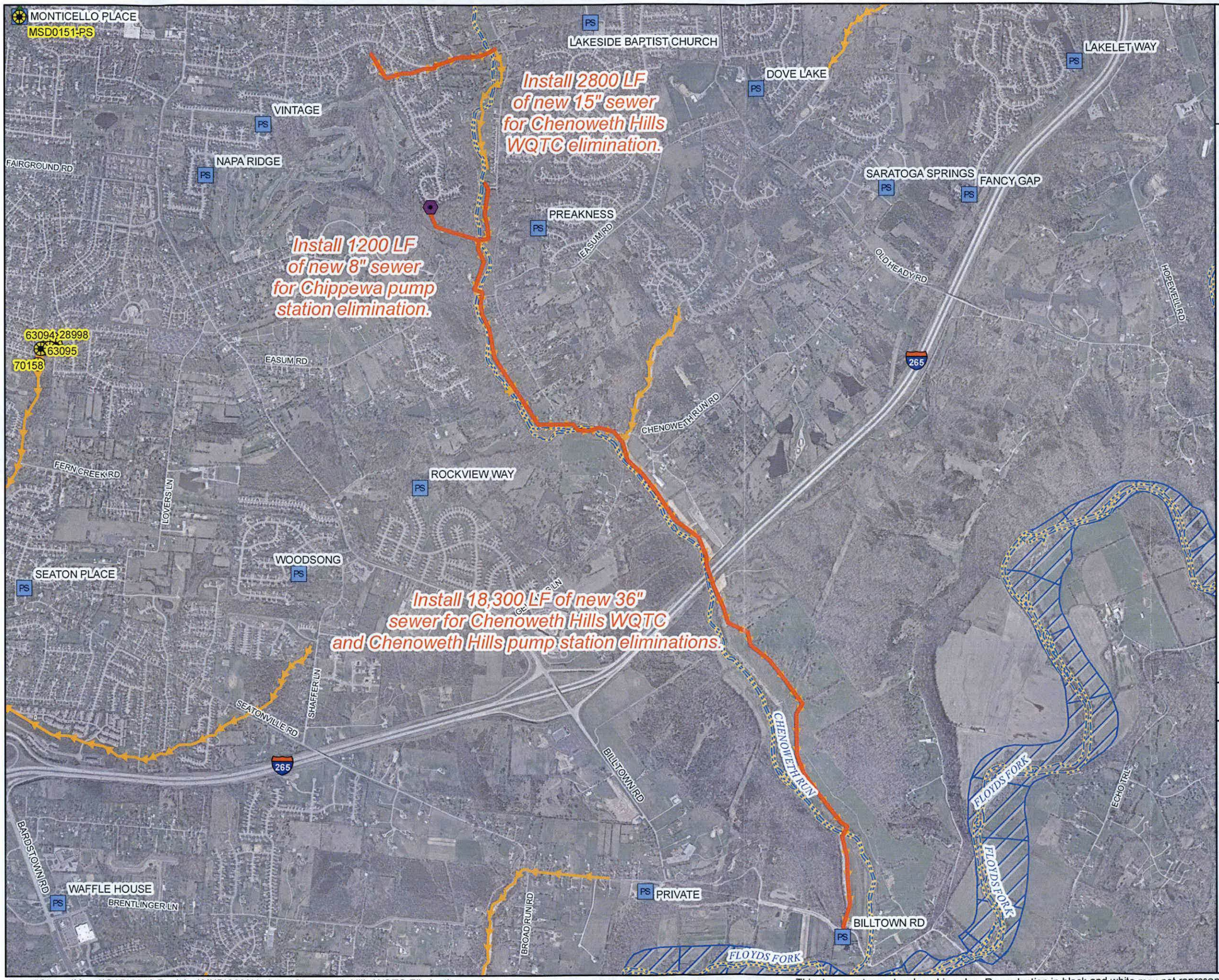
Integrated Overflow Abatement Plan

Vol. 3 - Sanitary Sewer Discharge Plan

Jeffersontown Sewershed

Chenoweth Hills WQTC, Chenoweth Run and Chippewa PS Eliminations

Preliminary - For Budget Development Only

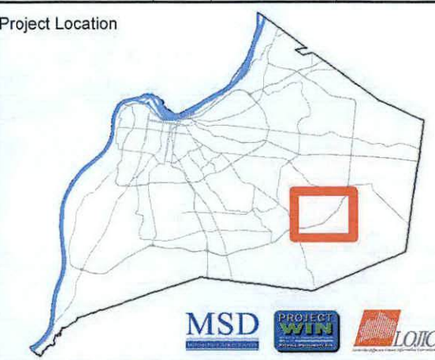


- Documented SSO
- Suspected SSO
- Haulop Locations
- Pump Stations
- Proposed Pipe Solution
- WQTC
- Interceptor >= 12"
- Streams
- Floodway
- Jefferson County Boundary

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

1 inch = 1,847 feet	N	Aerial Date: 2009	Map Revision: 11/17/2014

Project Location



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February 16, 2015

Dennis J. Sayre
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U.S. EPA Region 4
61 Forsyth St., SW
Atlanta, Georgia 30303

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

Subject: Goose Creek PS Phase 1 – Devondale Wet Weather Storage
Minor Project Modification
IOAP Project No. S_MI_MF_NB04_M_03_B
DOJ Case No. 90-5-1-1-08254

Attention Dennis and Jeff:

MSD is requesting approval of a proposed minor project modification to the Goose Creek PS Phase 1 – Devondale Wet Weather Storage project (IOAP Project No. S_MI_MF_NB04_M_03_B). This modification is part of an overall adaptive management review of the approved 2012 IOAP Modification, considering alternative opportunities not known when the IOAP was developed.

2009 IOAP Project Description

The Goose Creek PS Phase 1 – Devondale Wet Weather Storage project originally involved construction of a 0.5 million gallon (MG) covered wet weather storage basin at the Devondale Pump Station. This wet weather storage was intended to attenuate flow peaks that exceeded the capacity of the Devondale Pump Station, thereby eliminating the SSO at the pump station. This project has an IOAP completion date of December 31, 2024.

Project Modification Request

The project modification proposed eliminates the Devondale Pump Station by constructing 1,334 LF of new 12-inch diameter gravity sewer from the current pump station to the site of the existing Bancroft Water Quality Treatment Center (WQTC). MSD plans to eliminate the Bancroft WQTC as part of MSD's overall program to eliminate all small WQTCs. This will be accomplished by constructing a new 0.33 MGD pump station to eliminate the WQTC. A 0.25 MG wet weather storage basin at the Bancroft WQTC site will be constructed to attenuate wet weather peak flows. Flows from the Bancroft service area and the Devondale Pump Station service area will be consolidated and pumped through a 6-inch diameter force main back to the current discharge location of the Devondale Pump Station. Flows will be treated at the Morris Forman WQTC. No change in the project schedule is proposed.

Technical Justification

The original IOAP considered a variety of storage and pump station upgrades to eliminate the SSO at the Devondale Pump Station SITE. The selected solution in the IOAP was to provide off-line storage, based on the benefit-cost evaluation approach used in the IOAP. MSD's decision to eliminate all small WQTC(s) created the opportunity to consolidate the Devondale Pump Station elimination with the Bancroft WQTC elimination. Both facilities can be eliminated at a lesser expense with this consolidation. Based on MSD's current plans, the Devondale pump station will be eliminated by December 31, 2015, thereby eliminating the SSO at this location nine years earlier than originally proposed. This solution provides the same 1.82-inch 3-hour cloudburst level of protection as the original project with the added benefit of eliminating two aging facilities. All flows will be treated at the Morris Forman WQTC.

For your reference, a copy of the current project fact sheet and map from the 2012 IOAP Modification are in Attachment A. A new project fact sheet and map reflecting the pump station elimination have been provided in Attachment B.

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

If you have questions or need additional information, please contact me at (502) 540-6000.

Sincerely,

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

cc: Greg Heitzman Paula Purifoy

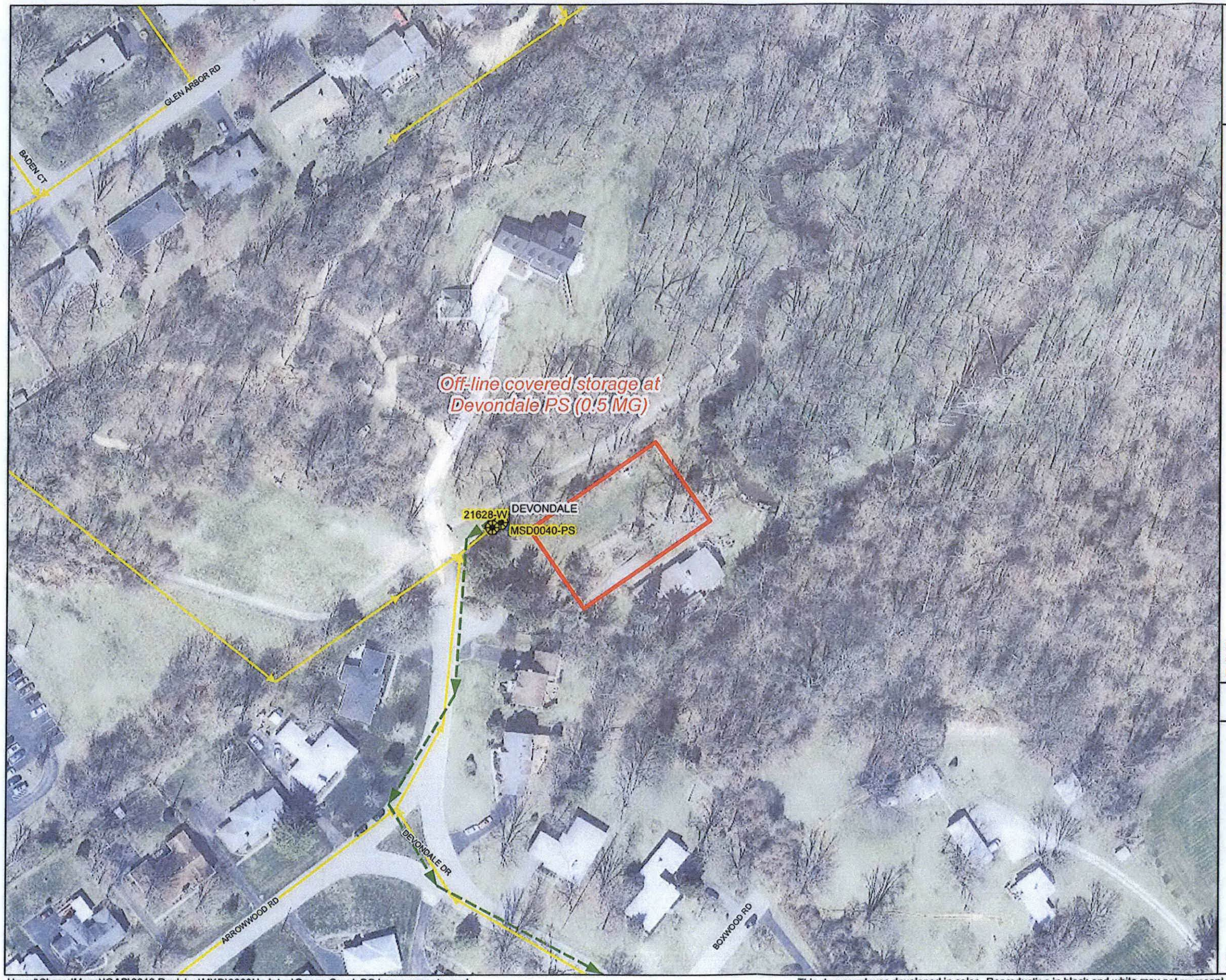
x:\..Final Devondale PS elimination February 2015 Modification.docx

Attachments

Attachment A

Project Name	Goose Creek PS Improvements & Wet Weather Storage 1 - Devondale Wet Weather Storage
Project Number	S_MI_MF_NB04_M_03_B
Modeled Area	Middle Fork Beargrass Creek
Branch or SSO ID	MF04
Project Type	Storage & Force Main Upgrades
Receiving Stream	Goose Creek
Project Description	Construct 0.5 MG covered storage basin near Devondale Pump Station.
Reason for Overflow	Pump station capacity
Design Parameters	This solution is based on a 2.25 inch cloudburst rain event.
Project Constraints	N/A
Estimated Capital Cost	$1,781,000
Weighted Benefit/Cost Ratio	11.00

Asset ID	SSO Start Date	Volume (Gal)
21628-W	1/1/2003	4500
21628-W	1/1/2003	4500
21628-W	1/1/2005	2000
MSD1024-PS	1/11/2014	5
43472	1/13/2013	16725
21628-W	1/24/2002	2000
MSD1024-PS	1/26/2012	52500
21628-W	1/3/2005	36000
21628-W	1/6/2005	30000
105936	10/6/2013	64000
43472	10/6/2013	37750
105936	11/17/2013	32500
43472	11/17/2013	6700
43472	11/22/2011	2520
21628-W	11/28/2011	28000
43472	11/28/2011	58500
21628-W	11/29/2001	400
43472	12/10/2012	1660
21628-W	12/15/2007	10800
21628-W	12/16/2000	0
21628-W	12/19/2002	8000
43472	12/21/2013	250
43472	12/22/2013	105500
43472	12/5/2011	9000
21628-W	12/5/2011	85500
105936	2/12/2013	100
43472	2/24/2011	15925
21628-W	2/25/2011	16475
21628-W	2/28/2011	1750
21628-W	2/6/2008	682500



Integrated Overflow Abatement Plan

Vol. 3 - Sanitary Sewer Discharge Plan

Middle Fork Sewershed
Goose Creek PS Improvements &
Wet Weather Storage 1
Devondale Wet Weather Storage

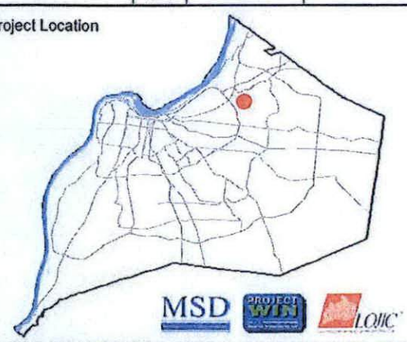
Preliminary - For Budget Development Only

- Documented SSO
- Suspected SSO
- Haulop Locations
- Pump Stations
- Proposed Pipe Solution
- WQTC
- Combined Sewer Pipe
- Force Main
- Collector < 12"
- Interceptor >= 12"
- Streams
- Proposed Storage Solution
- 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

Project Location



J:\msd\SharedMaps\IOAP\2012 Revision\MXD\2009Updates\Goose Creek PS Improvements.mxd

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Attachment B

SSO Project Fact Sheet
2012 IOAP Project Modification

Project Name Goose Creek PS Improvements & Wet Weather Storage 1 - Devondale Wet Weather Storage

Modeled Area	Middle Fork Beargrass Creek
Branch or SSO ID	MF04
Project Type	WQTC Elimination, Storage & Force Main Upgrades
Receiving Stream	Goose Creek
Project Description	This project eliminates the Devondale Pump Station by constructing 1,334 LF of new 12-inch diameter gravity sewer from the current pump station to the site of the existing Bancroft Water Quality Treatment Center (WQTC). The Bancroft WQTC will be eliminated by constructing a new 0.33 MGD pump station. A 0.25 MG wet weather storage basin at the Bancroft WQTC site will be constructed to attenuate wet weather peak flows. Flows from the Bancroft service area and the Devondale Pump Station service area will be consolidated and pumped through a 6-inch diameter force main back to the current discharge location of the Devondale Pump Station.
Reason for Overflow	Pump station capacity
Design Parameters	This solution is based on a 2.25 inch cloudburst rain event.
Project Constraints	N/A
Estimated Capital Cost	$1,781,000
Weighted Benefit/Cost Rati	11.00

Asset-ID	SSO Start Date	Volume (Gal)
105936	6/26/2013	122000
105936	10/6/2013	64000
105936	8/4/2009	1800
105936	4/4/2008	43200
105936	3/9/2011	326700
105936	4/12/2011	76500
105936	4/27/2011	417500
105936	6/27/2013	26000
105936	2/12/2013	100
105936	5/3/2011	268800
105936	4/24/2011	651000
105936	11/17/2013	32500
21628-W	8/4/2009	25000
21628-W	5/13/2002	18000
21628-W	9/2/2003	3500
21628-W	3/26/2002	6000
21628-W	3/19/2002	1000
21628-W	1/24/2002	2000
21628-W	12/16/2000	0
21628-W	1/3/2005	36000
21628-W	7/17/2004	10000
21628-W	11/29/2001	400
21628-W	12/19/2002	8000
21628-W	1/1/2003	4500
21628-W	1/1/2003	4500

Integrated Overflow Abatement Plan

Vol. 3 - Sanitary Sewer Discharge Plan

Middle Fork Sewershed
Goose Creek PS Improvements &
Wet Weather Storage 1
Devondale Wet Weather Storage

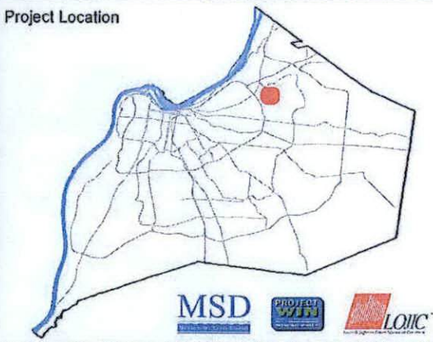
Preliminary - For Budget Development Only

- Documented SSO
- Suspected SSO
- WQTC
- Haulop Locations
- Pump Stations
- Proposed Pump Station Solution
- Proposed Gravity Sewer
- Proposed Force Main
- Collector < 12"
- Interceptor >= 12"
- Streams
- Proposed Storage Solution
- Floodway

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: 11/21/2014

Project Location



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

February 16, 2015

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

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

Subject: St. Rene Road Pump Station In-Line Storage
Minor Project Modification
IOAP Project No. S_FF_CH_NB01_S_09A_C_A
DOJ Case No. 90-5-1-1-08254

Attention Dennis and Jeff:

MSD is requesting approval of a proposed minor project modification to the St. Rene Road Pump Station In-Line Storage project (IOAP Project No. S_FF_CH_NB01_S_09A_C_A). This modification is part of an overall adaptive management review of the approved 2012 IOAP Modification, and in response to an opportunity that presented itself as a result of conditions not foreseen during development of the IOAP.

2009 IOAP Project Description

The St. Rene Road Pump Station In-Line Storage project originally involved replacing 42 LF of 8-inch diameter gravity sewer with 48-inch diameter pipe to provide in-line storage. This in-line storage was intended to attenuate flow peaks that exceeded the capacity of the St Rene Road Pump Station, thereby eliminating the SSO at the pump station. This project has an IOAP completion date of December 31, 2021.

Project Modification Request

The project modification proposed eliminates the St. Rene Road Pump Station by constructing approximately 700 LF of 15-inch diameter gravity sewer to the Upper Billtown Interceptor, which was constructed as part of the Jeffersontown Water Quality Treatment Center (WQTC) final elimination plan.

Technical Justification

The original IOAP considered a variety of storage and pump station upgrades to eliminate the SSO at the St. Rene Road Pump Station location. The selected solution in the 2009 IOAP was to provide in-line storage, based on the benefit-cost evaluation approach used in the IOAP.

The final Jeffersontown WQTC elimination plan was submitted for regulatory review in March, 2010. It calls for diverting approximately one-third of the Jeffersontown WQTC flow south to the Cedar Creek WQTC, with the remainder of the flow diverted north to the Hikes Lane interceptor. Part of the infrastructure required for the diversion to the Cedar Creek WQTC was the construction of the Upper Billtown Road Interceptor. Final alignment of this interceptor passes within 700 feet of the St. Rene Road Pump Station. Based on this alignment, the pump station could be eliminated with a lower life-cycle cost than the cost to construct the in-line storage and continue to operate the pump station indefinitely. A project was initiated to eliminate the pump station to avoid the cost of continued pump station operation. An additional benefit of the pump station elimination is the elimination of the SSO associated with the pump station.

The pump station was eliminated in September, 2014, thereby eliminating the SSO at this location more than seven years earlier than originally proposed.

For your reference, a copy of the current project fact sheet and map from the 2012 IOAP Modification are in Attachment A. A new project fact sheet and map reflecting the pump station elimination have been provided in Attachment B.

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

If you have questions or need additional information, please contact me at (502) 540-6000.

Sincerely,

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

cc: Greg Heitzman Paula Purifoy

x:\..Final St Rene PS elimination February 2015 Modification.docx

Attachments

Attachment A

SSO Project Fact Sheet
2012 IOAP Project Modification

Project Name	St. Rene Rd. PS Inline Storage
Project Number	S_FF_CH_NB01_S_09A_C_A
Modeled Area	Chenoweth Hills
Branch or SSO ID	CH01
Project Type	Inline Storage
Receiving Stream	Chenoweth Run
Project Description	This alternative includes replacing 42 LF of 8" with 48" pipe just upstream of the PS.
Reason for Overflow	Pump station capacity
Design Parameters	This solution is based on a 1.82 inch cloudburst rain event.
Project Constraints	N/A
Estimated Capital Cost	$30,000
Weighted Benefit/Cost Ratio	212.00

Asset ID	SSO Start Date	Volume (Gal)
94187	3/19/2008	4380

Integrated Overflow Abatement Plan

Vol. 3 - Sanitary Sewer Discharge Plan

Chenoweth Hills Sewershed

St. Rene Rd. PS Inline Storage

Preliminary - For Budget Development Only

- Documented SSO
- Suspected SSO
- Haulop Locations
- Pump Stations
- WQTC
- Proposed Pipe Solution
- Combined Sewer Pipe
- Force Main
- Collector < 12"
- Interceptor >= 12"
- TP Effluent Lines
- 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

Project Location

J:\msd\SharedMaps\IOAP\2012 Revision\MXD\2009Updates\St Rene Rd PS Inline Storage.mxd

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Attachment B

SSO Project Fact Sheet
2012 IOAP Project Modification

Project Name	St. Rene Rd. PS Elimination
Project Number	S_FF_CH_NB01_S_09A_C_A
Modeled Area	Chenoweth Hills
Branch or SSO ID	CH01
Project Type	Elimination
Receiving Stream	Chenoweth Run
Project Description	This alternative includes elimination of the pump station with a new 15" diameter sewer. Flow will be diverted to the Cedar Creek WQTC..
Reason for Overflow	Pump station capacity
Design Parameters	This solution is based on a 1.82 inch cloudburst rain event.
Project Constraints	N/A
Estimated Capital Cost	$30,000
Weighted Benefit/Cost Ratio	212.00

Asset ID	SSO Start Date	Volume (Gal)
94187	3/19/2008	4380

Integrated Overflow Abatement Plan

Vol. 3 - Sanitary Sewer Discharge Plan

Chenoweth Hills Sewershed

St. Rene Rd. PS Elimination

Preliminary - For Budget Development Only

- Documented SSO
- Suspected SSO
- Haulop Locations
- Pump Stations
- WQTC
- Proposed Pipe Solution
- Combined Sewer Pipe
- Force Main
- Collector < 12"
- Interceptor >= 12"
- TP Effluent Lines
- 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: Nov 12, 2014

Project Location

J:\msd\SharedMaps\IOAP\2012 Revision\MXD\2009Updates\St Rene Rd PS Elimination.mxd

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Louisville and Jefferson County Metropolitan Sewer District
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February 16, 2015

Dennis J. Sayre
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U.S. EPA Region 4
61 Forsyth St., SW
Atlanta, Georgia 30303

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

Subject: Prospect #3 – ORFM System Improvements
Minor Project Modification
IOAP Project No. S_OR_MF_NB04_M_03_B_B
DOJ Case No. 90-5-1-1-08254

Attention Dennis and Jeff:

MSD is requesting approval of a proposed minor project modification to the Prospect #3 – ORFM System Improvements project (IOAP Project No. S_OR_MF_NB04_M_03_B_B). This modification is part of an overall adaptive management review of the approved 2012 IOAP Modification.

2009 IOAP Project Description

The Prospect #3 – ORFM System Improvements project originally involved upsizing 8,350 LF of gravity interceptor to 27-inch diameter to provide in-line storage for peak flows. Three pump stations were also to be upgraded, and the force main from the Muddy Fork Pump Station was to be upsized to 24-inch. The in-line storage was intended to attenuate flow peaks that exceeded the capacity of the Muddy Fork Pump Station and the downstream Ohio River Force Main (ORFM), thereby eliminating SSOs along the Muddy Fork Interceptor and at the Muddy Fork Pump Station. This project has an IOAP completion date of December 31, 2016.

Project Modification Request

The project modification proposed constructs a 1.96 million gallon (MG) covered off-line storage basin at the location of the upper-most SSO on the Muddy Fork Interceptor. This provides the same function as the originally proposed in-line storage, without the disruption caused by removing and replacing an existing 8,350 LF of interceptor through several established subdivisions. The three pump stations will be upgraded and the discharge of the Muddy Fork Pump Station will be upsized in accordance with the original project concept. No change in project schedule is proposed.

Technical Justification

The proposed project modification provides the same wet weather capacity storage volume as the original project scope. The only difference is that storage is provided in an off-line basin rather than through in-line storage. Additionally, hydraulic modeling demonstrates that the level of control remains the same, at a 2.25-inch 3-hour cloudburst rain event. MSD prefers to construct a project on a single site rather than disrupting a much larger and densely populated area while replacing an active gravity pipe.

For your reference, a copy of the current project fact sheet and map from the 2012 IOAP Modification are in Attachment A. A new project fact sheet and map reflecting the location of the new off-line storage basin have been provided in Attachment B.

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

If you have questions or need additional information, please contact me at (502) 540-6000.

Sincerely,

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

cc: Greg Heitzman Paula Purifoy

Attachments

X:\...Final Prospect # 3 - ORFM System Improvements February 2015 Modification.docx

Attachment A

MSD

SSO Project Fact Sheet

2012 IOAP Project Modification

PROJECT WIN

Project Name	Prospect #3 - ORFM System Improvemetns
Project Number	S_OR_MF_NB04_M_03_B_B
Modeled Area	ORFM
Branch or SSO ID	NB04
Project Type	Pump Station & Pipe Upgrades
Receiving Stream	Goose Creek, Ohio River
Project Description	Upsize 8,350 LF of interceptor upstream of Muddy Fork PS to 27". Upgrade pumps at Muddy Fork, Winding Falls/Phoenix Hill PS and New Market PS. Upsize force main from Muddy Fork PS to 24".
Reason for Overflow	ORFM and pump station capacity
Design Parameters	This solution is based on a 2.25 inch cloudburst rain event.
Project Constraints	N/A
Estimated Capital Cost	$4,500,000
Weighted Benefit/Cost Ratio	4.8

Asset ID	SSO Start Date	Volume (Gal)
MSD0183-PS	1/1/2005	6000
MSD1063-PS	1/1/2005	6000
MSD1063-PS	1/13/2005	5000
89791	1/13/2013	21000
65623	1/13/2013	67500
40880	1/13/2013	174000
MSD0192-PS	1/13/2013	70875
MSD0183-PS	1/14/2007	100
40872	1/21/2010	12450
MSD1063-PS	1/22/2006	500
MSD0192-PS	1/24/2002	100000
MSD1063-PS	1/24/2002	6000
MSD1063-PS	1/26/2012	36375
MSD0186-PS	1/27/2012	37000
40880	1/27/2012	6020
89791	1/27/2012	7400
65623	1/27/2012	6200
40879	1/27/2012	181500
MSD0192-PS	1/3/2005	105000
MSD1063-PS	1/3/2005	3000
22436	1/3/2005	90000
40870	1/3/2005	81000
MSD0183-PS	1/3/2005	120000
MSD1063-PS	1/30/2002	1000
MSD1063-PS	1/4/2004	3000
MSD1063-PS	1/4/2005	110000
MSD0183-PS	1/4/2005	75000
MSD0183-PS	1/5/2005	100000
MSD0193-PS	1/6/2005	14000

Integrated Overflow Abatement Plan

Vol. 3 - Sanitary Sewer Discharge Plan

Ohio River Force Main Sewershed

Prospect #3 - ORFM System Improvements

Preliminary - For Budget Development Only

- Documented SSO
- Suspected SSO
- Haulop Locations
- Proposed Pump Station Solution
- Pump Stations
- WQTC
- Proposed Pipe Solution
- Combined Sewer Pipe
- Force Main
- Collector < 12"
- Interceptor >= 12"
- 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 = 1,000 feet	N	Aerial Date: 2009	Map Revision: April 9, 2012

Project Location

Upgrade Winding Falls/Phoenix Hill PS

Upgrade new Market PS

Upgrade Muddy Fork PS

Upsize 8,350 LF of interceptor to 27" diameter upstream of Muddy Fork PS and upsize force main at Muddy Fork PS to 24"

Ohio River

GLENGREGOR ROAD

RIVERS EDGE

GLENVIEW HILLS

PHOENIX HILL

POPLAR HILL COURT

POPLAR HILL RD

LOUISVILLE BOAT CLUB

NEW MARKET

STANNYE DR

MUDDY FORK

MUDDY FORK-BEARGRASS CREEK

J:\msd\SharedMaps\IOAP\2012 Revision\MXD\2009Updates\Prospect 3.mxd

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Attachment B

Project Name Prospect #3 - ORFM System Improvemetns

Modeled Area	ORFM
Branch or SSO ID	NB04
Project Type	Pump Station Upgrades & Storage
Receiving Stream	Goose Creek, Ohio River
Project Description	Construct a 1.96 MG covered storage basin. Upgrade pumps at Muddy Fork, Winding Falls/Phoenix Hill PS and New Market PS. Upsize force main from Muddy Fork PS to 24".
Reason for Overflow	ORFM and pump station capacity
Design Parameters	This solution is based on a 2.25 inch cloudburst rain event.
Project Constraints	N/A
Estimated Capital Cost	$4,500,000
Weighted Benefit/Cost Rati	4.8

Asset-ID	SSO Start Date	Volume (Gal)
	No Data	No Data
22436	12/15/2007	30000
22436	1/3/2005	90000
40870	5/8/2009	18000
40870	9/27/2002	10000
40870	9/20/2009	39600
40870	1/3/2005	81000
40870	12/24/2008	2400
40870	12/19/2002	50000
40870	10/23/2007	75000
40870	3/28/2005	10000
40870	5/28/2004	18000
40871	11/30/2010	97500
40871	6/23/2011	75000
40871	9/26/2011	10050
40871	4/23/2011	1429875
40871	11/28/2011	549000
40871	12/5/2011	962500
40871	3/9/2011	126000
40871	3/5/2011	30000
40871	3/12/2011	16750
40871	2/28/2011	8750
40871	2/25/2011	36000
40871	11/16/2011	11750
40871	4/11/2011	123625
40871	3/4/2008	18000
40871	3/18/2008	312200
40871	11/25/2010	38750
40871	4/4/2008	120000

Integrated Overflow Abatement Plan

Vol. 3 - Sanitary Sewer Discharge Plan

Ohio River Force Main Sewershed

Prospect #3 - ORFM System Improvements

Preliminary - For Budget Development Only

- Documented SSO
- Suspected SSO
- Haulop Locations
- Proposed Pump Station Solution
- Pump Stations
- WQTC
- Combined Sewer Pipe
- Force Main
- Collector < 12"
- Interceptor >= 12"
- Proposed Storage Solution
- Streams
- Floodway
- Jefferson County Boundary

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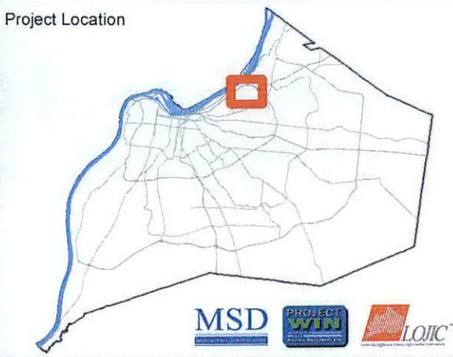
1 inch = 1,000 feet	N	Aerial Date: 2009	Map Revision: 11/17/2014

Project Location



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