

Municipal Separate Storm Sewer System (MS4)

ANNUAL REPORT

NOVEMBER 2021

KPDES PERMIT NO. KYS000001
AI NO. 8235

REPORTING YEAR 5
07.01.2020 TO 06.30.2021

COMPILED AND SUBMITTED BY:
Louisville and Jefferson County Metropolitan Sewer District 700 West Liberty Street Louisville, KY 40203

REPORTING TO:
Kentucky Division of Water
Surface Water Permits Branch
300 Sower Boulevard
Frankfort, KY 40601

CO-PERMITTEES:
City of Anchorage
City of Jeffersontown
City of St. Mathews
City of Shively
Louisville Metropolitan Government
Metropolitan Sewer District

msd
Safe, clean waterways

700 West Liberty Street | Louisville, KY 40203-1911
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November 15, 2021

Kentucky Division of Water
Surface Water Permits Branch
300 Sower Boulevard, 3rd Floor
Frankfort, Kentucky 40601

Subject: Annual Report Submittal for KYS000001 (AI No. 8235)

To Whom It May Concern:

Enclosed is the Annual Report for the Louisville and Jefferson County MS4 stormwater discharge permit. The primary co-permittee for this municipal stormwater discharge permit is the Louisville and Jefferson County MSD. Other co-permittees include Louisville Metro, Anchorage, Jeffersontown, St. Matthews, and Shively. The current MS4 permit became effective on February 1, 2017. Enclosed is the reporting year five Annual Report for the reporting period of July 1, 2020, to June 30, 2021.

The enclosed Annual Report documents the efforts of each of the co-permittees to comply with the MS4 permit by implementing MS4 permit elements during the reporting period. Co-permittee reports and certification statements are provided in Chapter 3.

MSD hereby submit the Annual Report as required by KPDES Permit KYS000001.

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 the 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.

Sincerely,

Ms. Lori Rafferty, PE
MS4 Program Manager

Mr. Anthony E. Marconi, PE
Development and Stormwater Services Director

Enclosures: MS4 Annual Report
cc: File

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EXECUTIVE SUMMARY

Objective

The objective of the MS4 Annual Report is to provide information to the Kentucky Division of Water (KDOW) on how items in the Metropolitan Sewer District's (MSD) Municipal Separate Storm Sewer System (MS4) permit have been addressed for compliance in the reporting year between July 1, 2020, and June 30, 2021.

Purpose

As a river city, and a community with approximately 760 miles of streams and 38 miles of Ohio River shoreline, the purpose of MSD's MS4 program, as outlined in the Stormwater Quality Management Plan (SWQMP), is to address the Kentucky Pollutant Discharge Elimination System (KPDES) MS4 Phase 1 program requirements as specified in MSD's KPDES Permit KYS000001. The Kentucky Division of Water (KDOW) regulates MSD's MS4 Program. The SWQMP does not establish new regulatory requirements, but is to be utilized as a guide for compliance with the permit.

The SWQMP describes activities in the functional areas of responsibility that help protect and improve the water quality in our streams, as outlined in the current effective permit. Schedules for compliance are outlined in the SWQMP. The MS4 Annual Report is intended to provide a snapshot of permit compliance for permit year 5 (PY 5) to KDOW. This document also provides MSD the opportunity to utilize adaptive management to the SWQMP, as necessary. If program technologies change or programmatic approaches to the MS4 compliance are modified, alterations to the SWQMP through the annual reporting is a mechanism to achieve this without full permit modification and negotiation.

The focus areas included in the MS4 permit that are addressed in the MS4 Annual Report are as follows: Public Education, Outreach, Participation & Learning Experiences (PEOPLE), Illicit Discharge Detection and Elimination (IDDE), Industrial Program (IP), Construction Site Stormwater Runoff Controls (CS), Post-Construction Stormwater Runoff Controls (PC), Good Housekeeping and Pollution Prevention (GH/P2), Monitoring Programs (M), Program Assessment and Reporting (PAR), Total Maximum Daily Loads (TMDL), and Co-permittee reports. Applicable fact sheets are provided in Chapter 2. The Co-permittee reports are provided without comment in Chapter 3.

MSD has achieved compliance with the MS4 permit activities, with the following highlights:

- Facilitated, attended, or engaged the public at 19 events (PEOPLE).
- Responded to and addressed 102 illicit discharge investigation requests. (IDDE)

- Performed 15 High Risk Industrial Facility inspection as part of the Industrial Program of the permit. (IP)
- Performed over 52,000 construction inspections for compliance with the EPSC Ordinance. (CS)
- Reviewed performance of 414 water quality BMPs. (PC)
- Performed 12 Stormwater Pollution Prevention Plan (SWPPP) compliance inspections at major MSD facilities. (GH/P2)
- Collected over 1,000,000 data points at Louisville streams to assess water quality.

The MS4 Annual Report is a valuable tool to document, report, and track progress that ultimately helps protect and improve the water quality in our streams.

MS4 POINTS OF CONTACT

The MSD is the primary permittee for the MS4 Program and is co-permitted with Louisville Metro, City of Anchorage, City of Jeffersontown, City of St. Matthews, and City of Shively. Points of contact including executive staff and MS4 Program coordinators are provided below. The MSD Engineering Division organizational chart effective 10/05/2021, including full-time MS4 program staff is provided in Appendix 1.2.1 MSD Organizational Chart.

Louisville & Jefferson County MSD

Name	Agency	Role	Phone Number
Mayor Greg Fisher	Louisville Metro	Mayor	(502) 574-2003
James A. Parrott	Louisville & Jefferson County MSD	Executive Director	(502) 540-6000
David Johnson	Louisville & Jefferson County MSD	Chief Engineer	(502) 540-6000
Tony Marconi	Louisville & Jefferson County MSD	Development and Stormwater Services Director	(502) 540-6000
Lori Rafferty	Louisville & Jefferson County MSD	MS4 Program Manager	(502) 540-6000

Louisville Metro

Name	Agency	Role	Phone Number
Mayor Greg Fisher	Louisville Metro	Mayor	(502) 574-2003
Vanessa D. Burns	Public Works	Director	(502) 574-5925
Mark Zoeller	Facilities Management	Director, Facilities & Fleet Management	(502) 574-0104
Sean Woods	Louisville Zoo	Zoo Facilities Manager	(502) 459-2181
Jason Canuel	Metro Parks	Assistant Director	(502) 485-8113

City of Anchorage

Name	Agency	Role	Phone Number
Mayor Neil Ramsey	City of Anchorage	Mayor	(502) 245-4654
Renee Major	City of Anchorage	City Clerk/MS4 Coordinator	(502) 245-4654
Gary Burkhead	City of Anchorage	Public Works	(502) 245-4654
Greg Smith	City of Anchorage	Stormwater/Drainage Officer	(502) 245-4654

City of Jeffersontown

Name	Agency	Role	Phone Number
Mayor Bill Dieruf	City of Jeffersontown	Mayor	(502) 267-8333
Matt Meunier	City of Jeffersontown	MS4 Coordinator	(502) 267-8333
Allison Padron	Stantec for City of Jeffersontown	Consultant	(502) 212-5000

City of St. Matthews

Name	Agency	Role	Phone Number
Mayor Richard J. Tonini	City of St. Matthews	Mayor	(502) 895-9444
Jim Birch	City of St. Matthews	City Engineer	(502) 899-2518
Kenan Stratman	City of St. Matthews	Public Works/Coordinator	(502) 899-2517

City of Shively

Name	Agency	Role	Phone Number
Mayor Beverly Chester-Burton	City of St. Shively	Mayor	(502) 449-5000
Jeff Early	City of St. Shively	MS4 Coordinator	(502) 449-4749
Rick Storm	BA Engineers for City of Shively	Consultant	(502) 775-5741

CHAPTER 1 INTRODUCTION

1.1 REGULATORY BACKGROUND

The Clean Water Act (CWA), enacted in 1972, was amended in 1987, to prohibit the discharge of any pollutant to the waters of the United States from a point source unless authorized by a National Pollutant Discharge Elimination System (NPDES) permit. Since the CWA amendment, there is increasing evidence that there are additional and more diffuse sources of surface water pollution. Specifically, stormwater runoff draining large surface areas (agriculture and urban lands) were found to be major causes of water quality impairment and contributors to non-attainment of designated beneficial uses.

The primary federal regulation pushing communities towards the goal of "fishable and swimmable water" is the Clean Water Act. Sections of the Clean Water Act, which specifically are relevant to stormwater, address:

- Regulation of stormwater discharges
- Water quality standards for water bodies receiving stormwater runoff
- Implications of non-attainment of water quality standards

The primary objective of the MS4 Permit is the reduction of pollutant discharges to the Maximum Extent Practicable (MEP) from stormwater runoff. MSD is to implement the practices, policies, procedures and stormwater controls contained in the permit and addressed in this plan throughout the regulated area. MSD is required to develop, administer, and update a Storm Water Quality Management Plan (SWQMP) and update as necessary to maintain compliance with the MS4 Permit.

1.2 STORMWATER QUALITY MANAGEMENT PLAN OVERVIEW

The latest MS4 Permit was issued with an effective date of February 1, 2017, for a term of five years. The majority of the permit requirement responses are provided in Chapter 2 of the MS4 Permit "Stormwater Quality Management Plan". This plan expands the Permit Tables to also include set verifiable performance measures for each activity. The programmatic elements performed in the SWQMP are documented in the MS4 Annual Report. This report shows activities and performance for the period of July 1, 2020 to June 30, 2021.

MSD is required to develop and implement a SWQMP with the objective of reducing the discharge of pollutants to the MEP. The SWQMP is a planning tool to define how the MS4 program will be administered. While it is not a part of the permit, it provides a more detailed description of the activities in the permit. The SWQMP addresses the Minimum Control Measures (MCMs).

The SWQMP covers the following:

- Public Education and Outreach (PEOPLE): MSD will develop and implement a program to distribute educational materials to the community or conduct equivalent outreach activities about the impacts of stormwater discharges on water bodies and the steps the public can take to reduce pollutants in stormwater runoff.
- Public Involvement and Participation (PEOPLE): MSD will provide representatives to local stormwater management work groups, public hearings, and schools, and will assist with program coordination and monitoring efforts, per applicable state and federal requirements.
- Illicit Discharge Detection and Elimination Program (IDDE): MSD will develop, implement and enforce a program to detect and eliminate illicit discharges into the District's maintained and operated portions of the MS4.
- Industrial Stormwater Program (IP): MSD will develop, implement, and enforce programs to minimize pollutants and stormwater pollution in runoff from developed and redeveloped commercial and industrial sites.
- Construction Site Runoff Control (CS): MSD will develop, implement, and enforce a program to reduce pollutants in any stormwater runoff from construction activities that result in land disturbance of greater than or equal to one acre.
- Post-Construction Site Runoff Control (PC): MSD will develop, implement, and enforce a program that addresses stormwater runoff from new development and redevelopment projects that disturb greater than or equal to one acre.
- Good Housekeeping/Pollution Prevention (GH/P2): MSD will develop and implement an operations and maintenance program that includes a training component and has a goal of preventing or reducing polluted runoff from their daily operations, including maintenance.
- Monitoring (M): MSD will develop and maintain a water quality monitoring network, and report on permit required pollutants in annual reporting.
- Performance Assessment and Reporting (PAR): MSD will prepare timely and accurate reporting documents, track critical program elements, and make programmatic changes as needed based on trends in data as needed.

The SWQMP for the Fourth Permit Cycle was submitted to KDOW in July 2017. An annual review of the SWQMP is required as part of the MS4 Annual Report submittal. During this time, the prior year's activities and the need for changes in implementation strategies and schedules should be assessed. The MS4 permit specifies that the SWQMP may be modified over time by MSD to facilitate implementation of permit requirements. Modifications are to be made based on lessons learned and the effectiveness of the various BMPs. There are no recommended SWQMP modifications at this time.

1.3 REGULATORY SUBMITTAL REQUIREMENTS

From the effective MS4 permit, the following requirement for submittal of a MS4 Annual Report is stated:

> *2.5. Annual Reporting*
>
> *Annual MS4 compliance reporting requirements shall also include a special section identifying approved TMDL(s) and special efforts or management practices to address the Pollutant(s) of Concern. As appropriate for the pollutant of concern, the permittee will identify measures taken to address in the following program areas:*
>
> - *Public Education, Outreach, Participation & Learning Experiences (PEOPLE)*
> - *Illicit Discharge Detection and Elimination (IDDE)*
> - *Industrial Stormwater Propgram (IP)*
> - *Construction Site Stormwater Runoff Controls (CS)*
> - *Post-Construction Site Stormwater Runoff Controls (PC)*
> - *Good Housekeeping/Pollution Prevention (GH/P2)*
> - *Monitoring (M)*
> - *Performance Assessing and Reporting (PAR)*
>
> *The permittee shall include water quality trend analysis for the pollutant(s) of concern with other MS4 monitoring program data with annual compliance reports.*

From the MS4 permit, Section 3 - "Reporting" identifies the following reporting requirements for permit compliance:

> 3.1. Reporting Requirements
> The permittee shall prepare an annual system-wide report (Annual Report) to be submitted no later than November 15th of the year following the fiscal year covered by the report (July 1 - June 30). The Annual Report shall include at a minimum:
>
> 1. An overall evaluation of the stormwater quality management program developments and progress including: major findings such as water-quality improvements or degradation, major accomplishments, overall program strengths/weaknesses; and future direction of the program. The permittee shall state an overall assessment of the effectiveness of the SWQMP taking into account water quality/watershed improvements;
>
> 2. The number of illicit discharges discovered; describing discharge and resolution;
>
> 3. A summary of inspections and enforcement actions for regulatory programs;
>
> 4. A summary of installed BMPs for post-construction stormwater management for new and redevelopment;

5. A summary of pollution prevention and good housekeeping BMPs performed at the municipal operations;

6. The status of implementation and proposed changes to the stormwater quality management program, including assessment of controls and specific improvements or degradation to water quality;

7. Any improvements in water quality due to watershed activities;

8. Annual Report shall be submitted electronically. Permittees can access the system at the following web address: http://dep.gateway.ky.gov/eForms/default.aspx?FormId=50

The permittee shall retain records accumulated pursuant to this individual permit for no fewer than three years following the termination of this individual permit.

1.4 SUMMARY

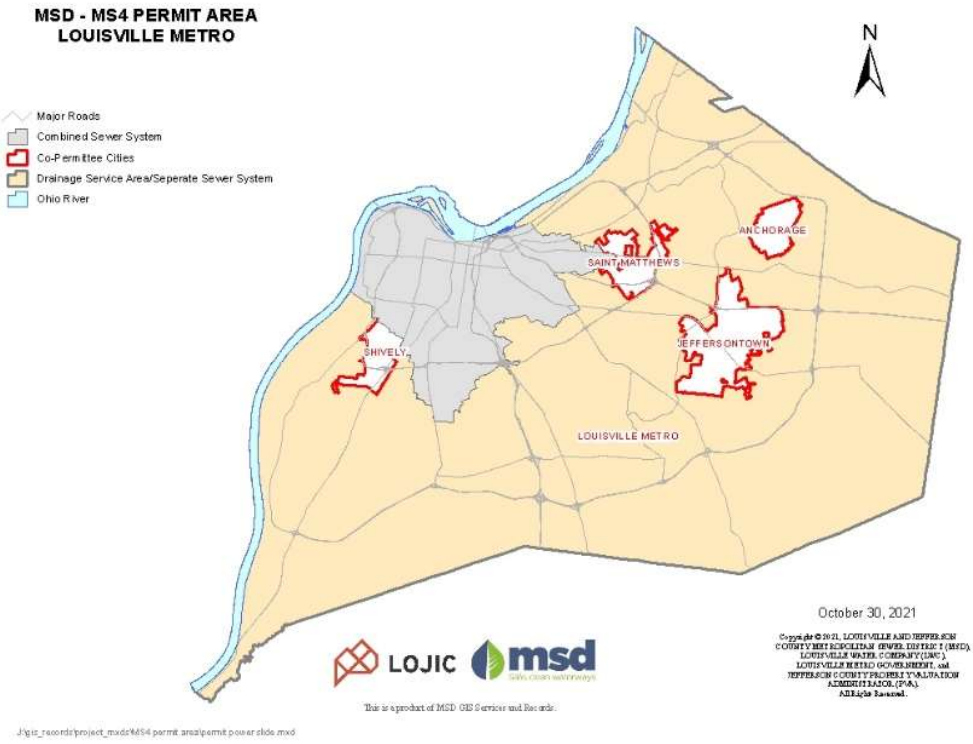
The MS4 Annual Report is developed to meet regulatory requirements outlined in the MS4 permit, while also providing information to the public, regulators, media, and others on the activities being performed every day in this community that improve water quality to the **Maximum Extent Practicable (MEP)**. The MS4 Annual Report documents the compliance with the PY 5 activities as outlined in the SWQMP.

MSD has achieved compliance with the MS4 permit activities, with the following highlights:

- Facilitated, attended, or engaged the public at 19 events. (PEOPLE)
- Responded to and addressed 102 illicit discharge investigation requests. (IDDE)
- Performed 15 High Risk Industrial Facility inspection as part of the Industrial Stormwater Program section of the permit. (IP)
- Inspected over 52,000 active construction permits for compliance with the Erosion Prevention and Sediment Control (EPSC) Ordinance. (CS)
- Reviewed performance of 414 water quality Best Management Practices (BMPs). (PC)
- Performed 12 Stormwater Pollution Prevention Plan (SWPPP) compliance inspections at major MSD facilities. (GH/P2)
- Collected over 1,000,000 data points at Louisville streams to assess water quality. (M)

MSD and its co-permittees strive to provide the public with an understanding of complex water quality issues and regulatory programs that protect our waterways. MSD-administered regulatory programs are enforced through the following mechanisms: the Erosion Prevention and Sediment Control (EPSC) Ordinance to manage stormwater runoff from construction sites, the Hazardous Materials Ordinance (HMO) to manage stormwater runoff from industrial facilities and detect and eliminate illicit discharges, and the Wastewater/Stormwater Discharge Regulations (WDR) to manage post-construction stormwater runoff and detect and eliminate

illicit discharges. Louisville Metro administers regulatory programs including ordinances and codes enforcing waste disposal and other environmental protection requirements, and the Cornerstone 2020 Land Development Code (LDC).



1.5 PERMIT RENEWAL AND LONG-TERM PLANNING

Each permit cycle, MSD enhances and improves the program through planning activities, regulatory authority, environmental education programs and leadership. The requirements in the MS4 permit represent the Kentucky Division of Water's determination of MEP for Louisville MSD and co-permittee communities. The MS4 permit was most recently renewed in early 2017, with an effective date of February 1, 2017. This report represents activities performed in the period of July 1, 2020, to June 30, 2021. The following table shows the Fifth Permit Cycle Activity Summary.

TABLE 1.6.1 PUBLIC EDUCATION, OUTREACH, PARTICIPATION, AND LEARNING EXPERIENCES (PEOPLE)									
PEOPLE	**General Public & Stakeholder Education Program**								
SWQMP ID	**Element Task**	**Frequency or Measure of Success**	**Activity Required**	**PY 1 6/17**	**PY 2 6/18**	**PY 3 6/19**	**PY 4 6/20**	**PY 5 6/21**	**Legal Auth**
2.1.1	General Public-Mass Media Integration/Distribution	Report the number of potential households and estimate the numbers of households were reached.	The permittee shall integrate MS4 stormwater quality topics in to existing print mass media, local government cable channel, social marketing materials, and/or new materials with the intent of affecting behavior change.	☑	☑	☑	☑	☑	N/A
2.1.2	General Public-Direct Interaction	Permittee shall present educational materials to the public at least six (6) event days per year; update booth material annually. Provide summary of the educational activities in annual report	The permittee shall present the "Key Messages" at community events, through the use of a display booth, "enviroscape" or other direct personal integration approaches.	☑	☑	☑	☑	☑	N/A
2.1.3	General Public-Meeting Topic Integration	Permittee shall integrate water quality topics in MS4 public meetings at least six (6) events per year; provide summary of the events in the Annual Report	The permittee shall integrate MS4 stormwater quality topics, as feasible and appropriate into other MSD sponsored public meetings.	☑	☑	☑	☑	☑	N/A

Schedule/Applicability Key: ❑ = Due in Permit Year (PY), ☑ = Scheduled/completed in PY

TABLE 1.6.1 PUBLIC EDUCATION, OUTREACH, PARTICIPATION, AND LEARNING EXPERIENCES (PEOPLE)									
PEOPLE	**General Public & Stakeholder Education Program**								
SWQMP ID	**Element Task**	**Frequency or Measure of Success**	**Activity Required**	**PY 1 6/17**	**PY 2 6/18**	**PY 3 6/19**	**PY 4 6/20**	**PY 5 6/21**	**Legal Auth**
2.1.4	Volunteer Programs Participation, Promotion or Support	Permittee shall have direct participation in at least three (3) events per year; and promote additional two (2) events per year, provide summary of volunteer opportunities the permittee participated, facilitate, or supported in the Annual Report	The permittee shall participate in, facilitate, encourage or support volunteer program opportunities on a case by case basis to optimize resources and potential to affect behavioral changes through participation events.	☑	☑	☑	☑	☑	N/A
2.1.5	MetroCall Hotline and MSD Customer Relations	Permittee shall provide a summary of MS4 complaints and comments received in the Annual Report	The permittee shall provide support to the 24-hour central reporting hotline "Metro Call" and internet communication channels for use by the public and MSD employees to report complaints, spills, and illegal dumping.	☑	☑	☑	☑	☑	N/A
2.1.6	Elected Officials	Permittee shall provide a summary of its attendance of meetings at Mayors and/or Council Member's discretion in the Annual Report	The permittee shall attend and participate at the discretion of Mayor's office and Louisville Metro Council members to address resident's concerns and questions.	☑	☑	☑	☑	☑	N/A
2.1.7	Public Speakers	Permittee shall provide public speakers to various community stakeholders at least six (6) events per year	The permittee shall provide speakers to various community stakeholder groups that could benefit from environmental stormwater information.	☑	☑	☑	☑	☑	N/A

Schedule/Applicability Key: ❑ = Due in Permit Year (PY), ☑ = Scheduled/completed in PY

TABLE 1.6.1 PUBLIC EDUCATION, OUTREACH, PARTICIPATION, AND LEARNING EXPERIENCES (PEOPLE)									
PEOPLE	**General Public & Stakeholder Education Program**								
SWQMP ID	**Element Task**	**Frequency or Measure of Success**	**Activity Required**	**PY 1 6/17**	**PY 2 6/18**	**PY 3 6/19**	**PY 4 6/20**	**PY 5 6/21**	**Legal Auth**
2.1.8	News Media-Press Releases	Permittee shall provide at least two (2) press releases per year highlighting public participation opportunities	The permittee shall provide press releases to the local news media highlighting opportunities for the public to participate in outreach and involvement events to make a positive difference through behavior change.	☑	☑	☑	☑	☑	N/A
2.1.9	MSD Web Site	Permittee shall report summary of updates in the Annual Reports of Permit Years 2 and 4	The permittee shall review and revise the website with the "Key Messages" content and other related PEOPLE plan elements.		☑		☑		N/A
2.1.10	Behavior Change Assessment Survey	Permittee shall provide summary in the Annual Report of the Baseline Survey in Permit Year one (1) and the Behavior Assessment in Permit Year four (4)	The permittee shall perform a statistical survey to gauge the population's knowledge of stormwater quality issues and establish baseline to assess the changes in behavior and outreach program effectiveness. The permittee shall utilize the survey results to refocus and reprioritize PEOPLE activities.	☑			☑		N/A
2.1.11	Building Industry Association of Greater Louisville Land Development Committee Monthly Meetings and Developers Advisory Group	Permittee shall participate in at least 75% of the meetings annually	The permittee shall attend Building Industry Association of Louisville land development committee and Developer Advisory Group meetings to address concerns and comments from the local homebuilder professional and provide information regarding changes in procedures, checklist, regulations, etc.	☑	☑	☑	☑	☑	N/A

Schedule/Applicability Key: ❑ = Due in Permit Year (PY), ☑ = Scheduled/completed in PY

TABLE 1.6.1 PUBLIC EDUCATION, OUTREACH, PARTICIPATION, AND LEARNING EXPERIENCES (PEOPLE)									
PEOPLE	**General Public & Stakeholder Education Program**								
SWQMP ID	**Element Task**	**Frequency or Measure of Success**	**Activity Required**	**PY 1 6/17**	**PY 2 6/18**	**PY 3 6/19**	**PY 4 6/20**	**PY 5 6/21**	**Legal Auth**
2.1.12	Greater Louisville Inc. Environmental and Water Committees	Permittee shall participate in at least three (3) events per year	The permittee shall participate in committee meetings to address concerns and comments from key local development professionals and provide information regarding changes in construction procedures, checklist, regulations, etc.	☑	☑	☑	☑	☑	N/A
2.1.13	Construction Operators	Permittee shall evaluate educational materials and/or multimedia presentations for the construction industry related to point and non-point source pollution and stormwater pollution annually	The permittee shall make available educational materials and/or multimedia presentations for the construction industry related to point and non-point source pollution, green infrastructure and stormwater pollution prevention measures for operational procedures and erosion and sediment controls.	☑	☑	☑	☑	☑	N/A
2.1.14	Rain Garden Outreach	Permittee shall estimate handbook distribution and report in the Annual Report	The permittee shall maintain and update rain garden handbook with the intent of general public outreach. Consider expanding use to support residential, non-residential, professional, and non-professional audiences. The permittee shall evaluate changes and make updates at least every even numbered year.		☑		☑		N/A

Schedule/Applicability Key: ❑ = Due in Permit Year (PY), ☑ = Scheduled/completed in PY

TABLE 1.6.1 PUBLIC EDUCATION, OUTREACH, PARTICIPATION, AND LEARNING EXPERIENCES (PEOPLE)									
PEOPLE	**General Public & Stakeholder Education Program**								
SWQMP ID	**Element Task**	**Frequency or Measure of Success**	**Activity Required**	**PY 1 6/17**	**PY 2 6/18**	**PY 3 6/19**	**PY 4 6/20**	**PY 5 6/21**	**Legal Auth**
2.1.15	Green Infrastructure Demonstration Projects	Permittee shall provide a Summary Report of Green Infrastructure demonstration projects in the Annual Report	The permittee shall monitor previously identified and constructed projects in outreach efforts aimed at demonstrating the feasibility and effectiveness of green infrastructure including, but not limited to rain gardens, green roofs, pervious pavement, bio-swales and infiltration. Prioritize, select and implement projects to support a variety of residential, non-residential, professional and non-professional audiences in MSD and co-permittee areas. Where feasible collaborate and/or cooperate with local government agencies, schools, co-permittees and/or private properties with significant use and exposure to the general public.	☑	☑	☑	☑	☑	N/A
2.1.16	Public Notification of Major Program Changes	Permittee shall maintain and update as needed the notification system or program changes.	The permittee shall maintain a web site-based system to notify the public and affected stakeholders of proposed major program changes that will significantly impact stormwater runoff quality, negatively or positively. The public shall be given the opportunity to informally comment on proposed changes.	☑	☑	☑	☑	☑	N/A

Schedule/Applicability Key: ❑ = Due in Permit Year (PY), ☑ = Scheduled/completed in PY

TABLE 1.6.1 PUBLIC EDUCATION, OUTREACH, PARTICIPATION, AND LEARNING EXPERIENCES (PEOPLE)									
PEOPLE	**General Public & Stakeholder Education Program**								
SWQMP ID	**Element Task**	**Frequency or Measure of Success**	**Activity Required**	**PY 1 6/17**	**PY 2 6/18**	**PY 3 6/19**	**PY 4 6/20**	**PY 5 6/21**	**Legal Auth**
Cooperative Efforts (MSD provides supportive or other non-lead role)									
2.1.17	Jefferson County MS4 Workgroup-Communication	Permittee shall attend at least two (2) meetings per year	The permittee shall participate in the Jefferson County MS4 Co-Permittee Workgroup meetings discussing program progress, challenges, activity changes, shared activity requests communication needs and lesson learned.	☑	☑	☑	☑	☑	N/A
2.1.18	Louisville Metro Office of Sustainability	Permittee shall report its activities and support of the Louisville Metro Department of Sustainability initiatives in the Annual Report	The permittee shall continue to support Louisville Metro Office of Sustainability initiatives with development of guidance materials to be applied to new Metro Government Facilities incorporating green infrastructure	☑	☑	☑	☑	☑	N/A

Schedule/Applicability Key: ❑ = Due in Permit Year (PY), ☑ = Scheduled/completed in PY

TABLE 1.6.2 ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE)									
IDDE 1 Legal Prohibition/Control Authority									
SWQMP ID	**Element Task**	**Frequency or Measure of Success**	**Activity Required**	**PY 1 6/17**	**PY 2 6/18**	**PY 3 6/19**	**PY 4 6/20**	**PY 5 6/21**	**Legal Auth**
2.2.1	Assess Legal Prohibition/Control Authority	Permittee shall evaluate, once per permit cycle proposed changes in Wastewater Stormwater Discharge Regulations (WDRs) for consideration by MSD Board	The permittee shall evaluate existing ordinances and regulations with an emphasis on Article 5 of the WDRs to determine if they are sufficient relative to MSD's ability to implement an effective IDDE program per 40 CFR. 122.26(b) (2). The permittee shall periodically update WDRs as needed to identify and eliminate risk of illicit discharges due to changes in technology, industrial management processes, regulations or program modifications. The permittee shall provide a summary of the adoption of such changes and information about implementation, and effective date in the Annual Report.	☑	☑	☑	☑	☑	☑
2.2.2	IDDE Source Investigation and Elimination Procedures	Permittee shall provide in the annual report, a summary of the process changes to IDDE investigations	The permittee shall develop and implement a formal plan of illicit discharge detection including how to trace the source of an illicit discharge and procedures for removing or eliminating them once they are located or reported. The plan should also include the enforcement procedures outlined in the WDRs for illicit discharge elimination, which includes ten (10) days from the receipt of the Notice of Violation; the source of the illicit discharge shall submit a mitigation plan for removal.	☑	☑	☑	☑	☑	☑
2.2.3	Public Illicit Discharge Report Investigation	Permittee shall provide in the annual report, a summary of the investigations of illicit discharges performed	The permittee shall continue to receive and investigate public reports of potential illicit discharges via customer service hotline, webpage reporting and MetroCall. The permittee shall update and perform customer service hotline staff training for receiving calls regarding potential illicit discharges and appropriate routing procedures.	☑	☑	☑	☑	☑	☑

Schedule/Applicability Key: ❑ = Due in Permit Year (PY), ☑ = Scheduled/completed in PY

TABLE 1.6.2 ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE)									
IDDE 1 Legal Prohibition/Control Authority									
SWQMP ID	**Element Task**	**Frequency or Measure of Success**	**Activity Required**	**PY 1 6/17**	**PY 2 6/18**	**PY 3 6/19**	**PY 4 6/20**	**PY 5 6/21**	**Legal Auth**
2.2.4	Dry Weather Screening	Permittee shall provide in the annual report, a summary of the dry weather screenings performed.	The permittee shall conduct dry weather screening of representative outfalls. The recommended level of effort is twenty percent (20%) of the major outfalls per year. However, all the major outfalls shall be addressed within the permit term. The permittee shall also conduct dry-weather screenings at ninety percent (90%) of large industrial outfalls of industrial facilities once per permit cycle.				☑		☑
2.2.5	Screening Follow-up	Permittee shall starting in Permit Year One (1) inspect at least 25% of suspect outfalls per year	After the initial follow-up to insure the illicit discharge has been mitigated, the permittee shall re-evaluate outfalls that were previously found to have had contaminated discharges to determine the current status of those outfalls.	☑	☑	☑	☑	☑	☑

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TABLE 1.6.2 ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE)									
IDDE 2 Management Activities									
SWQMP ID	**Element Task**	**Frequency or Measure of Success**	**Activity Required**	**PY 1 6/17**	**PY 2 6/18**	**PY 3 6/19**	**PY 4 6/20**	**PY 5 6/21**	**Legal Auth**
2.2.6	Mapping - Stormwater Infrastructure Inventory	Permittee shall maintain a storm sewer system map.	The permittee shall continue to maintain the GIS Louisville Jefferson County Information Center (LOJIC) layers constituting its storm sewer system map, showing the location of all known major outfalls, and the names and location of all waters of the Commonwealth that receive discharges from those outfalls.	☑	☑	☑	☑	☑	☑
2.2.7	Non-Industrial IDDE Program Enforcement	Permittee shall report annually, including number of investigations, enforcement actions and referrals to KDOW, and follow-up investigations.	The permittee shall continue to utilize the Wastewater/Stormwater Discharge Regulations, related checklists and procedures for investigation of potential illicit discharges and elimination of illicit discharges.	☑	☑	☑	☑	☑	☑
2.2.8	Hazmat/Spill Unified Response Program	Permittee shall report, if necessary, any changes to the policies and programs and procedures, in the annual report	The permittee shall continue to maintain and enforce the ordinances, policies, programs and procedures for response and containing spills that may discharge into the MS4. The spill response procedures outlined in Section 95.07 of the Louisville Metro Code of Ordinances relating to hazardous materials shall continue to be implemented and enforced.	☑	☑	☑	☑	☑	☑
2.2.9	MVA Mitigation Kit Program	Permittee shall report metrics for kit distribution and after-use collection in the annual report	The permittee shall continue motor vehicle accident (MVA) mitigation kit distribution program to meet Fire Department and emergency response spill containment needs.	☑	☑	☑	☑	☑	☑

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TABLE 1.6.2 ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE)									
IDDE 2 Management Activities									
SWQMP ID	**Element Task**	**Frequency or Measure of Success**	**Activity Required**	**PY 1 6/17**	**PY 2 6/18**	**PY 3 6/19**	**PY 4 6/20**	**PY 5 6/21**	**Legal Auth**
2.2.10	IDDE Identification SWPPP Training Integration	Training shall occur at least once per year and the permittee shall report in the annual report the date of training and the number of staff participating in training	The permittee shall integrate techniques and practices to assist staff identify potential illicit discharges into facility and system operations and maintenance training.	☑	☑	☑	☑	☑	N/A
Cooperative Efforts (MSD provides supportive or other non-lead role)									
2.2.11	KDOW Support	Permittee shall summarize and include in the annual report any assistance given to the Kentucky Division of Water (KDOW) by MSD	As KDOW requests, the permittee shall accompany KDOW on inspection of KPDES stormwater permitted facilities in Jefferson County	☑	☑	☑	☑	☑	N/A

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TABLE 1.6.3 INDUSTRIAL PROGRAM REQUIREMENTS (IP)									
IP 1 Legal Prohibition/Control Authority									
SWQMP ID	**Element Task**	**Frequency or Measure of Success**	**Activity Required**	**PY 1 6/17**	**PY 2 6/18**	**PY 3 6/19**	**PY 4 6/20**	**PY 5 6/21**	**Legal Auth**
2.3.1	Industrial IDDE Program Enforcement	Permittee shall summarize in the annual report the industrial enforcement actions and referrals to Kentucky Division of Water	For industrial properties, the permittee shall continue to utilize the Wastewater/Stormwater Discharge Regulations, Hazardous Materials Ordinance and related checklists and procedures for identification of potential illicit discharges and elimination of illicit discharges/ unauthorized stormwater discharges. The permittee shall perform analysis of industry property data layer in LOJIC cross linking with properties holding a Hazardous Materials (spill) Prevention Control (HMPC) Plan to identify potential sites that should be added to the program with consideration for High Risk Industrial Facilities designation (determined in other activities).	☑	☑	☑	☑	☑	☑
2.3.2	Industrial IDDE Program Enforcement (Legal Authority)	Permittee shall update as needed and maintain adequate legal authority to require compliance with this measure.	The permittee shall maintain adequate legal authority, per 401 KAR 5:060, Section 12(9)(b)3 and 40 CFR 122.26(b)(2), to require compliance and inspection of sites, inspection of priority industrial and commercial facilities, including establishing control measure requirements such as HMPC, Spill Prevention, Control and Countermeasure (SPCC) Plan and/or the Groundwater Protection Plan (GPP) for facilities that have a potential to discharge to the MS4 and enforce stormwater requirements.	☑	☑	☑	☑	☑	☑
2.3.3	Industrial Facility Inventory	Permittee shall update annually and made available to the KDOW upon request	The permittee shall maintain an inventory of all potential industrial and commercial sites/sources that could contribute pollutant loads to the MS4.	☑	☑	☑	☑	☑	N/A

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TABLE 1.6.3 INDUSTRIAL PROGRAM REQUIREMENTS (IP)									
IP 2 Inventory and Inspection of Industrial Facilities									
SWQMP ID	**Element Task**	**Frequency or Measure of Success**	**Activity Required**	**PY 1 6/17**	**PY 2 6/18**	**PY 3 6/19**	**PY 4 6/20**	**PY 5 6/21**	**Legal Auth**
2.3.4	"High Risk" Facility Definition	Review "High Risk" facility definition each permit cycle	The permittee shall identify Risk Factors to define facilities as "High Risk", "Moderate Risk" and "Low Risk".			☑			N/A
2.3.5	HRIF Inventory Update	Permittee shall summarize and report annually, the assessment and updates of any industrial facilities identified as "High", "Moderate", and "Low" risk	The permittee shall compare the datasets for local Approved HMPC Plan Facilities to the publicly available Facility data from local and state environmental and emergency response agencies to address the completeness and accuracy of High Risk Industrial Facilities identification. The permittee shall update the list of HRIFs at least once over the permit term, to account for the most recently available North American Industry Classification System (NAICS), Standard Industrial Classification (SIC) codes, Toxic Release Inventory (TRI) data, MSD's HMPC data and MSD's pretreatment program data with the goal of establishing a tiered list of industries to support priorities in MSD's industrial facility inspection program.			☑			N/A
2.3.6	High-Risk and Medium Risk Facilities	Permittee shall report the summary of prioritized inspections completed, and any enforcement resulting from the inspections.	Based on the results of the updated HRIF assessment, the permittee shall inspect high-risk facilities at least once every three (3) years and moderate risk facilities at least once every five (5) years.	☑	☑	☑	☑	☑	☑

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TABLE 1.6.3 INDUSTRIAL PROGRAM REQUIREMENTS (IP)									
IP 2 Inventory and Inspection of Industrial Facilities									
SWQMP ID	**Element Task**	**Frequency or Measure of Success**	**Activity Required**	**PY 1 6/17**	**PY 2 6/18**	**PY 3 6/19**	**PY 4 6/20**	**PY 5 6/21**	**Legal Auth**
2.3.7	Industrial Facility Control Measures	Permittee shall report annually on control measures required of the high-risk industrial and commercial facilities to ensure compliance with this measure	The permittee shall require the High Risk industrial and commercial facilities to select, install, implement, and maintain control measures that promote prevention and source control for discharge of applicable pollutants of concern. This requirement may be addressed through Hazardous Materials (spill) Prevention Control (HMPC) Plan and/or federal programs such as SPCC Plan and/or the GPP that are already implemented at the industrial and commercial facilities. The permittee shall require the applicable facilities to identify the specific control measures, good housekeeping and maintenance procedures, and employee training necessary.	☑	☑	☑	☑	☑	☑
2.3.8	Enforcement / Inspections	Within six months of the permit issuance, the Permittee shall develop the required criteria or procedures to comply with this measure.	The permittee shall develop criteria or procedures for site inspections and enforcement including criteria to address how the MS4 will use enforcement authorities to ensure compliance with the industrial program requirements. The permittee shall enforce the procedures outlined in Section 95.11 of the Louisville Metro Code of Ordinances relating to hazardous materials.	☑	☑	☑	☑	☑	☑
2.3.9	MSD Plan Review	Permittee shall assess at least every three (3) years and report changes to process in the annual report	The permittee shall determine if existing triggers in the new development and redevelopment plan and plumbing systems review process are sufficient to include appropriate industrial stormwater quality specialists/inspectors in the plan approval process.	☑			☑		N/A

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TABLE 1.6.3 INDUSTRIAL PROGRAM REQUIREMENTS (IP)									
IP 2 Inventory and Inspection of Industrial Facilities									
SWQMP ID	**Element Task**	**Frequency or Measure of Success**	**Activity Required**	**PY 1 6/17**	**PY 2 6/18**	**PY 3 6/19**	**PY 4 6/20**	**PY 5 6/21**	**Legal Auth**
2.3.10	Industrial & Commercial Community Outreach	The Permittee shall continue to identify materials developed and distribution estimates and summarize in the annual report	The permittee shall update as necessary and distribute outreach materials (brochure, fact sheets, etc.) to HMPC Facilities and other commercial operations of concern to promote illicit discharge elimination awareness.	☑	☑	☑	☑	☑	N/A
Cooperative Efforts (MSD provides supportive or other non-lead role)									
2.3.11	Third Party Oversight Inspection	Document training materials and the number of third party inspections conducted to be reported in the annual report	The permittee shall utilize third party inspections for development of recommendations of efficacy of permittee inspections and enforcement. Updates to training materials shall be administered for permittee personnel at least once per year, if necessary.	☑	☑	☑	☑	☑	N/A
2.3.12	KDOW Support	Permittee shall summarize and include in the annual report any assistance given to the KDOW by MSD	As KDOW requests, the permittee shall accompany KDOW on inspections of KPDES stormwater permitted facilities in Jefferson County.	☑	☑	☑	☑	☑	N/A

Schedule/Applicability Key: ❑ = Due in Permit Year (PY), ☑ = Scheduled/completed in PY

TABLE 1.6.4 CONSTRUCTION SITE STORMWATER RUNOFF CONTROL REQUIREMENTS (CS)									
CS 1	**Legal Prohibition/Control Authority**								
SWQMP ID	**Element Task**	**Frequency or Measure of Success**	**Activity Required**	**PY 1 6/17**	**PY 2 6/18**	**PY 3 6/19**	**PY 4 6/20**	**PY 5 6/21**	**Legal Auth**
2.4.1	Assess Legal Prohibition/Control Authority	Permittee shall summarize proposed changes enumerated by end of permit years one (1) and three (3) and report proposed changes in to Wastewater/Stormwater Discharge Regulations for consideration by MSD Board in the Annual Report	The permittee shall assess existing ordinance and regulations to identify changes needed to account for changes in standard of care (as directed by KDOW General Construction Permit KYR10), changes in technology, changes to development management process and related program needs in satisfaction 40 CFR 122.26(b)(15)(i) for construction activities that result in a land disturbance of greater than or equal to one acre and construction activity disturbing less than one acre that is part of a larger common plan of development that would disturb one acre or more.	☑		☑			☑
2.4.2	Implement Legal Prohibition/Control Authority	Permittee shall require routine inspections of active construction sites with reasonable potential to discharge to MS4. A summary of these inspections and any enforcement actions resulting from these inspections shall be included in the Annual Report	The permittee shall continue to enforce existing ordinances and regulations intended to limit construction phase stormwater quality impacts from new construction and significant redevelopment.	☑	☑	☑	☑	☑	☑
2.4.3	Site Plan Review	Permittee shall review plans as needed and report the number of plans reviewed in the Annual Report	The permittee shall conduct site plan reviews in accordance with the procedures outlined in Section 159.02 of the Louisville/Jefferson County Erosion Prevention and Sediment Control Ordinance to assess whether the plans include measures that address potential water quality impacts from construction prior to authorization of land disturbance.	☑	☑	☑	☑	☑	N/A

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TABLE 1.6.4 CONSTRUCTION SITE STORMWATER RUNOFF CONTROL REQUIREMENTS (CS)									
CS 1	**Legal Prohibition/Control Authority**								
SWQMP ID	**Element Task**	**Frequency or Measure of Success**	**Activity Required**	**PY 1 6/17**	**PY 2 6/18**	**PY 3 6/19**	**PY 4 6/20**	**PY 5 6/21**	**Legal Auth**
2.4.4	Construction Site Inspection	Permittee shall continue to implement the criteria and/or procedures for site inspections.	The permittee shall develop and implement criteria and/or procedures for site inspection. The procedures shall include an Enforcement Response Plan outlined in Section 159.05 of the Louisville/Jefferson County Erosion Prevention and Sediment Control Ordinance.	☑	☑	☑	☑	☑	☑
2.4.5	Construction Site Inspection Frequency	Permittee shall report the number of inspections performed in the Annual Report	The permittee is required to conduct inspections bi-monthly of at least 90% of active sites.	☑	☑	☑	☑	☑	☑
2.4.6	Construction Site Inventory	Inventory continually updated as projects are permitted and projects are completed	The permittee shall maintain an inventory of all active public and private construction sites that result in a total land disturbance of greater than or equal to one acre and less than one acre that is part of a larger common plan of development. Inventory should include the project's name, address, contact person, inspection dates, and any enforcement actions issued to the project.	☑	☑	☑	☑	☑	N/A

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TABLE 1.6.4 CONSTRUCTION SITE STORMWATER RUNOFF CONTROL REQUIREMENTS (CS)									
CS 2 CS Management Activities									
SWQMP ID	**Element Task**	**Frequency or Measure of Success**	**Activity Required**	**PY 1 6/17**	**PY 2 6/18**	**PY 3 6/19**	**PY 4 6/20**	**PY 5 6/21**	**Legal Auth**
2.4.7	Construction BMP Guidance Materials	Permittee shall update the Design Manual and Standards Specifications as needed and make the updates publicly available	As needed to account for changes in the KDOW general construction permit(s), the permittee shall update the guidance materials facilitating current technology use, local plan review/inspection requirements and related implications, Design Manual chapters and Standard Specifications sections to address EPSC and other construction phase (waste concrete, fueling and repairs operations, etc.) topics including BMP selection, feasibility, design considerations, operation, maintenance, inspection checklist and related matters.	☑	☑	☑	☑	☑	N/A
2.4.8	On-site SWPPP	Permittee shall document SWPPP procedures and expectations and make the procedures and expectations publicly available	The permittee shall continue the procedure for receiving Stormwater Pollution Prevention Plans (SWPPP) for qualifying construction sites.	☑	☑	☑	☑	☑	N/A
2.4.9	Construction Stormwater Runoff Control Program Inspection Refresher	Permittee shall complete refresher review with Construction inspectors annually, reporting the date and the number of attendees in the Annual Report	The permittee shall review inspector practices with individual MSD and contract inspectors to communicate/confirm oversight responsibilities, documentation requirements, and frequency of inspection, inspection standards and protocols. The refresher review (performed on-site) will include EPSC and non-EPSC construction stormwater control metrics, the most current KDOW General Construction Permit and the current USEPA MS4 Program Evaluation Construction Site Checklist.	☑	☑	☑	☑	☑	N/A

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TABLE 1.6.4 CONSTRUCTION SITE STORMWATER RUNOFF CONTROL REQUIREMENTS (CS)									
CS 2 CS Management Activities									
SWQMP ID	**Element Task**	**Frequency or Measure of Success**	**Activity Required**	**PY 1 6/17**	**PY 2 6/18**	**PY 3 6/19**	**PY 4 6/20**	**PY 5 6/21**	**Legal Auth**
2.4.10	Construction Inspector Training	Permittee shall provide at least three (3) training opportunities annually reporting the date and the number of attendees in the Annual Report	The permittee shall continue construction inspector training program placing new emphasis on delivering similar messages and understanding between MSD inspectors (regular and contracted) and qualified local contractor inspectors.	☑	☑	☑	☑	☑	N/A
2.4.11	Local Utility Construction General Permit Entities	Permittee shall hold meetings with MSD's EPSC general permit holders as needed.	The permittee shall continue to coordinate policy level stakeholders from local utility agencies holding construction general permits from MSD to confirm inter-agency communication protocols and review changes to standard, policies, procedures, BMP operation expectations and related matters.	☑	☑	☑	☑	☑	N/A
2.4.12	MSD General Construction Permits Evaluations	Permittee shall evaluate all general permits by the end of Permit Year three (3); and report general construction permits issued by MSD in the annual report	Permittee shall evaluate all general permits by the end of Permit Year three (3); and report general construction permits issued by MSD in the annual report			☑			N/A
2.4.13	Enforcement Tracking Log/Database	Permittee shall summarize in the annual report. A summary of the tracked enforcement actions issued shall be included in the annual report.	The permittee shall continue to track enforcement actions issues (SWO/NOVs) to support follow-up inspections and issuance of penalties and/or Notice of Compliance.	☑	☑	☑	☑	☑	N/A

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TABLE 1.6.4 CONSTRUCTION SITE STORMWATER RUNOFF CONTROL REQUIREMENTS (CS)									
CS 2 CS Management Activities									
SWQMP ID	**Element Task**	**Frequency or Measure of Success**	**Activity Required**	**PY 1 6/17**	**PY 2 6/18**	**PY 3 6/19**	**PY 4 6/20**	**PY 5 6/21**	**Legal Auth**
2.4.14	Third Party Oversight Inspection	Document training materials and the number of third party inspections conducted	The permittee shall utilize third party inspections for development of recommendations of efficacy of permittee inspections and enforcement. Updates to training materials shall be administered for permittee personnel at least once per year, if necessary.	☑	☑	☑	☑	☑	N/A
Cooperative Efforts (MSD provides supportive or other non-lead role)									
2.4.15	Plan Development Process Identification	Permittee shall make up-to-date guidance documents publicly available. A summary of the revised guidance materials shall be included in the Annual Report	The permittee shall review and update, as needed guidance materials identifying the process that developers must follow to obtain related construction permits, including process flow charts and checklists.	☑	☑	☑	☑	☑	N/A
2.4.16	Metro Construction Review Enforcement Coordination	Permittee shall hold at least one (1) conference every other year starting in Permit Year one (1)	The permittee shall coordinate program enforcement actions with Metro Inspections, Permits and Licensing (IP&L), as necessary, to support overall site compliance with an emphasis on Notices of Deficiency, Notices of Violation, and Stop Work Orders issued by MSD and implications on land disturbances and “in building” activities.	☑		☑		☑	N/A

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TABLE 1.6.5 POST-CONSTRUCTION (PC) STORMWATER RUNOFF CONTROL FOR NEW DEVELOPMENT AND REDEVELOPMENT									
PC 1	**Legal Prohibition/Control Authority**								
SWQMP ID	**Element Task**	**Frequency or Measure of Success**	**Activity Required**	**PY 1 6/17**	**PY 2 6/18**	**PY 3 6/19**	**PY 4 6/20**	**PY 5 6/21**	**Legal Auth**
2.5.1	Assess Legal Prohibition/Control Authority	Permittee shall make assessments as needed, and report proposed changes in the WDR for consideration by MSD Board.	The permittee shall assess existing Wastewater/Stormwater Discharge Regulations and other relevant ordinances and regulations, to identify changes needed to account for changes in standard of care, changes in technology, changes to development management process and related program needs for new development and redevelopment projects that disturb greater than or equal to one acre and construction activity disturbing less than one acre, including projects less than one acre that are part of a larger common plan of development.	☑	☑	☑	☑	☑	☑
2.5.2	Implement Legal Prohibition/Control Authority	Permittee shall summarize enforcement actions in the annual report. The permittee shall include the number of inspections and enforcement actions	The permittee shall enforce existing ordinances and regulations intended to limit long-term stormwater quality impacts from new construction and significant redevelopment.	☑	☑	☑	☑	☑	☑
2.5.3	Site Plan Review	Permittee shall continue to conduct site plan reviews	The permittee shall conduct site plan reviews through procedures for reviewing development plans for compliance with stormwater management requirements.	☑	☑	☑	☑	☑	☑
2.5.4	Stormwater Infrastructure Inventory	Permittee shall update the GIS LOJIC System as data becomes available	The permittee shall continue to maintain the GIS-LOJIC layers incorporating system changes from new development plans, MSD projects and related system projects.	☑	☑	☑	☑	☑	N/A

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TABLE 1.6.5 POST-CONSTRUCTION (PC) STORMWATER RUNOFF CONTROL FOR NEW DEVELOPMENT AND REDEVELOPMENT									
PC 1	**Legal Prohibition/Control Authority**								
SWQMP ID	**Element Task**	**Frequency or Measure of Success**	**Activity Required**	**PY 1 6/17**	**PY 2 6/18**	**PY 3 6/19**	**PY 4 6/20**	**PY 5 6/21**	**Legal Auth**
2.5.5	Post-Construction BMP Inventory Update	Permittee shall incorporate related data on an ongoing basis; Permittee shall assess data to identify and fill dataset gaps every other year	The permittee shall develop and maintain an inventory and map of post-construction stormwater controls, including retention ponds, detention basins, and stormwater quality treatment facilities. The permittee shall update LOJIC and HANSEN® datasets to reflect the location, extent, and condition of post-construction stormwater quality BMPs.	☑		☑			N/A
2.5.6	Post-Construction Inspector Training	At least two trainings per year for the inspectors of Post-Construction BMPs. Report in the annual report, the dates of training, # of attendees, and subject matter	The permittee shall provide training to the inspectors including internal staff that have been designated to inspect the effectiveness of the post-construction BMPs, as well as, the local residents who are required to provide operation and maintenance of privately-owned Post-Construction BMPs.	☑	☑	☑	☑	☑	N/A

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TABLE 1.6.5 POST-CONSTRUCTION (PC) STORMWATER RUNOFF CONTROL FOR NEW DEVELOPMENT AND REDEVELOPMENT									
PC 2	**PC Plan Maintenance and Update**								
SWQMP ID	**Element Task**	**Frequency or Measure of Success**	**Activity Required**	**PY 1 6/17**	**PY 2 6/18**	**PY 3 6/19**	**PY 4 6/20**	**PY 5 6/21**	**Legal Auth**
2.5.7	Inspect "Credit" Basins	Permittee shall continue to perform spot check inspections for at least 50% of qualifying facilities annually and summarize for the annual report	The permittee shall inspect private flood control basins, (retention ponds) receiving a stormwater utility user fee credit (reduction) to determine ability to fulfill original, current, and projected drainage demands. Continue to enforce, per existing basin credits documentation requirements, necessary to fulfill maintenance agreements and long-term system integrity.	☑	☑	☑	☑	☑	N/A
2.5.8	Inspection Plan Procedures for Treatment BMPs	Permittee shall continue to perform spot check inspections for at least 20% of treatment BMPs annually. All BMPs should be inspected by the end of the permit cycle. A summary of this activity shall be included in the annual report	The permittee shall update inspection and oversight protocol for private stormwater quality treatment BMPs to facilitate long-term maintenance demands including requirements for qualified private inspection of private BMPs with local government oversight access inspection and controls, as needed.	☑	☑	☑	☑	☑	N/A
2.5.9	Post-Construction and Green Infrastructure BMP Guidance Materials	Permittee shall update the guidance materials specifically the Design Manual chapters and Standards Specifications sections and make the document publicly available	The permittee shall evaluate and update the guidance materials facilitating current technology use and to reflect local plan review, construction site inspection and post-construction inspection requirements. Design Manual chapters and Standard Specifications sections to address long-term BMP operation, inspection and maintenance including checklists. "Green Infrastructure" is a combination of natural and engineered infrastructure that is designed to reduce the environmental footprint of the system. In terms of stormwater, green infrastructure can effectively manage stormwater runoff through the use of infiltration, biofiltration, detention, and other stormwater management techniques.	☑	☑	☑	☑	☑	N/A

Schedule/Applicability Key: ❑ = Due in Permit Year (PY), ☑ = Scheduled/completed in PY

TABLE 1.6.5 POST-CONSTRUCTION (PC) STORMWATER RUNOFF CONTROL FOR NEW DEVELOPMENT AND REDEVELOPMENT									
PC 2	**PC Plan Maintenance and Update**								
SWQMP ID	**Element Task**	**Frequency or Measure of Success**	**Activity Required**	**PY 1 6/17**	**PY 2 6/18**	**PY 3 6/19**	**PY 4 6/20**	**PY 5 6/21**	**Legal Auth**
2.5.10	Plan Preparers & Reviewers Training (MSD Facilitates)	Permittee shall continue to offer at least two (2) events annually. A summary of workshops topics and attendance shall be submitted in the annual report	The permittee shall provide available content, such as EPA web casts, through periodic training classes, workshops and meetings for designers, planners, and developers including emphasis on green infrastructure, post-construction planning, and design procedures for structural and non-structural BMPs, pollutant removal and inspection. MSD shall incorporate comments from stakeholders in the plan review process from designers to internal MSD review staff to facilitate training sessions to address evolving technologies and lessons learned.	☑	☑	☑	☑	☑	N/A
2.5.11	Project DRI	Permittee shall provide program progress summarizing cost, number and type of projects in the annual report	The permittee shall continue to implement Drainage Response Initiative (DRI) program aimed at identifying and solving the local drainage problems in Jefferson County.	☑	☑	☑	☑	☑	N/A
2.5.12	User Fee Credits (Green Infrastructure Incentives) Program Planning	Permittee shall evaluate incentives as needed.	The permittee shall evaluate enhancements to the utility user fee credits program for green infrastructure and post- construction BMPs based on post-construction lessons learned.	☑	☑	☑	☑	☑	N/A
2.5.13	Stream Restoration Inspection and Maintenance	Permittee shall continue to provide in the annual report, summarized stream reaches and maintenance. Permittee shall assess or implement at least one restoration project per year starting in Permit Year two (2)	The permittee shall identify restored stream reaches that MSD has maintenance responsibilities. The permittee shall also determine status of restored reaches and identify, prioritize/schedule and implement maintenance needs. MSD shall prioritize, design, and implement restoration practices on at least one stream segment per year.		☑	☑	☑	☑	N/A

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TABLE 1.6.5 POST-CONSTRUCTION (PC) STORMWATER RUNOFF CONTROL FOR NEW DEVELOPMENT AND REDEVELOPMENT									
PC 2	**PC Plan Maintenance and Update**								
SWQMP ID	**Element Task**	**Frequency or Measure of Success**	**Activity Required**	**PY 1 6/17**	**PY 2 6/18**	**PY 3 6/19**	**PY 4 6/20**	**PY 5 6/21**	**Legal Auth**
2.5.14	Certified/Qualified Construction BMP Inspector Program	Permittee shall continue to administer Qualified Post Construction Inspector training and include summary of activities in the annual report	The permittee shall enhance the Qualified Post Construction Inspector training program to identify and hold accountable third party private BMP inspectors to facilitate periodic operation and maintenance of private facilities resulting from the credits program, regulations changes and demonstration projects.	☑	☑	☑	☑	☑	☑
2.5.15	Stormwater runoff quality treatment standard for all new development and redevelopment projects	Permittee shall continue to administer a local treatment standard for addressing stormwater runoff quality.	The permittee shall continue to administer an on-site stormwater runoff quality treatment standard, to be adopted by ordinance or other regulatory mechanism for all new development and redevelopment projects at any location within Louisville Metro. The proposed local standard will require, in combination or alone, management measures that are designed, built and maintained to infiltrate, evapo-transpire, harvest and reuse stormwater runoff, or otherwise manage the stormwater runoff quality. The standard shall be based, at a minimum, on an analysis of precipitation records to determine the equivalent surface depth of runoff (e.g. 0.60 inches) produced from an 80th percentile precipitation event.	☑	☑	☑	☑	☑	☑

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TABLE 1.6.5 POST-CONSTRUCTION (PC) STORMWATER RUNOFF CONTROL FOR NEW DEVELOPMENT AND REDEVELOPMENT									
PC 2	**PC Plan Maintenance and Update**								
SWQMP ID	**Element Task**	**Frequency or Measure of Success**	**Activity Required**	**PY 1 6/17**	**PY 2 6/18**	**PY 3 6/19**	**PY 4 6/20**	**PY 5 6/21**	**Legal Auth**
2.5.16	Private BMP Maintenance Agreement Assessment/Long Term O & M	Permittee shall continue to require all new development and redevelopment projects to have this agreement	The permittee shall require all new development or redevelopment to establish and enter into a long-term maintenance agreement and maintenance plan approved management practices for property owners. Alternatively, the permittee may establish other enforceable mechanisms for requiring long-term maintenance of structural and non-structural BMPs. Such authorities shall allow the MS4, or its designee, to conduct inspections of the management practices and also account for transfer of responsibility in leases and/or deed transfers. The agreement shall also allow the MS4s, or its designee, to perform necessary maintenance or corrective actions neglected by the property owner/operator, and authority to recover costs from the property owner/operator when the owner/operator has not performed the necessary maintenance.	☑	☑	☑	☑	☑	☑
Cooperative Efforts (MSD provides supportive or other non-lead role)									
2.5.17	Green Infrastructure Demonstration Site(s)	Permittee shall report its role and activities, lessons learned, and overall project progress and summarize for the annual report	The permittee shall continue, in cooperation with Louisville Metro Mayor's administration, University of Louisville and other local agencies, to pursue development of stormwater quality and green infrastructure interpretative center(s) at strategic location(s) around Jefferson County with the intent of providing a positive highly visible platform to promote the viability and desirability of green infrastructure BMPs. Where feasible explore the opportunity for BMP evaluation and pre-/post-monitoring.	☑	☑	☑	☑	☑	N/A

Schedule/Applicability Key: ❑ = Due in Permit Year (PY), ☑ = Scheduled/completed in PY

TABLE 1.6.5 POST-CONSTRUCTION (PC) STORMWATER RUNOFF CONTROL FOR NEW DEVELOPMENT AND REDEVELOPMENT									
PC 2	**PC Plan Maintenance and Update**								
SWQMP ID	**Element Task**	**Frequency or Measure of Success**	**Activity Required**	**PY 1 6/17**	**PY 2 6/18**	**PY 3 6/19**	**PY 4 6/20**	**PY 5 6/21**	**Legal Auth**
2.5.18	Rain Barrels Partnerships	Permittee shall report its role, lessons learned and overall programs progress and summarize for the annual report	The permittee shall explore the opportunity for MSD to continue program with Louisville Nature Center that provided public guidance to construct and maintain rain barrels.	☑	☑	☑	☑	☑	N/A
2.5.19	No Mow/Riparian Zone	Permittee shall report its role and activities, lessons learned, and overall project progress and summarize for the annual report	The permittee shall assess existing mowing areas as part of maintenance activities to determine if the original need or impetus still exists. Opportunities to adjust the mowing contracts to include or exclude mowing areas will be incorporated into those contracts as they are rebid or renewed. Areas that are removed from the mowing list will be considered for "no mow" signage and education.	☑	☑	☑	☑	☑	N/A
2.5.20	Urban Reforestation – MS4	Permittee shall report its role and activities, lessons learned, and overall project progress and summarize for the annual report	The permittee shall create a grant funding mechanism to provide incentives for the planting of trees in the MS4 area and improve tree canopy for the benefit of stream health and water quality. The co-permittee will budget to provide grant funding of private or public grantees to plant 1000 trees per year in the MS4. Funds will be administered in accordance with water quality goals, and on a first-come first-serve basis.	☑	☑	☑	☑	☑	N/A
2.5.21	Regional Basin Retrofit Analysis	Permittee shall by the end of Permit Year four (4) produce a technical memo outlining findings and recommendations	The permittee shall assess the regional flood control basins to determine if there is potential for enhancement to the basin or the outlet structure to provide additional capture for smaller water quality events. A technical memo and recommendation outline shall be provided prior to the end of Permit Year four (4).				☑		N/A

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TABLE 1.6.6 GOOD HOUSEKEEPING/POLLUTION PREVENTION (GH/P2) PROGRAMS FOR MUNICIPAL FACILITIES									
GH/P2	**Plan Maintenance and Update**								
SWQMP ID	**Element Task**	**Frequency or Measure of Success**	**Activity Required**	**PY 1 6/17**	**PY 2 6/18**	**PY 3 6/19**	**PY 4 6/20**	**PY 5 6/21**	**Legal Auth**
2.6.1	Stormwater Pollution Prevention Plans for MSD Operations	Permittee shall assess plans within six (6) months of major facility changes or at least once every two years by the facility superintendents and operation managers who make up the SWP3 Committee	The permittee shall periodically update and implement SWPPPs (also known as BMP Plans or Stormwater Plans) to control the discharge of pollutants from POTWs and other applicable MSD-owned facilities as defined in 40 CFR 122.26 including wastewater treatment plants and major operating facilities. SWPPPs will include provisions for maintenance activities on facility grounds, materials and equipment storage, security, preventative maintenance, risk identification and assessment, materials inventory, floor drain protection/controls, inspections and records.		☑		☑		N/A
2.6.2	Training on MSD Facility SWPPPs	Permittee shall starting in Permit Year one (1) utilize third party inspectors to address at least three (3) SWPPP issues annually and summarize training and attendance for the Annual Report	The permittee shall utilize third party inspectors working with the facility SWPPP Committees to perform routine training of key SWPPP issues	☑	☑	☑	☑	☑	N/A
2.6.3	Maintenance Staff Training on Pollution Prevention	Permittee shall report the number of staff attending related training and include in the Annual Report	The permittee shall provide training to key maintenance staff on good housekeeping activities related to stormwater quality in MSD operations including but not limited to: green infrastructure operation and maintenance, fleet and building maintenance, and stormwater conveyance/drainage system maintenance.	☑	☑	☑	☑	☑	N/A

Schedule/Applicability Key: ❑ = Due in Permit Year (PY), ☑ = Scheduled/completed in PY

TABLE 1.6.6 GOOD HOUSEKEEPING/POLLUTION PREVENTION (GH/P2) PROGRAMS FOR MUNICIPAL FACILITIES									
GH/P2	**Plan Maintenance and Update**								
SWQMP ID	**Element Task**	**Frequency or Measure of Success**	**Activity Required**	**PY 1 6/17**	**PY 2 6/18**	**PY 3 6/19**	**PY 4 6/20**	**PY 5 6/21**	**Legal Auth**
2.6.4	Pesticides Management	Permittee shall track employees with related state certifications.	The permittee shall utilize Commonwealth of Kentucky pesticide management registration and certifications to qualify MSD employees applying pesticides. The permittee shall develop and maintain a list of pesticides used and stored, including storage locations.	☑	☑	☑	☑	☑	N/A
2.6.5	Incident Response Staff Training	Permittee shall continue to report incident response staff training participation	The permittee shall provide training to unified incident response staff on related stormwater issues including good housekeeping, IDDE, construction, post-construction BMP/controls and program management.	☑	☑	☑	☑	☑	N/A
2.6.6	MSD Capital Project Control	Permittee shall summarize changes to MSD Capital Project requirements, as necessary	The permittee shall, for MSD directed capital, rehabilitation and reconstruction projects, disturbing more than one acre, performed by a contractor, ensure the contract documents/agreements/work orders will include stipulations that require the work be designed/performed/implemented/constructed under the same standards for construction and post-construction stormwater quality that MSD requires of private development it regulates.	☑	☑	☑	☑	☑	N/A
2.6.7	MSD Stormwater Quality BMP Data	Permittee shall every other year assess datasets for completeness and ability to support staff scheduling stormwater-quality BMPs MSD is responsible for maintaining	The permittee shall update LOJIC and HANSEN® datasets to identify stormwater-quality BMPs located on MSD properties, rights-of-way and easements that MSD is responsible for operating and/or maintaining. The datasets will be updated in a manner to support ongoing prioritization and tracking of operation and maintenance.	☑		☑		☑	N/A

Schedule/Applicability Key: ❑ = Due in Permit Year (PY), ☑ = Scheduled/completed in PY

TABLE 1.6.6 GOOD HOUSEKEEPING/POLLUTION PREVENTION (GH/P2) PROGRAMS FOR MUNICIPAL FACILITIES									
GH/P2	**Plan Maintenance and Update**								
SWQMP ID	**Element Task**	**Frequency or Measure of Success**	**Activity Required**	**PY 1 6/17**	**PY 2 6/18**	**PY 3 6/19**	**PY 4 6/20**	**PY 5 6/21**	**Legal Auth**
2.6.8	Catch Basin and Storm Sewer Cleaning	Permittee shall summarize and include in the Annual Report	The permittee shall continue to clean catch basins and sewers (closed pipe systems) to prevent debris from entering receiving streams and address drainage/flooding issues in MSD area based on known priorities and information gathered from the customer hotline.	☑	☑	☑	☑	☑	N/A
Cooperative Efforts (MSD provides supportive or other non-lead role)									
2.6.9	Channel Maintenance	Permittee shall summarize and include in the Annual Report	The permittee shall continue to maintain open channel system in MSD area based on priorities and information from the customer hotline including ditch cleanings, ditch regrading, drainage obstruction removals, erosion repairs, floodwall levee maintenance, headwall install/repair, concrete channel installation, tree removal, driveway apron restoration, routine mowing and closed pipe installations.	☑	☑	☑	☑	☑	N/A
2.6.10	Stormwater Pollution Prevention Plans for Co-Permittee Operations	Permittee shall assist in the review of at least one (1) facility annually	The permittee shall provide co-permittees with periodic 3rd-party technical assistance and/or review of the facility stormwater pollution prevention plans (SWPPPs, BMP plans, or Stormwater Plans and BMPs) and/or site visit/walkthrough to help identify opportunities to improve the effectiveness of the plans and their implementation.	☑	☑	☑	☑	☑	N/A

Schedule/Applicability Key: ❑ = Due in Permit Year (PY), ☑ = Scheduled/completed in PY

TABLE 1.6.7 MONITORING (M)									
M	**Monitoring Plan Maintenance and Update**								
SWQMP ID	**Element Task**	**Frequency or Measure of Success**	**Activity Required**	**PY 1 6/17**	**PY 2 6/18**	**PY 3 6/19**	**PY 4 6/20**	**PY 5 6/21**	**Legal Auth**
2.7.1	Long-Term Monitoring Network (LTMN)	Permittee shall provide datasets electronically with annual report.	The permittee shall continue the existing program of the collection of long-term data on stream quality and habitat for at least 28 LTMN locations selected to support the various types of data collected. This program includes: **Continuous** – pH, conductivity, temperature, dissolved oxygen, and stream flow. **Quarterly** – Ambient monitoring for Total Suspended Solids (TSS); E. coli; Total Nitrogen (as N) Oil and Grease, Total Recoverable Copper and pH. **5/month (May-October)** - Recreational monitoring for E. coli. **Once Every Two Years** – Biological sampling and/or evaluation rotating to include: algae, fish and benthic macro invertebrates.	☑	☑	☑	☑	☑	N/A
2.7.2	Monitoring Summary	Permittee shall summarize and include in annual report	The permittee shall provide a summary of monitoring collection efforts and results in the annual report.	☑	☑	☑	☑	☑	N/A
2.7.3	Trend Analysis	Permittee shall, at least once per permit cycle, provide synthesis report	The permittee shall perform trend analysis to support long-term assessments of local waterways and program performance. Report analysis through the "Synthesis Reports" at least once every permit cycle.					☑	N/A

Schedule/Applicability Key: ❑ = Due in Permit Year (PY), ☑ = Scheduled/completed in PY

TABLE 1.6.7 MONITORING (M)									
M	**Monitoring Plan Maintenance and Update**								
SWQMP ID	**Element Task**	**Frequency or Measure of Success**	**Activity Required**	**PY 1 6/17**	**PY 2 6/18**	**PY 3 6/19**	**PY 4 6/20**	**PY 5 6/21**	**Legal Auth**
2.7.4	Flow Estimate to Support Quarterly Ambient Monitoring	Permittee shall provide available data and include in annual reports	The permittee shall utilize total precipitation estimates over the previous twenty-four (24) hour period to estimate flow. When flow is measured with in stream gauging equipment, that data will be utilized rather than precipitation based estimates.	☑	☑	☑	☑	☑	N/A
2.7.5	Monitoring Location Maintenance	Permittee shall summarize activities and include in annual reports	The permittee shall continue its collaboration with United States Geological Survey (USGS) on flow gages and monitoring locations maintenance and data management.	☑	☑	☑	☑	☑	N/A
2.7.6	Precipitation Estimate	Permittee shall continue to make rain gage network data available on-line	The permittee shall continue to maintain the continuous rain gage network and on-line public access to that data.	☑	☑	☑	☑	☑	N/A
2.7.7	Water Quality Standards	Permittee shall apply the most stringent standard	The permittee shall compare stream monitoring analytical results to the applicable water quality standards for each parameter of the monitoring program. The most stringent applicable standard shall be used for comparison. Constituents that exceed applicable Water Quality Standards shall be highlighted. The permittee shall include a discussion of possible pollutant sources through the annual report.	☑	☑	☑	☑	☑	N/A
2.7.8	Location Mapping	Permittee shall maintain the monitoring stations reflected in mapping system	The permittee shall maintain the geo-coded monitoring station locations and descriptions through related geographic datasets and databases.	☑	☑	☑	☑	☑	N/A

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TABLE 1.6.7 MONITORING (M)									
M	**Monitoring Plan Maintenance and Update**								
SWQMP ID	**Element Task**	**Frequency or Measure of Success**	**Activity Required**	**PY 1 6/17**	**PY 2 6/18**	**PY 3 6/19**	**PY 4 6/20**	**PY 5 6/21**	**Legal Auth**
2.7.9	Sampling Methodology and Test Procedures	Permittee shall perform the sampling methodology to insure compliance with 40 CFR 122.26 and 136, and provide a summary of as-needed updates to the QAPP in the annual report	The permittee shall perform the sampling methodology according to the EPA stormwater application regulation at 40 CFR 122.26. The permittee shall perform the analyses according to the procedures approved under 40 CFR Part 136, unless other test procedures have been specified. The permittee shall assess the monitoring Quality Assurance Project Plan (QAPP), and update as needed.	☑	☑	☑	☑	☑	N/A
2.7.10	Annual Data Summary	Permittee shall provide a summary electronically with the annual report	The permittee shall submit a stormwater monitoring report annually. The monitoring reports shall include: status of implementation of the monitoring program, methods of evaluating data, graphical summaries of the data, and an explanation/discussion of the data for each component of the monitoring program. The monitoring data/results obtained each year will be submitted electronically with the Annual Report. A narrative data analysis shall be submitted annually within the Annual Report.	☑	☑	☑	☑	☑	N/A

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TABLE 1.6.8 PERFORMANCE ASSESSMENT AND REPORTING (PAR)									
PAR	**Performance Assessment and Reporting**								
SWQMP ID	**Element Task**	**Frequency or Measure of Success**	**Activity Required**	**PY 1 6/17**	**PY 2 6/18**	**PY 3 6/19**	**PY 4 6/20**	**PY 5 6/21**	**Legal Auth**
2.8.1	Activity Measures Reporting	Permittee shall develop and retain Annual Reports for three years beyond permit term.	As described in the specific activity listings, the permittee shall compile information necessary to provide in the annual report. The metrics defined by "Measure of Success" shall be reported and kept for program assessment purposes. The permittee shall track the appropriate metrics through existing databases/spreadsheets to support staff assignments and budget development.	☑	☑	☑	☑	☑	N/A
2.8.2	PEOPLE	Permittee shall, by the end of Permit Year one (1), summarize tracking procedures and results and include with Annual Report.	The permittee shall continue activity tracking to support consistent coordination and integrated reporting in a way that enables the variety of MSD staff to report their individual activities, target audiences, and related metric.	☑	☑	☑	☑	☑	N/A
2.8.3	Illicit Discharge Trend Analysis	Permittee shall provide, during Permit Year Five (5) a report of trends and potential implications of IDDE investigations.	The permittee shall perform a trend analysis of illicit discharge investigations and enforcement actions over the term of the permit.					☑	N/A
2.8.4	Industrial/IDDE Compliance Actions Portal	Permittee shall maintain and report progress summarized in the Annual Report.	The permittee shall maintain a Compliance Actions Web Portal supplementing existing databases for functionality for internal use to expedite follow-up inspections of HRIFs.	☑	☑	☑	☑	☑	N/A
2.8.5	Post-Construction Inspection Portal	Permittee, shall maintain and report progress summarized in the Annual Report.	The permittee shall maintain a Compliance Actions Database for internal use to expedite follow-up inspections of private post-construction BMPs.	☑	☑	☑	☑	☑	N/A
2.8.6	Six-Level Program Assessment Methodology	Permittee shall continue to assess performance with the six-level program and report on progress in Annual Reports	The permittee shall continue to evaluate and report portions of the six-level program EPA began advocating in 2008 to assist MS4 programs in identifying success and future areas of focus.	☑	☑	☑	☑	☑	N/A

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TABLE 1.6.8 PERFORMANCE ASSESSMENT AND REPORTING (PAR)									
PAR	**Performance Assessment and Reporting**								
2.8.7	Cooperative annual report	Permittee shall prepare and submit Annual Report in a timely manner	The permittee shall coordinate and cooperate with co-permittees in compilation of the annual compliance demonstration reports	☑	☑	☑	☑	☑	N/A

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2.0 MS4 Annual Report Fact Sheet Introduction

The MS4 Permit (KYS000001) includes a table that outlines compliance measures for programmatic activities. Each item in this permit table was addressed in the narrative description provided in the SWQMP, submitted to KDOW in July 2017. For this report, a summary of activities and performance during the reporting year is provided in the following sections:

- Section 2.1 - Public Education, Outreach, Participation, and Learning Experiences (PEOPLE)
- Section 2.2 - Illicit Discharge and Detection (IDDE)
- Section 2.3 - Industrial Program Requirements (IP)
- Section 2.4 - Construction Site Stormwater Runoff Control (CS)
- Section 2.5 - Post-Construction Controls (PC)
- Section 2.6 - Good Housekeeping/Pollution Prevention (GH/P2)
- Section 2.7 - Monitoring (M)
- Section 2.8 - Program Assessment and Reporting (PAR)

MS4 ANNUAL REPORT - MSD FIFTH PERMIT CYCLE PROGRAM
KY000001
PUBLIC EDUCATION, OUTREACH, PARTICIPATION, AND LEARNING EXPERIENCES (PEOPLE)

5th Reporting Period - November 2021

	Element Task	SWQMP ID	Element Task	Frequency or Measure of Success	Schedule	Activity Required	Event or Meeting	Location	Date	Description	Appendix	Proposed Change
PEOPLE General Public & Stakeholder Education Program	General Public - Mass Media Integration/Distribution	2.1.1	General Public- Mass Media Integration/Distribution	Report the number of potential households and estimate the numbers of households were reached.	Annually	The permittee shall integrate MS4 stormwater quality topics in to existing print mass media, local government cable channel, social marketing materials, and/or new materials with the intent of affecting behavior change.	MSD Media Releases	Media Release	Various	Media releases for MSD activities and projects	2.1.1-A	No
								Business First	Various	Ads in Business First on various topics.	2.1.1-B	No
								Oldham Era	Various	Louisville MSD service for Oldham County.	2.1.1-C	No
								The Anchor Age	9/2020	The Anchor Age newsletter.	2.1.1-D	No
							Kentucky Conservation Conversations Podcast	Podcast	10/6/2020	Louisville MSD Executive Director Tony Parrott discussed MSD and Water Quality in Jefferson County.	2.1.1-E	No
							Social Media Posts	Facebook, Twitter, Instagram	Various	Social media posts on various topics.	2.1.1-F	No
							MSD Streamline	Electronic Newsletter	Various	MSD newsletter with articles and ads about various topics.	2.1.1-G	No
							MSD Floodplain News	Mailed Newsletter	11/2020	MSD floodplain newsletter included with annual mailing to all property owners in the floodplain.	2.1.1-H	No
							MSD Bill Stuffer	Mailed Newsletter	August/September 2020	MSD Bill Stuffer included with monthly bill	2.1.1-I	No
							Local Government Cable Channel	MetroTV	See Attachment	MetroTV aired various MSD programming including topics such as the Ohio River Tunnel, Shanwee Park Basin and many others totalling 99 hours and 46 minutes of air time.	2.1.1-J	No
							Catch Basin Signage	Various Locations	On-Going	There are “Dump No Waste – Drains to Stream” signs located on catch basins. These signs let the public know that the catch basins go directly to a stream; therefore dumping waste or any contaminants will affect the streams.	2.1.1-K	No
	General Public - Direct Interaction	2.1.2	General Public- Direct Interaction	Permittee shall present educational materials to the public at least six (6) event days per year; update booth material annually. Provide summary of the educational activities in annual report	Annually	The permittee shall present the "Key Messages" at community events, through the use of a display booth, "enviroscape" or other direct personal integration approaches.	Waterway Protection Tunnel Exhibit	Kentucky Science Center	On-going	MSD partnered with the Kentucky Science Center to create an exhibit on the Waterway Protection Tunnel and how it keeps waterways safe and clean.	2.1.2-A	No
							University of Louisville Green Engineering Class	Virtual	3/9/2021	Discussed Green Infrastructure, water quality and watershed topics with a class at the University of Louisville	2.1.2-B	No
							Louisville Free Public Library Presentations	Virtual	4/5/2021 4/12/2021 4/19/2021 4/26/2021	MSD partnered with the Louisville Free Public Library to present information on the Waterway Protection Tunnel, how it was built and how it contributes to safe, clean water. Presentation targeted at 2nd-5th grade students.	2.1.2-C	No
							Holy Cross High School River to River Program	Virtual	4/19/2021	MSD conducted a workshop for freshman at Holy Cross High School about the different aspects of water from wastewater, drinking water, to stormwater and flooding.	2.1.2-D	No
							Portland Elementary School River to River Program	Portland Elementary School	4/23/2021	Heritage Engineering used the MSD flood model to give a presentation to 3rd graders at Portland Elementary School about flood safety and flooding and how development impacts watersheds and water quality.	2.1.2-E	No
							Louisville Nature Center Field Trips and Camps	Louisville Nature Center	On-going	MSD supports Louisville Nature Center programs including field trips, day camps, workshops and Scout programs.	2.1.2-F	No
							Waterfront Botanical Gardens Summer Camp Tour	MSD Research Station	44358	MSD staff guided summer camp tour of our research station.	2.1.2-G	No
							University of Louisville’s Public Health Practice Undergraduate Course	Virtual	11/19/2020	MSD taught a session of the University of Louisville’s Public Health Practice undergraduate course. The class focused on the impact that MSD services and the connection between safe, clean water and public health.	2.1.2-H	No

	Element Task	SWQMP ID	Element Task	Frequency or Measure of Success	Schedule	Activity Required	Event or Meeting	Location	Date	Description	Appendix	Proposed Change
PEOPLE General Public & Stakeholder Education Program	General Public- Meeting Topic Integration	2.1.3	General Public- Meeting Topic Integration	Permittee shall integrate water quality topics in MS4 public meetings at least six (6) events per year; provide summary of the events in the annual report	Annually	The permittee shall integrate MS4 stormwater quality topics, as feasible and appropriate into other MSD sponsored public meetings.	Waterfront Botanical Gardens Beargrass Greenway Trail Connector Ribbon Cutting	Waterfront Botanical Gardens	9/2/2020	MSD joined Waterfront Botanical Gardens for the ribbon cutting of the Beargrass Greenway Trail Connector.	2.1.3-A	No
							KDOW Video Interview Series	Online	9/17/2020	MSD participated in a series of video interviews with KDOW to discuss solutions for stormwater management. The video was used as a virtual option to support public outreach and engagement.	2.1.3-B	No
							Louisville Metro Council Meeting	Metro Hall	12/10/2020, 6/24/21	MSD participated in the Metro Council meeting.	2.1.3-C	No
							Co-Immunity Project Webinar	Virtual	1/19/2021	MSD participated in the Co-Immunity Study Webinar, which focused on the partnership efforts to collect and test surface water and wastewater samples for SARS-CoV-2.	2.1.3-D	No
							Salt River Watershed Watch Annual Conference	Virtual	2/25/2021	MSD presented at the Salt River Watershed Watch Annual Conference, including an update on the Waterway Protection Tunnel, Three Forks Beargrass Creek Ecosystem Restoration study, and Middle Fork Beargrass Creek Watershed Plan.	2.1.3-E	No
							Currys Fork Watershed Technical Advisory Committee	Virtual	4/29/2021	The Currys Fork Watershed Technical Advisory Committee works to restore and protect the Currys Fork Watershed in Oldham County. MSD presented to the advisory committee MSD's role in Oldham County and our vision for safe, clean waterways.	2.1.3-F	No
							Cliff Avenue Pollinator Garden Installation	4701 Cliff Ave	5/15/2021-5/16/2021	MSD, in partnership with the Jefferson County Soil and Water Conservation District and the Beechmont Neighborhood Association, kicked off installing a pollinator garden on the property bringing new life to the third-of-an-acre property.	2.1.3-G	No
							Shawnee Park Boat Ramp Ribbon Cutting Celebration	Shawnee Park	5/21/2021	MSD, Metro Parks, and Partners participated in the Shawnee Boat Ramp Ribbon Cutting. The project will allow a new generation of Louisvillians to explore and enjoy the Ohio River from West Louisville.	2.1.3-H	No
							Shawnee Park Improvements Celebration	Shawnee Park	6/11/2021	MSD participated in a press conference in Shawnee Park with Louisville Metro to celebrate park improvements.	2.1.3-I	No
							Ripple Effects Awards Ceremony	Waterfront Park	6/21/2021	MSD participated in the Ripple Effects awards presentation, celebrating students and community members who captured photographs of local waterways.	2.1.3-J	No
							Beargrass Creek Alliance Meeting	Virtual	6/28/2021	MSD participated in the Beargrass Creek Alliance meeting, providing an update on wastewater, stormwater, and flood protection projects. https://www.kwalliance.org/bca-resources-ndash-maps-and-meeting-minutes.html?fbclid=IwAR0trMu_dIJzzVyEh-QjbXGG26Xr7MOTuOgsTs4gnRVtaL234pusxASbqTo	2.1.3-K	No

	Element Task	SWQMP ID	Element Task	Frequency or Measure of Success	Schedule	Activity Required	Event or Meeting	Location	Date	Description	Appendix	Proposed Change
PEOPLE General Public & Stakeholder Education Program	Volunteer Programs, Participation, Promotion or Support	2.1.4	Volunteer Programs, Participation, Promotion or Support	Permittee shall have direct participation in at least three (3) events per year; and promote additional two (2) events per year, provide summary of volunteer opportunities the permittee participated, facilitate, or supported in the annual report	Annually	The permittee shall participate in, facilitate, encourage or support volunteer program opportunities on a case by case basis to optimize resources and potential to affect behavioral changes through participation events.	Ohio River Mini-Sweep Clean up	Ohio River	5/22/2021	MSD and ORSANCO sponsored event to clean up along the Ohio River	2.1.4-A	No
							Mayors Give A Day	Various	04/01/2021-04/30/2021	MSD Employees volunteered for various tree plantings and cleanups throughout Louisville Metro.	2.1.4-B	No
							Native Seed Give Away	Distributed by mail	3/1/2021	Distributed native seed packets.	2.1.4-C	No
							Tree Planting at Sutherland Dr FEMA Buyout Properties	Sutherland Dr	4/15/2021	Louisville MSD employees volunteered to plant trees on FEMA buyout property sites along Sutherland Dr which is planned as a future community park.	2.1.4-D	No
							South Louisville Tree Planting Project	Louisville Metro Council Districts 8 and 21	5/15/2021	Partnered with Louisville Grows, Division of Community Forestry and Operation Brightside to plant 167 new trees in the combined sewer area in an effort to address drainage, heat island, and water quality issues.	2.1.4-E	No
							Seventh Street Garden Tree Planting	Seventh Street Community Garden	4/24/2021	Planted more than 50 trees in the combined sewer area in an effort to address drainage, heat island, and water quality issues.	2.1.4-F	No
							Beechmont Pollinator Garden	Beechmont Pollinator Garden	May 2021	In May, the Jefferson County Soil and Water Conservation District, in partnership with the Beechmont Neighborhood Association, kicked off the installation of the garden bringing new life to the third-of-an-acre property.	2.1.4-G	No
							Beargrass Creek Mini-Sweep	Beargrass Creek	5/22/2021	A group of volunteers including members of River city Paddle Sports participated in a clean up of Beargrass Creek.	2.1.4-H	No
							Metro Council District 8 Stream Cleanup	Beargrass Creek	4/24/2021	Beargrass Creek stream cleanup as part of Earth Day events.	2.1.4-I	No
	Metro Call Hotline and MSD Customer Relations	2.1.5	Metro Call Hotline and MSD Customer Relations	Permittee shall provide a summary of MS4 complaints and comments received in the annual report	Annually	The permittee shall provide support to the 24-hour central reporting hotline "Metro Call", LWC/One Water lines, and internet communication channels for use by the public and MSD employees to report complaints, spills, and illegal dumping.	Summary of MS4 Customer Complaints	Customer Relations Call Center	07/01/2020 - 06/30/2021	MSD's Customer Relations Call Center is staffed 24 hours per day, seven days per week and responds to customer calls and web requests for service. Requests are recorded and coded in the IPS database and routed to the appropriate staff for follow-up. Responses are recorded in the database. The department also assists walk-in customers.	2.1.5-A	No
	Elected Officials	2.1.6	Elected Officials	Permittee shall provide a summary of its attendance of meetings at Mayors and/or Council Member's discretion in the annual report	Annually	The permittee shall attend and participate at the discretion of Mayor's office and Louisville Metro Council members to address resident's concerns and questions.	Metro Council District 21 Bellevue Park On-site Meeting and Discussion	Bellevue Park	3/17/2021	MSD representatives met on-site with Council District 21 and Metro Parks representatives to discuss using a rain garden as a solution to site drainage issues.	2.1.6-A	No
							Maple Street Flood Mitigation Buyout Area Plan Update to Councilman James	Virtual	7/8/2020	Meeting with Metro Council President James on the status of the plan for reuse of a previous FEMA grant buyout area.	2.1.6-B	No
							Meeting with Councilman Mark Fox	Virtual	10/23/2020	Discuss drainage issues reported by residents.	2.1.6-C	No
							Metro Council Meeting	Metro Hall	2/18/2021	Attendance at budget meeting.	2.1.6-D	No
							Sutherland Community Meeting	1620 Sutherland Dr	7/31/2020	Neighborhood meeting to discuss future use of grant buyout area at the request of Councilman Coan.	2.1.6-E	No
	Public Speakers	2.1.7	Public Speakers	Permittee shall provide public speakers to various community stakeholders at least six (6) events per year	Annually	The permittee shall provide speakers to various community stakeholder groups that could benefit from environmental stormwater information.	Kentucky Association of Mitigations Managers (KAMM) Annual Conference	Virtual	9/23/2020	Virtual presentation at the Kentucky Association of Mitigations Managers (KAMM) Annual Conference about grant funding for flood and water quality projects.	2.1.7-A	No
							Kentucky Society of Professional Engineers Presentation	Virtual	5/26/2021	2021 Infrastructure Report Card for America, including topics on stormwater.	2.1.7-B	No
							MSD Field Day	Virtual	4/14/2021	MSD conducted the Annual Field Day event virtually due to COVID-19 restrictions. MSD used Microsoft Teams to present on green infrastructure, current projects, and outreach opportunities.	2.1.7-C	No
							MSD Green Infrastructure Design Manual Updates Meeting	Virtual	5/26/2021	Engineers, Architects, Surveyors and other users of the MSD Green Infrastructure Design Manual Updates Meeting (Chapter 18) were invited to discuss and comment on proposed changes.	2.1.7-D	No
							Fee-In-Lieu (FILO) Program Stakeholder Meeting	Virtual	6/29/2021	Engineers, Architects, Surveyors and other Land Development Specialists were invited to discuss and comment on the proposed FILO program.	2.1.7-E	No
							Kentucky Stormwater Association(KSA) Presentation	Virtual	10/16/2020	Lori Rafferty and Brett Clark presented Lessons Learned for Long Term Success of Green Infrastructure.	2.1.7-F	No
							Water Environment Federation Technical Exhibition and Conference Presentation	Virtual	10/6/2020	Lori Rafferty and Brett Clark presented Lessons Learned as the Louisville and Jefferson County Metropolitan Sewer District Looks for Long Term Success of Public and Private Green Infrastructure.	2.1.7-G	No

	Element Task	SWQMP ID	Element Task	Frequency or Measure of Success	Schedule	Activity Required	Event or Meeting	Location	Date	Description	Appendix	Proposed Change
PEOPLE General Public & Stakeholder Education Program	News Media- Press Releases	2.1.8	News Media- Press Releases	Permittee shall provide at least two (2) press releases per year highlighting public participation opportunities	Annually	The permittee shall provide press releases to the local news media highlighting opportunities for the public to participate in outreach and involvement events to make a positive difference through	Media Release	Media Release	10/29/2020	Volunteers needed for stream cleanup.	2.1.8-A	No
							Media Release	Media Release	11/24/2020	Properly dispose of cooking fats and protect you home from sewer backups.	2.1.8-B	No
	MSD Web Site	2.1.9	MSD Web Site	Permittee shall report summary of updates in the annual reports of Permit Years 2 and 4	Permit Years 2 & 4	The permittee shall review and revise the website with the "Key Messages" content and other related PEOPLE plan elements.	MSD Water Quality Proposed Website Revisions	Draft Attached	FY21	As part of an internal FY21 goal, a draft revised website outline was prepared for the MS4/Water Quality department. Procurement is underway to update the webpage based on the outline.	2.1.9-A	No
	Behavior Change Assessment Survey	2.1.10	Behavior Change Assessment Survey	Permittee shall provide summary in the Annual Report of the Baseline Survey in Permit Year one (1) and the Behavior Assessment in Permit Year four (4).	Permit Years 1 & 4	The permittee shall perform a statistical survey to gauge the population's knowledge of stormwater quality issues and establish baseline to assess the changes in behavior and outreach program effectiveness. The permittee shall utilize the survey results to refocus and reprioritize PEOPLE activities.	2021 Project WIN / MS4 Public Behavior Change Assessment Survey Summary	Survey Summary Attached	9/27/2021	An updated survey was conducted this year and included as an attachment.	2.1.10-A	No
	Building Industry Association of Greater Louisville Land Development Committee Monthly Meetings and Developers Advisory Group	2.1.11	Building Industry Association of Greater Louisville Land Development Committee Monthly Meetings and Developers Advisory Group	Permittee shall participate in at least 75% of the meetings annually	Annually	The permittee shall attend Building Industry Association of Louisville land development committee and Developer Advisory Group meetings to address concerns and comments from the local homebuilder professional and provide information regarding changes in procedures, checklist, regulations, etc.	Building Industry Association Meeting	Virtual	8/5/2020	BIA Land Development Committee	2.1.11-A	No
							Building Industry Association Meeting	Virtual	9/9/2020	BIA Land Development Committee	2.1.11-B	No
							Building Industry Association Meeting	Virtual	10/14/2020	BIA Land Development Committee	2.1.11-C	No
							Building Industry Association Meeting	Virtual	11/4/2020	BIA Land Development Committee	2.1.11-D	No
							Building Industry Association Meeting	Virtual	12/2/2020	BIA Land Development Committee	2.1.11-E	No
							Building Industry Association Meeting	Virtual	1/6/2021	BIA Land Development Committee	2.1.11-F	No
							Building Industry Association Meeting	Virtual	2/3/2021	BIA Land Development Committee	2.1.11-G	No
							Building Industry Association Meeting	Virtual	3/3/2021	BIA Land Development Committee	2.1.11-H	No
							Building Industry Association Meeting	Virtual	4/14/2021	BIA Land Development Committee	2.1.11-I	No
							Building Industry Association Meeting	BIA Louisville	5/5/2021	BIA Land Development Committee	2.1.11-J	No
							Building Industry Association Meeting	BIA Louisville	6/2/2021	BIA Land Development Committee	2.1.11-K	No
	Greater Louisville Inc. Environmental and Water Committees	2.1.12	Greater Louisville Inc. Environmental and Water Committees	Permittee shall participate in at least three (3) events per year	Annually	The permittee shall participate in committee meetings to address concerns and comments from key local development professionals and provide information regarding changes in construction procedures, checklist, regulations, etc.	GLI EEC Committee	Virtual	8/12/2020	Attended by Wesley Sydnor	2.1.12-A	No
							GLI EEC Committee	Virtual	9/9/2020	Attended by Wesley Sydnor	2.1.12-B	No
							GLI EEC Committee	Virtual	10/14/2020	Attended by Wesley Sydnor	2.1.12-C	No
							GLI EEC Committee	Virtual	11/11/2020	Attended by Wesley Sydnor	2.1.12-D	No
							GLI EEC Committee	Virtual	12/9/2020	Attended by Wesley Sydnor	2.1.12-E	No
							GLI EEC Committee	Virtual	4/14/2021	Attended by Wesley Sydnor	2.1.12-F	No
							GLI EEC Committee	Virtual	5/12/2021	Attended by Wesley Sydnor	2.1.12-G	No
	Construction Operators	2.1.13	Construction Operators	Permittee shall evaluate educational materials and/or multimedia presentations for the construction industry related to point and non- point source pollution and stormwater pollution annually	Annually	The permittee shall make available educational materials and/or multimedia presentations for the construction industry related to point and non-point source pollution, green infrastructure and stormwater pollution prevention measures for operational procedures and erosion and sediment controls.	Lunch & Learn Erosion Control Series: Hydraulic Erosion Control & Soil Restoration	Virtual	5/27/2021	Lunch & Learn Webinar presenting hydraulic erosion control & soil restoration methods and fundamentals for establishing vegetation. Seventy-three people attended.	2.1.13-A	No
							MSD EPSC Training	Online	On-Going	MSD collaborates with JCPS to offer online EPSC training for Home Builders and Contractors.	2.1.13-B	No
							MSD Qualified Post-Construction Inspector Training (QPCI)	Online	On-Going	Qualified Post-Construction Inspector (QPCI) training and certification is provided free of cost on the MSD website.	2.1.13-C	No
							Peer Cities Meeting	Virtual	1/7/2021	MSD staff discussed their post-construction BMP inspection and enforcement program with other communities.	2.1.13-D	No
							MSD Permeable Paver Maintenance Video	You Tube	On-Going	Instructional video on permeable paver systems. https://www.youtube.com/watch?v=rg4F1jbH57k	2.1.13-E	No
	Rain Garden Outreach	2.1.14	Rain Garden Outreach	Permittee shall estimate handbook distribution and report in the annual report	Permit Years 2 & 4	The permittee shall maintain and update rain garden handbook with the intent of general public outreach. Consider expanding use to support residential, non-residential professional and nonprofessional audiences. The permittee shall evaluate changes and make updates at least every even numbered year.	MSD Rain Garden Handbook and Rain Garden Plant Guide	Online	On-Going	MSD Rain Garden Handbook and Rain Garden Plant Guides are available online. The handbook is also available in print	2.1.14-A	No

	Element Task	SWQMP ID	Element Task	Frequency or Measure of Success	Schedule	Activity Required	Event or Meeting	Location	Date	Description	Appendix	Proposed Change
PEOPLE General Public & Stakeholder Education Program	Green Infrastructure Demonstration Projects	2.1.15	Green Infrastructure Demonstration Projects	Permittee shall provide a Summary Report of Green Infrastructure demonstration projects in the annual report	Annually	The permittee shall monitor previously identified and constructed projects in outreach efforts aimed at demonstrating the feasibility and effectiveness of green infrastructure including, but not limited to rain gardens, green roofs, pervious pavement, bio-swales and infiltration. Prioritize, select and implement projects to support a variety of residential, non-residential, professional and non-professional audiences in MSD and co-permittee areas. Where feasible collaborate and/or cooperate with local government agencies, schools, co-permittees and/or private properties with significant use and exposure to the general public.	SummerWorks: Green Infrastructure Walking Tour	University of Louisville	7/14/2020	Louisville MSD staff host a tour of green infrastructure, stormwater and sanitary facilities on the University of Louisville Belknap Campus.	2.1.15-A	No
							SummerWorks: Infiltration Trench Installation	Chickasaw Park	7/22/2020	Collaboration with ECHO and SummerWorks to work with youth on an infiltration trench installation.	2.1.15-B	No
							MSD Can You Dig It Event	Virtual	1/21/2021	Forum for contractors and consultants to learn about MSD projects and how to do business with MSD.	2.1.15-C	No
							Green Infrastructure Education Signage	Churchill Downs and Louisville Urban League Sports & Learning Campus	On-Going	Green infrastructure signs are outreach signs that explain how green infrastructure works and encourage the public to build green infrastructure on their properties.	2.1.15-D	No
							Catch Basin Signage	Various Locations	On-Going	There are “Dump No Waste – Drains to Stream” signs located on catch basins. These signs let the public know that the catch basins go directly to a stream; therefore dumping waste or any contaminants will affect the streams.	2.1.15-E	No
	Public Notification of Major Program Changes	2.1.16	Public Notification of Major Program Changes	Permittee shall maintain and update as needed the notification system or program changes.	Annually, as needed	The permittee shall maintain a web site-based system to notify the public and affected stakeholders of proposed major program changes that will significantly impact stormwater runoff quality, negatively or positively. The public shall be given the opportunity to informally comment on proposed changes.	MSD News Webpage	www.louisvillemsd.org/news	On-Going	MSD maintains a news webpage with any updates to affected stakeholders. Most recently, proposed revisions to the MSD Design Manual Chapter 18 were posted for comment.	2.1.16-A	No
Cooperative Efforts (MSD provides supportiveor other non-lead role)	Jefferson County MS4 Workgroup-Communication	2.1.17	Jefferson County MS4 Workgroup-Communication	Permittee shall attend at least two (2) meetings per year	Annually	The permittee shall participate in the Jefferson County MS4 Co-Permittee Workgroup meetings discussing program progress, challenges, activity changes, shared activity requests communication needs and lesson learned.	FY21 Co-Permittee Meeting #1	Virtual	10/21/2020	Co-Permittee Meeting 1 of 2.	2.1.17-A	No
							FY21 Co-Permittee Meeting #2	Virtual	3/9/2021	Co-Permittee Meeting 2 of 2.	2.1.17-B	No
	Louisville Metro Office of Sustainability Assistance	2.1.18	Louisville Metro Office of Sustainability Assistance Note: In an effort to save funds, City leaders chose to merge the Office of Sustainability into the Office of Planning.	Permittee shall report its activities and support of the Louisville Metro Department of Sustainability initiatives in the annual report	Annually	The permittee shall continue to support Louisville Metro Office of Sustainability initiatives with development of guidance materials to be applied to new Metro Government Facilities incorporating green infrastructure.	Partners for Places Grant Assistance	Virtual	8/24/2020 and 9/8/2020	Louisville MSD provided funding, grant writing, and technical support to the Office of Advanced Planning and Sustainability for the Partners for Places grant to improve the Parkland Plaza. Funding support was provided to Trees Louisville and allocated to urban reforestation and green stormwater solutions at Parkland Plaza.	2.1.18-A	No

MS4 ANNUAL REPORT - MSD FIFTH PERMIT CYCLE PROGRAM

KY000001

Illicit Discharge Detection and Elimination (IDDE)

5th Reporting Period - November 2021

		SWQMP ID	ACTION REQUIRED	SCHEDULE	FREQUENCY OR MEASURE OF SUCCESS	RESULT	APPENDIX	PROPOSE CHANGE
IDDE 1 Legal Prohibition/Control Authority	Access Legal Prohibition/Control Authority	2.2.1	The permittee shall evaluate existing ordinances and regulations with an emphasis on Article 5 of the WDRs to determine if they are sufficient relative to MSD's ability to implement an effective IDDE program per 40 CFR. 122.26(b)(2). The permittee shall periodically update WDRs as needed to identify and eliminate risk of illicit discharges due to changes in technology, industrial management processes, regulations or program modifications. The permittee shall provide a summary of the adoption of such changes and information about implementation, and effective date in the Annual Report.	Annually	Permittee shall evaluate, once per permit cycle proposed changes in Wastewater Stormwater Discharge Regulations (WDRs) for consideration by MSD Board.	Wastewater Stormater Discharge regulation were last updated in 2013. (effective date 8/1/2013) No changes were made during current reporting period.		No
	IDDE Source Investigation and Elimination Procedures	2.2.2	The permittee shall develop and implement a formal plan of illicit discharge detection including how to trace the source of an illicit discharge and procedures for removing or eliminating them once they are located or reported. The plan should also include the enforcement procedures outlined in the WDRs for illicit discharge elimination, which includes ten (10) days from the receipt of the Notice of Violation; the source of the illicit discharge shall submit a mitigation plan for removal.	Annually	Permittee shall provide in the annual report, a summary of the process changes to IDDE investigations.	Dry Weather Screening for Illicit Discharge/Connection SOP was created June 1, 2021.	2.2.2 Standard Operating Procedures for Dry Weather Screening for Illicit Discharge/Connection	No
	Public Illicit Discharge Report Investigation	2.2.3	The permittee shall continue to receive and investigate public reports of potential illicit discharges via customer service hotline, webpage reporting and MetroCall. The permittee shall update and perform customer service hotline staff training for receiving calls regarding potential illicit discharges and appropriate routing procedures.	Annually	Permittee shall provide in the annual report, a summary of the investigations of illicit discharges performed.	There were 102 total requests for investigation and 68 requests for service for potential illicit discharges that were received from the public via the customer service hotline, webpage reporting, and MetroCall.	2.2.3 IDDE Summary	No

		SWQMP ID	ACTION REQUIRED	SCHEDULE	FREQUENCY OR MEASURE OF SUCCESS	RESULT	APPENDIX	PROPOSE CHANGE
IDDE 1 Legal Prohibition/Control Authority	Dry Weather Screening	2.2.4	The permittee shall conduct dry weather screening of representative outfalls. The recommended level of effort is twenty percent (20%) of the major outfalls per year. However, all the major outfalls shall be addressed within the permit term. The permittee shall also conduct dry-weather screenings at ninety percent (90%) of large industrial outfalls of industrial facilities once per permit cycle.	Once per permit cycle	Permittee shall provide in the annual report, a summary of the dry weather screenings performed.	MSD began outfall screening through an aerial infrared thermal imaging process beginning in the winter of 2013. The most recent thermal imaging flyover was performed in winter of 2020. Thermal screening during winter months allows optimal visibility and temperature conditions to identify thermal anomalies potentially associated with illicit discharges. Infrared thermal imagery methods allow MSD to identify and quantify the following types of possible illicit discharges: leaking sewage collection lines, non-stormwater discharges from outfalls and pipes, illegal connections to storm drainage ditches and systems, septic tank or degraded sanitary sewer discharges, non-stormwater industrial discharges, groundwater to surface water discharges, and force main exfiltration. A desktop analysis of thermal imagery for hotspots was performed along 150-foot stream buffers and industrial land uses in the MS4 system. This desktop analysis identified 40 anomalies for field screening, which then identified illicit discharges. 17 of these anomalies were field verified. During the current permit year, streamwalks were performed in the South Fork Beargrass Creek, Middle Fork Beargrass Creek, and Mill Creek watershed. A total of 426 outfall points were collected in these watersheds during the winter months, with 59 of those outfalls identified as 36” in diameter and greater. One illicit discharge was confirmed in the Mill Creek watershed.	2.2.4.1 Suspect Outfall Map 2.2.4.2 IDDE Thermal Field Investigation Packet	No
IDDE 1 Legal Prohibition/Control Authority	Screening Follow-up	2.2.5	After the initial follow-up to insure the illicit discharge has been mitigated, the permittee shall re-evaluate outfalls that were previously found to have had contaminated discharges to determine the current status of those outfalls.	Annually	Permittee shall starting in Permit Year One (1) inspect at least 25% of suspect outfalls per year.	Using the thermal imagery, 27 sites had been digitally identifed as observations warranting further investigations. In this reporting period, MSD field verified 17 of these sites. Of these 17 sites, only 6 warranted reinspection and were later documented as not needing any further mitigation.	2.2.5 Suspected Outfall Inspection Summary	No
IDDE 2 Management Acitivities	Mapping - Stormwater Infrastructure Inventory	2.2.6	The permittee shall continue to maintain the GIS Louisville Jefferson County Information Center (LOJIC) layers constituting its storm sewer system map, showing the location of all known major outfalls, and the names and location of all waters of the Commonwealth that receive discharges from those outfalls.	Annually	Permittee shall maintain a storm sewer system map.	Mapping routinely updated and available upon request.		No

		SWQMP ID	ACTION REQUIRED	SCHEDULE	FREQUENCY OR MEASURE OF SUCCESS	RESULT	APPENDIX	PROPOSE CHANGE
IDDE 2 Management Acitivities	Non-Industrial IDDE Program Enforcment	2.2.7	The permittee shall continue to utilize the Wastewater/Stormwater Discharge Regulations, related checklists and procedures for investigation of potential illicit discharges and elimination of illicit discharges.	Annually	Permittee shall report annually, including number of investigations, enforcement actions and referrals to KDOW, and follow-up investigations.	**Emergency Response Incident (ERI) investigation outcomes and enforcement actions (57 total cases):** • 43 No Further Action Required • 0 Field Correction Notice • 10 Notices of Violation • 4 Referred to KDOW • Referred to KDOW – (20ER1133) Allied Ready Mix, (21ER1001) Ford Motor Company, Kentucky Truck Plant, Referred to Louisville Metro Health – (21ER1004), Referred to MSD Sewer Maintenance – (21ER1034) 4001 St. Francis Lane		No
	Hazmat/Spill Unified Response Program	2.2.8	The permittee shall continue to maintain and enforce the ordinances, policies, programs and procedures for response and containing spills that may discharge into the MS4. The spill response procedures outlined in Section 95.07 of the Louisville Metro Code of Ordinances relating to hazardous materials shall continue to be implemented and enforced.	Annually	Permittee shall report, if necessary, any changes to the policies and programs and procedures, in the annual report.	MSD will continue to maintain and when needed coordinate the improvement of ordinances, and improve MSD policies, programs and procedures for response and the containment of spills that may discharge into the MS4. No changes were made during current reporting period.		No
	MVA Mitigation Kit Program	2.2.9	The permittee shall continue motor vehicle accident (MVA) mitigation kit distribution program to meet Fire Department and emergency response spill containment needs.	Annually	Permittee shall report metrics for kit distribution and after- use collection in the annual report.	MSD purchased 1200 30-lb bags of absorbent. Total amount spent for mitigation materials: $24,188.19 *No costs further cost incurred during the reporting period. It is a part of standard operating procedure to contact MSD Operation for cleanup. The waste is disposed of properly as needed. *The dumpster is emptied every 1 – 2 years. The dumpster was emptied once during this fiscal year for a total of $184.49. **There were no changes to the IWD Motor Vehicle Accident (MVA) Mitigation Program.**		No
IDDE 2 Management Acitivities	IDDE Identification SWPPP Training Integration	2.2.10	The permittee shall integrate techniques and practices to assist staff identify potential illicit discharges into facility and system operations and maintenance training.	Annually	Training shall occur at least once per year and the permittee shall report in the annual report the date of training and the number of staff participating in training.	**MSD staff participated in two training modules that highlighted techniques and practices to assist staff with identifying potential illicity discharges;** *Spill Response Training (1 hour) - 93 participants between March and June of 2021. *Virtual Stormwater Pollution Prevention Plan Training (1.0 hours) - 185 participants in May 2021.	2.6.3 MS4 Related Training Summary	No
	KDOW Support	2.2.11 - Cooperative Efforts (MSD provides supportive or other non-lead role)	As KDOW requests, the permittee shall accompany KDOW on inspection of KPDES stormwater permitted facilities in Jefferson County	Annually	Permittee shall summarize and include in the annual report any assistance given to the Kentucky Division of Water (KDOW) by MSD.	MSD inspector, Bob Pifine, accompanied KDOW on an inspection at Tree Care on 3/10/21 because of a suspected illicit discharge to a blue-line stream that was reported as a customer service request. This particular site had mulch washing into the roadway and eventually into the blue-line stream. The issue was addressed and no further action was taken with this facility.		No

MS4 ANNUAL REPORT - MSD FIFTH PERMIT CYCLE PROGRAM

KY000001

2.3 Industrial Stormater Program Requirements (IP)

5th Reporting Period - November 2021

		SWQMP ID	ACTION REQUIRED	SCHEDULE	FREQUENCY OR MEASURE OF SUCCESS	RESULT	APPENDIX	PROPOSE CHANGE
IP 1 Legal Prohibition/Control Authority	Industrial IDDE Program Enforcement	2.3.1	For industrial properties, the permittee shall continue to utilize the Wastewater/Stormwater Discharge Regulations, Hazardous Materials Ordinance and related checklists and procedures for identification of potential illicit discharges and elimination of illicit discharges/ unauthorized stormwater discharges. The permittee shall perform analysis of industry property data layer in LOJIC cross linking with properties holding a Hazardous Materials (spill) Prevention Control (HMPC) Plan to identify potential sites that should be added to the program with consideration for High Risk Industrial Facilities designation (determined in other activities).	Annually	Permittee shall summarize in the annual report the industrial enforcement actions and referrals to Kentucky Division of Water.	During the reporting period, MSD issued 8 Notice of Violation as a result of industrial enforcement action. Due to MSDs continuous review process and oversight since the implementation of the Industrial Stormwater Program, MSD only referred one facility to the KY Division of Water during this reporting period. MSD routinely evaluates SIC codes and refers facilities to KY Division of Water when a facility is identified that has a SIC code requiring an Industrial Stormwater Permit and is not permitted. MSD's process was validated by the EPA during an Industrial Stormwater inspection conducted in May 2017. The EPA's inspection was targeted at conducting inspections at specific SIC codes within the MS4 which were not permitted. As a result of MSD's aggressive review of facility SIC Codes to determine Industrial Stormwater permitting requirements, the EPA was unable to identify any of the targeted SIC Code facilities in the MS4 that required permits that were not permitted.		No
	Industrial IDDE Program Enforcment (Legal Authority)	2.3.2	The permittee shall maintain adequate legal authority, per 401 KAR 5:060, Section 12(9)(b)3 and 40 CFR 122.26(b)(2), to require compliance and inspection of sites, inspection of priority industrial and commercial facilities, including establishing control measure requirements such as HMPC, Spill Prevention, Control and Countermeasure (SPCC) Plan and/or the Groundwater Protection Plan (GPP) for facilities that have a potential to discharge to the MS4 and enforce stormwater requirements.	Annually, as needed	Permittee shall update as needed and maintain adequate legal authority to require compliance with this measure.	The MSD WDRs were most recently revised in 2013, to support the MS4 Post-Construction permit requirements and became effective August 1, 2013. Article 5 of the WDRs requires industrial facilities to abate and alleviate violations and implement control measures to mitigate non-stormwater discharges identified by MSD inspectors. MSD will continue to periodically evaluate the effectiveness of the language in Article 5 of the WDRs to support its ongoing efforts to identify and eliminate illicit discharges. No updates were made during the current reporting period.		No
IP 2 Inventory and Inspection of Industrial Facilities	Industrial Facility Inventory	2.3.3	The permittee shall maintain an inventory of all potential industrial and commercial sites/sources that could contribute pollutant loads to the MS4.	Annually	Permittee shall update annually and made available to the KDOW upon request.	During the current reporting period, MSD identified a total of 1,267 industrial facility sources that could impact the MS4. Designated sites/sources inventoried are assessed for their risk; risk parameters are defined in **Activity 2.3.4 – High Risk Facility Definition** and an update on high-risk industrial facility inventory is provided in **Activity 2.3.5 – HRIF Inventory Update**. MSD will continue to update the industrial facility inventory in the next permit year.		No

		SWQMP ID	ACTION REQUIRED	SCHEDULE	FREQUENCY OR MEASURE OF SUCCESS	RESULT	APPENDIX	PROPOSE CHANGE
IP 2 Inventory and Inspection of Industrial Facilities	"High Risk" Facility Definition	2.3.4	The permittee shall identify Risk Factors to define facilities as "High Risk", "Moderate Risk" and "Low Risk".	Permit Year 3	Review “High Risk” facility definition each permit cycle.	The high and moderate risk facilities were identified in reporting year 3.		No
	HRIF Inventory Update	2.3.5	The permittee shall compare the datasets for local Approved HMPC Plan Facilities to the publicly available Facility data from local and state environmental and emergency response agencies to address the completeness and accuracy of High Risk Industrial Facilities identification. The permittee shall update the list of HRIFs at least once over the permit term, to account for the most recently available North American Industry Classification System (NAICS), Standard Industrial Classification (SIC) codes, Toxic Release Inventory (TRI) data, MSD's HMPC data and MSD's pretreatment program data with the goal of establishing a tiered list of industries to support priorities in MSD's industrial facility inspection program.	Annually	Permittee shall summarize and report annually, the assessment and updates of any industrial facilities identified as "High", "Moderate", and "Low" risk.	Inventory completed in 2011 and most recently updated in 2017. During the previous permit cycle, MSD field verified the updated HRIF Inventory as of June 30, 2016. The current industrial facility inventory is comprised of 17 HRIFs, 15 MRIFs, and 1,235 LRIFs for a total of 1,267 industrial facilities. *High Risk facilities are updated on a continuous basis based upon new information and incident response status. Facilities identified by MSD that need an Industrial Stormwater Permit or are referred to the State for other reasons are moved to a High Risk Facility until all issues are resolved.		No
	High-Risk and Medium Risk Facilities	2.3.6	Based on the results of the updated HRIF assessment, the permittee shall inspect high-risk facilities at least once every three (3) years and moderate risk facilities at least once every five (5) years.	Annually	Permittee shall report the summary of prioritized inspections completed, and any enforcement resulting from the inspections.	MSD has completed inspections for high and moderate risk industrial facilities, as identified in the Threat Matrix. During the current reporting period, MSD performed 15 of 17 HRIF, which aligned with protocol. MSD will continue to perform high and medium risk inspections every three and five years, respectively.		No
	Industrial Facility Control Measures	2.3.7	The permittee shall require the High Risk industrial and commercial facilities to select, install, implement, and maintain control measures that promote prevention and source control for discharge of applicable pollutants of concern. This requirement may be addressed through Hazardous Materials (spill) Prevention Control (HMPC) Plan and/or federal programs such as SPCC Plan and/or the GPP that are already implemented at the industrial and commercial facilities. The permittee shall require the applicable facilities to identify the specific control measures, good housekeeping and maintenance procedures, and employee training necessary.	Annually	Permittee shall report annually on control measures required of the high-risk industrial and commercial facilities to ensure compliance with this measure.	During the current reporting period, MSD continued to administer the HMO; soliciting, reviewing and approving Hazardous Material Spill Prevention Control (HMPC) plans, verifying inventory, storage amounts and storage locations through facility inspections. Additionally, MSD worked with industrial and commercial facilities to implement and maintain control measures that promote source control for and prevention of the discharge of applicable pollutants. During the reporting period, as part of the combined HMPC and Industrial Stormwater programs, MSD continued to inspect both HMPC and HMPC-exempt facilities in an effort educate facility’s management of the importance of good housekeeping practices to protect stormwater quality.		No

		SWQMP ID	ACTION REQUIRED	SCHEDULE	FREQUENCY OR MEASURE OF SUCCESS	RESULT	APPENDIX	PROPOSE CHANGE
IP 2 Inventory and Inspection of Industrial Facilities	Enforcement/Inspections	2.3.8	The permittee shall develop criteria or procedures for site inspections and enforcement including criteria to address how the MS4 will use enforcement authorities to ensure compliance with the industrial program requirements. The permittee shall enforce the procedures outlined in Section 95.11 of the Louisville Metro Code of Ordinances relating to hazardous materials.	Six months after permit issuance	Within six months of the permit issuance, the Permittee shall develop the required criteria or procedures to comply with this measure.	SOP Developed. During the Permit period, the step-by-step SOP for industrial facility inspections and enforcement continued to be implemented by MSD. This SOP may be modified as necessary, to compliment the ERP and support staff implementation of the enforcement program. The SOP includes instructions for: inspection preparation, conducting inspections and IPS® data entry.		No
	MSD Plan Review	2.3.9	The permittee shall determine if existing triggers in the new development and redevelopment plan and plumbing systems review process are sufficient to include appropriate industrial stormwater quality specialists/inspectors in the plan approval process.	PYs 1 & 4	Permittee shall assess at least every three (3) years and report changes to process in the annual report.	Adequate triggers in place. As a matter of routine business, the MSD Development and Stormwater Services Department refers potential projects to the IWD for additional review. Periodically, MSD determines if triggers in the new development and redevelopment plan and plumbing systems review process are sufficient to include appropriate industrial stormwater quality specialists/inspectors in the plan approval process. The existing plan review triggers provide a means to involve the IWD. This task is intended to refresh associated staff with the indicators and/or checklists used to trigger their involvement and provide a basis for the expanded plan review process.		No
	IDDE Identification SWPPP Training Integration	2.3.10	The permittee shall update as necessary and distribute outreach materials (brochure, fact sheets, etc.) to HMPC Facilities and other commercial operations of concern to promote illicit discharge elimination awareness.	Annually	The Permittee shall continue to identify materials developed and distribution estimates and summarize in the annual report.	Due to COVID protocol, all educational material related to the Industrial Program has been added to the MSD website and made readily available. Inspectors frequently point facilities to these materials. MSD is currently working on development an outreach plan that will provide for more targeted education in the future. A Dental Amalgam Program was developed to meet mandated EPA requirements. Outreach materials were mailed to 479 potential dental office sources that provided requirements for dental offices to manage discharges of mercury from the application and removal of dental amalgam. During the current reporting period, the following brochures were posted online to support industrial, commercial and residential education of stormwater impacts: • Stormwater BMP Brochure • Downspout Disconnection Program Brochure • Hazardous Materials Use and Spill Prevention Control (HMPC) Plan booklet • Fats, Oils and Grease Brochure • Stormwater Inspection Program Brochure brochure		No

		SWQMP ID	ACTION REQUIRED	SCHEDULE	FREQUENCY OR MEASURE OF SUCCESS	RESULT	APPENDIX	PROPOSE CHANGE
IP 2 Inventory and Inspection of Industrial Facilities	Industrial & Commercial Community Outreach	2.3.11	The permittee shall utilize third party inspections for development of recommendations of efficacy of permittee inspections and enforcement. Updates to training materials shall be administered for permittee personnel at least once per year, if necessary.	Annually	Document training materials and the number of third party inspections conducted to be reported in the annual report.	Third-Party inspections were conducted with 7 MSD employees at 7 individual sites. The refresher training was given November 20, 2020; Robert Rose -Bramco-Brandeis – 9/20/20 Amber Pauly - Clarke Power Service – 8/31/20 Scott Shrader - CSX – 9/9/20 Ben Davidson - International Paper – 9/8/20 Kitt Tuttle - Trimac – 9/10/20 Jeremy Knight - Zenith Logistics – 9/10/20 Kandyce Goves - Biorgin/PTX – 9/17/20	2.3.11 Third-Party IWD Refresher Training	No
	Third Party Oversight Inspection	2.3.12 - Cooperative Efforts (MSD provides supportive or other non-lead role)	As KDOW requests, the permittee shall accompany KDOW on inspections of KPDES stormwater permitted facilities in Jefferson County.	Annually	Permittee shall summarize and include in the annual report any assistance given to the KDOW by MSD.	KDOW did not request any assistance from MSD on KPDES stormwater permitted facilities in the current reporting period.		No

MS4 ANNUAL REPORT - MSD FIFTH PERMIT CYCLE PROGRAM
KY000001
2.4 Construction Site Stormwater Runoff Control Requirements (CS)

5th Reporting Period - November 2021

		SWQMP ID	ACTION REQUIRED	SCHEDULE	FREQUENCY OR MEASURE OF SUCCESS	RESULT	APPENDIX	PROPOSE CHANGE
CS 1 Legal Prohibition/Control Authority	Access Legal Prohibition/Control Authority	2.4.1	The permittee shall assess existing ordinance and regulations to identify changes needed to account for changes in standard of care (as directed by KDOW General Construction Permit KYR10), changes in technology, changes to development management process and related program needs in satisfaction 40 CFR 122.26(b)(15)(i) for construction activities that result in a land disturbance of greater than or equal to one acre and construction activity disturbing less than one acre that is part of a larger common plan of development that would disturb one acre or more.	Permit Years 1 & 3	Permittee shall summarize proposed changes enumerated by end of permit years one (1) and three (3) and report proposed changes in to Wastewater/ Stormwater Discharge Regulations for consideration by MSD Board in the Annual Report.	**Not required for this reporting period**. Effective WDRs became final August 1, 2013.		No
	Implement Legal Prohibition/Control Authority	2.4.2	The permittee shall continue to enforce existing ordinances and regulations intended to limit construction phase stormwater quality impacts from new construction and significant redevelopment.	Annually	Permittee shall require routine inspections of active construction sites with reasonable potential to discharge to MS4. A summary of these inspections and any enforcement actions resulting from these inspections shall be included in the Annual Report.	In the current reporting period, MSD conducted 52,793 EPSC related inspections.	2.4.2 Construction Inspection Summary	
	Site Plan Review	2.4.3	The permittee shall conduct site plan reviews in accordance with the procedures outlined in Section 159.02 of the Louisville/Jefferson County Erosion Prevention and Sediment Control Ordinance to assess whether the plans include measures that address potential water quality impacts from construction prior to authorization of land disturbance.	Annually	Permittee shall review plans as needed and report the number of plans reviewed in the Annual Report.	In the current reporting period, 238 site plan reviews were conducted that warranted the issuance of a Land Disturbance Permit.	2.4.3 List of Reviewed Construction Plans	No

		SWQMP ID	ACTION REQUIRED	SCHEDULE	FREQUENCY OR MEASURE OF SUCCESS	RESULT	APPENDIX	PROPOSE CHANGE
CS 1 Legal Prohibition/Control Authority	Construction Site Inspection	2.4.4	The permittee shall develop and implement criteria and/or procedures for site inspection. The procedures shall include an Enforcement Response Plan outlined in Section 159.05 of the Louisville/Jefferson County Erosion Prevention and Sediment Control Ordinance.	Annually	Permittee shall continue to implement the criteria and/or procedures for site inspections.	**Standard Operating Procedures for inspection and enforcement of the Erosion Protection and Sediment Control Ordinance are in place**. In 2013, MSD developed the following Standard Operating Procedures (SOPs) to document protocols for construction site inspections and oversight: • EPSC Construction Site Inspection (SOP CS-01) documents how inspections are conducted and documented as well as how enforcement procedures are implemented and tracked • EPSC Inspector Field Verification Training (SOP CS-02) documents oversight inspection review responsibilities, frequency and standards. This SOP was updated in the current reporting period.	2.4.4 EPSC Field Verification Training SOP	No
	Construction Site Inspection Frequency	2.4.5	The permittee is required to conduct inspections bi-monthly of at least 90% of active sites.	Annually	Permittee shall report the number of inspections performed in the Annual Report.	MSD maintains an electronic database of inspections to assign inspectors and track activities. MSD inspects at least 90% of active construction sites. More information on construction inspections performed over the course of the reporting period is provided in **Activity 2.4.2 – Implement Legal Prohibition/Control Authority.**	2.4.2 Construction Inspection Summary	No
CS 2 CS Management Activities	Construction Site Inventory	2.4.6	The permittee shall maintain an inventory of all active public and private construction sites that result in a total land disturbance of greater than or equal to one acre and less than one acre that is part of a larger common plan of development. Inventory should include the project's name, address, contact person, inspection dates, and any enforcement actions issued to the project.	Annually	Inventory continually updated as projects are permitted and projects are completed.	**Project inventory database maintained.** MSD tracks active construction sites greater than 2,000 sq. ft. per the EPSC Ordinance, and the inspection team conducts inspections for all permitted active construction sites. Sites are tracked using the Home Building and Service Request Inspection Report in the EPSC Enforcement Log database. The database catalogs construction site project name, address, primary contact and inspection dates and tracks any enforcement actions issued. The number of active sites varies daily based on the number of site disturbance permits issued (new sites added) to and released from the system. In addition, MSD adjusts the frequency of construction site inspections based on site drainage characteristics or impact to sensitive features/streams with more frequent inspections to protect sensitive areas.		No

		SWQMP ID	ACTION REQUIRED	SCHEDULE	FREQUENCY OR MEASURE OF SUCCESS	RESULT	APPENDIX	PROPOSE CHANGE
CS 2 CS Management Activities	Construction BMP Guidance Materials	2.4.7	As needed to account for changes in the KDOW general construction permit(s), the permittee shall update the guidance materials facilitating current technology use, local plan review/inspection requirements and related implications, Design Manual chapters and Standard Specifications sections to address EPSC and other construction phase (waste concrete, fueling and repairs operations, etc.) topics including BMP selection, feasibility, design considerations, operation, maintenance, inspection checklist and related matters.	Annually, as needed	Permittee shall update the Design Manual and Standards Specifications as needed and make the updates publicly available.	The MSD Design Manual was updated during the current report period and the updates were presented at the 2021 MSD Annual Field Day event on 4/14/21. MSD also conducted a virtual meeting with community engineers on 5/26/21 to give them a chance to comment on the updates. The updated Design Manual is available to the public at: http://louisvillemsd.org/sites/default/files/inline-files/designmanual_rev%2006-29-2021.pdf	2.1.2 Outreach Summary	No
	On-site SWPPP	2.4.8	The permittee shall continue the procedure for receiving Stormwater Pollution Prevention Plans (SWPPP) for qualifying construction sites.	Annually	Permittee shall document SWPPP procedures and expectations and make the procedures and expectations publicly available.	Effective July 14, 2008, MSD instituted a requirement and procedure for receiving SWPPPs for qualifying construction sites. MSD notified the development community that SWPPPs should be submitted to KDOW as well as to MSD as part of the construction plan submittal process. This requirement was intended to reduce confusion associated with existing MSD requirements for a "BMP Plan" and KDOW's KPDES General Construction (KYR10) Permit language references to a "SWPPP." Certified developers, homebuilders and related stakeholders were sent letters indicating the requirement for SWPPPs. MSD requires that qualifying construction plan submittals include a SWPPP, as shown on MSD's Site Plan Review Checklist. SWPPPs must be prepared for sites disturbing greater than one acre. The site plan checklist is available on MSD's website at: http://louisvillemsd.org/sites/default/files/inline-files/SITE_PLAN_REVIEW_CHECKLIST_2.pdf. MSD will continue to administer requirements for SWPPPs on construction sites.		No
	Construction Stormwater Runoff Control Program Inspection Refresher	2.4.9	The permittee shall review inspector practices with individual MSD and contract inspectors to communicate/confirm oversight responsibilities, documentation requirements, and frequency of inspection, inspection standards and protocols. The refresher review (performed on-site) will include EPSC and non-EPSC construction stormwater control metrics, the most current KDOW General Construction Permit and the current USEPA MS4 Program Evaluation Construction Site Checklist.	Annually	Permittee shall complete refresher review with Construction inspectors annually, reporting the date and the number of attendees in the Annual Report.	Refresher training involves the consultant's trainer observing and documenting MSD's EPSC inspectors as they perform inspections and then conducting an EPSC Inspector Training Course using lessons learned from the field inspections. During the reporting period, MSD contracted with a third-party consultant to conduct oversight inspections between October 23, 2020 and December 2, 2020. The third-party refresher training was held remotely on May 12, 2021 and 27 MSD employees logged into the meeting. MSD will continue to administer third-party training of inspectors in the next reporting period.		No

		SWQMP ID	ACTION REQUIRED	SCHEDULE	FREQUENCY OR MEASURE OF SUCCESS	RESULT	APPENDIX	PROPOSE CHANGE
CS 2 CS Management Activities	Construction Inspector Training	2.4.10	The permittee shall continue construction inspector training program placing new emphasis on delivering similar messages and understanding between MSD inspectors (regular and contracted) and qualified local contractor inspectors.	Annually	Permittee shall provide at least three (3) training opportunities annually reporting the date and the number of attendees in the Annual Report.	MSD provides a number virtual ESPC related trainings to contractors and builders through Jefferson County Public Schools. There were 221 total attendees for these trainings in the current reporting period. See Appendix 2.4.10 EPSC Training Summary.	2.4.10 EPSC Training Summary	No
	Local Utility Construction General	2.4.11	The permittee shall continue to coordinate policy level stakeholders from local utility agencies holding construction general permits from MSD to confirm inter-agency communication protocols and review changes to standard, policies, procedures, BMP operation expectations and related matters.	Annually, as needed	Permittee shall hold meetings with MSD's EPSC general permit holders as needed.	Due to COVID, MSD did not hold any meetings with General Permit holders. MSD is currently assesing the General Permits and will potentially look to hold routine meetings or trainings with the General Permit holders in the future related to EPSC issues.		No
	MSD General Construction Permits	2.4.12	Permittee shall evaluate all general permits by the end of Permit Year three (3); and report general construction permits issued by MSD in the annual report	Evaluate general permits by end of Permit Year 3. Reported annually.	Permittee shall evaluate all general permits by the end of Permit Year three (3); and report general construction permits issued by MSD in the annual report.	Permits were evaluated in previous permit years. No changes were made.		No
	Enforcement Tracking Log/Database	2.4.13	The permittee shall continue to track enforcement actions issues (SWO/NOVs) to support follow-up inspections and issuance of penalties and/or Notice of Compliance.	Annually	Permittee shall summarize in the annual report. A summary of the tracked enforcement actions issued shall be included in the annual report.	**Enforcement actions tracked.** During the reporting period, MSD issued approximately 1464 FCNs, 47 NOVs, and 47 SWOs. MSD issued $15,000 in fines and received $15,000. MSD will continue to track enforcement on construction sites and issue corrective actions in accordance with the WDRs.		No
	Third Party Oversight Inspection	2.4.14	The permittee shall utilize third party inspections for development of recommendations of efficacy of permittee inspections and enforcement. Updates to training materials shall be administered for permittee personnel at least once per year, if necessary.	Annually	Document training materials and the number of third party inspections conducted.	During the reporting period, MSD utilized a third-party consultant to produce a report detailing the results of the previous round of oversight inspections. This report detailed areas where MSD construction inspectors performed well and areas where continued education could be of use. All MSD inspectors with active construction sites were trained between October 23, 2020 and December 2, 2020, for a total of 17 individual inspectors and 34 unique jobs sites.	2.4.14 EPSC Third-Party Refresher Presentation	No
	Plan Development Process Identifiction	2.4.15 - Cooperative Efforts (MSD provides supportive or other non-lead role)	The permittee shall review and update, as needed guidance materials identifying the process that developers must follow to obtain related construction permits, including process flow charts and checklists.	Annually, as needed	Permittee shall make up-to- date guidance documents publicly available. A summary of the revised guidance materials shall be included in the Annual Report.	**Updated Guidance Materials.** Up-to-date guidance materials are available on the MSD website: https://louisvillemsd.org/what-we-do/stormwaterdrainage		No

		SWQMP ID	ACTION REQUIRED	SCHEDULE	FREQUENCY OR MEASURE OF SUCCESS	RESULT	APPENDIX	PROPOSE CHANGE
CS 2 CS Management Activities	Metro Construction Review Enforcement Coordination	2.4.16 - Cooperative Efforts (MSD provides supportive or other non-lead role)	The permittee shall coordinate program enforcement actions with Metro Inspections, Permits and Licensing (IP&L), as necessary, to support overall site compliance with an emphasis on Notices of Deficiency, Notices of Violation, and Stop Work Orders issued by MSD and implications on land disturbances and “in building” activities.	Permit Years 1, 3, & 5	Permittee shall hold at least one (1) conference every other year starting in Permit Year one (1).	MSD coordinates construction program enforcement actions with Develop Louisville (formerly Metro Inspections, Permits and Licenses), as necessary, to support overall site compliance with an emphasis on Notices of Deficiency (NODs), NOVs and SWOs issued by MSD with implications on land disturbance and "in building" activities. MSD’s enforcement policies allow MSD to issue a SWO to halt work on land disturbing activities that have failed to comply with EPSC requirements, while Develop Louisville has responsibility for applying enforcement on activities on or inside the structures. MSD and Develop Louisville regularly communicate, when appropriate, to make each other aware of enforcement activities that halt work. MSD also routinely coordinates with Develop Louisville field staff. Continual communication is occurring between MSD and Metro inspection staff in an effort to educate and streamline inspection requirements. MSD regularly coordinates construction program enforcement actions with Develop Louisville. This includes education and coordination on green infrastructure features such as rain gardens and no-mow areas, which use native plants to provide stormwater uptake and increase infiltration rates. MSD coordinates with Develop Louisville on these green infrastructure practices so that violations are not issued by Develop Louisville for these features.		No

MS4 ANNUAL REPORT - MSD FIFTH PERMIT CYCLE PROGRAM

KY000001

Post-Construction Controls (PC)

5th Reporting Period - November 2021

		SWQMP ID	ACTION REQUIRED	SCHEDULE	FREQUENCY OR MEASURE OF SUCCESS	RESULT	APPENDIX	PROPOSE CHANGE
PC 1 Legal Prohibition/Control Authority	Assess Legal Prohibition/Control Authority	2.5.1	The permittee shall assess existing Wastewater/Stormwater Discharge Regulations and other relevant ordinances and regulations, to identify changes needed to account for changes in standard of care, changes in technology, changes to development management process and related program needs for new development and redevelopment projects that disturb greater than or equal to one acre and construction activity disturbing less than one acre, including projects less than one acre that are part of a larger common plan of development.	Annually, as needed	Permittee shall make assessments as needed, and report proposed changes in the WDRs for consideration by MSD Board.	No proposed changes in the current reporting period. MSD will continue to review and enhance the WDRs for water quality improvements, as necessary.		No
	Implement Legal Prohibition/Control Authority	2.5.2	The permittee shall enforce existing ordinances and regulations intended to limit long-term stormwater quality impacts from new construction and significant redevelopment.	Annually	Permittee shall summarize enforcement actions in the annual report. The permittee shall include the number of inspections and enforcement actions.	MSD inspected 414 Post-Construction Best Management Practices (BMP's) in the reporting period. MSD identified 88 BMP inspections in the reporting period to be "Unsatisfactory." Of those 88, 10 received a Notice of Violation for failure to respond to the Maintenance Request Letter. Three (3) BMP's escalated to a Notice of Citation.	2.5.2 Post-Construction Inspection and Enforcement Tracking Map	No
	Site Plan Review	2.5.3	The permittee shall conduct site plan reviews through procedures for reviewing development plans for compliance with stormwater	Annually	Permittee shall continue to conduct site plan reviews.	MSD reviewed plans and issued a Site Disturbance Permit at 238 sites. 80 of those sites were required to meet the post-construction water quality runoff regulations. There were a total of 112 BMP's built in the reporting period.	2.5.3 List of Reviewed Post-Construction BMP Required Projects	No
	Stormwater Infrastructure Inventory	2.5.4	The permittee shall continue to maintain the GIS-LOJIC layers incorporating system changes from new development plans, MSD projects and related system projects.	Annually	Permittee shall update the GIS LOJIC System as data becomes available.	GIS-LOJIC layers are updated routinely. Much of the LOJIC data is publically available through a series of interactive mapping tools administered by LOJIC such as the “LOJIC Online Map” available at: https://www.lojic.org/lojic-online. More information about LOJIC is available at: www.lojic.org.		No

		SWQMP ID	ACTION REQUIRED	SCHEDULE	FREQUENCY OR MEASURE OF SUCCESS	RESULT	APPENDIX	PROPOSE CHANGE
PC 1 Legal Prohibition/Control Authority	Post-Construction Site BMP Inventory Update	2.5.5	The permittee shall develop and maintain an inventory and map of post-construction stormwater controls, including retention ponds, detention basins, and stormwater quality treatment facilities. The permittee shall update LOJIC and HANSEN® datasets to reflect the location, extent, and condition of post-construction stormwater quality BMPs.	Reporting years 1 & 3	Permittee shall incorporate related data on an ongoing basis; Permittee shall assess data to identify and fill dataset gaps every other year.	GIS-LOJIC layers are updated routinely, including retention ponds, detention basins, and stormwater quality treatment facilities. MSD uses both ESRI ArcGIS Online and Hansen to track the location, extent, and condition of all post-construction stormwater quality BMPs. These datasets are routinely updated.	2.5.2 Post-Construction Inspection and Enforcement Tracking Map	No
	Post-Construction Inspector Training	2.5.6	The permittee shall provide training to the inspectors including internal staff that have been designated to inspect the effectiveness of the post- construction BMPs, as well as, the local residents who are required to provide operation and maintenance of privately-owned Post- Construction BMPs.	Annually	At least two trainings per year for the inspectors of Post-Construction BMPs. Report in the annual report, the dates of training, # of attendees, and subject matter.	A free, online Qualified Post-Construction Inspection Training module is offered at: http://oit.louisvillemsd.org/. MSD chose to make the modification from in-class training to an online training to achieve better participation. As a result, 63 individuals became certified MSD Qualified Post-Construction BMP inspectors in this reporting year.		No
PC 2 PC Plan Maintenance Update	Inspect "Credit" Basins	2.5.7	The permittee shall inspect private flood control basins, (retention ponds) receiving a stormwater utility user fee credit (reduction) to determine ability to fulfill original, current, and projected drainage demands. Continue to enforce, per existing basin credits documentation requirements, necessary to fulfill maintenance agreements and long-term system integrity.	Annually	Permittee shall continue to perform spot check inspections for at least 50% of qualifying facilities annually and summarize for the annual report.	During the current reporting period, MSD inspected 203 of 203 credited basins, or 100% of basins, exceeding the goal of inspecting 50% of basins annually. During these inspections, MSD is accompanied by someone associated with the property that maintains the basin. The MSD inspector uses this meeting to issue a verbal correction warning if necessary. The inspector then follows up in the appropriate time frame to determine that the necessary repairs are satisfactory. In this reporting period there were no follow up inspections that resulted in the property owner losing their drainage credit.		No
	Inspection Plan Procedures for	2.5.8	The permittee shall update inspection and oversight protocol for private stormwater quality treatment BMPs to facilitate long- term maintenance demands including requirements for qualified private inspection of private BMPs with local government oversight access inspection and controls, as needed.	Annually, as needed	Permittee shall continue to perform spot check inspections for at least 20% of treatment BMPs annually. All BMPs should be inspected by the end of the permit cycle. A summary of this activity shall be included in the annual report.	During the current reporting period, oversight inspections were conducted for 414 of the total 1126 post-construction best management practices. This meets the goal inspecting at least 20% of active treatment BMPs during the reporting period. Among the sites inspected, MSD identified 118 of the BMPs with maintenance deficiencies.		No
	Post-Construction and Green Infrastructure BMP Guidance Materials	2.5.9	The permittee shall evaluate and update the guidance materials facilitating current technology use and to reflect local plan review, construction site inspection and post-construction inspection requirements. Design Manual chapters and Standard Specifications sections to address long-term BMP operation, inspection andmaintenance including checklists. “Green Infrastructure” is a combination of natural and engineered infrastructure that is designed to reduce the environmental footprint of the system. In terms of stormwater, green infrastructure can effectively manage stormwater runoff through the use of infiltration, biofiltration, detention, and other stormwater management techniques.	Annually, as needed	Permittee shall update the guidance materials specifically the Design Manual chapters and Standards Specifications sections and make the document publicly available.	Last reporting period, MSD selected a committee to analyze Chapter 18 of the Design Manual. The committee met frequently for over a year to make updated changes that reflect lessons learned in the design, construction and long term maintenance of post-construction BMP's. The current version of the Design Manual, updated in this reporting year, can be downloaded from the MSD website: https://louisvillemsd.org/sites/default/files/inline-files/designmanual_rev%2006-29-2021.pdf		No

		SWQMP ID	ACTION REQUIRED	SCHEDULE	FREQUENCY OR MEASURE OF SUCCESS	RESULT	APPENDIX	PROPOSE CHANGE
PC 2 PC Plan Maintenance Update	Plan Preparers & Reviewers Training (MSD Facilitates)	2.5.10	The permittee shall provide available content, such as EPA web casts, through periodic training classes, workshops and meetings for designers, planners, and developers including emphasis on green infrastructure, post-construction planning, and design procedures for structural and non-structural BMPs, pollutant removal and inspection. MSD shall incorporate comments from stakeholders in the plan review process from designers to internal MSD review staff to facilitate training sessions to address evolving technologies and lessons learned.	Annually	Permittee shall continue to offer at least two (2) events annually. A summary of workshops topics and attendance shall be submitted in the annual report.	**MSD offered at least 2 training sessions related to green infrastructure and post-construction design:** *5/27/2021 - MSD partnered with Profile to promote a Lunch and Learn Webinar that promoted engineered hydraulic erosion control projects. There were 73 individuals from the engineering, development and contractor community who registered for the virtual event. *5/26/2021 - MSD Green Infrastructure Design Manual Updates Meeting: MSD presented to local design engineers about recent revisions to Chapter 18 of the Design Manual. This chapter holds the post-construction BMP design, construction and maintenance requirements. This meeting was held virtually.	2.1.2 Outreach Summary	No
	Project DRI	2.5.11	The permittee shall continue to implement Drainage Response Initiative (DRI) program aimed at identifying and solving the local drainage problems in Jefferson County.	Annually	Permittee shall provide program progress summarizing cost, number and type of projects in the annual report.	Project DRI complete 60 projects aimed at solving drainage issues in Jefferson County. These drainage projects carried a budget of $2,000,000.		No
	User Fee Credits (Green Infrastructure Incentives)	2.5.12	The permittee shall evaluate enhancements to the utility user fee credits program for green infrastructure and post-construction BMPs based on post-construction lessons learned.	Annually, as needed	Permittee shall evaluate incentives as needed.	Since 2010, MSD has worked with local businesses and developments to build and promote green infrastructure and post-construction BMP's. During this period, MSD has used the lessons learned in the design, construction, and maintenance of these BMPs to drive new incentives that are appropriate for the future of the program.	2.5.12 Summary of Incentive Projects	No
	Stream Restoration Inspection and Maintenance	2.5.13	The permittee shall identify restored stream reaches that MSD has maintenance responsibilities. The permittee shall also determine status of restored reaches and identify, prioritize/schedule and implement maintenance needs. MSD shall prioritize, design, and implement restoration practices on at least one stream segment per year.	Start in Reporting Year 2	The permittee shall identify restored stream reaches that MSD has maintenance responsibilities. The permittee shall also determine status of restored reaches and identify, prioritize/schedule and implement maintenance needs. MSD shall prioritize, design, and implement restoration practices on at least one stream segment per year.	MSD designed and took to bid, a stream restoration project for approximately 300 feet along Bruce Creek, adjacent to 5424 Bruce Ave. With this project, MSD was able to capture the stormwater from the roof of Kenwood Church of Christand direct into an infiltration trench. This project went into construction in July of 2021 and was completed the following month.		No
	Certified/Qualified Post-Construction BMP Inspector Program	2.5.14	The permittee shall enhance the Qualified Post Construction Inspector training program to identify and hold accountable third party private BMP inspectors to facilitate periodic operation and maintenance of private facilities resulting from the credits program, regulations changes and demonstration projects.	Annually	Permittee shall continue to administer Qualified Post Construction Inspector training and include summary of activities in the annual report.	Administration of the online QPCI Training Program is on-going. 63 individuals completed the training and received their certificates in the current reporting period. The training module can be found on the MSD website at; http://oit.louisvillemsd.org/.		No

		SWQMP ID	ACTION REQUIRED	SCHEDULE	FREQUENCY OR MEASURE OF SUCCESS	RESULT	APPENDIX	PROPOSE CHANGE
PC 2 PC Plan Maintenance Update	Stormwater Quality Runoff Treatment Standard For All New Development and Redevelopment	2.5.15	The permittee shall continue to administer an on-site stormwater runoff quality treatment standard, to be adopted by ordinance or other regulatory mechanism for all new development and redevelopment projects at any location within Louisville Metro. The proposed local standard will require, in combination or alone, management measures that are designed, built and maintained to infiltrate, evapo-transpire, harvest and reuse stormwater runoff, or otherwise manage the stormwater runoff quality. The standard shall be based, at a minimum, on an analysis of precipitation records to determine the equivalent surface depth of runoff (e.g. 0.60 inches) produced from an 80th percentile precipitation event.	Annually	Permittee shall continue to administer a local treatment standard for addressing stormwater runoff quality.	Administration/ enforcement for treatment standard compliance is on-going. MSD's post-construction treatment standard is available in the Green Infrastructure Design Manual, Section 18.2. The Green Infrastructure Design Manual is publicly available at: https://louisvillemsd.org/sites/default/files/inline-files/designmanual_rev%2006-29-2021.pdf		No
	Maintenance Agreement Assessment/Long Term O&M Private BMP Maintenance	2.5.16	The permittee shall require all new development or redevelopment to establish and enter into a long-term maintenance agreement and maintenance plan approved management practices for property owners. Alternatively, the permittee may establish other enforceable mechanisms for requiring long-term maintenance of structural and non-structural BMPs. Such authorities shall allow the MS4, or its designee, to conduct inspections of the management practices and also account for transfer of responsibility in leases and/or deed transfers. The agreement shall also allow the MS4s, or its designee, to perform necessary maintenance or corrective actions neglected by the property owner/operator, and authority to recover costs from the property owner/operator when the owner/operator has not performed the necessary maintenance.	Annually	Permittee shall continue to require all new development and redevelopment projects to have this agreement.	Long Term Maintenance and Operation Agreements (LTMOA) are in place and administered. Any development that meets the post-construction water quality runoff requirment must execute an LTMOA. These agreements are recorded at the County Clerks Office.		No
	Green Infrastructure Demonstration Site(s)	2.5.17	The permittee shall continue, in cooperation with Louisville Metro Mayor's administration, University of Louisville and other local agencies, to pursue development of stormwater quality and green infrastructure interpretative center(s) at strategic location(s) around Jefferson County with the intent of providing a positive highly visible platform to promote the viability and desirability of green infrastructure BMPs. Where feasible explore the opportunity for BMP evaluation and pre-/post-monitoring.	Annually	Permittee shall report its role and activities, lessons learned, and overall project progress and summarize for the annual report.	Program is ongoing. See appendix 2.5.12 Summary of User Fee Credits/Green Infrastructure Incentive Projects, for summary of all incentive projects.	2.5.12 Summary of User Fee Credits/Green Infrastructure Incentive Projects	No

		SWQMP ID	ACTION REQUIRED	SCHEDULE	FREQUENCY OR MEASURE OF SUCCESS	RESULT	APPENDIX	PROPOSE CHANGE
PC 2 PC Plan Maintenance Update	Rain Barrels and Louisville Nature Center	2.5.18	The permittee shall explore the opportunity for MSD to continue program with Louisville Nature Center that provided public guidance to construct and maintain rain barrels.	Annually	Permittee shall report its role, lessons learned and overall programs progress and summarize for the annual report.	MSD continues to support the education efforts of the Louisville Nature Center (LNC) through an annual donation. These funds go directly towards educational camps, tree give-aways, and other educational initiatives. MSD will continue to maintain partnerships with entities that support its mission.		No
	No Mow/Riparian Zone	2.5.19	The permittee shall assess existing mowing areas as part of maintenance activities to determine if the original need or impetus still exists. Opportunities to adjust the mowing contracts to include or exclude mowing areas will be incorporated into those contracts as they are rebid or renewed. Areas that are removed from the mowing list will be considered for "no mow" signage and education.	Annually	Permittee shall report its role and activities, lessons learned, and overall project progress and summarize for the annual report.	MSD periodically evaluates mowed properties to seek alternative maintenance options including tree planting and managed meadows. MSD continues to evaluate mow vs. no-mow areas to determine feasibility of removing properties from mowing contracts.	2.5.19 Map of MSD Mowing Boundaries	No
	Urban Reforestation - MS4	2.5.20	The permittee shall create a grant funding mechanism to provide incentives for the planting of trees in the MS4 area and improve tree canopy for the benefit of stream health and water quality. The co- permittee will budget to provide grant funding of private or public grantees to plant 1000 trees per permit cyle in the MS4. Funds will be administered in accordance with water quality goals, and on a first- come first-serve basis.	Annually	Permittee shall report its role and activities, lessons learned, and overall project progress and summarize for the annual report.	13 tree partnership and planting projects were completed in the reporting period for a total of 988 trees planted.	2.5.20 Urban Reforestation Grant Summary	No
	Regional Basin Retrofit/Analysis	2.5.21	The permittee shall assess the regional flood control basins to determine if there is potential for enhancement to the basin or the outlet structure to provide additional capture for smaller water quality events. A technical memo and recommendation outline shall be provided prior to the end of Permit Year four (4).	By End of Permit Year Four (4)	Permittee shall by the end of Permit Year four (4) produce a technical memo outlining findings and recommendations.	Completed in previous reporting year.		No

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KY000001

Good Housekeeping/Pollution Prevention (GH/P2)

5th Reporting Period - November 2021

		SWQMP ID	ACTION REQUIRED	SCHEDULE	FREQUENCY OR MEASURE OF SUCCESS	RESULT	APPENDIX	PROPOSE CHANGE
GH/P2 Plan Maintenance and Update	Stormwater Pollution Prevention Plans for MSD Operations	2.6.1	The permittee shall periodically update and implement SWPPPs (also known as BMP Plans or Stormwater Plans) to control the discharge of pollutants from POTWs and other applicable MSD-owned facilities as defined in 40 CFR 122.26 including wastewater treatment plants and major operating facilities. SWPPPs will include provisions for maintenance activities on facility grounds, materials and equipment storage, security, preventative maintenance, risk identification and assessment, materials inventory, floor drain protection/controls, inspections and records.	PYs 2 & 4	Permittee shall assess plans within six (6) months of major facility changes or at least once every two years by the facility superintendents and operation managers who make up the SWP3 Committee.	In Summer 2021, MSD updated the SWPPPs for the following facilities: Central Maintenance Facility, Cedar Creek WQTC, Derek R. Guthrie WQTC, Floyds Fork WQTC and Morris Forman WQTC. MSD chose to wait on Hite Creek WQTC due to significant ongoing construction. This effort included good housekeeping trainings for facility staff, the development of inspection forms, facility inspections, recommendations for good housekeeping practices, and the development of work orders. In fall of 2021 MSD will get these signed and distributed to each facility. MSD will continue to monitor major changes at facilities and update the SWPPPs appropriately.		No
	Training on MSD Facility SWPPPs	2.6.2	The permittee shall utilize third party inspectors working with the facility SWPPP Committees to perform routine training of key SWPPP issues	Annually	Permittee shall starting in Permit Year one (1) utilize third party inspectors to address at least three (3) SWPPP issues annually and summarize training and attendance for the Annual Report.	Virtual Stormwater Pollution Prevention Plan Training (1.0 hours) - Training covered illicit disharge detection and elimination, spill response, good housekeeping, and pollution prevention. 185 participants in May 2021. Third-Party SWPPP inspections were completed in April 2021 by AECOM and DLZ.		No
	Maintenance Staff Training on Pollution	2.6.3	The permittee shall provide training to key maintenance staff on good housekeeping activities related to stormwater quality in MSD operations including but not limited to: green infrastructure operation and maintenance, fleet and building maintenance, and stormwater conveyance/drainage system maintenance.	Annually	Permittee shall report the number of staff attending related training and include in the Annual Report.	The virtual SWPPP training, mentioned in Activity 2.6.2 - Training and MSD Facility SWPPPs, covered good housekeeping and fleet and building maintenance. MSD offered 16 different MS4 related training that totaled 386 hours in material.	2.6.3 MS4 Related Training Summary	No
	Pesticides Management	2.6.4	The permittee shall utilize Commonwealth of Kentucky pesticide management registration and certifications to qualify MSD employees applying pesticides. The permittee shall develop and maintain a list of pesticides used and stored, including storage locations.	Annually	Permittee shall track employees with related state certifications.	MSD no long administers pesticides. MSD contracts with Louisville Metro Health to apply pellets in catch basins to control mosquitos. MSD maintains a facilities inventory of all material safety data sheet information and is available to all employees through MSDNet.		Yes, MSD no longer administers pesticides.
	Incident Response Staff Training	2.6.5	The permittee shall provide training to unified incident response staff on related stormwater issues including good housekeeping, IDDE, construction, post- construction BMP/controls and program management.	Annually	Permittee shall continue to report incident response staff training participation.	Due to COVID, incident response staff only participated in the following trainings; • SORP (Four Quarterly Courses - 9/30/2020, 12/31/2020, 3/31/2021, 6/21/2021) • LV Green (4/30/2021) • SWPPP (throughout the year) • HazMat Refresher Training (throughout the year)	2.6.3 MS4 Related Training Summary	No

		SWQMP ID	ACTION REQUIRED	SCHEDULE	FREQUENCY OR MEASURE OF SUCCESS	RESULT	APPENDIX	PROPOSE CHANGE
GH/P2 Plan Maintenance and Update	MSD Capital Project Control	2.6.6	The permittee shall, for MSD directed capital, rehabilitation and reconstruction projects, disturbing more than one acre, performed by a contractor, ensure the contract documents/agreements/work orders will include stipulations that require the work be designed/performed/implemented/constructed under the same standards for construction and post-construction stormwater quality that MSD requires of private development it regulates.	Annually, as needed	Permittee shall summarize changes to MSD Capital Project requirements, as necessary.	MSD capital projects are reviewed identically to private development projects. MSD reviews projects to meet the requirements set forth in the Design Manual, WDRs, EPSC and Floodplain Management Ordinances. The reviews and permits are tracked in the Project Activity Tracking system and IPS®. MSD will continue to subject its own projects to the rigorous review process that is administered for private construction.		No
	MSD Stormwater Quality BMP Data	2.6.7	The permittee shall update LOJIC and IPS® datasets to identify stormwater-quality BMPs located on MSD properties, rights-of-way and easements that MSD is responsible for operating and/or maintaining. The datasets will be updated in a manner to support ongoing prioritization and tracking of operation and maintenance.	PYs 1, 3, & 5	Permittee shall every other year assess datasets for completeness and ability to support staff scheduling stormwater-quality BMPs MSD is responsible for maintaining.	MSD continually updates LOJIC and IPS datasets to reflect the construction of all new assets. All stormwater-quality BMP's, owned and operated by MSD, are inspected annually. Work orders or third-party contracts have been created for most BMP's for maintenance.		No
	Catch Basin and Storm Sewer Cleaning	2.6.8	The permittee shall continue to clean catch basins and sewers (closed pipe systems) to prevent debris from entering receiving streams and address drainage/flooding issues in MSD area based on known priorities and information gathered from the customer hotline.	Annually	Permittee shall summarize and include in the Annual Report.	Using MSD's IPS database tracking system, 6,938 work orders were completed for maintenance of storm sewers and catch basins in the MS4 area in the current reporting period.	2.6.8 Summary of Storm Sewer System Maintenance	No
	Channel Maintenance	2.6.9	The permittee shall continue to maintain open channel system in MSD area based on priorities and information from the customer hotline including ditch cleanings, ditch regrading, drainage obstruction removals, erosion repairs, floodwall levee maintenance, headwall install/repair, concrete channel installation, tree removal, driveway apron restoration, routine mowing and closed pipe installations.	Annually	Permittee shall summarize and include in the Annual Report.	Using MSD's IPS database tracking system, 7,635 work orders were created to maintain 485,566 linear feet of drainage ways, amounting to over $2.5 Million for drainage way maintenance in the MS4 area in the current reporting period.	2.6.8 Summary of Storm Sewer System Maintenance	No
	Stormwater Pollution Prevention Plans for Co-Permittee Operations	2.6.10 - Cooperative Efforts (MSD provides supportive or other non-lead role)	The permittee shall provide co-permittees with periodic 3rd-party technical assistance and/or review of the facility stormwater pollution prevention plans (SWPPPs, BMP plans, or Stormwater Plans and BMPs) and/or site visit/walkthrough to help identify opportunities to improve the effectiveness of the plans and their implementation.	Annually, as needed	Permittee shall assist in the review of at least one (1) facility annually.	Upon request by a co-permittee, MSD provides third-party technical assistance and/or review of the facility stormwater pollution prevention plans (SWPPPs, BMP plans, or Stormwater Plans and BMPs) and/or site visits or walkthroughs to help identify opportunities to improve the effectiveness of the plans and their implementation. The permit requires at a minimum that MSD shall assist in the review of at least one facility annually if requested. During the reporting period MSD assisted Louisville Metro Public Works with SWPPP inspections on two of their facilities. On 4/2/2021 two MSD staffers assisted at the Hubbards Lane Public Works Facility. On 4/16/2021 two MSD staffer assisted at the Public Works West facility. Suggestions were given for both facilities.		No

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KY000001

Monitoring (M)

5th Reporting Period - November 2021

		SWQMP ID	ACTION REQUIRED	SCHEDULE	FREQUENCY OR MEASURE OF SUCCESS	RESULT	APPENDIX	PROPOSE CHANGE
Monitoring Plan Maintenance and Update	Long-Term Monitoring Network (LTMN)	2.7.1	The permittee shall continue the existing program of the collection of long-term data on stream quality and habitat for at least 28 LTMN locations selected to support the various types of data collected. This program includes: • Continuous – pH, conductivity, temperature, dissolved oxygen, and stream flow. • Quarterly – Ambient monitoring for Total Suspended Solids (TSS); E. coli; Total Nitrogen (as N) Oil and Grease, Total Recoverable Copper and pH. • 5/month (May-October) - Recreational monitoring for E. coli. • Once Every Two Years – Biological sampling and/or evaluation rotating to include: algae, fish and benthic macro invertebrates.	Annually	Permittee shall provide datasets electronically with annual report.	Monitoring data collected.	5A Continuous Monitoring Data - Sonde Watershed Data, Conductivity, pH, Dissolved Oxygen, Temperature 5B Analyzed Quarterly Monitoring Data - Site Data, E Coli, Wet or Dry, Total Nitrogen, Metals	No
	Monitoring Summary	2.7.2	The permittee shall provide a summary of monitoring collection efforts and results in the annual report.	Annually	Permittee shall summarize and include in annual report.	See Chapter 5 – Monitoring for a detailed description of environmental data collection activities and monitoring data assessment for permit required parameters and analytics.		No
	Trend Analysis	2.7.3	The permittee shall perform trend analysis to support long-term assessments of local waterways and program performance. Report analysis through the “Synthesis Reports” at least once every permit cycle.	Once per permit cycle	Permittee shall, at least once per permit cycle, provide synthesis report.	MSD will produce a State of the Streams report by January, 30 2022, the end of the permit cycle.		No
	Flow Estimate to Support Quarterly Ambient Monitoring	2.7.4	The permittee shall utilize total precipitation estimates over the previous twenty-four (24) hour period to estimate flow. When flow is measured with in stream gauging equipment, that data will be utilized rather than precipitation based estimates.	Annually	Permittee shall provide available data and include in annual reports.	USGS Flow Monitoring Data is provided in Appendix 5A and 5B – Continuous Monitoring Data.	5A Continuous Monitoring Data - Sonde Watershed Data, Conductivity, pH, Dissolved Oxygen, Temperature 5B Analyzed Quarterly Monitoring Data - Site Data, E Coli, Wet or Dry, Total Nitrogen, Metals	No

		SWQMP ID	ACTION REQUIRED	SCHEDULE	FREQUENCY OR MEASURE OF SUCCESS	RESULT	APPENDIX	PROPOSE CHANGE
Monitoring Plan Maintenance and Update	Monitoring Location Maintenance	2.7.5	The permittee shall continue its collaboration with United States Geological Survey (USGS) on flow gauges and monitoring locations maintenance and data management.	Annually	Permittee shall summarize activities and include in annual reports.	MSD continues to collaborate with USGS on the operation of 25 flow gauges throughout the MSD service area. USGS maintains flow gauges, manages flow data, and provides access to the data through the National Water Information System website at http://waterdata.usgs.gov/ky/nwis. MSD continues to collaborate with USGS on the operation of 24 water quality sondes throughout the MSD service area. Through its contract with USGS, MSD operates and maintains the sondes and USGS provides on-line access to provisional (i.e., as collected) water quality data through the National Water Information System website (http://waterdata.usgs.gov/ky/nwis). USGS reviews and finalizes the data annually and delivers the final sonde water quality data.		No
	Precipitation Estimate	2.7.6	The permittee shall continue to maintain the continuous rain gauge network and on-line public access to that data.	Annually	Permittee shall continue to make rain gauge network data available on-line.	MSD continues to maintain a rain gauge network and provides on-line public access to that data. This rain gauge network data is currently available on MSD's website (raingauge.louisvillemsd.org). There are a total of 46 rain gauges.	2.7.6. Rain Gauge Map	No
	Water Quality Standards	2.7.7	The permittee shall compare stream monitoring analytical results to the applicable water quality standards for each parameter of the monitoring program. The most stringent applicable standard shall be used for comparison. Constituents that exceed applicable Water Quality Standards shall be highlighted. The permittee shall include a discussion of possible pollutant sources through the annual report.	Annually	Permittee shall apply the most stringent standard.	**Comparison completed**; source evaluation performed using wet vs. non-wet. MSD compared analytical results of the stream monitoring to the most stringent applicable water quality standards for each parameter of the monitoring program. Constituents that exceed applicable Water Quality Standards were highlighted. The comparison with water quality criteria and parameters without numeric criteria are provided in **Chapter 5 – Monitoring of this report.**		No
	Location Mapping	2.7.8	The permittee shall maintain the geo- coded monitoring station locations and descriptions through related geographic datasets and databases.	Annually	Permittee shall maintain the monitoring stations reflected in mapping system.	The LOJIC database maintains geocoded LTMN monitoring station locations and descriptions.	2.7.8. Monitoring Stations Map	No
	Sampling Methodology and Test Procedures	2.7.9	The permittee shall perform the sampling methodology according to the EPA stormwater application regulation at 40 CFR 122.26. The permittee shall perform the analyses according to the procedures approved under 40 CFR Part 136, unless other test procedures have been specified. The permittee shall assess the monitoring Quality Assurance Project Plan (QAPP), and update as needed.	Annually	Permittee shall perform the sampling methodology to insure compliance with 40 CFR 122.26 and 136, and provide a summary of as- needed updates to the QAPP in the annual report.	Sampling methodology is conducted according to the EPA stormwater application regulations. Analyses are conducted according to procedures approved under 40 CFR Part 136 or similar methods. Analytical methods are included with raw monitoring data in **Appendix 5D – Raw LIMS Data**. MSD is currently following the DRAFT QAPP that is under review by DOW's Quality Assurance Officer. A provisional approval for Quarterly and Recreational sampling sections was granted in March of 2021 and is anticipated to be fully approved by Spring of 2022. A copy of the complete document is available upon request.	5D Raw LIMS Data	No

		SWQMP ID	ACTION REQUIRED	SCHEDULE	FREQUENCY OR MEASURE OF SUCCESS	RESULT	APPENDIX	PROPOSE CHANGE
Monitoring Plan Maintenance and Update	Annual Data Summary	2.7.10	The permittee shall submit a stormwater monitoring report annually. The monitoring reports shall include: status of implementation of the monitoring program, methods of evaluating data, graphical summaries of the data, and an explanation/discussion of the data for each component of the monitoring program. The monitoring data/results obtained each year will be submitted electronically with the Annual Report. A narrative data analysis shall be submitted annually within the Annual Report.	Annually	Permittee shall provide a summary electronically with the annual report.	Monitoring data assessment is reported in **Chapter 5 – Monitoring** of this report.		No

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KY000001

Performance Assessment and Reporting (PAR)

5th Reporting Period - November 2021

		SWQMP ID	ACTION REQUIRED	SCHEDULE	FREQUENCY OR MEASURE OF SUCCESS	RESULT	APPENDIX	PROPOSE CHANGE
PAR Performance Assessment and Reporting	Activity Measures Reporting	2.8.1	As described in the specific activity listings, the permittee shall compile information necessary to provide in the annual report. The metrics defined by "Measure of Success" shall be reported and kept for program assessment purposes. The permittee shall track the appropriate metrics through existing databases/spreadsheets to support staff assignments and budget development.	Annually	Permittee shall develop and retain Annual Reports for three years beyond permit term.	Annual report submitted and posted on website. MSD also keeps digital version on server and a hard copy.		No
	PEOPLE	2.8.2	The permittee shall continue activity tracking to support consistent coordination and integrated reporting in a way that enables the variety of MSD staff to report their individual activities, target audiences, and related metric.	Annually	Permittee shall, by the end of Permit Year one (1), summarize tracking procedures and results and include with Annual Report.	MSD currently has an email set up to assist with the tracking of MS4 related activites and events. The MS4 group often coordinates with MSD's Communication Department to update a tracking spreadsheet as well. MSD recently developed a Sharepoint database and calandar to streamline the tracking of MS4 related activities and events.		No
	Illicit Discharge Trend Analysis	2.8.3	The permittee shall perform a trend analysis of illicit discharge investigations and enforcement actions over the term of the permit.	Permit Year 5	Permittee shall provide, during Permit Year Five (5) a report of trends and potential implications of IDDE investigations.	Infared thermal imagery was collected in February 2020. MSD will provide a report of trends and potential inplications of IDDE investigations by January, 30 2022, the end of the permit cycle.		No

		SWQMP ID	ACTION REQUIRED	SCHEDULE	FREQUENCY OR MEASURE OF SUCCESS	RESULT	APPENDIX	PROPOSE CHANGE
PAR Performance Assessment and Reporting	Industrial/IDDE Compliance Actions Portal	2.8.4	The permittee shall maintain a Compliance Actions Web Portal supplementing existing databases for functionality for internal use to expedite follow-up inspections of HRIFs.	Annually	Permittee shall maintain and report progress summarized in the Annual Report.	During previous reporting periods, MSD has reviewed current data collection processes and developed a plan to improve the current industrial facility inspections tracking system. Currently, MSD uses the Threat Matrix spreadsheet in conjunction with IPS® to collect and maintain data (see Activity 2.3.1 – Industrial IDDE Program Enforcement). No improvements were made in this year's reporting period based on previous reporting period reviews. In 2013, MSD designed a customized table in its IPS® Asset Data Management system to host the data contained in the spreadsheet version of the Threat Matrix, which assesses facility risk into low, moderate and high-risk categories. IPS® does not currently include a mechanism to score facilities based on inspection results. Therefore, Industrial Waste Department (IWD) staff has been entering inspection information into both IPS® and the spreadsheet version of the Threat Matrix. In 2014, MSD developed an Industrial Inspection Compliance Actions Portal Implementation Plan Memo for IPS® improvements to modify IPS® to include risk assessment and scoring capability. MSD will continue to enhance the IPS® database to improve efficiency and data integrity.		No
	Post-Construction Inspection Portal	2.8.5	The permittee shall maintain a Compliance Actions Database for internal use to expedite follow-up inspections of private post- construction BMPs.	Annually	Permittee, shall maintain and report progress summarized in the Annual Report.	MSD currently tracks inspection and enforcement using an ArcGIS online application and Survey123. Using this method, MSD has seen compliance rise from 25% to over 75%. MSD continues to follow up and escalate enforcement if needed. Inspection and enforcement is also tracked using the IPS database. MSD is working to have the ArcGIS data and IPS database sync.		No

		SWQMP ID	ACTION REQUIRED	SCHEDULE	FREQUENCY OR MEASURE OF SUCCESS	RESULT	APPENDIX	PROPOSE CHANGE
PAR Performance Assessment and Reporting	Six-Level Program Assessment Methodology	2.8.6	The permittee shall continue to evaluate and report portions of the six-level program EPA began advocating in 2008 to assist MS4 programs in identifying success and future areas of focus.	Annually	Permittee shall continue to assess performance with the six-level program and report on progress in Annual Reports.	**Evaluation Complete.** By administering the MS4 permit, MSD seeks to attain the ultimate goal of water quality improvement in Louisville by educating the public, effectively regulating private industry and development, maintaining critical public facilities and infrastructure, and by closely monitoring in-stream water quality trends. MSD recognizes that to attain water quality improvement in Louisville, special attention must be given to reducing non-point source pollutant loading. MSD has routinely exceeded regulatory targets related to public education and outreach. During the last reporting period, MSD exceeded regulatory targets for direct public interaction, public meetings with water quality topics, volunteer program support, and public speaking engagements (see Activities 2.1.2, 2.1.3, 2.1.4, and 2.1.7, respectively). MSD routinely publishes the State of the Streams report (http://www.louisvillemsd.org/WaterQuality), to both document and communicate improvements in local water quality and to highlight areas where future improvement is necessary. By exceeding regulatory targets, effectively communicating stormwater issues to the public, and regularly analyzing water quality trends, MSD can accelerate progress toward realizing water quality improvement in Louisville.		No
	Cooperative Annual Report	2.8.7	The permittee shall coordinate and cooperate with co-permittees in compilation of the annual compliance demonstration reports	Annually	Permittee shall prepare and submit Annual Report in a timely manner.	**Fourth Annual Report completed.** MSD coordinates and cooperates with co-permittees to compile annual compliance reports. Ultimately, the co-permittees are responsible for their own MS4 Annual Reports, just as they are for their portions of the SWQMP. MSD continues to provide leadership and assistance to the co- permittees as they compile the reports and utilize MS4 program partner opportunities.		No

CHAPTER 3 CO-PERMITTEE PROGRAM REPORTS

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3.5 COMPLIANCE ACTIVITIES REPORT FOR THE CITY OF SHIVELY

The Co-Permittees individually and collectively continue to perform the required activities specified in KPDES Permit # KYS000001. This section will focus on those activities for which the City of Shively was responsible during the permit period and will document the compliance tasks performed by City of Shively during the period of July 1, 2018 – June 30, 2019.

3.5.1 Illicit Discharge Detection and Elimination (IDDE)

City crews graded approximately 1500 feet of drainage channels within the city.

3.5.1.1 Illicit Discharge / Illegal Dumping Ordinance IDDE-4

The City of Shively enforces its illegal dumping ordinance.

The city's Code Enforcement Board, is continuing to cite residents with debris blocking their drainage ditches.

- City crews abated 245 abandoned properties.

3.5.1.2 Provide education on the Revised Wastewater Discharge Regulations IDDE-5

The City of Shively posts "no dumping" signs at new locations within the city.

3.5.2 Construction Site Runoff Controls (CS)

The City of Shively has an interlocal agreement with MSD, the primary Co-Permittee on the MS4 permit, to perform certain CS program tasks.

3.5.2.1 Erosion Prevention and Sediment Control Plan (EPSC) CS-1

The City of Shively has an approved EPSC General Permit issued by MSD for Public Works activities.

3.5.2.2 Scheduled Inspections of BMPs CS-5

A City of Shively Code Enforcement Officer inspects construction sites as needed.

3.5.3 Post Construction Controls (PC)

3.5.3.1 Pilot BMP Projects PC-2

Shively continued a practice of not installing paved curbs and gutters on residential streets. Grass swales are used to collect street runoff.

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3.5.3.2 Built-Upon Area Reductions PC-3

Shively adopted the provisions of Cornerstone 2020.

3.5.3.3 Source Controls PC-4

The City of Shively facilities have approved HMPC plans.

3.5.4 Good Housekeeping / Pollution Prevention (GH)

The components of the drainage system require routine inspections and maintenance. The City of Shively performed the following activities during the permit year:

- Augured approximately 2,000 feet of drainage pipe.
- Cleaned approximately 1,500 feet of curbing.
- Cleaned and maintained 7500 feet of drainage ditches.
- Installed approximately 1200 feet of drainage pipe.

3.5.4.1 Street Maintenance GH-1

Street maintenance by Shively is performed on an as-needed basis. The City of Shively follows the EPSC General Permit requirements.

3.5.4.2 Street Sweeping GH-2

The City of Shively manually collects debris along Dixie Highway as needed. The City of Shively cleans curb and gutter roads within the city on an average of twice per year. Debris removed from streets and gutters is sent to a landfill.

3.5.4.3 Catch Basin Cleaning GH-3

Catch basins are manually cleaned as needed. The debris is taken to a landfill.

3.5.4.4 Storm Sewer Cleaning GH-4

Storm sewers are cleaned as needed with a pressure auger. Debris is collected and sent to a landfill.

3.5.4.5 Channel Maintenance GH-5

Silt is removed from drainage ditch channels as needed. Silt is generally removed by hand to minimize the impact to the channel, though equipment is sometimes used when necessary. Debris removed from drainage channels is sent to a landfill.

3.5.4.6 Pollution Prevention for De-Icing GH-6

The City of Shively calibrates salt spreaders as needed. Salt is pre-wetted with liquid calcium chloride to maximize effectiveness. De-icing salts are stored in a building.

3.5.4.7 BMP Inspections GH-7

Good Housekeeping/Pollution Prevention BMPs are inspected regularly by the City of Shively Maintenance Director.

3.5.4.8 BMP Maintenance GH-8

Good Housekeeping/Pollution Prevention BMPs are regularly maintained.

3.5.4.9 Pollution Prevention for Herbicides and Pesticides GH-9

The City of Shively does not use pesticides. Herbicides are used sparingly.

3.5.4.10 Continuation of Existing Programs GH-10

The city collects municipal waste, recycling and yard waste weekly. In an effort to reduce loose recyclable items from blowing out of their bins, the city purchased 95 gallon recycling totes with lids for the residents. The City of Shively recycles newspaper, cardboard, plastic, aluminum cans and glass. A private contractor picks up used oil from the City of Shively's maintenance facility.

3.5.5 Public Education/Outreach Programs (PE)

The City of Shively has an interlocal agreement with MSD, the primary Co-Permittee on the MS4 permit, to perform certain public education program tasks. Therefore, only those tasks performed by the City of Shively are listed in this report.

The City of Shively offers educational materials at the annual Easter Egg Hunt, Trunk or Treat and Light Up Shively.

3.5.5.1 Public Education Programs PE-1

The City of Shively maintained a website, www.shivelyky.org. Public education also takes place through quarterly newsletters which address services including recycling, leaf pick-up, appliance and junk pickup days and catch basin cleaning.

3.5.5.2 Earth Day PE-2

The City of Shively does not hold separate Earth Day activities. Community-wide Earth Day celebrations at the Louisville Zoo are sponsored by Louisville Metro.

3.5.5.3 Litter Control PE-3

The City of Shively continues to work on litter control. With signage and public education.

3.5.5.4 Internal Training PE-5

Because of “covid” the city’s public works designee was not able to attend quarterly meetings with MSD (URS)

3.5.6 Monitoring (M)

The City of Shively has an interlocal agreement with MSD to perform the Monitoring requirements of the MS4 permit. Watershed monitoring performed on the Mill Creek Cutoff characterized the water quality downstream from the City of Shively MS4.

3.5.7 Reporting (R)

The City of Shively has an interlocal agreement for MSD to perform the Annual Reporting function. Shively provided MSD with the information regarding its MS4 program activities for this Annual Report.

CO-PERMITTEE CERTIFICATION
2021 MS4 STORMWATER ANNUAL REPORT
KPDES PERMIT NUMBER KYS000001

THE CITY OF Shively is designated as a co-permittee covered by the Municipal Separate Storm Sewer System (MS4) permit that was issued by the Kentucky Division of Water under the Kentucky Pollutant Discharge Elimination System (KPDES) program. **THE CITY OF Shively** has prepared the attached annual compliance report for the reporting period of **July 1, 2020 to June 30, 2021.**

Under the terms of KPDES Permit No. KYS000001 [Part I.A.2], and implemented through an interlocal agreement with Louisville and Jefferson County Metropolitan Sewer District dated 11-01-2021, **THE CITY OF Shively** certifies that it has responsibility for the following:

- Construction oversight in addition to the regulatory inspections conducted by Louisville MSD pursuant to the Erosion Prevention and Sediment Control Ordinance, Chapter 159;
- Drainage system and outfall mapping;
- Drainage system operation and maintenance;
- Road maintenance and upkeep, including snow and ice removal and related stormwater management activities;
- Drafting and implementing fleet and facility stormwater pollution prevention plans;
- Reporting and refering potential illicit discharges observations by municipal employees or other reports from residents to MSD for investigation and potential enforcement;
- Inspection, operation, maintenance and/or applicable certification that permanent (also known as post-construction) water quality devices, controls, and management practices are operating effectively;
- Implementation of education and outreach within the City of Shively to compliment the education and outreach provided by MSD which is tailored to local water bodies pollutants of concern;
- Preparation and timely submittal of annual compliance demonstration report to MSD according to agreed upon formats and standards; and

Certification: "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 the information, the above statements are, 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."

CITY OF Shively
Name: Jeff Early Signature: Jeff Early
Title: Works Director Date:11-01-2021

3.2 COMPLIANCE ACTIVITIES REPORT FOR THE CITY OF ANCHORAGE

The KPDES Large MS4 stormwater discharge permit program requirements are classified into seven Program Elements, each designated with an acronym. The Program Elements include: Illicit Discharge Detection and Elimination (IDDE), Construction Site Runoff Controls (CS), Post-construction Controls (PC) Good Housekeeping/Pollution Prevention (GH), Public Education/Outreach Programs (PE), Monitoring (M) and Reporting (R).

The Co-Permittees individually and collectively continue to perform the required activities specified in KPDES Permit # KYS000001. This subsection will focus on those activities for which the City of Anchorage, Kentucky was responsible during the permit period and will document the compliance tasks performed by City of Anchorage during the period of July 1, 2020 – June 30, 2021.

3.2.1 Illicit Discharge Detection and Elimination (IDDE)

The City of Anchorage has an interlocal agreement with MSD, the primary Co-Permittee on the MS4 permit, to perform certain IDDE tasks. Therefore, only those tasks performed by the City of Anchorage are listed in this report. MSD performs illicit discharge investigation and follow up throughout Louisville Metro, including the City of Anchorage. Previously, most of the City of Anchorage did not have sanitary sewers. With the June 2008 completion of the Hazelwood Extension of its sanitary sewer, the City of Anchorage brought 95 properties previously on septic systems onto an MSD-operated sewer system. Of the approximate 860 residences in Anchorage, 432 residences are now estimated to be on MSD-operated sewer systems. Recently, MSD installed a gravity interceptor sewer in the southwest quadrant of Anchorage. The Anchor Estates Pump Station Elimination Project eliminated three pump stations in Anchorage, adding approximately 30 septic-tank properties to new sewer service, and providing future expansion for other areas on the south side of Anchorage. The project was completed August 2016. In 2017, the City of Anchorage obtained approval to extend the sewer service to two additional residences. In 2019 and 2020, three additional residences were connected to sewers. In 2021, one residence connected to sewers. Within the past two years, the City performed water sample testing twice and extensive soundings/boring geotechnical testing to determine the feasible of expanding sewer service to the southeast quadrant of the City. At report time, the final report of findings was pending.

3.2.1.1 Illicit Discharge / Illegal Dumping Ordinance IDDE-4

The City of Anchorage enforces its illegal dumping ordinance and posts signs that prohibit dumping at locations that are problem areas. City of Anchorage staff investigates areas regularly and responds to resident complaints. In the past two years, the City has had zero instances of illicit dumping or discharge to MSD.

3.2.1.2 Provide education on the revised Wastewater Discharge Regulations IDDE-5

The City of Anchorage provides education on their local ordinance(s) that prohibit illicit connections and illegal dumping. Anchorage has no waste water treatment plants, however, has two pumping stations on Creel Lodge Drive and Lucas Lane. The City of Anchorage has marked all Catch Basins throughout the City with markers informing the public that there is no dumping into the basins and that these basins drain to local creeks. Currently, there are still a

total of 119 *No Dumping* decals located throughout the City. All commercial properties and the Anchorage school system have marked all their Catch Basins. The City of Anchorage monthly newsletter periodically contains information on the prohibition of dumping into catch basins and drains, and proper disposal of leaf and grass debris.

3.2.2 Construction Site Runoff Controls (CS)

The City of Anchorage has an interlocal agreement with MSD, the primary Co-Permittee on the MS4 permit, to perform certain CS program tasks. MSD administers the Erosion and Sediment Control Ordinance. The City of Anchorage requires contractors to show proof of EPSC Certification before they can obtain a Zoning Compliance Certificate. A copy of their certification is attached to their building permit. The City's Public Works department checks worksites to insure EPSC measures are in place. The City's Flood Safety Officer reviews residential building plans for any increase in impervious surface. Residents with problematic or excessive impervious surface overages (greater than 20% of the lot acreage/size) will need to obtain an engineering report to mitigate the overage or satisfactorily resolve the problem before approval will be granted by Anchorage City Council. During this current term, the Flood Safety Officer reviewed 24 sites for drainage issues or potential problems. Anchorage ordinances require any lot with more that 20% impervious to obtain an approved variance to retain excess runoff on site and provide an approved plan.

3.2.2.1 Erosion Prevention and Sediment Control Plan (EPSC) CS-1

An EPSC Plan with provisions for Best Management Practices (BMPs) to keep sediment on-site (silt fences, staked bales, sediment ponds, gravel mats, etc.) and to capture sediment that would enter local or on-site drainage systems is required for any new development within the City of Anchorage. Forty-two trenching permits were issued by the City Forester in the last year for various projects from new homes to fence and cable wire installations. Any stockpiled soils are required to be contained by silt fencing. Twenty-four Zoning Compliance Certificates were issued for building projects where the contractor or subcontractor was required to be EPSC certified.

The City of Anchorage has an approved EPSC General Permit issued by MSD for Public Works activities.

3.2.2.2 Training for Operators CS-3

The City of Anchorage ensures that appropriate staff members attend training for equipment operators and construction managers that describes the proper installation and maintenance of construction site BMPs. Two Public Works employees, the Director of Public Works, and the foreman, attended the MSD class for certification on September 27, 2019. Unfortunately, due to the pandemic of 2020 and 2021, staff members did not attend any training courses.

3.2.2.3 Scheduled Inspections of BMPs CS-5

The City of Anchorage city officials check construction sites to ensure that the EPSC Ordinance is being followed. The Public Works Director visits all construction projects to review compliance with permits. The City of Anchorage reviews plans to ensure the proposed work does not increase or inappropriately divert storm water runoff. The City of Anchorage requires a specific drainage retention plan approval when the construction plans call for a 20% or more impervious area or if neighboring properties are affected.

3.2.3 Post Construction Controls (PC)

The City of Anchorage has an interlocal agreement with MSD, the primary Co-Permittee on the MS4 permit, to perform certain PC program tasks. MSD performs the PC-1, Watershed Planning, Post Construction tasks on behalf of the City of Anchorage. The City of Anchorage Flood Safety Officer reviews construction plans and meets with contractors and homeowners where there may be runoff issues. The City's Flood Safety Officer met with 52 property owners this year to review and remedy storm water/drainage/impervious surface issues. Storm water retention is discussed with contractors and homeowners for projects increasing impervious surface in excess of 20% of the lot size. Bio-swale, rain garden, rain barrel, and other information is discussed with and given (when requested) to contractors and homeowners. This information is also readily available at Anchorage City Hall.

3.2.3.1 Pilot BMP Project PC-2

Over the permit term, the City of Anchorage was required to complete a minimum of three BMP Pilot Projects. Anchorage adopted and continues a policy to not install curbs on city streets so that runoff filters through nearby pervious areas. Residents are required to outlet downspouts into yards or channel to French drains, bio swales, dry wells, etc., to filter runoff before it enters a stream. The City's Annual Canopy Campaign is an effort to repopulate the tree canopy within the City of Anchorage, especially adjacent to roadways. The Annual Canopy Campaign takes place each fall. Through this program, the City pays for one half the cost of a canopy-type tree as determined by the City Forester and Forestry Board and professional planting of the tree selected by the residents. These trees are designated for the right-of-ways only. Fall 2020, residents purchased 33 canopy trees. The City also offers a Spring Tree Give-away Program. Spring 2021, despite the Coronavirus Pandemic, 300 one-inch caliper trees were given free of charge to Anchorage residents for planting anywhere on their properties. The City of Anchorage has a tree preservation ordinance that requires one tree replacement for every one to three trees removed depending on the trunk caliper of the replacement tree. The City has an on-going hazardous tree removal program for trees in the City's right-of-ways. Dead, dying, or hazardous trees are removed, and other trees are pruned, as needed. Trees removed by the Anchorage Public Works Department are chipped and taken to a mulch operation which turns it into compost and mulch. The City has been a "Tree City USA" for 32 years and achieved the Growth Award status level for 11 years by continuing to provide increased awareness and public education of accepted urban forestry practices.

3.2.3.2 Built-Upon Area Reductions PC-3

The City of Anchorage adopted the Land Development Code provisions of the Comprehensive Plan 2040. Many provisions in the Land Development Code version that Anchorage follows favor smaller homes on larger lots than traditional zoning allows so that there is a reduction in impervious surface. The streets are narrower and easements adjacent to the drainage swales are wider in order to save trees and to provide more green space. The City's floor-area-to-open-space ratio requirement requires more open space than Louisville Metro's floor-area-to-open-space ratio. Residents are required to outlet downspouts into yards or French drains, rain gardens, bio swales, etc. to filter runoff before it enters a stream. The City requires lots with more than 20% of impervious surface to now provide a professional engineering analysis/report

to provide alternative measures in place to retain on the lot excess stormwater created by the additional impervious surface. Prescribed methods to mitigate excessive runoff include rain gardens, dry wells, French drains, retention ponds, bio swales, etc.

3.2.3.3 Source Controls PC-4

City of Anchorage facilities have approved HMPC plans. The City of Anchorage maintains salt storage in a covered building. Recently, a large garage entry door has been added to keep salt secure. The salt under roof is also covered with tarps. The City of Anchorage has a refueling area for Public Works vehicles. The area is diked so that spills are controlled and maintained. A spill management system controls any spilled fuel in the dike area and allows rainwater to be removed without causing erosion to the ground. Employees are required to stay with vehicles while refueling. In addition, a sign is posted reminding employees of this policy. The City of Anchorage investigates downspout connectivity to the streams. Residents are required to daylight their downspout or direct to a French drain rather than flow entering the stream directly.

3.2.4 Good Housekeeping / Pollution Prevention (GH)

By agreement with the Anchorage Middletown Fire and EMS Department, all public works vehicles that are heavily soiled (dirt, salt, asphalt, etc.) must be washed inside the Anchorage Middletown Firehouse. The Firehouse has a containment pit to catch the material, so it can be disposed of properly. City policy dictates that any vehicle cleaned outside is washed with an environmentally safe soap only.

3.2.4.1 Street Maintenance GH-1

The City of Anchorage follows the EPSC General Permit requirements. Street maintenance in Anchorage is performed on an as-needed basis. During any roadway repair all remaining unused material is swept up and disposed of properly. Staked bales and silt fencing are used to minimize impacts of construction. Public roads are constructed without curbs, allowing the runoff to be filtered through the nearby grasses.

3.2.4.2 Street Sweeping GH-2

The City of Anchorage picks up trash along all of the roadways within its city limits monthly or more often, if needed. An annual Litter Abatement spreadsheet can be reviewed with the Public Works Director showing miles of road cleaned, number of bags collected and total cost. The City of Anchorage uses a leaf vacuum to keep the culverts and ditch lines clear of leaves during the fall and maintaining a list by month of ditch areas cleaned/restored. Leaves collected throughout the fall are taken to a mulch operation which turns leaves into compost and mulch. Road culverts are cleaned weekly in the fall to remove leaves. A City of Anchorage stormwater management and control ordinance requires property owners to maintain both natural and man-made drainage channels on their properties. It is unlawful for to deposit leaves, grass clippings, or other forms of debris in the drainage channels.

3.2.4.3 Catch Basin Cleaning GH-3

Catch basins were checked and cleaned by hand 47 times including before and/or after rain events. During this term, all catch basins were inspected and serviced while in the field documenting data for a new outflow map of the City. Outlets are plugged so that debris cannot get into the stream. This debris is taken to a landfill.

3.2.4.4 Storm Sewer Cleaning GH-4

Storm sewer cleaning is performed on an as-needed basis. Anchorage Public Works performed 47 culvert inspections this year. Through an agreement with the Anchorage Middletown Fire and EMS Department, blocked Anchorage culverts are flushed with water from a high-pressure hose, and the debris collected and taken to a landfill, as needed. During this term, two culverts required flushing.

3.2.4.5 Channel Maintenance GH-5

Grass drainage channels in Anchorage are mowed no lower than 6-inches. Debris is removed from channels and sent to a landfill. Concrete channels are cleaned of sediment manually. Staked hay bales and silt fencing are required during channel maintenance where heavily accumulated siltation needs removal. Anchorage Public Works inspected channels 117 times this year and had no reason to create any new concrete channels to stop erosion and road deterioration.

3.2.4.6 Pollution Prevention for De-Icing GH-6

The City of Anchorage inspects and adjusts its two salt spreaders distribution rates before and during any long-term snow events. Salt spreaders are adjusted to minimize the amount of overspray. The salt is pre-wetted with calcium chloride. Anchorage uses a brine road pre-treatment. Pushing the snow off the roadway is the preferred method for snow removal. The City applied less than 140 tons of salt and 500 gallons of brine this year. The City of Anchorage Public Works does yearly Internet research and employees attend training to learn about new application technologies.

3.2.4.7 BMP Inspections GH-7

Good Housekeeping/Pollution Prevention BMPs are inspected regularly by the Public Works Director.

3.2.4.8 BMP Maintenance GH-8

Good Housekeeping / Pollution Prevention BMPs are maintained on a regular basis. The Public Works crew inspects the building and grounds on a daily basis to assure materials and stock are stored properly.

3.2.4.9 Pollution Prevention for Herbicides and Pesticides GH-9

In the last 11 years, the City of Anchorage has used no pesticides and only minimal herbicides and is committed to continue on this course. No herbicides or pesticides are stored.

3.2.4.10 Continuation of Existing Programs GH-10

An outside contractor continues to collect municipal waste, yard waste and recyclables weekly. The yard waste is taken to a compost site. The City, under the direction of Jefferson County, requires recyclable paper bags for yard waste. Approximately 85% of the City of Anchorage

residents participate in the recycling program. The City of Anchorage utilizes a private contractor to reclaim its used oil and antifreeze. The City maintains a collection tank for used oil. This year, there was no oil or antifreeze reclaimed and removed.

3.2.5 Public Education/Outreach Programs (PE)

In a large metropolitan area, the impact of the actions of the citizens can cause great harm to the environment if the actions are careless or un-informed or can have great benefit if the actions are positive. Individual behavior repeated by many people has a cumulative effect.

3.2.5.1 Public Education Programs PE-1

Water quality issues are discussed in the monthly newsletter and on the City of Anchorage's website at www.cityofanchorage.org. The website includes information on the City of Anchorage's Tree Preservation Program and the Storm water Management ordinance. The newsletter has contained information on the recycling program, leaf pick-up schedules, rain gardens, swimming pool drainage, and mosquito control. This year, 11 articles in the city's newsletter contained information relating to recycling, yard waste, lawns, drainage, and forestation. The City of Anchorage continues to offer the "Forestry Handbook," which is free, to Anchorage residents. The City works with developers who install innovative" green" storm water control and encourage the developers to allow the City and other organizations to observe the installation, and become more educated about rain gardens, retention ponds, and other storm water retention and water quality. Throughout the year, City Council was advised on five separate occasions of storm water and drainage related issues.

3.2.5.2 Earth Day PE-2

The City of Anchorage does not have separately planned activities for Earth Day, but they do celebrate Arbor Day. Coordinated through the Anchorage Forestry Board, Arbor Day's celebration focuses on tree-related activities often coordinated with the Anchorage Public School. Past activities have included identifying tree species, clearing invasive plants, spreading wood chips on the Anchorage horse trails, the Emerald Ash Bore, replacing dying trees, and identifying tree diseases and decline. This year 300 free trees were given to Anchorage residents for planting on their properties. An additional 42 trees were purchased under the Annual Fall Tree Canopy sale; 33 were canopy trees, and nine were non-canopy type trees.

3.2.5.3 Litter Control PE-3

The City supplies the garbage bags and is responsible for disposing of the collected debris. In addition, the City's Public Works Department regularly collects litter and debris from public rights-of-way. In the past, an outreach education program incorporated the local Boy Scout troop to collect litter in the City.

3.2.5.4 Internal Training PE-5

The City Administrative Officer and Public Works Director have attended MS4 presentations by MSD staff. Routinely, all public works employees receive SWQMP training four times a year, however, due to the pandemic, no training was done. Training would be in the area of IDDE, IDE-4, CS, CS-3, etc., spill prevention, or disposal of contaminates.

3.2.6 Monitoring (M)

The City of Anchorage has an interlocal agreement with MSD to perform the Monitoring requirements of the MS4 permit. In early 2020, that agreement was amended and renegotiated to account for higher maintenance costs.

3.2.7 Reporting (R)

The City of Anchorage provides information on implementation of the MS4 permit requirements to MSD. The City of Anchorage has an interlocal agreement for MSD to prepare the Annual Report.

3.2.8 Financial

This section is a summary of the City of Anchorage's SWQMP budget for FY 2021:

City of Anchorage FY 2021 Total Operating Budget: $2,849,105				
Drainage	**Bridge/Culvert Repair**	**City Drainage Officer**	**Forestry Budget**	**Litter Cleanup**
$15,000	**$40,000**	**$2,700**	**$32,470**	**$900**

CO-PERMITTEE CERTIFICATION
2021 MS4 STORMWATER ANNUAL REPORT
KPDES PERMIT NUMBER KYS000001

THE CITY OF ANCHORAGE is designated as a co-permittee covered by the Municipal Separate Storm Sewer System (MS4) permit that was issued by the Kentucky Division of Water under the Kentucky Pollutant Discharge Elimination System (KPDES) program. **THE CITY OF ANCHORAGE** has prepared the attached annual compliance report for the reporting period of **July 1, 2020 to June 30, 2021.**

Under the terms of KPDES Permit No. KYS000001 [Part I.A.2], and implemented through an interlocal agreement with Louisville and Jefferson County Metropolitan Sewer District dated 17 April 2014, **THE CITY OF ANCHORAGE** certifies that it has responsibility for the following:

- Construction oversight in addition to the regulatory inspections conducted by Louisville MSD pursuant to the Erosion Prevention and Sediment Control Ordinance, Chapter 159;
- Drainage system and outfall mapping;
- Drainage system operation and maintenance;
- Road maintenance and upkeep, including snow and ice removal and related stormwater management activities;
- Drafting and implementing fleet and facility stormwater pollution prevention plans;
- Reporting and refering potential illicit discharges observations by municipal employees or other reports from residents to MSD for investigation and potential enforcement;
- Inspection, operation, maintenance and/or applicable certification that permanent (also known as post-construction) water quality devices, controls, and management practices are operating effectively;
- Implementation of education and outreach within the City of Anchorage to compliment the education and outreach provided by MSD which is tailored to local water bodies pollutants of concern;
- Preparation and timely submittal of annual compliance demonstration report to MSD according to agreed upon formats and standards; and

Certification: "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 the information, the above statements are, 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."

CITY OF ANCHORAGE
Title: City Administrative Officer/City Clerk
Date: 18 OCTOBER 2021

Signature: Renee M. Major
Renee M. Major

The following report covers the three primary departments of Louisville Metro Government that have direct impact with the MS4 Program. The Louisville Metro Government MS4 Committee continues its efforts to increase strong communication and cooperation between departments to successfully fulfil its co-permittee responsibilities.

As one of the co-permittees with MSD on the Kentucky Pollution Discharge Elimination System (KPDES) Large Municipal Separate Storm Sewer System (MS4) stormwater discharge permit, it is necessary for Louisville Metro Government to fulfill applicable permit requirements. Through an interlocal agreement with MSD, the primary co-permittee on the KPDES MS4 permit, Louisville Metro Government is not responsible for performing certain tasks required as these tasks are overseen and implemented by MSD.

3.3.1 LOUISVILLE METRO GOVERNMENT – PARKS

Public Education, Outreach, Participation, and Learning Experiences (PEOPLE)

- Newsletter

Frequency or Measure of Success	Activity Required
Permittee shall report the number of hits received on an annual basis and revise as needed	Louisville Metro Government – Parks shall employ its various social media outlets, and its other electronic communications, to discuss pollution prevention information.

- Louisville Metro Government –Parks regularly updates its page on the www.louisvilleky.gov website and offers pollution prevention and litter reduction as regular discussion points for social media blasts across all platforms.

Illicit Discharge Detection and Elimination (IDDE)

- Training session(s) for applicable staff

Frequency or Measure of Success	Activity Required
Permittee shall report number of staff trained per year	Louisville Metro Government – Parks shall require staff to attend training on the recognition and reporting of illicit discharges as provided by MSD.

- Louisville Metro Government – Parks ensures that appropriate employees attend the Erosion Prevention and Sedimentation (EPSC) training class. Topics covered include pre-construction planning, design procedures for structural and non-structural Best Management Plans, pollutant removal and inspections.

Construction Site Stormwater Runoff Control Requirements (CS)

- City construction projects to follow construction site BMP requirements

Frequency or Measure of Success	Activity Required
Permittee shall summarize the contracts, city code officer inspection log of sites and will include with the annual report	Louisville Metro Government – Parks shall require all contracts specify compliance with the Erosion Prevention and Sediment Control Program requirements and require that in-house projects be inspected for compliance.

- Louisville Metro Government – Parks follows guidance materials for EPSC plan and inspections. Inspections of Louisville Metro Government – Parks construction sites are conducted by Louisville Metro Government inspectors using a checklist provided by MSD to assist the inspectors and developers on proper procedures and requirements.

Post-Construction Stormwater Runoff Control for New Development and Redevelopment (PC)

- Tree-green space replacement to provide future ground cover

Frequency or Measure of Success	Activity Required
Permittee shall continue the memorandum-for-record filed yearly by participating departments	Louisville Metro Government – Parks shall maintain or increase the total amount of trees or other green space/grounds covered on its properties, in accordance with appropriated resources.

- In FY 2015 Louisville Metro Government completed a comprehensive tree canopy analysis that established Louisville's land is 37% covered by trees. With the goal set at 45%, 5% higher than the American Forests recommendation, Louisville Metro Government – Parks continues to maintain current green spaces and increases ground cover by green spaces in every available opportunity.

Good Housekeeping/Pollution Prevention for Municipal Operations

- Municipal Facility SWPPPs

Frequency or Measure of Success	Activity Required
Permittee shall revise SWPPPs as needed and retain the revised SWPPPs on file	Louisville Metro Government – Parks shall maintain and revise, as needed, MS4 SWPPPs for applicable "industrial" type facilities.

- Louisville Metro Government-Parks shall maintain and revise, as needed, MS4 SWPPPs for applicable "industrial" type Metro facilities. For "industrial" type Metro facilities with KPDES Individual Stormwater Discharge Permits, preparation, maintenance, and revision of Best Management Practices (BMPs) in permit-required BMP Plan is an acceptable equivalent for this required activity.

Staff Training

Frequency or Measure of Success	Activity Required
Permittee shall retain copies of training records and training references as provided	Louisville Metro Government – Parks shall train staff, as needed, on the SWPPP requirements.

- Louisville Metro Government-Parks shall train the municipal facility staff on the SWPPP requirements, as needed, for facilities that have KPDES Individual Stormwater Discharge Permits, training on BMP requirements is an acceptable equivalent for this required activity.

Parks Ground Maintenance

Frequency or Measure of Success	Activity Required
Permittee shall continue the memorandum-for-record filed yearly by the department	Louisville Metro Government – Parks shall develop and implement a Pesticide, Herbicide and Fertilizer (PHF) Program which includes required certification of applicators, reporting on the number of certifications, procedures for the storage and proper use of PHFs and the corresponding measures to protect MS4s and receiving waters from the PHFs.

- Louisville Metro Government – Parks requires all employees that work in the application of pesticides and herbicides on their golf courses and park locations to be properly trained and certified as required.

Monitoring (M)

- Louisville Metro Government, and its agencies (Parks), have an inter-local agreement with MSD, the primary Co-Permittee on this MS4 permit; the responsibilities are divided according to the Part I, Section A.

Performance Assessment and Reporting (PAR)

- Louisville Metro Government, and its agencies (Parks), have an inter-local agreement with MSD, the primary Co-Permittee on this MS4 permit; the responsibilities are divided according to the Part I, Section A. Louisville Metro Government – Parks shall submit its annual report to MSD for submittal to the Division of Water in the appropriate time frame developed by MSD.

3.3.2 LOUISVILLE METRO GOVERNMENT – PUBLIC WORKS & ASSETS

Public Education, Outreach, Participation, and Learning Experiences (PEOPLE)

- Website

Frequency or Measure of Success	Activity Required
Permittee shall report the number of hits received on an annual basis and revise as needed	Louisville Metro Government – Public Works & Assets shall employ its various social media outlets and other electronic communications to discuss pollution prevention information.

- The Solid Waste Management Division of Louisville Metro Government – Public Works & Assets provides presentations and publications to encourage the establishment of residential compost piles for yard waste and annually publishes reminders to residence to keep leaves out of the street gutter. The Louisville Metro Government website, www.louisvilleky.gov, addresses littering, water quality, snow removal, recycling issues, pollution prevention and air quality. In addition to newsletters, pollution prevention and litter reduction are regular discussion points for social media blasts across all platforms.

Illicit Discharge Detection and Elimination (IDDE)

- Mapping

Frequency or Measure of Success	Activity Required
Permittee shall complete and submit to the Division of Water within 24 months of the effective date of this permit	Louisville Metro Government – Public Works & Assets shall develop and maintain a storm sewer system map, showing the location of all known major outfalls, as defined herein, and the names and location of all waters of the Commonwealth that receive discharge from those outfalls. If this mapping is completed using Geographical Information Systems (GIS) or Computer Aided Drafting (CAD) software, the permittee shall provide to the Division of Water, at a minimum, the MS4 boundary and the mapping infrastructure in either ESRI shape file format geo-referenced AutoCAD drawings.

- Louisville Metro Government – Public Works & Assets continually updates the stormwater asset inventory data and supplies it to the Louisville-Jefferson County Information Consortium GIS system.

- Training session(s) for applicable staff

Frequency or Measure of Success	Activity Required
Permittee shall report number of staff trained per year	Louisville Metro Government – Public Works & Assets shall require staff to attend training on the recognition and reporting of illicit discharges as provided by MSD.

➢ Louisville Metro Government – Public Works & Assets ensures that appropriate employees attend the Erosion Prevention and Sedimentation (EPSC) training class. Topics covered include pre-construction planning, design procedures for structural and non-structural Best Management Plans, pollutant removal and inspections.

Construction Site Stormwater Runoff Control Requirements (CS)

- City construction projects to follow construction site BMP requirements

Frequency or Measure of Success	Activity Required
Permittee shall summarize the contracts, city code officer inspection log of sites and will include with the annual report	Louisville Metro Government – Public Works & Assets shall require all contracts specify compliance with the Erosion Prevention and Sediment Control Program requirements and require that in-house projects be inspected for compliance.

➢ Louisville Metro Government – Public Works & Assets follows guidance materials for EPSC plan and inspections. Inspections of Louisville Metro Government – Public Works & Assets construction sites are conducted by Louisville Metro Government inspectors using a checklist provided by MSD to assist the inspectors and developers on proper procedures and requirements.

Post-Construction Stormwater Runoff Control for New Development and Redevelopment (PC)

- Tree-green space replacement to provide future ground cover

Frequency or Measure of Success	Activity Required
Permittee shall maintain records of trees removed and planted by participating departments	Louisville Metro Government – Public Works & Assets shall maintain or increase the total amount of trees or other green space/grounds covered on its properties, in accordance with appropriated resources.

➢ In FY 2015 Louisville Metro Government completed a comprehensive tree canopy analysis that established Louisville's land is 37% covered by trees. With the goal set at 45%, 5% higher than the American Forests recommendation, Louisville Metro Government – Public Works & Assets continues to maintain current green spaces and increases ground cover by green spaces at every available opportunity.

Good Housekeeping/Pollution Prevention for Municipal Operations

- Municipal Facility SWPPPs

Frequency or Measure of Success	Activity Required
Permittee shall revise SWPPPs as needed and retain the revised SWPPPs on file	Louisville Metro Government – Public Works & Assets shall maintain and revise, as needed, MS4 SWPPPs for applicable "industrial" type facilities.

➢ Louisville Metro Government – Public Works & Assets shall maintain and revise, as needed, MS4 SWPPPs for applicable "industrial" type Metro facilities. For

"industrial" type Metro Facilities with KPDES Individual Stormwater Discharge Permits, preparation, maintenance, and revision of Best Management Practices (BMPs) in permit-required BMP Plan is an acceptable equivalent for this required activity.

Staff Training

Frequency or Measure of Success	Activity Required
Permittee shall retain copies of training records and training references as provided	Louisville Metro Government – Public Works & Assets shall train staff, as needed, on the SWPPP requirements.

- The permittee shall train the municipal facility staff on the SWPPP requirements, as needed, for facilities that have KPDES Individual Stormwater Discharge Permits, training on BMP requirements is an acceptable equivalent for this required activity.

Metro Government Environmental Program

Frequency or Measure of Success	Activity Required
Permittee shall revise the Environmental Program and manual as needed	Louisville Metro Government – Public Works & Assets shall make recommendations to incorporate the Mayor's Green Initiative Strategies within the Metro Environmental Program Manual, as needed.

- Louisville Metro Government – Public Works & Assets supports the Mayor's Green Initiative Strategies through assisting other Louisville Metro Government departments in environmental education and outreach programs and other established environmental initiatives. I.E.- Litter-Free Louisville, Operation Brightside, Community-Wide Planting Days, increasing tree canopies, and supporting the Green Infrastructure Incentives.

Monitoring (M)

- Louisville Metro Government, and its agencies (Public Works & Assets), have an inter-local agreement with MSD, the primary Co-Permittee on this MS4 permit; the responsibilities are divided according to the Part I, Section A.

Performance Assessment and Reporting (PAR)

- Louisville Metro Government, and its agencies (Public Works & Assets), have an inter-local agreement with MSD, the primary Co-Permittee on this MS4 permit; the responsibilities are divided according to the Part I, Section A. Louisville Metro Government – Public Works & Assets shall submit its annual report to MSD for submittal to the Division of Water in the appropriate time frame developed by MSD.

3.3.3 LOUISVILLE METRO GOVERNMENT – ZOO

Public Education, Outreach, Participation, and Learning Experiences (PEOPLE)

- Environmental Outreach Events

Frequency or Measure of Success	Activity Required
Permittee shall conduct at least four environmental outreach events annually	Louisville Metro Government – Zoo shall employ its various social media outlets and other electronic communications to discuss pollution prevention information.

- Louisville Metro Government – Zoo continues to conduct their annual environmental outreach events that include Earth Day events, educational night safaris, Zoo-at-the-School and Wetland Programs.

Illicit Discharge Detection and Elimination (IDDE)

- Training session(s) for applicable staff

Frequency or Measure of Success	Activity Required
Permittee shall report number of staff trained per year	Louisville Metro Government – Zoo shall require staff to attend training on the recognition and reporting of illicit discharges as provided by MSD.

- Louisville Metro Government – Zoo ensures that appropriate employees attend the Erosion Prevention and Sedimentation (EPSC) training class. Topics covered include pre-construction planning, design procedures for structural and non-structural Best Management Plans, pollutant removal and inspections.

- Stormwater Improvements

Frequency or Measure of Success	Activity Required
Permittee shall retain project reports and documents	Louisville Metro Government – Zoo shall continue to partner with MSD on identified improvements to the drainage and monitoring systems for control of flow and contamination of Stormwater from facilities.

- Louisville Metro Government – Zoo follows guidance materials for EPSC plan and inspections. Inspections of Louisville Metro Government – Zoo construction sites are conducted by Louisville Metro Government inspectors using a checklist provided by MSD to assist the inspectors and developers on proper procedures and requirements.

Construction Site Stormwater Runoff Control Requirements (CS)

- City construction projects to follow construction site BMP requirements

Frequency or Measure of Success	Activity Required
Permittee shall summarize the contracts, city code officer inspection log of sites and will include with the annual report	Louisville Metro Government – Zoo shall require all contracts specify compliance with the Erosion Prevention and Sediment Control Program requirements and require that in-house projects be inspected for compliance.

- Louisville Metro Government – Zoo follows guidance materials for EPSC plan and inspections. Inspections of Louisville Metro Government – Zoo construction sites are conducted by Louisville Metro Government inspectors using a checklist provided by MSD to assist the inspectors and developers on proper procedures and requirements.

Post-Construction Stormwater Runoff Control for New Development and Redevelopment (PC)

- Louisville Metro Government, and its agencies (Zoo), have an inter-local agreement with MSD, the primary Co-Permittee on this MS4 permit; the responsibilities are divided according to the Part I, Section A.

Good Housekeeping/Pollution Prevention for Municipal Operations

- Municipal Facility SWPPPs

Frequency or Measure of Success	Activity Required
Permittee shall revise SWPPPs as needed and retain the revised SWPPPs on file	Louisville Metro Government – Zoo shall maintain and revise, as needed, MS4 SWPPPs for applicable "industrial" type facilities.

- Louisville Metro Government-Zoo shall maintain and revise, as needed, MS4 SWPPPs for applicable "industrial" type Metro facilities. For "industrial" type Metro facilities with KPDES Individual Stormwater Discharge Permits, preparation, maintenance, and revision of Best Management Practices (BMPs) in permit-required BMP Plan is an acceptable equivalent for this required activity.

Staff Training

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Metro Government Environmental Program

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Monitoring (M)

- Louisville Metro Government, and its agencies (Zoo), have an inter-local agreement with MSD, the primary Co-Permittee on this MS4 permit; the responsibilities are divided according to the Part I, Section A.

Performance Assessment and Reporting (PAR)

- Louisville Metro Government, and its agencies (Zoo), have an inter-local agreement with MSD, the primary Co-Permittee on this MS4 permit; the responsibilities are divided according to the Part I, Section A. Louisville Metro Government – Zoo shall submit its annual report to MSD for submittal to the Division of Water in the appropriate time frame developed by MSD.

CO-PERMITTEE CERTIFICATION

2021 MS4 STORMWATER ANNUAL REPORT

LOUISVILLE METRO is designated as a co-permittee covered by the Municipal Separate Storm Sewer System (MS4) permit that was issued by the Kentucky Division of Water under the Kentucky Pollutant Discharge Elimination System (KPDES) program. **LOUISVILLE METRO** has prepared the attached annual compliance report for the reporting period of **July 1, 2020 to June 30, 2021.**

Under the terms of KPDES Permit No. KYS000001 [Part I.A.2], and implemented through an interlocal agreement with Louisville and Jefferson County Metropolitan Sewer District dated **July 1, 2021, LOUISVILLE METRO** certifies that it has responsibility for the following:

- Construction oversight in addition to the regulatory inspections conducted by Louisville MSD pursuant to the Erosion Prevention and Sediment Control Ordinace, Chapter 159;
- Drainage system and outfall mapping;
- Drainage system operation and maintenance;
- Road maintenance and upkeep, including snow and ice removal and related stormwater management activities;
- Drafting and implementing fleet and facility stormwater pollution prevention plans;
- Reporting and refering potential illicit discharges observations by municipal employees or other reports from residents to MSD for investigation and potential enforcement;
- Inspection, operation, maintenance and/or applicable certification that permanent (also known as post-construction) water quality devices, controls, and management practices are operating effectively;
- Implementation of education and outreach within **Louisville Metro** to compliment the education and outreach provided by MSD which is tailored to local water bodies pollutants of concern;
- Preparation and timely submittal of annual compliance demonstration report to MSD according to agreed upon formats and standards; and

Certification: "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 the information, the above statements are, 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."

LOUISVILLE METRO

Name: Mark Zoeller

Title: Director Facilities + Fleet Mgmt

Signature: Mark Zoeller

Date: 11-2-2021

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3.4 COMPLIANCE ACTIVITIES REPORT FOR THE CITY OF JEFFERSONTOWN

The City of Jeffersontown has an interlocal agreement with MSD, the primary Co-Permittee on the MS4 permit, to perform certain tasks and negotiated a new interlocal agreement in 2019. This subsection will focus on those activities for which the City of Jeffersontown, Kentucky was responsible during the permit period of July 1, 2020 – June 30, 2021 and will document the compliance tasks performed by the City of Jeffersontown during the period. This permit period occurred during the implementation of COVID-19 protocols and compliance with social distancing requirements impacting in person meetings, Gaslight Festival, conferences, Jeffersontown Business Blast, etc.

3.4.1 PUBLIC EDUCATION, OUTREACH PARTICIPATION AND LEARNING EXPERIENCES (PEOPLE)

3.4.1.1 Public Education Programs PE-1

The City of Jeffersontown continues to provide downloadable information, services, and participation opportunities available to the public through the Jeffersontown website, http://www.jeffersontownky.gov/. These include articles and handouts on recycling and yard waste, as well as pollution prevention activities, catch basin cleaning, and general dumping requirements. Jeffersontown has continued to update the City's website to create a page that will engage residents and visitors and supply them with current information. It also includes alerts using Code Red software. Currently, the City has more than 343 registered email addresses which receive newsletters, 7,978 Facebook page followers (7,368 in 2020, 6,586 in 2019, 5,716 in 2018, 5,110 in 2017 & 4,446 in 2016), 830 Twitter followers (805 in 2020, 738 in 2019, 627 in 2018, 497 in 2017 & 395 in 2016), and 1,144 Instagram followers (976 in 2020, 798 in 2019, 597 in 2018, 463 in 2017 & 344 in 2016). These followers receive all messages by the City, including periodic stormwater messages, providing the ability to reach a greater number of residents through the City's main outreach platforms. The City also participated in community events to further public education and outreach. The two events the City participated in were the Gaslight Festival and the Chamber of Jeffersontown Business Expo.

The City will continue to implement their public education program, initiated in 2009, to include public education on the effects of litter, trash, and illegal dumping. This program supplies garbage bags and clean-up materials to volunteers and provides disposal of the collected debris.

The City has found that working with various groups already actively engaged in the community has been the most beneficial for raising public awareness, as well as promoting public involvement. However, due to safety concerns, including drug paraphernalia, the City has scaled back clean-ups with groups. When requested by approved groups, the City evaluates sites and safety, and provides materials for litter clean-ups. The City staff continue to perform litter pick-up as a matter of routine. The City will provide information through social medial regarding the importance of litter clean-up and the connection to stream health.

Other notable programs promoted by the City are as follows:

"Gaslight Clean Up" - This is a Citywide clean-up day aimed at not only litter control but education on the importance of a clean community and the impact litter/trash has on the environment and water quality. If other groups express interest, the City will coordinate with the group giving preference for clean-up participation to adults due to safety concerns.

"Gutter Gremlins" - Street sweeping all around the City and clearing drainage ways allows catch basins to function properly and minimizes flooding in neighborhoods and streets. In most instances, maintaining an effective drainage system will also minimize the possibility of erosion and sediment deposits. The City of Jeffersontown, on average, cleans 350 miles of roadway each year through the Litter Abatement Program. In an effort to maintain water quality, the street sweeping crew has sought to clean every street throughout Jeffersontown at least once this past year, not just the main thoroughfares. The visibility of the street sweeper also raises awareness of the importance of litter control.

"Bright Spot" - This program explores places that could become a bright spot for the City instead of areas that may hold water (which may become mosquito breeding grounds), begin or continue to erode, or otherwise be unattractive. Establishing landscaping and vegetation relative to these features enhances the visual quality of community while providing a balance between surface runoff and stormwater management planning. When a Homeowners Association (HOA) expresses interest, the City partners with the HOA. For the reporting period, the City communicated with HOA boards regularly throughout the permit year.

"Tree Treasure Program" - This is an educational and sponsorship program that supports planting trees throughout the City and along riparian ways. Developing a strategy for plantings will create a stable environment to promote good stewardship of the land. This program continues to grow as people become aware of the significance of trees and the benefits provided by them. Many additional trees have been planted in Veterans Park during the redesign of the park.

"Recycle-Reuse-Renew Environmental Educational Program" - The City has a robust recycling program which is promoted on the City website. The City is moving toward a social media platform for education and outreach but continues to distribute fliers to schools and churches in an effort to increase awareness of these efforts within our community and environment.

"Jefferson Gardens" - This program includes community gardening to promote a healthy lifestyle, while also using gardens to help promote the absorption of storm water runoff (i.e. rain gardens). Native plants infiltrate greater amounts of stormwater and filter pollutants. The City has made progress on expanding this program by reaching out to community groups such as the Reserve Officer Training Course (ROTC), Boy Scouts of America and other school service projects to connect them with the importance of keeping the streams, channels, ditches, and drains free of debris and pollutants from dumping. Through the City-sponsored Farmer's Market, flyers and handouts have been distributed to increase awareness of community gardens and the proper maintenance of them during off-seasons. The City will continue to track requests to participate in this program. During this reporting period there were no requests for participation.

3.4.1.2 "Gaslight Clean Up" PE-2

The City of Jeffersontown organizes "Gaslight Clean Up" which promotes National Earth Day efforts. In the past, residents pick up litter and clean creeks throughout the City. Due to safety concerns related to needles and other safety issues, the City has limited City sponsored clean-ups with civic and church groups. The City is currently exploring other opportunities, which will be documented in the next permit cycle and reported in the annual report. If an interest group requests to participate, the City will identify a potential location. The City supplies garbage bags and is responsible for properly disposing of collected debris. The Gaslight Festival was not held in 2020 due to COVID-19 social distancing protocols and orders.

3.4.1.3 Litter Control Patrol PE-3

During prior permitting years, the City provided litter abatement five (5) days a week by utilizing work release programs to perform roadside cleanup. Typically, there were 3-4 inmates in a crew for roadside maintenance activities. However, this program has been discontinued and City staff perform the litter abatement. Municipal employees continue to routinely inspect high traffic areas to gauge program success, as well as to target new areas in need of attention. City employees are also utilized in collection efforts. In 2020-21, there were 1,569 trash bags collected through the Litter Abatement Program.

3.4.1.4 Internal Training of City Officials and Employees PE-4

The City of Jeffersontown's Director of Community Development and Assistant to the Mayor has attended MS4 presentations and meetings held with MSD staff. These include the co-permittee coordination meetings held throughout the year. The City attended co-permittee meetings on October 21, 2020 and March 9, 2021; as well as the MSD Virtual Field Day on April 14, 2021. The City also attends Kentucky Stormwater Association (KSA) meetings. During the current permit year, the City attended KSA meetings on October 16, 2021, February 25, 2021, and April 28, 2021. The Director of Community Development and Assistant to the Mayor attended the following MS4 related trainings:

- Saving Our Streambanks Virtual Workshop Series, March 9, 2021-March 25, 2021 (Tuesday and Thursdays) – totaling six sessions
- Innovative Stormwater Funding Workshop on April 23, 2021
- IDDE training through MSD on May 13, 2021
- Five Fundamentals for Successful Erosion Control and Revegetation of Disturbed Sites on May 27, 2021

Jeffersontown had a series of employee training materials developed, in association with a third-party facility inspection, at the City's Public Works Department located at 10317 Grant Avenue. The training materials cover a wide variety of issues pertinent to stormwater awareness for municipal employees. Additionally, the City utilizes available MSD materials for municipal employee and public education. The City employs a Safety Director who has overseen training and safety meetings, including mowing and equipment maintenance, for municipal Public Works employees. The Safety Director has attended safety conferences with Kentucky League of Cities

(KLC), state agencies, equipment safety meetings, and has educated the Public Works Department during meetings and during day to day activities. The Director of Public Works completed the Road Master on December 3, 2019, and Roads Scholar on December 18, 2018.

3.4.1.5 External Training PE-5

The City of Jeffersontown is in the process of developing educational materials, Stormwater 101, that will be used to engage students that may include signage in the future along bike/pedestrian trails. The City is also pursuing a partnership or sponsorship with members of the community to provide certain amenities to the developing bike/pedestrian trail system in the City. The goal of the partnership is to develop story boards and signs that will educate the biking/walking community about various water quality issues and stormwater management issues including floodplains, erosion and sediment control, stream water quality, and environmental awareness. The City is developing a scope of work and budget associated with this project, with the intention of developing signage to educate the public, and if funding is identified will implement this project during the current permit cycle.

The City has four (4) employees who have attended the EPSC certification training course. The City also provides brown bag luncheons on new trends and activities that could benefit the City and community. During this reporting period, City officials received external training on such topics as municipal facilities management, municipal field and maintenance activities, public education and outreach, and overall stormwater quality strategies. Materials from trainings were shared with City Council during 2020-2021 due to COVID-19 protocols and orders. This external training, given to department heads, was then distributed to other City employees, in a “train-the-trainer” system. The City is continuing to find ways to connect with key employees and first responders to increase awareness of stormwater management and the things that impede these efforts.

The Director of Community Development and Assistant to the Mayor did not attend the Jeffersontown Chamber Business Blast during this permit period. These meetings were postponed due to COVID-19 protocols.

3.4.1.6 Kentucky Stormwater Association (KSA) PE-6

The City of Jeffersontown regularly attends Kentucky Stormwater Association (KSA) meetings, and actively participates in KSA discussions. The Director of Community Development and Assistant to the Mayor, has attended three KSA meetings this period (October 16, 2020 and February 25, 2021, and April 28, 2021), as well as the past Annual KSA meetings from 2012 - 2019. KSA provides members with training on MS4 water quality topics, industry trends, new technologies, and shared experiences from across the state of Kentucky. It also provides an opportunity for members to interact with state and federal regulators. KSA routinely coordinates with the Kentucky Division of Water (DOW) on current and upcoming regulations, and for education and outreach opportunities. Membership in KSA has helped keep the City of Jeffersontown knowledgeable about MS4 topics which may affect the City.

3.4.1.7 Kentucky Transportation Cabinet (KYTC) – Public Education Materials PE-7

The City of Jeffersontown utilizes existing educational materials whenever feasible, including KYTC's MS4 Toolkit Resources, MSD-developed educational content, EPAs Educational Toolkit, and other educational stormwater materials. Jeffersontown feels that utilizing KYTC, MSD, and EPA educational materials allows for the dissemination of proven educational content, as well as facilitates a regionally consistent message.

3.4.1.8 Jeffersontown – Coalition of Neighborhoods PE-8

In 2002, the City of Louisville was divided into eight Coalition of Neighborhoods as part of a county-wide, grassroots, non-profit group to promote environmental, economic, and community development. Jeffersontown has been implementing a Coalition of Neighborhoods program throughout the City to promote a variety of efforts to benefit the overall stormwater program, including litter control, community beautification, and neighborhood stormwater management.

HOAs are active in Jeffersontown, and efforts continue to be implemented to further coordinate with these groups. The Public Works Director coordinates with the HOA Boards regularly. The Director of Community Development and Assistant to the Mayor attended one HOA meeting with Watterson Woods on April 1, 2021, to discuss the bike and pedestrian entrance and MS4 program. The Director of Community Development and Assistant to the Mayor also met with the Farmers' Market Committee Meeting on April 7, 2021 and discussed the benefits of promoting the MS4 program at the Farmers' Market.

3.4.2 ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE)

3.4.2.1 Mapping IDDE-1

Jeffersontown retained a professional consultant to assist with mapping the City's stormwater infrastructure in 2012 and has performed updates as needed. Mapping and collection of stormwater outfalls and proximal infrastructure has been compiled into a geographic information system (GIS) to facilitate Citywide sharing, tracking, and simplified infrastructure updates. City staff have been actively involved with the mapping process, and employees have received hands-on training for mapping and system screening efforts. Citywide mapping was completed in January 2014, while annexations were mapped in 2016 and 2020.

3.4.2.2 Illicit Discharge / Illegal Dumping Ordinance IDDE-2

The City of Jeffersontown enforces the MSD Wastewater/Stormwater Discharge Regulations ordinance, effective November 26, 2013, which applies to incorporated cities in Jefferson County. The regulations prohibit non-stormwater discharges to the MS4, prevent illicit discharges and improper disposal of chemicals and other materials which degrade water quality, and provide enforcement mechanisms.

City staff investigate areas regularly and respond to resident complaints. The City has established a database entry portal called Community Awareness Tracking System to serve as a first line quick response system. This web-based system is used to track complaints and concerns from the community in an effort to minimize the response time to various issues. It controls the proper direction of the particular issue to the appropriate department. The service request entry system is available on the City website.

For this permit year, outfall inspections were completed four (4) times at eight (8) locations. There were no major problems reported.

In 2013, the City executed a Memorandum of Agreement (MOA) with MSD that contains provisions for the enforcement of illicit discharges. This MOA outlines the roles and responsibilities for how investigations will take place, when parties will get involved, and how countermeasures are deployed in the event of an active spill. This agreement will help with appropriate countermeasures and cleanup to larger incidents, as MSD is better equipped to manage such events, should they occur. The Interlocal Agreement was updated in November 2019.

3.4.2.3 Provide Education on Illicit Discharge Detection and Elimination IDDE-3

The City of Jeffersontown previously published a bi-monthly newsletter which periodically contained information on the proper disposal of leaf debris and other ways in which water quality is affected. Costs associated with the newsletter became prohibitively expensive. Consequently, the City developed an e-newsletter system where residents can subscribe to various newsletters through email regarding City events and news. Subscription services are available on the City's updated website. Text message alerts are also available. Alerts are also available on the City's social media Facebook page and Twitter newsfeed. Currently, the City has more than 343 registered email addresses which receive newsletters, 7,978 Facebook page followers (7,368 in 2020, 6,586 in 2019, 5,716 in 2018, 5,110 in 2017 & 4,446 in 2016), 830 Twitter followers (805 in 2020, 738 in 2019, 627 in 2018, 497 in 2017 & 395 in 2016), and 1,144 Instagram followers (976 in 2020, 798 in 2019, 597 in 2018, 463 in 2017 & 344 in 2016). These followers receive all messages by the City, including periodic stormwater messages reaching a greater number of residents through the City's main outreach platforms. As more constituents embrace tablets, smart-phones, and other handheld devices, the City believes this will be a more effective and efficient system moving forward. This is anticipated as a more effective method for the City to communicate with citizens not only during storm events but as an educational tool to keep people informed.

3.4.2.4 Co-permittee IDDE-4

The City of Jeffersontown attends and actively participates in co-permittee meetings when they are held. Jeffersontown staff and other co-permittees discuss common IDDE problems, detection strategies, educational and outreach measures, and opportunities for more program consistency countywide. The Director of Community Development and Assistant to the Mayor attended co-permittee meetings on October 21, 2020 and March 9, 2021.

3.4.3 CONSTRUCTION SITE STORMWATER RUNOFF CONTROL (CS)

3.4.3.1 Jeffersontown/MSD Partnership CS-1

The City of Jeffersontown has continued to partner with MSD through a formal Interlocal Agreement. This agreement, entered into in 2013, outlines the roles and responsibilities for both Jeffersontown and MSD. The City signed a new Interlocal Agreement with MSD in November 2019.

The City has a working relationship with MSD for the development review process which includes construction inspection and coordinated approval of construction plans including drainage improvements. MSD is the permitting agency for all development construction and they perform site inspections until such time as the bonds and construction is completed. Once it is completed, the City begins to provide the management oversight and drainage maintenance responsibilities. On all City-funded drainage projects, the City maintains the best management practices (BMPs) for erosion protection and sediment control (EPSC) and general construction inspection services. The City receives an approved EPSC permit from MSD for each project, along with general information under our general permit with the DOW and MSD.

3.4.3.2 Erosion Prevention and Sediment Control (EPSC) Plan CS-2

The City continues to support MSD in highlighting the basic requirements for EPSC practices. Additionally, Jeffersontown has developed a binder containing resource materials and other information that is used to educate contractors, developers, and the general public. The City also relies on KYTC's Environmental Resource Handbook, which contains numerous one-page factsheets on EPSC activities.

The City of Jeffersontown follows the provisions of the Louisville and Jefferson County Erosion Prevention and Sediment Control ordinance, Ord. No. 186, Series 2007. The ordinance was adopted on November 21, 2000, and is intended to conserve, preserve, and enhance the natural resources throughout Jefferson County by controlling degradation caused by soil erosion and sedimentation from land disturbing activities. The required EPSC measures follow the requirements of the KPDES Permit and outlines design standards, maintenance procedures during construction, and enforcement procedures.

3.4.3.3 Scheduled Inspection of Maintenance of BMPs CS-3

Four (4) members of the City of Jeffersontown staff are certified in EPSC practices and are available to assist MSD with inspections of construction sites to assist with the implementation of the EPSC Ordinance. Typically, City staff will alert MSD of a citizen complaint and/or City staff observations related to active construction sites. Jeffersontown staff continue to work with MSD to implement consistent, standardized requirements for construction site inspections. As previously mentioned, Jeffersontown has an interlocal agreement with MSD for approval of EPSC plans, as well as monitoring and inspection of active construction sites.

3.4.3.4 Construction Development Plan Process CS-4

The City of Jeffersontown continues to work with MSD to review and update guidance materials for developers regarding construction permits and procedures, as needed. The City works with MSD to review EPSC Plans, as part of the application and construction drawings, for approval. If required, a pre-construction site meeting will be held before a site disturbance permit will be issued. A checklist for EPSC Detailed Construction Plans is available on the MSD website.

3.4.3.5 Collaborative Guidance and Training CS-5

The City of Jeffersontown continues to work with MSD to help educate design engineers on appropriate erosion prevention and sediment control (EPSC) measures most appropriate for the various construction site conditions. Jeffersontown will continue to encourage engineers and contractors to take the EPSC training certification courses offered by MSD.

3.4.4 POST CONSTRUCTION CONTROLS (PC)

3.4.4.1 Pilot BMP Projects PC-1

During the first permit term, the City of Jeffersontown was required to complete a minimum of three BMP Pilot Projects. One of the projects the City of Jeffersontown implemented was a no-mow forest restoration area on a steep slope of Veteran's Park above Chenoweth Run. Also, the wooded riparian buffer along Chenoweth Run is protected in City easements. Lastly, approximately 80% of City of Jeffersontown's grass channels have at least a ten-foot buffer strip, which filters runoff before it reaches the stream and helps improve water quality. The City will continue to provide oversight for these ongoing projects.

In association with these and other post-construction BMPs, Jeffersontown is revisiting the checklist to implement a user friendly tracking system to aid in the review of post-construction BMPs. The City finalized the excel tracking document to document the review of BMPs. The City is considering the development of an application to document the review of stormwater BMPs.

The City expanded Veterans Park, as referenced above. This project adjoins Chenoweth Run and reconnects park visitors to nature and the local waterway. As part of the redesign, the City included two bioswales and an Aqua-Swirl water quality unit. The City anticipates installing educational signage to further promote water quality awareness prior to the end of this permit cycle.

Also referenced above is Jeffersontown's commitment to working with local HOAs to identify projects to improve water quality for private detention/retention systems. Monticello Place is the is an example of a study performed by the City with the focus on partnering with HOAs on stormwater enhancement projects.

3.4.4.2 Built-Upon Area Reductions PC-2

The City of Jeffersontown has adopted and observes the water quality provisions of Cornerstone 2040 which represents a vision of the next twenty years of Louisville and Jefferson County's metro government, including the City of Jeffersontown, to make the area more attractive, mobile, efficient and environmentally aware. A primary vision of this community plan is to protect environmental resources as the population of the area increases.

3.4.4.3 Collaborative Guidance and Training PC-3

Consistent with the 2020 Audit conducted by DOW, the City of Jeffersontown will revisit the checklist to develop and implement a post-construction runoff control tracking system that will be used for new developments implementing post-construction stormwater management controls. The City will continue communications with MSD throughout this process.

The City of Jeffersontown encourages people involved with stormwater to attend the MSD Qualified Post-Construction Inspector Program (QPCIP). Certification allows a person to perform inspections and oversee maintenance activities for stormwater quality BMPs.

3.4.5 GOOD HOUSEKEEPING / POLLUTION PREVENTION FOR MUNICIPAL OPERATIONS (GH)

3.4.5.1 Street Maintenance GH-1

Street maintenance in Jeffersontown is performed on an as-needed basis and follows EPSC General Permit requirements. Appropriate EPSC measures, such as silt fencing and catch basin inlet protection are used during maintenance activities.

In 2020-2021, there were 1,569 trash bags collected through the Litter Abatement Program. This reporting period did not include trash collected during the Gaslight Festival, since it was canceled due to COVID-19 protocols.

3.4.5.2 Street Sweeping GH-2

The City of Jeffersontown regularly performs vacuum sweeping five (5) days per week, except in winter months. The City of Jeffersontown vacuum-sweeps heavily traveled roads more often, but has also swept residential and side-roads during this past year. The City of Jeffersontown sweeps an average of 300 miles of roadway annually, collecting around 100 tons of debris. The City maintains sweeper logs documenting the daily locations for street sweeping. These logs are available upon request. Woody debris that is collected is sent through the chipper-shredder for easier disposal. The debris collected during street sweeping is sent to a transfer station where it is weighed before being sent to a landfill. In 2020-2021, the City collected 278,120 pounds (139 tons) of debris from street sweeping.

3.4.5.3 Catch Basin "Gutter Gremlins" GH-3

The previous permit term, the City mapped its entire storm sewer infrastructure, including all catch basins. Jeffersontown catch basins are cleaned as needed, although an effort is made to clear catch basins prior to a storm event to prevent flooding from clogged drains. The collected debris is sent to a landfill.

In the past, the City has collaborated with MSD to implement the "FOG No Dumping! Drains to our Creeks" program, whereby the City placed decals on catch basins promoting the no dump provisions. This was in conjunction with the City's annual clean-up program, which is a community-wide event to pick up litter, clean debris from streams and other parts of the City. Inspections are made of catch basins, detention basins and drainage courses to make sure they are free of debris that would impede positive drainage.

The City has continued efforts through its education and outreach programs aimed at educating the public on the importance of minimizing erosion and sediment deposits, litter, and the importance of a clean and green community. The City has implemented several additional programs beside litter control.

3.4.5.4 Storm Sewer Cleaning GH-4

Jeffersontown storm sewers are cleaned as needed, especially prior to a rain event. The City is working to develop inspection standards for drainage easements and stormwater channels. A draft checklist has been created, and will be updated as needed, as conveyance systems are inspected and maintained. The online citizen request tracker has been used to target areas where maintenance is needed.

3.4.5.5 Channel Maintenance GH-5

The City of Jeffersontown has a fulltime drainage crew that maintains concrete channels as needed. Grass channels are maintained on a regular schedule. The debris removed during drainage channel maintenance is sent to a landfill, although large woody debris is shredded first. The online citizen request tracker has been used to target areas where maintenance is needed.

3.4.5.6 Pollution Prevention for De-icing GH-6

The City of Jeffersontown calibrates the salt spreaders with the manufacturer as needed and inspects de-icing equipment at least annually. Brine pretreatment is applied at the beginning of the storm to minimize the amount of salt required. Sand and salt are also used as needed to maintain motorist safety. There are twenty-two (22) de-icing trucks used by the City, which are cleaned after events.

Jeffersontown has focused on investing in infrastructure that will reduce potential pollutant exposure and releases to the drainage system. Construction on the new salt storage facility was completed at the beginning of August 2016. This sizeable project has helped reduce salt loss and pollutants from reaching nearby streams.

3.4.5.7 BMP Inspections and Maintenance GH-7

Good Housekeeping / Pollution Prevention BMPs are inspected monthly by the Public Works/Maintenance Director. Inspections are tracked using a log which is kept in the Stormwater Municipal Operations Plan binder at the Public Works Facility. BMPs inspected include the fuel storage tanks, fuel island, salt barn, vehicle impound lot, AGG piles, oil storage facility, drains in the workshop, and spoil piles. Good Housekeeping / Pollution Prevention BMPs are regularly maintained, however, if a problem is discovered during the monthly inspection, immediate action is taken. A Spill Inventory Form is utilized by the City to track spills and cleanup actions taken. In the reporting period (July 2020-June 2021), no spills of reportable quantities were documented on the inspection forms.

The City employs a Safety Director who holds regular training sessions for Public Works employees to enhance oversight of various construction projects, safety, and stormwater quality within the City. The City utilizes various training materials, including an easy-to-follow training manual with nine categories, focused on such topics as vehicle maintenance and refueling, deicing operations, illicit discharges, and spill response. The education system is designed to be flexible by allowing new materials to be regularly delivered over the course of the year. Alternatively, new/seasonal employees can review the entire training program when first hired to provide a comprehensive review of stormwater quality initiatives.

3.4.5.8 Source Controls GH-8

The City of Jeffersontown's Public Works Department has an approved Hazardous Materials Use and Spill Prevention Control (HMPC) Plan to cover such items as salt storage areas and refueling areas. All dumpsters located within the City of Jeffersontown must be covered and fenced. The City continues to monitor these point source areas and maintains a high level of control for possible runoff.

In 2013, the City finalized and adopted a Stormwater Municipal Operations Plan (SMOP) for the Public Works Facility located at 10317 Grand Avenue. This plan contains information regarding water quality with respect to municipal operations at the facility, as well as general recommendations for municipal operations in the field. The plan also contains training logs, outfall inspection sheets, and facility maintenance inspection sheets to document activities on the site. In the process of developing this plan, Jeffersontown reviewed a copy of MSD's facility stormwater pollution prevention plan (SWPPP), which was developed for MSD's central maintenance facility.

The City has updated all documents utilized to record the various activities of the City. Checklists were updated and created to track activities, and proper procedures for various activities such as stormwater management, hazardous material, point source places were developed. During this reporting period, the City's consultant performed a third-party review of the Public Works Department facility for stormwater quality considerations. The City will use these observations to update materials including the facility map to document the new Public Works building.

3.4.5.9 Pollution Prevention for Herbicides and Pesticides GH-9

Appropriate Jeffersontown employees are licensed by the Commonwealth of Kentucky for herbicide and pesticide application. Currently, there are three (3) employees who are licensed to perform herbicide and pesticide applications for the City.

3.4.5.10 Continuation of Existing Programs GH-10

The City of Jeffersontown has a contractor collect municipal waste, yard waste and recyclables weekly. Previously, over sixty-four (64%) percent of residents within the City have participated in the recycling program. The City of Jeffersontown picks up appliances with Freon and has a contractor properly manage and recycle these appliances. The City also utilizes Louisville Metro's used oil and waste program and maintains a collection tank for used oil.

3.4.5.11 Stormwater Pollution Prevention Plans for Co-permittee Operations GH-11

The City regularly attends co-permittee meetings with MSD and will continue to actively participate in the co-permittee partnership. The City will explore additional opportunities to collaborate and share resources, as well as participate in peer reviews for program enhancements. The City and/or the City's representative attend regularly scheduled co-permittee meetings.

A Master Plan for Veterans Park, adjacent to the site where the Jeffersontown WQTC was removed, has been developed and takes into account water quality. Taylor, Siefker, Williams Design Group gave presentation of the conceptual plan for the New Veterans Park layout to the City Council on January 20, 2015. Work on the project has continued through 2021. The City is in the process of designing an adaptive reuse project of the former location of the Jeffersontown WQTC that will include an amphitheater, green space, and stream bank restoration to minimize sedimentation and erosion.

3.4.6 MONITORING (M)

The City of Jeffersontown has an interlocal agreement with MSD to perform the monitoring requirements of the MS4 permit. Watershed monitoring performed on Chenoweth Run characterized the water quality of the stream within the City of Jeffersontown MS4 area.

3.4.7 PERFORMANCE ASSESSMENT AND REPORTING (PAR)

The City of Jeffersontown has an interlocal agreement for MSD to prepare the Annual Report. The City of Jeffersontown has provided information on the implementation of the MS4 permit requirements of the City to MSD for this report.

City personnel provide quarterly updates on the Stormwater Program to the City Council. Stormwater was discussed in committee reports throughout the year.

3.4.8 BUDGET: PERSONNEL, CAPITAL PROJECTS, AND SUPPORT SERVICES

The City of Jeffersontown estimates the following summary to support the stormwater program:

Personnel/ Staffing
City Hall Staff - MS4 Coordinator - Director of Community Development and Assistant to the Mayor

Public Works Director

Twenty four (24) full-time employees (Public works employees are being cross-trained regarding stormwater practices)

Capital Projects & Drainage Related Projects (2020-21)

Drainage:	$300,000
MS4 Program:	$25,000

(Outfall screening; catch basins and drainage ways maintenance; community outreach)

Co-permittee Commitment
Jeffersontown portion of co-permittee responsibilities:

Public Education (PEOPLE), Monitoring by MSD Staff (annual fee)	$33,759
IDDE Control Program Requirements (unit cost per event)	$4,321
Industrial Program Requirements (unit cost per event)	$500-$2,500

*Costs will automatically escalate 3% annually.

PICTURES, CHECKLISTS, CHARTS AND REPORTS ARE AVAILABLE UPON REQUEST.

CO-PERMITTEE CERTIFICATION
2021 MS4 STORMWATER ANNUAL REPORT
KPDES PERMIT NUMBER KYS000001

THE CITY OF JEFFERSONTOWN is designated as a co-permittee covered by the Municipal Separate Storm Sewer System (MS4) permit that was issued by the Kentucky Division of Water under the Kentucky Pollutant Discharge Elimination System (KPDES) program. **THE CITY OF JEFFERSONTOWN** has prepared the attached annual compliance report for the reporting period of **July 1, 2020, to June 30, 2021.**

Under the terms of KPDES Permit No. KYS000001 [Part I.A.2], and implemented through an interlocal agreement with Louisville and Jefferson County Metropolitan Sewer District dated NOVEMBER 19, 2019, **THE CITY OF JEFFERSONTOWN** certifies that it has responsibility for the following:

- Construction oversight in addition to the regulatory inspections conducted by Louisville MSD pursuant to the Erosion Prevention and Sediment Control Ordinance, Chapter 159.
- Drainage system and outfall mapping.
- Drainage system operation and maintenance.
- Road maintenance and upkeep, including snow and ice removal and related stormwater management activities.
- Drafting and implementing fleet and facility stormwater pollution prevention plans.
- Reporting and referring potential illicit discharges observations by municipal employees or other reports from residents to MSD for investigation and potential enforcement.
- Inspection, operation, maintenance and/or applicable certification that permanent (also known as post-construction) water quality devices, controls, and management practices are operating effectively.
- Implementation of education and outreach within the city of Jeffersontown to compliment the education and outreach provided by MSD which is tailored to local water bodies pollutants of concern.
- Preparation and timely submittal of annual compliance demonstration report to MSD according to agree upon formats and standards; and

Certification: "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 the information, the above statements are, 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."

CITY OF JEFFERSONTOWN
Name: Matthew W. Meunier
Title: Dir. Community Development

Signature: Matthew W. Meunier
Date: October 25, 2021

3.5 COMPLIANCE ACTIVITIES REPORT FOR THE CITY OF ST. MATTHEWS

The City of St. Matthews, Kentucky has an interlocal agreement with MSD, the primary Co-Permittee on the MS4 permit, to perform required activities specified in the KPDES Permit No. KYS000001to reduce discharge of pollutants and prohibit illicit discharges. The City of St. Matthews was incorporated as a sixth-class city in March of 1950. Since that time, the City's limits have expanded as several neighborhoods been annexed. Since 2000, all residences annexed into the City of St. Matthews, by an ordinances passed by the city council, still pay a storm water fee to MSD. For these specific areas, the City of St. Matthews is not responsible for storm drainage. These areas, and the date they were annexed are as follows:

- Springlee – September 2000
- Plymouth Village – July 2000
- Fairmead – September 2000
- Cherrywood – September 2000
- Broadfields – July 2000
- Springwood – July 2014

This subsection will focus on those activities for which the City of St. Matthews was responsible during the permit period and will document the compliance tasks performed by St. Matthews during the period of July 1, 2020– June 30, 2021.

3.5.1 Illicit Discharge Detection and Elimination (IDDE)

The IDDE program is intended to detect and eliminate illicit connections and improper disposal to the MS4. St. Matthews has an interlocal agreement with MSD, the primary Co-Permittee on the MS4 permit, to perform certain IDDE tasks. Therefore, only those tasks performed by the City of St. Matthews are listed in this report. MSD performs illicit discharge investigation and follow-up through out Louisville Metro, including the City of St. Matthews.

In 2011 the City of St. Matthews contracted with HDR to develop a GIS system to map the City's drainage facilities. The interactive site can be used to display all pipes, direction of flow, and sizes. Many of the systems which constructions plans were available can be accessed from the site. In March of 2020 the program that housed the technology was no long supported. The City is actively working with HDR to generate a more up to date system.

3.5.1.1 Illicit Discharge / Illegal Dumping Ordinance IDDE-4

In 2008 the City of St. Matthews put together a hotline list and distributed the list to all its residents via a Newsletter sent to residents four times a year. The intention was to provide a quick and easy to use reference for residents. The hotline provides a directory for city personnel from police to council members. Amongst those numbers on the list is a direct line for individuals to report illegal dumping or illegal discharge into the storm sewer system. The goal is to simplify the reporting process of this illegal act, and to inform the appropriate people so that quick action can be taken. The city has also added this directory of numbers to the St. Matthews website. http://www.stmatthewsky.gov

The City has two fulltime employees that are dedicated to Code Enforcement. A part of their daily duties are associated with investigating and enforcing our illegal dumping ordinance.

Signs are posted in areas which continue to be problem areas. City maintenance staff performs inspections at these sites throughout the year in an effort to reduce dumping & improve enforcement.

3.5.1.2 Provide Education on the Revised Wastewater Discharge Regulations IDDE-5

The City of St. Matthews publishes and distributes a newsletter at least four times per year to all residential property owners within the city limits. This newsletter is an excellent vehicle with which to provide information to the citizens and to alert them to issues and programs that affect the community. In the past, small narratives have been periodically provided to inform residents of drainage problems and ways to report them.

In 2009 the City of St. Matthews added a "Green" page to its website. The "Green" page provides links to various websites, including http://www.louisvillegreen.com, http://www.stormwater.kytc.ky.gov/ http://msdlouky.org, & http://rumpke.com, all of which provide educational material about the Wastewater Discharge Regulations. During this past year, a new section/link was added specifically for education. The link is to the KYTC stormwater webpage "If its on the ground, its in your water."

The City of St. Matthews City Engineer and Director of Public Works/MS4 Coordinator have attended all MS4 presentations and meetings held with MSD and other co-permittees staff. Information is then relayed to appropriate staff (ie Public Works and City Council).

Annually the City of St. Matthews hosts an elementary school to show then the "insides" of City Hall and how the government operates. A separate break-out session related to public works and maintenance is given. During this session the Director of Public Works provides a 10 min informative session on what happens to water that goes into the drain. During this reporting period, due to COVID, students were not allowed to participate.

The City is in the planning session of developing an outdoor class room at Brown Park. The outdoor class room will be located in the city park, next to an existing wetland. The class room can be utilized by local science teachers to aid in the understanding of the environment.

The City recently renovated City Hall and our Free Public Library. With that project, the City added an outdoor class room setting in an area know as the Childrens Garden. The City has been working with library staff to hold children friendly informational classes about the environment.

3.5.2 Construction Site Runoff Controls (CS)

Sedimentation and erosion from land disturbing activities can have severe impacts to stream systems. The City of St. Matthews has an interlocal agreement with MSD, the primary Co-Permittee on the MS4 permit to perform certain CS program tasks. MSD administers and enforces the Erosion & Sediment Control Ordinance. Therefore, only those tasks performed by City of St. Matthews are listed in this report.

3.5.2.1 Erosion Prevention and Sediment Control Plan (EPSC) CS-1

St. Matthews obtains EPSC and Site Disturbance Permits from MSD on applicable projects constructed with Public Works crews and projects bid out. The City holds themselves and their contractors to the same EPSC standards as private contractors working within the City.

Before a building permit is granted, the developer needs to pay a review fee to MSD for plan approval on all storm and sanitary design. MSD is responsible for all sanitary systems located within St. Matthews, but it does not maintain the storm water system (with the exception of the six areas annexed after 2000). Prior to any approvals, MSD confirms with the City of St. Matthews that there are not any existing complaints or reported problems in the project area.

3.5.2.2 Scheduled Inspections of BMP's CS-5

The City of St. Matthews has an interlocal agreement with MSD, the primary Co-Permittee on the MS4 permit, however MSD administers approval and inspection on EPSC and Site Disturbance Permits for construction projects within the City. For private construction, a city official or representative periodically inspects sites for compliance with the EPSC Ordinance. Should a violation occur, St. Matthews will request MSD's assistance to bring the site into compliance.

3.5.3 Post Construction Controls (PC)

Best Management Practices for managing the increase in impervious area and controlling the subsequent increases in runoff quantity, velocity and pollutant migration include planning for on-site capture systems, protecting stream corridors, and implementing regulations and policies. The City of St. Matthews has an interlocal agreement with MSD, the primary Co-Permittee on the MS4 permit, to perform certain PC program tasks. Therefore, only those tasks performed by the City of St. Matthews are listed in this report.

3.5.3.1 Pilot BMP Projects PC-2

The City of St. Matthews is known as an urban environment populated with many mature trees and the City intends to keep it that way. Following the ice and wind storms in 2008, the City increased its tree planting efforts in an effort to maintain this atmosphere. During this reported cycle, the city has planted approximately 105 two to three-inch diameter trees. The City's maintenance crews planted the new trees in public parks and in public rights of way. Should residents want a tree in front of their house, inside the City R/W, they can request a tree on the City's website or by calling.

In years past, the City of St. Matthews developed a Storm Water Drainage Master Plan in order to provide a separate storm sewer system for its residents. The City is in its final stages of development of the Master Plan and continuously maintains the areas previously constructed. The plan is continuously updated to handle ongoing issues. The following are a list of projects performed during the last reporting period. COVID-19 and precautions the City took limited the amount of availability our City Crews had to do small drainage improvement.

Trinity Hills 150 LF 12" Pipe, 4 CB
Alley (Grandview/Warner) 193 LF 18" Pipe, 633 LF 15" Pipe, 50 LF 12" Pipe, 10 CB

The City of St. Matthews has been actively replacing all open throat catch basins with grated type basins where possible. This program provides improved capture and removal of debris from grates, rather than allowing the debris to enter the separate storm sewer system. During this report period the City has replaced 0 open throat catch basin.

In November of 2015 the City of St. Matthews reconstructed a portion of the ditch along Trinity Hills. The area continuously flood as a resident had filled in the ditch and placed a structure in the easement. Continuous erosion and sediment deposits downstream were constant maintenance issues. The $78,000 project awarded to E/Z Construction reconstructed 200' of channel and included the instillation of diffusers to help reduce velocities in the channel. In 2017, St. Matthews hired HDR to do a detailed drainage study on the Trinity Hills Ditch drainage area. The purpose of the study was to identify ways to remove 19 homes within a 100 year flood zone. The $35,000 study revealed option that could remove 13 of the 19 homes and solutions ranged in cost of $500K - $2 million. The study was completed in December 2018. The City took preemptive measures and constructed a 3' berm at 4074 Gilman to prevent structure flooding from a 2 year event. The HDR study produced multiple projects. In fall of 2020 the City plans to replace a culvert under Trinity Hills (est cost $175K). In July of 2020 a drainage project along Massie (est. cost $150K). In September 2019, St. Matthews entered into a contract ($180K) with HDR to work on the final design of the Trinity Hills Ditch Design (est. cost $1.5M). Plans were submitted to the USACE in May of 2021. Construction is slated for July of 2022.

3.5.3.2 Built-upon Area Reductions PC-3

The City has a program to reduce the number of off-street parking pads within the public right of way. This activity will reduce the amount of impervious surfaces and replace with grass; thus decreasing surface runoff and providing additional filtering of runoff before entering the separate storm sewer systems.

This program provides property owners wanting this service an easy and free solution. Once the resident contacts the City; City forces will remove the pad, haul away the material, regrade the area, & then restore the disturbed area back to turf. During this report period, two property owner participated in this program. To date there have been 25 pads removed from the City right of way, including the 2 green-up during this report period. The program was advertised in the newsletter a few years ago. It was noticed that this had failed to appear in the quarterly newsletter this reporting period but was corrected August 2021.

During this report period the City has finalized the revitalization project for the City Hall Campus in July of 2019. The project provides for a complete campus parking and circulation. With the construction of 9,000 SF library addition and new parking lots, the design implements "green technologies" to reduce the overall impervious footprint. The project optimizes parking lot layout and is designed with pervious concrete pavers. The new parking lot was over excavated 2' and backfilled with stone. The pervious pavers in the parking stalls allow the water to infiltrate and store in the stone. The outlet structure was throttled back to allow for more storage and reduce the down stream impacts. A water quality unit was also installed with the project. Weekly the City uses blowers to clean the parking lot to keep the infiltration spaces open.

3.5.3.3 Source Control PC-4

Dumpsters in St. Matthews are required to be fenced for litter control. All garbage cans that are proposed or replaced within the city parks are equipped with lids to limit animal access and to reduce litter resulting from wind. Two/Three times a week, City forces empty the trash in all public trash cans to decrease the occurrence of cans over flowing. All City salt storage facilities are covered with permanent roofs. New developments and redevelopments within the City of St. Matthews require downspouts to discharge onto surface areas or rocked French drains rather than tied directly to the storm sewers. The City (Public Works, Fire & Rescue, and Police) refuel all vehicles at commercial fueling stations to limit the occurrence of unmanaged spills.

3.5.4 Good Housekeeping / Pollution Prevention (GH)

3.5.4.1 Street Maintenance GH-1

The City of St. Matthews abides by the EPSC General Permit regulations. Street maintenance is performed on an as-needed basis, the city utilizes Louisville Metro's annual contract to resurface local streets. All storm drainage projects are finalized with resurfacing to assure positive drainage. St. Matthews uses inlet protection (stone bags and magnetic inlet filters) and/or silt fence on its storm sewer projects to minimize soil and debris entering the storm sewer system. Throughout the year, on an as needed basis, city crews remove storm debris from public rights-of-way and transport to the landfill.

3.5.4.2 Street Sweeping GH-2

The majority of the City's streets are not curbed. This drainage system allows water to run-off into adjacent yards and into small yard inlets. The small yard inlets or catch basins allow time for the storm water runoff to infiltrate the greenscape prior to entering the storm sewer system. The City uses a private street sweeping company, Sweep All, to clean all curbed streets. The majority of the curb streets in St. Matthews are under the direction of Louisville Metro, but St. Matthews takes the initiative to clean these streets. This reduces the amount of pollutants that enter the separate storm sewer system by removing sediment and debris from streets and disposing of them properly. Street sweeping is performed on an as needed basis (min of 2 times per year)

3.5.4.3 Catch Basin Cleaning/ Repair GH-3

Storm sewers are cleaned as needed by city employees or contract services. The usual problem areas are routinely checked. During the fall months, when catch basin blockages are at their highest, City forces use vacuum systems to remove leaves throughout the community's rights of way and catch basin inlets. Debris is transported to a landfill. This report period, the city retained records for removing approximately 31– 30 cubic yard dumpsters of mulched leaves. The leaf collection period ran from November 16th, 2020 – January 29th , 2021.

3.5.4.4 Storm Sewer Cleaning GH-4

Storm sewers are cleaned as needed by city employees or contract service. Debris is transported directly to a landfill or place in a dumpster and transported. Below is a list of storm sewer cleanings or repairs performed this report period:

Grandview Catch Basins & Ditch	Approx. 1 CY Leaves over the year
Various CB throughout City	2 times per year

3.5.4.5 Channel Maintenance GH-5

Public Works performs drainage channel maintenance as needed. Maintenance is done during periods of low flow and low frequency. Problem areas are routinely checked and maintained. The debris is transported to a landfill. The following are the areas cleaned and the amount of material removed. This reporting season the City Partnered with two volunteer organizations to help keep the streams cleaned. The visited Community Park and Draut Park to pick up litter along the stream deposited after heavy storms.

Kentucky Ave	5 CY
Weicher Creek	10 CY
Trinity Hills Ditch	1 CY
Community Center Park	10 – 30 gal. garbage bags
Draut Park	11 – 30 gal garbage bags

3.5.4.6 Pollution Prevention for De-icing GH-6

Beginning in the winter of 2007, the City of St. Matthews began experimenting with the use of Geomelt, a natural anti-icing fluid derived from sugar beets in its street salting program. The use of this material is expected to allow a reduction of the use of salt as well as fewer applications, which translates into a much more environmentally friendly solution to snow and ice response that uses less fuel and causes less wear and tear on equipment.

During this reporting period, the City used 175 TONS OF SALT & 13 GAL. OF BEET JUICE between Dec 2020 and March 2021.

3.5.4.7 BMP Inspection GH-7

Good Housekeeping / pollution Prevention BMP’s are inspected by public works and construction personnel.

3.5.4.8 BMP Maintenance GH-8

Maintenance activities are performed by city crews and contract services. On 08/15 the City constructed a secondary covered storage bin constructed for mulch, and debris (overflow for salt if needed). In the past this material was just stockpiled and created opportunities for the material to wash out during heavy

rain events. The concrete bins provide a confined area to store the material. In 10/19, the City constructed a concrete wall around all material storage areas to prevent any of the material from migrating.

3.5.4.9 Pollution Prevention for Herbicides and Pesticides GH-9

City of St. Matthews uses "Round-up" sparingly on weeds. These chemicals are not bought or stored in bulk by the City of St. Matthews. No pesticides are used. During this reporting period the City hired an employee licensed in herbicide application, the largest container of material purchased was 5 gal.

3.5.4.10 Continuation of Existing Programs GH-10

The City contracts out the collection of municipal waste, yard waste, and recyclables weekly to Rumpke. The City has operated a leaf collection program citywide since 1990 to assist residents in the collection and disposal of leaves during the fall season. This activity provides the residents a strong incentive to rake leaves in a timely manner and is important in that it dramatically reduces sediment and debris from the separate storm sewer systems and its discharge waters.

This program provides for two to three leaf pickups along each residential street throughout the City during the fall months. The Fall Newsletter identifies an approximate schedule for each street. Signs are posted approximately 1 week in advance of the pickup to provide residents time to rake leaves to the front of their properties.

- During this reporting period, the City filled approximately 31 – 30 cubic yard dumpsters. This yard waste material was collected and placed in steel dumpsters and was picked up and removed by Rumpke.

3.5.5 Public Education/outreach programs (PE)

The Permit included requirements for support of existing programs plus several new initiatives to increase public awareness of water quality issues and to promote a sense of stewardship for the streams in Jefferson County. The City of St. Matthews has an interlocal agreement with MSD, the primary Co-Permittee on the MS4 permit, to perform certain public education program tasks. Therefore, only those tasks performed by the city are listed in this report.

3.5.5.1 Public Education Programs PE-1

The City of St. Matthews publishes and distributes a newsletter at least four times per year to all residential property owners within the city limits. This newsletter is an excellent vehicle with which to provide information to the citizens and to alert them to issues and programs that affect the community. In the past, small narratives have been periodically provided to inform residents of drainage problems and ways to report them. The City implements an annual drainage improvement program to address surface drainage concerns throughout the city. Typically, drainage projects affecting approximately one block have a public information meeting prior to finalizing the design to solicit input from the public on the problems as well as possible solutions.

The City will continue to utilize its newsletter to provide details about the leaf pickup and yard waste bag/sticker program available to its citizens. Specific program details include scheduled leaf pickup dates for areas of town, and phone number/contacts for problems or requests for additional pickups.

The City has revamped its website. www.stmatthews.gov/. The website provides another," at your fingertip," source for property and business owners to find the specific information such as leaf pickup, storm damage pickup, recycling programs, etc..

Within the website, there is a link for property owners to place a request for a tree to be planted in the R/W at their house. This program not only greens up the city, it gives its residents a viable option to help improve the area at no cost to themselves individually.

3.5.5.2 Earth Day PE-2

The City of St. Matthews at this time does not hold separate Earth Day activities.

3.5.5.3 Litter Control PE-3

The City of St. Matthews has not organized specific events, but uses its public works crew to maintain litter control on streets and public properties. The city has hired employees to empty public garbage cans located within public parks and spaces a minimum of 2 – 3 times a week.

The City has initiated a program to install signs and waste receptacles at City parks and community centers to inform/remind the public they are responsible for cleaning up after their pets. The major city owned public parks now have waste receptacles and bags on site for pet owners' use while on the property. These will be placed at strategic locations within the facilities to maximize availability by the public.

The City partners with several church groups and the Boy Scouts in the area for clean up days in the parks and within the streams. This report period there were 2 different service organization that visited our parks and pick up littler along the streams of Community Park and Draut Park.

3.5.5.4 Internal Training PE-4

The City of St. Matthews Mayor and City Engineer have attended MS4 presentations by MSD staff. MSD attended a city council meeting during this reporting period to inform city council members and citizens about the MS4 program and the roles the co-permitees play.

3.5.5.5 Children Training PE-5

Annually the City of St. Matthews hosts an elementary school to show then the "insides" of City Hall and how the government operates. A separate break-out session related to public works and maintenance is given. During this session the Director of Public Works provides a 15 min informative session to each of the 5 classes on what happens to water that goes into the drain. The City was not able to perform this event this dear due to COVID restrictions.

The City is in the planning session of developing an outdoor class room at Brown Park. The outdoor class room will be located in the city park, next to Middle Fork of Bear Grass Creek. The class room can be utilized by local science teachers to aid in the understanding of the environment. Last fiscal year the City did finalize the construction of an outdoor children's garden associated with our Library. The garden

is a fenced in landscaped area that provides for a class room setting. In the spring and fall the library host various events for kids to learn about the environment and to read. During this period much of the events were cancelled due to COVID related issues and the library being closed for a portion of the reporting period.

3.5.5.6 City Festival/Informational Propaganda PE-6

Beginning in the 2015/2016 reporting period the City will provide handouts and other informational material in the City Tent displayed at the various social events. The two main events that will provided information is at the Holloween Festival (held in October at Brown Park) and the City Street Fair (held August) both of those events during the reporting period were cancelled due to Covid.

3.5.6 Monitoring (M)

St. Matthews has an interlocal agreement with MSD, the primary Co-Permittee on the MS4 Permit. St. Matthews provides an annual report which documents the compliance tasks performed during the individual permit periods.

3.5.7 Reporting (R)

St. Matthews has an interlocal agreement with MSD, the primary Co-Permittee on the MS4 Permit. St. Matthews provides an annual report which documents the compliance tasks performed during the individual permit periods.

3.5.8 Financial

This Section provides a summary of the SWQMP Financing. St. Matthews utilizes the SWQMP as a business plan to guide the various agencies and departments in how they will implement the various requirements of the MS4 Permit. While there are interlocal agreements between MSD and St. Matthews, including compensation for the monitoring program, finances are managed separately.

3.5.8.1 St. Matthews

*Includes operating budgets for stormwater related efforts.

St. Matthews Annual Operating Budget for 2020 ($,000)						
	Fiscal Year					
	2017	2017	2018	2019	2020	2021
Total Operating Budget	13,145	20,391	19,826	15,230	16,430	16,837
Estimated Stormwater Operating Budget*	1000	550	50	770	1,700	800

Annual Capital Budget ($,000)						
	Fiscal Year					
	2016	2017	2018	2019	2020	2021
MS4 Capital Budget	750	700	350	800	900	1200

Historical Estimated Full Time Equivalents (FTEs)						
	Fiscal Year					
	2015	2016	2017	2018	2020	2021
Stormwater Staff Position (FTE) *	14	15	14	14	16	13

* includes staff from various departments including drainage, engineering, public works, maintenance.. Staff with a portion of their time related to stormwater are consolidated.

CO-PERMITTEE CERTIFICATION
2021 MS4 STORMWATER ANNUAL REPORT
KPDES PERMIT NUMBER KYS000001

THE CITY OF_____ is designated as a co-permittee covered by the Municipal Separate Storm Sewer System (MS4) permit that was issued by the Kentucky Division of Water under the Kentucky Pollutant Discharge Elimination System (KPDES) program. **THE CITY OF**_____ has prepared the attached annual compliance report for the reporting period of **July 1, 2020 to June 30, 2021.**

Under the terms of KPDES Permit No. KYS000001 [Part I.A.2], and implemented through an interlocal agreement with Louisville and Jefferson County Metropolitan Sewer District dated 11/12/21, **THE CITY OF**_____ certifies that it has responsibility for the following:

- Construction oversight in addition to the regulatory inspections conducted by Louisville MSD pursuant to the Erosion Prevention and Sediment Control Ordinace, Chapter 159;
- Drainage system and outfall mapping;
- Drainage system operation and maintenance;
- Road maintenance and upkeep, including snow and ice removal and related stormwater management activities;
- Drafting and implementing fleet and facility stormwater pollution prevention plans;
- Reporting and refering potential illicit discharges observations by municipal employees or other reports from residents to MSD for investigation and potential enforcement;
- Inspection, operation, maintenance and/or applicable certification that permanent (also known as post-construction) water quality devices, controls, and management practices are operating effectively;
- Implementation of education and outreach within the City of ____ to compliment the education and outreach provided by MSD which is tailored to local water bodies pollutants of concern;
- Preparation and timely submittal of annual compliance demonstration report to MSD according to agreed upon formats and standards; and

Certification: "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 the information, the above statements are, 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."

CITY OF St. Matthews
Name: Kenan Stratman
Title: Public Works Dir.

Signature: [signature]
Date: 11/12/21

CHAPTER 4 TOTAL MAXIMUM DAILY LOADS

4.1 BACKGROUND

The Kentucky Division of Water (DOW) uses monitoring data they collect as well as data collected by other agencies to assess whether waterbodies are attaining their designated uses with respect to water quality standards. The term ***waterbody*** refers to a stream, river, pond, or lake. For streams and rivers, the extent of the waterbody is reported in miles from the downstream confluence (mile 0.0) to the upper extent of the assessment. For ponds and lakes, the assessment is reported in acres. The Division of Water assigns the extent of the assessment based on the location of monitoring station(s), changes in land use, location of major tributaries and other factors.

Designated uses that apply to some or all Jefferson County waterbodies include:

- Warm Water Aquatic Habitat (WAH) – fish and other aquatic life
- Primary Contact Recreation (PCR) – swimming
- Secondary Contact Recreation (SCR) – wading and boating
- Fish Consumption (FC) – contaminants in fish consumed by humans
- Drinking Water Supply (DWS) – protects the quality of water used for potable supplies at the point of intake

The Kentucky DOW assess each designated use separately using methods described in Consolidated Assessment and Listing Methodology: Surface Water Quality Assessment in Kentucky, The Integrated Report (KDOW, 2015). Results are placed into one of three *designated use attainment categories*:

- Full Support (FS): the designated use is fully supported, the use is not impaired
- Partial Support (PS): the designated use is partially supported, the waterbody is impaired
- Non-Support (NS): the designated use is not supported, the waterbody is impaired

Kentucky DOW places each assessed waterbody into one of five assessment categories, which are summarized on **Table 4.1.1**. Good quality waterbodies are placed into Category 1 or 2, because monitoring data shows that all assessed designated uses are fully supported. Waterbodies that have not been monitored or assessed are placed into Category 3. Waterbodies with one or more designated use impairments are placed into Category 5 until a Total Maximum Daily Load (TMDL) is completed and approved for the impairment(s). Once the TMDL is completed for all the impaired uses, the waterbody is moved to Category 4, if impairment still exists. If the waterbody is monitored and found to be attaining all the designated uses after a TMDL is completed, it is moved to Category 2C.

Note that a waterbody can be listed in only one (1) category that reflects the worst-case assessment if impairments are found. Therefore, if a waterbody is classified as Full Support for Warm Water Aquatic Health, but Partial Support (i.e., impaired) for Primary Contact Recreation, it is included in Category 5. If a waterbody is classified as Full Support for one or more designated

uses and the other uses are classified as Not Assessed, the waterbody is classified as Full Support (i.e., not impaired).

Table 4.1.1 – Assessment Categories

Category	Definition
1	All designated uses for water body fully supporting.
2	Assessed designated use(s) is/are fully supporting, but not all designated uses assessed.
2B	Segment currently supporting use(s), but 303(d) listed & proposed to EPA for delisting.
2C	Segment with an EPA approved or established TMDL for the following use(s) now attaining Full Support. TMDL approval #____
3	Designated use(s) has/have not been assessed (insufficient or no data available).
4A	Segment with an EPA approved or established TMDL for the listed uses not attaining full support. TMDL approval # _____
4B	Nonsupport segment with an approved alternative pollution control plan (e.g. BMP) stringent enough to meet full support level of all uses within a specified time.
4C	Segment is not meeting full support of assessed use(s), but this is not attributable to a pollutant or combination of pollutants.
5	TMDL is required.
5B	Segment does not support designated uses based on evaluated data, but based on Kentucky listing methodology insufficient data are available to make a listing determination. No TMDL needed.
Definitions	
WAH	Warm Water Aquatic Habitat (fish and other aquatic creatures)
PCR	Primary Contact Recreation (swimming)
SCR	Secondary Contact Recreation (wading and boating)
FC	Fish Consumption (contaminants in fish consumed by humans)
DWS	Drinking Water Supply (Applies at the Ohio River intakes – Mile 600.6 and 594.7)
FS	Fully supports the use
PS	Partially supports the use and is considered to be impaired
NS	Non-support of the use and is considered to be impaired
Source: KDOW 2016 Integrated Report to Congress on the Condition of Water Resources in Kentucky, Executive Summary	

Approximately every two years, Kentucky DOW publishes an Integrated Report. In the past, the Integrated Report included Volumes I and II. Volume I included a description of the monitoring and assessment procedures and results for all waterbodies that were monitored and assessed. Volume II included only the impaired waters list (also known as the 303(d) List), which was a subset of the results presented in Volume I. However, the 2016 Integrated Report was the last published and is organized differently.

The Integrated Report to Congress on the Condition of Water Resources in Kentucky, 2016 was published by Kentucky DOW on February 28, 2018. The report describes monitoring and assessment results, TMDL development, de-listing and water quality programs. Waterbody-specific assessment results (305b) and impaired waterbodies list (303d) were provided in spreadsheets. Integrated reports and appendices are available to be downloaded from the following website: (*http://water.ky.gov/waterquality/Pages/IntegratedReport.aspx).*

The 303d List is issued as a draft subject to public comment and is finalized after responding to public comments and approval by USEPA. The draft 303(d) List includes the following categories:

- Delisting Requests – monitoring and assessment data show that designated uses are currently attained, or that the original listed was in error.
- Draft New Listings – monitoring and assessment performed since the last report have identified new impairments.
- Draft Current Year Listings – the compiled list of waterbodies that have one or more impairments.

USEPA may request more information, approve, or deny changes to waterbody status that are proposed by KDOW. These reports are required by the Clean Water Act.

Kentucky DOW is responsible for developing Total Maximum Daily Loads (TMDLs), i.e., waterbody clean-up plans, for the Kentucky waterbodies that are included on the 303d List. The 2016 Integrated Report is the most recent final document and was used to prepare this chapter of the MS4 Annual Report. The assessment status of Jefferson County waterbodies per the final 2016 305b Integrated Report excel table is summarized on **Table 4.1.2**.

Table 4.1.2 – 2016 Assessment Status of Jefferson County Waterbodies

Category (1) (2)	Stream Segments	Stream Miles	Lake Count	Lake Acres
2 - Assessed designated use(s) is/are fully supporting, but not all designated uses assessed.	1	18.2	5	46.3
4A - Segment with an EPA approved or established TMDL for the listed uses not attaining full support.	12	74	0	0
5 - TMDL is required. (3)	41	238.5	2	54.5
Totals	**54**	**330.7**	**7**	**100.8**

Notes

1. As of the 2016 Integrated Report, no waterbodies were assessed as Category 1. All designated uses for water body fully supporting.
2. The 2016 Integrated Report does not specifically identify waterbodies in Category 3. Designated use(s) has/have not been assessed (insufficient or no data available). However, these waterbodies as well as assessed waterbodies can be viewed in the Kentucky Water Health Portal mapping application: *http://watermaps.ky.gov/WaterHealthPortal/*
3. Six (6) Ohio River stream segments listed for Jefferson County account for 83.4 stream miles; the remaining 35 segments (155.1 miles) were internal streams. A total of three (3) streams were listed as crossing county boundaries with Oldham, Shelby and Bullitt Counties.

In the sections that follow, the status of Jefferson County waterbodies, as reported by the approved Kentucky DOW 2016 Integrated Report are described in more detail.

4.2 JEFFERSON COUNTY WATERBODIES THAT FULLY SUPPORT DESIGNATED USES

The following Jefferson County waterbodies were assessed and shown to be fully supporting designated uses in the 2016 Integrated Report. Note that designated uses identified as Category 3 were not assessed.

Table 4.2.1 – Jefferson County Waterbodies Meeting Designated Uses

Waterbody	Size	Units	WAH	PCR	SCR	FC	DWS	Assessment Category	Assessment Date
Harrods Creek 3.4 to 21.6	18.2	Miles	2-FS	2-FS	2-FS	3	3	2	3/17/2016
Long Run Lake	30	Acres	2-FS	3	3	3	3	2	3/29/2011
Miles Park Pond #4	3.9	Acres	3	3	3	2-FS	3	2	1/31/2008
Waggners Lake	4.8	Acres	3	3	3	2-FS	3	2	9/25/2007
Waterson Lake	4.3	Acres	3	3	3	2-FS	3	2	3/4/2009
Willow Pond	3.3	Acres	3	3	3	2-FS	3	2	10/7/2005
Definitions									
WAH	Warm Water Aquatic Habitat (fish and other aquatic creatures)								
PCR	Primary Contact Recreation (swimming)								
SCR	Secondary Contact Recreation (wading and boating)								
FC	Fish Consumption (contaminants in fish consumed by humans)								
DWS	Drinking Water Supply (Applies at the Ohio River intakes – Mile 600.6 and 594.7)								
FS	Fully supports the use								
PS	Partially supports the use and is considered to be impaired								
NS	Non-support of the use and is considered to be impaired								

4.3 JEFFERSON COUNTY WATERBODIES WITH APPROVED TMDLS

This section provides an assessment of the Total Maximum Daily Loads (TMDLs) requirements in the MS4 Permit, Section D.1.c. Kentucky DOW is responsible for preparing TMDLs for impaired waters and **Table 4.3.1** below shows the TMDLs that have been approved and published by KDOW for waterbodies in Jefferson County. TMDL documents are available at: *http://water.ky.gov/waterquality/Pages/ApprovedTMDLs.aspx.*

Table 4.3.1 – Approved TMDLS

Title	303(d) Impairment	Year Approved	County
Harrods Creek Dissolved Oxygen TMDL	Organic Enrichment	1995	Oldham, Jefferson
Development of a Total Phosphorus TMDL for Chenoweth Run (Phase I)	Nutrients	1997	Jefferson
Development of an Ultimate Oxygen Demand TMDL for Floyds Fork and its Tributaries	Organic Enrichment	1997	Jefferson, Shelby
Final TMDL for Fecal Coliform – Six Stream Segments within the Beargrass Creek	Fecal Coliform	2012	Jefferson
Total Maximum Daily Load for E. Coli and Fecal Coliform – 18 Stream Segments within the Floyds Fork Watershed – Bullitt, Henry, Jefferson, Oldham, Shelby and Spencer Counties, Kentucky	E. coli, Fecal Coliform	2014	Bullitt, Henry, Jefferson, Oldham, Shelby, Spencer

The 1997 TMDLs for Floyds Fork and Chenoweth Run and the 1995 TMDL for Harrods Creek address wastewater facilities and do not include wasteload allocations for stormwater or load allocations for nonpoint sources. The 2012 TMDL for Beargrass Creek includes wasteload allocations for sanitary sewer overflows, combined sewer overflows, MS4 stormwater, other permitted sources, and wasteload and load allocations for groundwater sources. The 2014 bacteria TMDL for Floyds Fork includes a margin of safety, sanitary wastewater facilities, future

growth, MS4 stormwater, and load allocations for nonpoint sources. Waterbodies that have been moved to Category 4 following approval of a TMDL are shown on **Table 4.3.2.**

Table 4.3.2 – Jefferson County Waterbodies in Category 4 - TMDL Approved

Waterbody	Size	Units	WAH	PCR	SCR	FC	DWS	Assessment Category	Assessment Date
Cane Run 0.0 to 7.3	7.3	Miles	2-FS	4A-NS	3	3	3	4A	2/11/2011
Chenoweth Run 0.0 to 5.25	5.25	Miles	4A-PS	4A-NS	4A-PS	3	3	4A	2/22/2011
Chenoweth Run 5.25 to 9.2	3.95	Miles	4A-PS	4A-NS	4A-NS	3	3	4A	3/12/2001
Floyds Fork 24.2 to 34.1	9.9	Miles	2B-FS	4A-NS	2-FS	3	3	4A	4/25/2014
Floyds Fork 34.1 to 40.1	6	Miles	2C-FS	4A-NS	4A-NS	3	3	4A	4/28/2014
Floyds Fork 40.1 to 45.7	5.6	Miles	2C-FS	4A-NS	4A-NS	3	3	4A	4/28/2014
Long Run 0.0 to 9.9	9.9	Miles	2-FS	4A-NS	3	3	3	4A	2/24/2011
Middle Fork Beargrass Creek 2.0 to 2.9	0.9	Miles	2-FS	4A-NS	3	3	3	4A	3/3/2009
Middle Fork Beargrass Creek 2.9 to 15.3	12.4	Miles	2-FS	4A-NS	3	3	3	4A	3/3/2009
Muddy Fork 0.0 to 7.2	7.2	Miles	2-FS	4A-NS	3	3	3	4A	3/12/2001
Pope Lick 0.0 to 2.1	2.1	Miles	3	4A-NS	3	3	3	4A	2/28/2011
Pope Lick 2.1 to 5.6	3.5	Miles	2-FS	4A-NS	3	3	3	4A	2/24/2011

Kentucky DOW finalized a Statewide TMDL for Bacteria in December 2018 that included the statewide document with appendices for the Green River Basin and Tradewater River Basin. Kentucky DOW issued the approved Statewide Bacteria TMDL appendices for the Salt River Basin on September 23, 2021 (Note: the release date of this TMDL is outside of this year's MS4 reporting period). It is anticipated that the Statewide Bacteria TMDL for Ohio River Tributaries will be in 2022. Kentucky DOW's fact sheet can be accessed using this link: *http://water.ky.gov/waterquality/Documents/Statewide%20bacteria%20TMDL%20fact%20sheet.pdf.* The 2016 Integrated Report refers to the TMDL List serve as the means to receive updates for future draft 303(d) lists or TMDL actions. The email address for the Listserv is *TMDL@ky.gov.*

The U.S. Environmental Protection Agency (EPA) Region 5 has retained Tetra Tech, Inc., to provide consulting services for the development of the bacteria Total Maximum Daily Load (TMDL) for the Ohio River. The Ohio River Sanitation Commission (ORSANCO), the six states that lie along the river (Illinois, Indiana, Kentucky, Ohio, Pennsylvania, and West Virginia), and U.S. EPA Regions 3 and 4 are also participating. ORSANCO is conducting the extensive monitoring program to provide the stream water quality data necessary to complete the project. During 2019 the Ohio River Bacteria Trends report for the study period of 2001 to 2015 was published to ORSANCO's website. More information about this TMDL can be accessed using this link: *http://www.orsanco.org/programs/bacteria-tmdl/*

4.4 303(d) LISTED WATERBODIES IN JEFFERSON COUNTY

The waterbodies shown on **Table 4.4.1** were included on the 2016 Impaired Waterbodies List (i.e., 303(d) List) because it was classified as impaired (Category 5) for one or more designated uses. In the future, these waterbodies may be moved to Category 4 after a TMDL is developed and approved, Category 2 if new monitoring and assessments show that the waterbody attains designated uses, or remain on Category 5 if one or more additional designated uses are impaired.

Table 4.4.1 – 303(d) Listed Waterbodies in Jefferson County

Waterbody	Total Size	Units	WAH	PCR	SCR	FC	DWS	Assess-ment Category	Assessment Date
Beargrass Creek 0.5 to 1.8	1.3	Miles	5-NS	3	3	3	3	5	3/3/2009
Big Bee Lick Creek 0.0 to 4.2	4.2	Miles	3	5-NS	3	3	3	5	5/15/2014
Blue Spring Ditch 0.0 to 2.1	2.1	Miles	2-FS	5-NS	3	3	3	5	2/22/2006 - 5/15/2014
Cedar Creek 4.3 to 12.1	7.8	Miles	5-PS	4A-NS	2-FS	3	3	5	4/7/2014
Cedar Creek 12.1 to 16.1	4	Miles	5-PS	3	3	3	3	5	4/7/2014
Chenoweth Run (Upper) 0.0 to 4.05	4.05	Miles	5-NS	3	3	3	3	5	4/4/2014
Chickasaw Park Pond	1.5	Miles	3	3	3	5-PS	3	5	10/7/2005
Fern Creek 0.0 to 1.3	1.3	Miles	5-PS	5-NS	3	3	3	5	3/22/2001 - 5/15/2014
Fern Creek 1.3 to 4.4	3.1	Miles	5-NS	5-NS	3	3	3	5	5/2/2001 - 5/15/2014
Fern Creek 4.4 to 5.9	1.5	Miles	5-PS	5-NS	3	3	3	5	3/12/2001 - 5/15/2014
Fishpool Creek 0.0 to 1.9	1.9	Miles	2-FS	5-NS	3	3	3	5	5/16/2014
Floyds Fork 11.7 to 24.2	12.5	Miles	5-NS	4A-NS	2-FS	3	3	5	4/25/2014
Goose Creek 0.3 to 3.6	3.3	Miles	5-PS	5-NS	3	3	3	5	3/3/2009
Goose Creek 3.6 to 13.0	9.4	Miles	5-PS	5-NS	3	3	3	5	3/3/2009
Greasy Ditch 0.0 to 2.6	2.6	Miles	3	5-NS	3	3	3	5	5/15/2014
Harrods Creek 0.0 to 3.4	3.4	Miles	5-NS	5-PS	2-FS	3	3	5	12/1/2005
Hite Creek 0.0 to 5.8	5.8	Miles	5-NS	3	3	3	3	5	4/9/2001
Little Bee Lick Creek 0.0 to 2.6	2.6	Miles	3	5-NS	3	3	3	5	10/23/2013
Little Goose Creek 0.0 to 9.5	9.5	Miles	2-FS	5-PS	3	3	3	5	3/12/2001
McNeely Lake	53	Acres	2-FS	3	3	5-NS	3	5	3/29/2011

Waterbody	Total Size	Units	WAH	PCR	SCR	FC	DWS	Assess-ment Category	Assessment Date
Middle Fork Beargrass Creek 0.0 to 2.0	2	Miles	5-NS	4A-NS	3	3	3	5	3/13/2001
Mill Creek 0.0 to 9.9	9.9	Miles	5-NS	5-NS	3	3	3	5	3/13/2001
Mill Creek Cutoff 0.0 to 2.4	2.4	Miles	2-FS	5-NS	3	3	3	5	3/12/2001
Mud Creek 0.0 to 4.35	4.35	Miles	3	5-NS	3	3	3	5	5/15/2014
Northern Ditch 0.0 to 7.3	7.3	Miles	5-PS	5-NS	3	3	3	5	5/22/2014
Ohio River 595.8 to 593.4	2.4	Miles	2-FS	5-PS	3	5-PS	3	5	9/22/2014
Ohio River 603.1 to 595.8	7.3	Miles	2-FS	2-FS	3	5-PS	2-FS	5	9/22/2014
Ohio River 605.8 to 603.1	2.7	Miles	2-FS	5-PS	3	5-PS	3	5	9/22/2014
Ohio River 608.6 to 605.8	2.8	Miles	5-PS	5-PS	3	5-PS	3	5	9/22/2014
Ohio River 614.0 to 608.6	5.4	Miles	5-PS	5-NS	3	5-PS	3	5	9/22/2014
Ohio River 676.8 to 614.0	62.8	Miles	5-PS	5-NS	3	5-PS	3	5	9/23/2014
Pennsylvania Run 0.0 to 3.3	3.3	Miles	5-PS	4A-NS	4A-NS	3	3	5	4/8/2014
Pond Creek 5.2 to 8.1	2.9	Miles	5-NS	5-NS	3	3	3	5	5/22/2014
Salt Block Creek 0.0 to 3.35	3.35	Miles	3	5-NS	3	3	3	5	5/15/2014
South Fork Beargrass Creek 0.0 to 2.7	2.7	Miles	5-PS	4A-NS	3	3	3	5	3/3/2009
South Fork Beargrass Creek 2.7 to 13.6	10.9	Miles	5-NS	4A-NS	3	3	3	5	3/15/2001
South Long Run 0.0 to 3.6	3.6	Miles	5-PS	4A-NS	3	3	3	5	4/8/2014
Southern Ditch 0.0 to 5.75	5.75	Miles	2-FS	5-NS	3	3	3	5	4/1/1998
Southern Ditch 5.75 to 9.0	3.25	Miles	3	5-NS	3	3	3	5	5/15/2014
UT of Blue Spring Ditch 0.0 to 2.6	2.6	Miles	3	5-NS	3	3	3	5	5/15/2014
UT of Southern Ditch 0.0 to 2.8	2.8	Miles	5-NS	3	3	3	3	5	4/16/2004
Wetwoods Creek 2.2 to 4.25	2.05	Miles	5-PS	5-NS	3	3	3	5	4/1/1998 - 5/16/2014
Wilson Creek 0.0 to 5.6	5.6	Miles	3	5-NS	3	3	3	5	5/15/2014

Definitions	
WAH	Warm Water Aquatic Habitat (fish and other aquatic creatures)
PCR	Primary Contact Recreation (swimming)
SCR	Secondary Contact Recreation (wading and boating)
FC	Fish Consumption (contaminants in fish consumed by humans)

Waterbody	Total Size	Units	WAH	PCR	SCR	FC	DWS	Assess-ment Category	Assessment Date
DWS	Drinking Water Supply (Applies at the Ohio River intakes – Mile 600.6 and 594.7)								
FS	Fully supports the use								
PS	Partially supports the use and is considered to be impaired								
NS	Non-support of the use and is considered to be impaired								

4.5 DE-LISTED WATERBODIES

Documented improvements in stream water quality through water quality sampling can result in streams being removed from the 303(d) list where water quality standards are being met. Alternatively, some impairments or pollutants may be removed, but the waterbody continues to be on the 303(d) list because of other impairments. **Table 4.5.1** shows waterbodies or pollutants removed (i.e., delisted) from the 303(d) list in Jefferson County. This list was derived from KDOW's TMDL program delisted streams, available on the following website *http://water.ky.gov/waterquality/Pages/DelistedStreams.aspx.* The 2016 KY 303(d) List was also referenced.

MSD developed a de-listing strategy in 2014. The strategy focuses on removing impaired waterbodies from the 303(d) list (i.e. de-listing) if current monitoring data are sufficient and document that applicable surface water standards are met. The following factors are considered: the listed impairment, the data supporting the listed impairment, monitoring data, and the land uses upstream and near the listed impairment. Implementation of the de-listing strategy is ongoing. In 2015, MSD submitted a successful de-listing proposal for two stream segments in the Pond Creek watershed for un-ionized ammonia. Continued collaboration with KDOW on future stream de-listings is ongoing.

Table 4.5.1 – Jefferson County Waterbodies Delisted from 303(d)

Waterbody	Impairment	Approval Date
(Blue) Spring Ditch 0.0 to 2.1	Metals (Cadmium)	7/2007
(Blue) Spring Ditch 0.0 to 2.1	Metals (Zinc)	72007
Beargrass Creek 0.5 to 1.8	Cadmium	9/2011
Cane Run 0.0 to 7.6	Organic Enrichment/Low DO	6/1998
Cedar Creek 0.0 to 15.3	Pathogens	4/2003
Fern Creek 1.3 to 4.4	Metals (Cadmium)	7/2007
Fern Creek 4.4 to 5.9	Metals	7/2007
Fishpool Creek 0.0 to 5.4	Organic Enrichment/Low DO	6/1998
Fishpool Creek 0.0 to 5.4	Metals	6/1998
Fishpool Creek 0.0 to 5.4	Pathogens	6/1998
Floyds Fork 24.2 to 34.1 (1)	Organic Enrichment (Sewage) Biological Indicators	2/2018
Goose Creek 4.5 to 11.7	Metals	6/1998
Goose Creek 0.0 to 4.5	Metals	6/1998
Goose Creek 0.3 to 3.6	Cadmium	9/2011
Goose Creek 3.6 to 13.0	Cadmium	9/2011
Harrods Creek 3.2 to 4.0	Organic Enrichment/Low DO	4/2003
Little Goose Creek 0.0 to 8.7	Metals	6/1998
Little Goose Creek 0.0 to 8.7	Organic Enrichment/Low DO	4/2003
McNeely Lake Lake	Nutrients	7/2007

Waterbody	Impairment	Approval Date
Middle Fork Beargrass Creek 2.3 to 15.2	Organic Enrichment/Low DO	4/2003
Middle Fork Beargrass Creek 0.0 to 2.0	Cadmium	9/2011
Middle Fork Beargrass Creek 2.0 to 2.9	Cadmium	9/2011
Middle Fork Beargrass Creek 2.9 to 15.3	Cadmium	9/2011
Mill Creek 0.0 to 4.4	Turbidity	6/1998
Muddy Fork Beargrass Creek 0.0 to 6.9	Metals	6/1998
Muddy Fork Beargrass Creek 0.0 to 6.9	Organic Enrichment/Low DO	6/1998
Muddy Fork Beargrass Creek 0.0 to 6.9	Unknown Toxicity	6/1998
Ohio River 609.7 to 617.6	Pathogens	5/2005
Ohio River 606.8 to 629.9	Chlordane	4/2003
Ohio River 593.0 to 603.3	Fecal Coliform	9/2011
Pennsylvania Run 0.0 to 3.35	Nutrients	7/2007
Pond Creek/Southern Ditch 14.7 to 16.1	Metals	5/2005
Pond Creek/Southern Ditch 14.7 to 16.1	Organic Enrichment/Low DO	5/2005
South Fork Beargrass Creek 0.0 to 14.6	Metals	6/1998
South Fork Beargrass Creek 0.0 to 2.7	Cadmium	9/2011
Southern Ditch 0.0 to 5.5	Organic Enrichment/Low DO	4/2003

Notes

1. Floyds Fork 24.2 to 34.1 Warm Water Aquatic Habitat impairment was approved for delisting with the approval of the 2016 303d List component of the Integrated Report based on data showing this use is now attained. This waterbody was moved to List 4A due to Primary Contact Recreation use impairments after completion of the Floyds Fork Bacteria TMDL.

4.6 REFERENCES

Kentucky Division of Water. 2018. Integrated Report to Congress on the Condition of Water Resources in Kentucky, 2016. Assessment Results with Emphasis on the Big Sandy, Little Sandy, Tygarts River, and Kentucky River Basin Management Units and a Statewide Update. *http://water.ky.gov/waterquality/Integrated%20Reports/Forms/AllItems.aspx*

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Kentucky Division of Water. Total Maximum Daily Load Program – Approved TMDLs Website: *http://water.ky.gov/waterquality/Pages/ApprovedTMDLs.aspx.* Accessed 10/21/2021

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Ohio River Sanitation Commission (ORSANCO). Bacteria TMDL Website: *http://www.orsanco.org/programs/bacteria-tmdl/.* Accessed 10/21/2021

CHAPTER 5 MONITORING

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CHAPTER 5 MONITORING

5.1 Introduction

MSD is required to monitor stream segments in Jefferson County for stream health. It has been noted that Louisville has one of the most robust monitoring systems and programs in Kentucky. Using this established network, MSD is able to identify water quality trends, and adjust programs to improve water quality.

Chapter 5 provides an overview of MSD's monitoring program and the most recent final monitoring data. A description of the analysis of monitoring data is provided. Results, including comparison to applicable water quality criteria and characterization of water quality under wet and dry conditions, are presented as summaries and on a watershed basis. MSD collects and analyzes monitoring data based on its draft Quality Assurance Project Plan (QAPP). The report period for each monitoring data set is shown on **Table 5.1.1.**

Table 5.1.1 – Monitoring Reporting Periods

Monitoring Data Set	Reporting Period	Notes
Stream Flow	**Final Data:** 7/1/2020 to 3/22/2021 **Provisional Data:** 3/1/2021 to 6/30/2021	Streamflow is for determination of wet or dry sample type during water quality quarterly sampling, and at time of quarterly analysis, data are not always approved. Both approved and provisional data are used in this report. (Streamflow does not undergo the same impacts the sonde data does and in general the provisional and final data are the same.)
Water Quality - Sonde	**Final Data:** 7/1/2020 to 3/22/2021 **Provisional Data:** 3/23/2021 to 6/30/2021	The most recent final data from USGS were used in this report. Data that are currently in provisional status will be reported in the 2022 MS4 Annual Report.
Water Quality - Quarterly	7/1/2020 to 6/30/2021	Quarterly sampling occurred in July, October, January, and April of this reporting period.
Recreation Season Bacteria	7/1/2020 to 10/31/2020 5/1/2021 to 6/30/2021	Per Kentucky Surface Water Standards, recreation season extends from May 1 to October 31 therefore, reporting covers part of two recreation seasons.
Fish Community & Aquatic Habitat	Summer 2020 and Spring 2021	
Benthic Macro-invertebrate Community & Aquatic Habitat	Spring 2021	
Algal Community	Fall 2020	

5.2 Monitoring Program Description

MSD maintains a Long-Term Monitoring Network (LTMN), shown on **Figure 5.2.1** and **Table 5.2.1**. It is designed around 27 sites purposefully distributed through the 11 watersheds that flow in or through Jefferson County.

Figure 5.2.1 Long Term Monitoring Network Locations

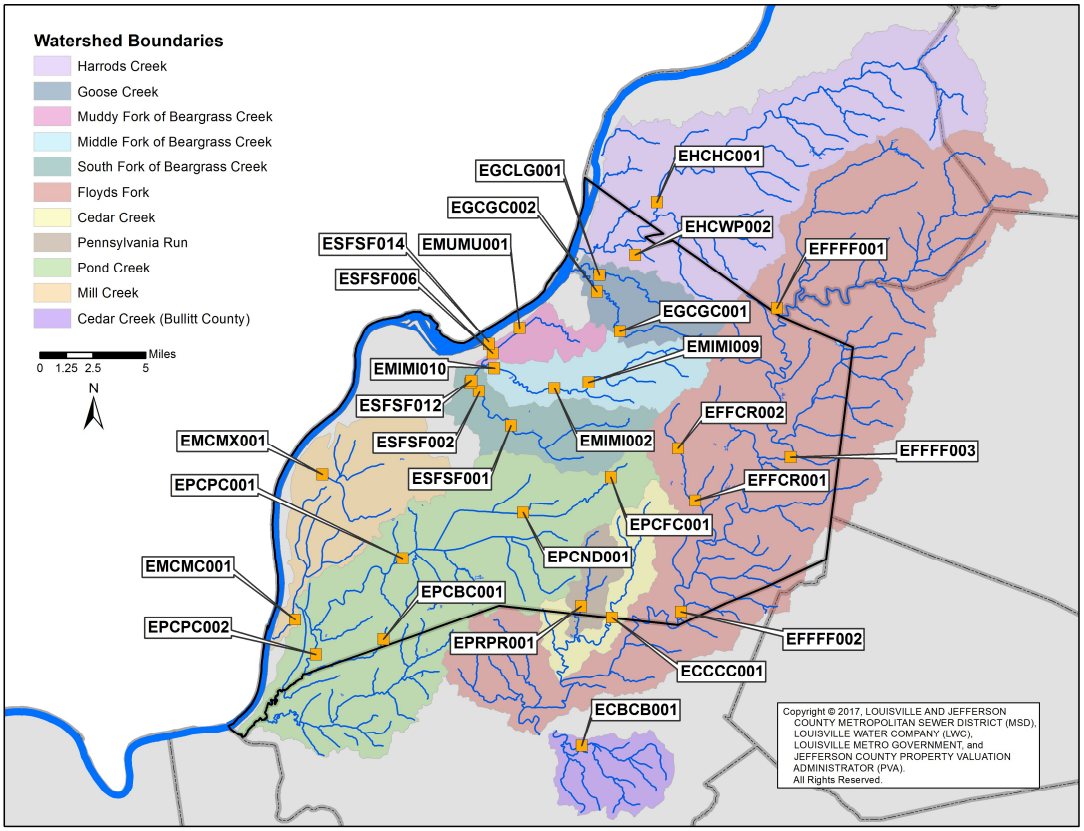


Table 5.2.1 lists monitoring sites and data collected at each site and the descriptions of each data set are provided in the sections that follow.

Table 5.2.1 – Long-Term Monitoring Network Locations

Number	MSD Site #	USGS Gauge	LTMN Location	Flow	Sonde	WQ	Biological
1	EHCHC001	03292470	Harrods Creek at Covered Bridge Road	1	1	1	1
2	EHCWP002	No Gauge	Wolf Pen Branch at 8200 Wolf Pen Branch Road	No Gauge	1	1	1
3	EGCGC001	03292474	Goose Creek at Old Westport Road	1	1	1	1
4	EGCGC002	03292475	Goose Creek at US 42	1	1	1	1
5	EGCLG001	03292480	Little Goose Creek at US 42	1	1	1	1
6	EMUMU001	03293530	Muddy Fork of Beargrass Creek at Mockingbird Valley Road	1	1	1	1
7	EMIMI009	No Gauge	Middle Fork of Beargrass Creek at Browns Lane	No Gauge	1	1	1
8	EMIMI002	03293000	Middle Fork of Beargrass Creek at Old Cannons Lane	1	1	1	1
9	EMIMI010	03293500	Middle Fork of Beargrass Creek at Lexington Road	1	1	1	1
10	ESFSF001	03292500	South Fork of Beargrass Creek at Trevilian Way	1	1	1	1

Number	MSD Site #	USGS Gauge	LTMN Location	Flow	Sonde	WQ	Biological
11	ESFSF012	03292555	South Fork of Beargrass Creek at East Breckinridge Street [1]	1	1	1	1
12	ESFSF006	No Gauge	South Fork of Beargrass Creek at Brownsboro Road	No Gauge	1	1	1
13	ESFSF014	03293510	Beargrass Creek at River Road	1	1	No Data	No Data
14	EFFFF001	03297900	Floyds Fork at Ash Avenue	1	1	1	1
15	EFFFF003	03298000	Floyds Fork at Old Taylorsville Road	1	1	1	1
16	EFFFF002	03298200	Floyds Fork at Bardstown Road	1	1	1	1
17	EFFCR002	03298135	Chenoweth Run #1 at Ruckriegel Parkway	1	1	1	1
18	EFFCR001	03298150	Chenoweth Run #1 at Gelhaus Lane	1	1	1	1
19	ECCCC001	03298250	Cedar Creek at Thixton Lane	1	1	1	1
20	EPRPR001	03298300	Pennsylvania Run at Mount Washington Road	1	1	1	1
21	EPCFC001	03301900	Fern Creek at Bardstown Road	1	1	1	1
22	EPCND001	03301940	Northern Ditch at Preston Highway	1	1	1	1
23	EPCPC001	03302000	Pond Creek at Manslick Road	1	1	1	1
24	EPCPC002	03302030	Pond Creek at Pendleton Road	1	1	1	1
25	EPCBC001	03302050	Brier Creek at Bear Camp Road	1	1	1	1
26	EMCMX001	03294550	Mill Creek Cutoff at Cane Run Road	1	No Sonde	1	1
27	EMCMC001	03294570	Mill Creek at Orell Road	1	1	1	1
28	ECBCB001	03297800	Cedar Creek at State Highway 1442	1	1	1	1
			Total	**25**	**27**	**27**	**27**

Notes
1. South Fork of Beargrass Creek at East Breckenridge Street is replacing South Fork of Beargrass Creek at Mason Avenue

MS4 Permit Update: The Kentucky State Division of Water issued an updated MS4 Permit for February 1, 2017 to January 31, 2022. The monitoring requirements for this permit are shown in **Table 5.2.2.**

Table 5.2.2 – Monitoring Parameters in MS4 Permits

Monitoring Data Set	Permit Period 2/1/2017 to 1/31/2022
Stream Flow	Daily mean discharge
Water Quality - Sonde	Dissolved Oxygen, Temperature, pH, Specific Conductance (Conductivity)
Water Quality – Quarterly	Ambient monitoring for Total Suspended Solids (TSS); *E. coli*; Total Nitrogen (as N), Oil and Grease, Copper, Total Recoverable and pH
Recreation Season Bacteria	5 samples per month (May-October) - Recreational monitoring for *E. coli*.
Biological Communities & Habitat	Once Every Two Years – Biological sampling and/or evaluation rotating to include: algae, fish, and benthic macro invertebrates.

These parameters are met through following the standard operation procedures outlined in the MS4 Programmatic Quality Assurance Project Plan (QAPP). The QAPP addresses required elements of the quality assurance program for the LTMN including program management, data acquisition, data assessment, data review, evaluation, and reporting. The specific procedures for the LTMN program are described in Field Standard Operating Procedures (SOPs), which are appended to the QAPP. The SOPs describe health and safety, job training and personnel qualifications, equipment, supplies, equipment calibrations, sample collection, troubleshooting and quality control considerations. MSD and third party consultants use Field SOPs in conjunction with the QAPP to ensure high quality data are collected through the LTMN program.

MS4 Monitoring Program Description: The following types of monitoring data are collected in the LTMN: quarterly water quality, recreational season bacteria, continuous monitoring (i.e., sonde), biological communities and aquatic habitat, wet weather water quality, and precipitation. Stream flow monitoring required in the MS4 program is conducted by the United States Geological Survey (USGS).

Quarterly and Recreation Season Bacteria Monitoring: Trained MSD Field Technicians collect quarterly water quality samples, generally in January, April, July and October. Water quality sampling months may be adjusted due to weather and safety concerns. Trained MSD Field Technicians collect five *Escherichia Coli (E.coli)* bacteria samples each 30-day period during the six-month recreational season of May 1 to October 31. Quarterly and recreation season *E. coli* samples are analyzed at MSD's certified laboratory located at the Morris Forman Water Quality Treatment Center (WQTC). The lab certification number is KY#08034.

Continuous (Sonde) Monitoring and Stream Discharge: MSD and the USGS jointly conduct the continuous (i.e., sonde) monitoring. Sondes collect pH, temperature, conductivity, and dissolved oxygen data every 15 minutes. MSD or USGS perform calibration and maintenance of sonde equipment and USGS performs periodic cross section checks of the data, hosts provisional

and final data in USGS's National Water Information System (NWIS) database, and provides quality assurance review to finalize the data.

USGS is solely responsible for operating the stream gaging program to measure stream discharge, which is a required component of the MS4 program. USGS operates this program according to rigorous federal protocols and quality assurance requirements. MSD is an end user of this data provided by an external entity.

Biological Monitoring: Trained professional biologists sample fish, benthic macroinvertebrate and algal communities using protocols developed by the EPA and DOW. This is currently accomplished through contractual arrangement with local firms, with MSD assisting in placement, collection and shipment of algae tiles to a third-party laboratory for analysis. Concurrent aquatic habitat data are also collected. Biological sampling is performed every two years per permit requirements.

Wet Weather Water Quality and Precipitation Monitoring: Water resource professionals collect water quality samples for three storm events at each long term monitoring site during the five-year permit cycle. This is currently accomplished through contractual arrangement with local firms. Samples are analyzed at a local certified laboratory using EPA approved methods specified in 40 CFR 136 found in https://www.ecfr.gov/cgi-bin/text-idx?tpl=/ecfrbrowse/Title40/40cfr136_main_02.tpl. MSD operates a network of tipping bucket rain gauges, some of which are telemetered to monitor precipitation depths every five minutes. Results are displayed and available for download from MSD's website: http://raingauge.louisvillemsd.org/

MSD is currently following the DRAFT QAPP that is under review by DOW's Quality Assurance Officer. A provisional approval for Quarterly and Recreational sampling sections was granted in March of 2021 and is anticipated to be fully approved by spring of 2022. A copy of the complete document is available upon request.

5.3 Data Analysis

Final water quality data collected via continuous monitoring, quarterly monitoring, and recreational season bacteria monitoring were compared to the applicable numeric water quality criteria shown in **Table 5.3.1**. This table is consistent with water quality criteria in Kentucky Surface Water Standards regulations found in 401 KAR 10:031 and available at: http://lrc.ky.gov/kar/401/010/031.htm.

Table 5.3.1 – Water Quality Criteria

Parameter	Units	Water Quality Criteria
Temperature	C	31.7 C (instantaneous maximum)
Dissolved Oxygen	mg/l	4.0 mg/l (instantaneous minimum), 5.0 mg/l (24-hour average)
pH	Std. units	6.0 to 9.0
Escherichia coli	MPN/100 ml	Geometric mean of 5 samples collected within 30 day period does not exceed 130 colonies/100 ml and less than 20% of samples exceed 240 colonies/100 ml

Parameter	Units	Water Quality Criteria
Copper	ug/l	Acute and Chronic Aquatic Life: calculated per equations in 401 KAR 10:031

The remaining water quality parameters specified in the permit do not have a numeric water quality criterion and are instead managed through a narrative criterion or are monitored to provide a more thorough characterization of water quality. For parameters that do not have a numeric water quality criterion, the data are summarized in terms of range and average conditions. Raw data are provided in **Appendix 5C Raw Sonde and Streamflow Data and Appendix 5D – Raw LIMS Data.**

Flow Characterization: Provisional daily average flow data were collected between July 1, 2020 and June 30, 2021 and were used to characterize stream flow on the day of sample collection for this report. If the average stream flow on the day of sample collection was at least 50% greater than the long term monthly average stream flow, the sample was characterized as being collected under wet conditions; all other samples were characterized as being collected under dry conditions.

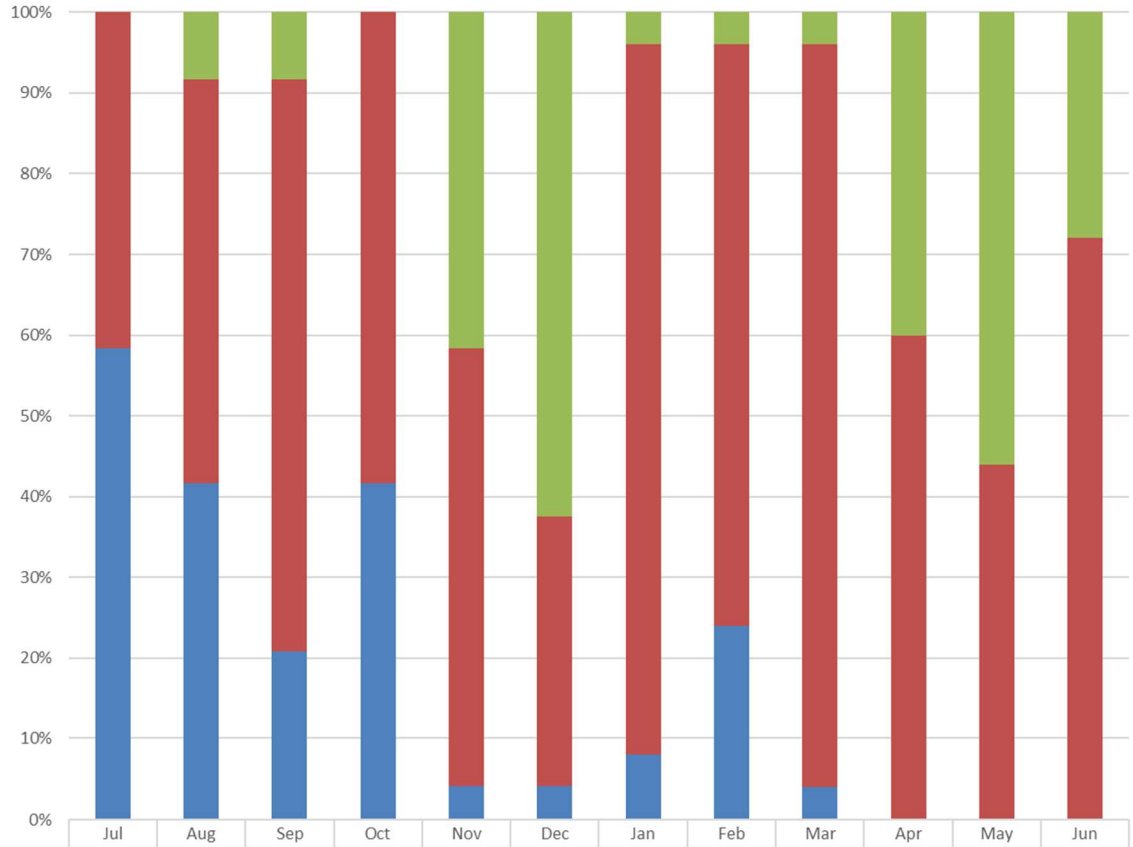
For three locations, adjacent flow gauges were used to characterize flow on the day of sample collection as shown on Table 5.3.2.

Table 5.3.2 – Proxy Gauges for LTMN Sites Without Flow Gauges

LTMN Site without Flow Gauge	Proxy Flow Gauge
EHCWP002: Wolf Pen Branch at 8200 Wolf Pen Branch Road	**03292480**: Little Goose Creek at US 42
EMIMI009: Middle Fork of Beargrass Creek at Browns Lane	**03293000**: Middle Fork of Beargrass Creek at Old Cannons Lane
ESFSF006: South Fork of Beargrass Creek at Brownsboro Road	**03293500**: Middle Fork of Beargrass Creek at Lexington Road (1)
Notes: 1. Beargrass Creek at River Road (USGS Gauge # 03293510) is closer to Site ESFSF006, however Ohio River backwater strongly influences this site. Therefore, Gauge 03293500 was used as a more appropriate proxy site.	

Monthly stream flow was characterized to provide an overview of stream flow conditions for the report period. For 24 sites with sufficient flow data, the number of months during which stream flow was classified as low, average, and elevated were characterized by comparing average monthly stream flows during the report year with the long term monthly average stream flow. Stream flow was classified as “low” for months in which average stream flow was more than 50% below average monthly stream flow. Stream flow was characterized as “elevated” for months in which average stream flow was more than 50% higher than average monthly stream flow. Remaining stream flows were characterized as “average”. Results shown on Figure 5.3.1 highlight the drier conditions during December 2020 and May 2021, and the wetter conditions prevalent in July 2020, with average conditions prevalent for the remainder of the report year.

Figure 5.3.1 Summary of Streamflow Conditions



	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Sum of Gages with Low Flow	0	2	2	0	10	15	1	1	1	10	14	7
Sum of Gages with Average Flow	10	12	17	14	13	8	22	18	23	15	11	18
Sum of Gages with Elevated Flow	14	10	5	10	1	1	2	6	1	0	0	0

Continuous Monitoring: Parameters were collected between July 1, 2020 and June 30, 2021; however USGS approved is available through March 22, 2021. Analyzed data are provided in **Appendix 5A – Analyzed Continuous Monitoring Data**. For each parameter, the percent complete and range of values were calculated for the 27 LTMN sites. The reviewed data was compared to water quality criteria where applicable.

Quarterly Monitoring: Data were reviewed for quality assurance purposes, and final data from quarterly samples collected at 27 LTMN sites were compared to numeric criteria. For copper, hardness samples were taken at the time of sample collection and were used to calculate hardness-dependent criteria using equations in the Kentucky Surface Water Standards. If hardness data was not available, hardness from a nearby LTMN site was used to calculate hardness-dependent criteria. Sample concentrations were compared to the acute and chronic aquatic life criterion for copper.

Bacteria Monitoring: Data were reviewed for quality assurance, and final data were compared to 401 KAR 10:031 Surface Water Standards criteria for *E. coli* bacteria during the May 1 to

October 31 recreational season. *E. coli* bacteria results are reported on a monthly basis during the recreational season and on a quarterly basis for the remainder of the year.

Biological Monitoring: Narrative ratings that include "excellent", "good", "fair", "poor" and "very poor" were developed by Division of Water to characterize fish, benthic macroinvertebrate, algal communities as well as habitat quality. The standard operating procedures (SOPs) documenting the rating system are available from Division of Water at this website: http://water.ky.gov/Pages/SurfaceWaterSOP.aspx. The narrative ratings are tailored to watershed size and ecological region of the state. LTMN sites were classified as "headwaters", "wadeable" or "boatable" using these protocols. All LTMN sites except Brier Creek at Bear Camp Road and Pond Creek at Manslick Road were located in the Bluegrass ecological region. Brier Creek at Bear Camp Road and Pond Creek at Manslick Road are located in the Pennyroyal ecological region.

MSD had biological community samples collected using protocols developed by EPA and Division of Water. Fish community samples and habitat quality data were collected in summer 2020 and spring 2021. Concurrent data for stream temperature, dissolved oxygen, pH, and conductivity were also collected. Benthic macroinvertebrate community and aquatic habitat data were collected in spring 2021. MSD collected algal samples in October 2020, using Division of Water protocols. Algal communities were collected on tiles over a 15-day period to provide a consistent way to collect samples at each site. Benthic macroinvertebrate, algae, fish, and habitat results are summarized by watershed in **Section 5.5 – Watershed Summaries** of this report.

5.4 Water Quality Summary

South Fork of Beargrass Creek at Breckinridge Street is the replacement site for South Fork of Beargrass Creek at Mason Avenue site that is referenced within the permit. Three sites (Wolf Pen Branch at 8200 Wolf Pen Branch Road, Middle Fork of Beargrass Creek at Browns Lane, and South Fork of Beargrass Creek at Brownsboro Road) are not telemetered. These sites produce provisional data (not finalized by USGS) and are not included in these statistics. Mill Creek Cutoff at Cane Run Road does not have a sonde installed and is therefore not included in these statistics.

Temperature: Water temperature is an important parameter for the overall health of a stream, since hot water can stress fish and other forms of aquatic life. Final continuous monitoring data collected between July 1, 2020 and March 22, 2021 were analyzed for temperature. The final temperature records ranged from 28% complete to 100% complete at 24 sites with continuous monitoring sondes, and most were above 90%. The temperature criterion of 31.7 degrees C was met 99% of the time in available data.

Dissolved Oxygen: Dissolved oxygen is an important parameter for the overall health of a stream. Water with low dissolved oxygen can stress fish and other forms of aquatic life. Final continuous monitoring data collected between July 1, 2020 and March 22, 2021 were analyzed for dissolved oxygen by compiling the 15-minute data to a daily record. A daily record was considered complete if at least 88 of a possible 96 records per day were available.

The final dissolved oxygen record ranged from 25.3% complete (67 days) to 94.3% complete (250 days) at 24 sites with continuous monitoring sondes. Average concentrations of dissolved oxygen at the 24 sites with sondes ranged between 7.85 mg/l and 12.68 mg/l. The number of days with complete records that met the criteria (i.e., no dissolved oxygen readings below 4 mg/l and average concentration above 5 mg/l) ranged between 77.6% and 100%. Results are shown in **Figure 5.4.1**.

pH: The degree to which a stream is acidic or alkaline is measured using a pH scale measured in standard units, which ranges from very acidic (pH of 0) to neutral (pH of 7) to very alkaline (pH of 14). Water that is too acidic or too alkaline stresses aquatic life. The final pH record ranged from 6.4% complete to 93.2% complete at the 24 sites with final record. The pH criteria were met for more than 99% of the available record. The pH ranged from 6.2 and 9.4 Standard Units.

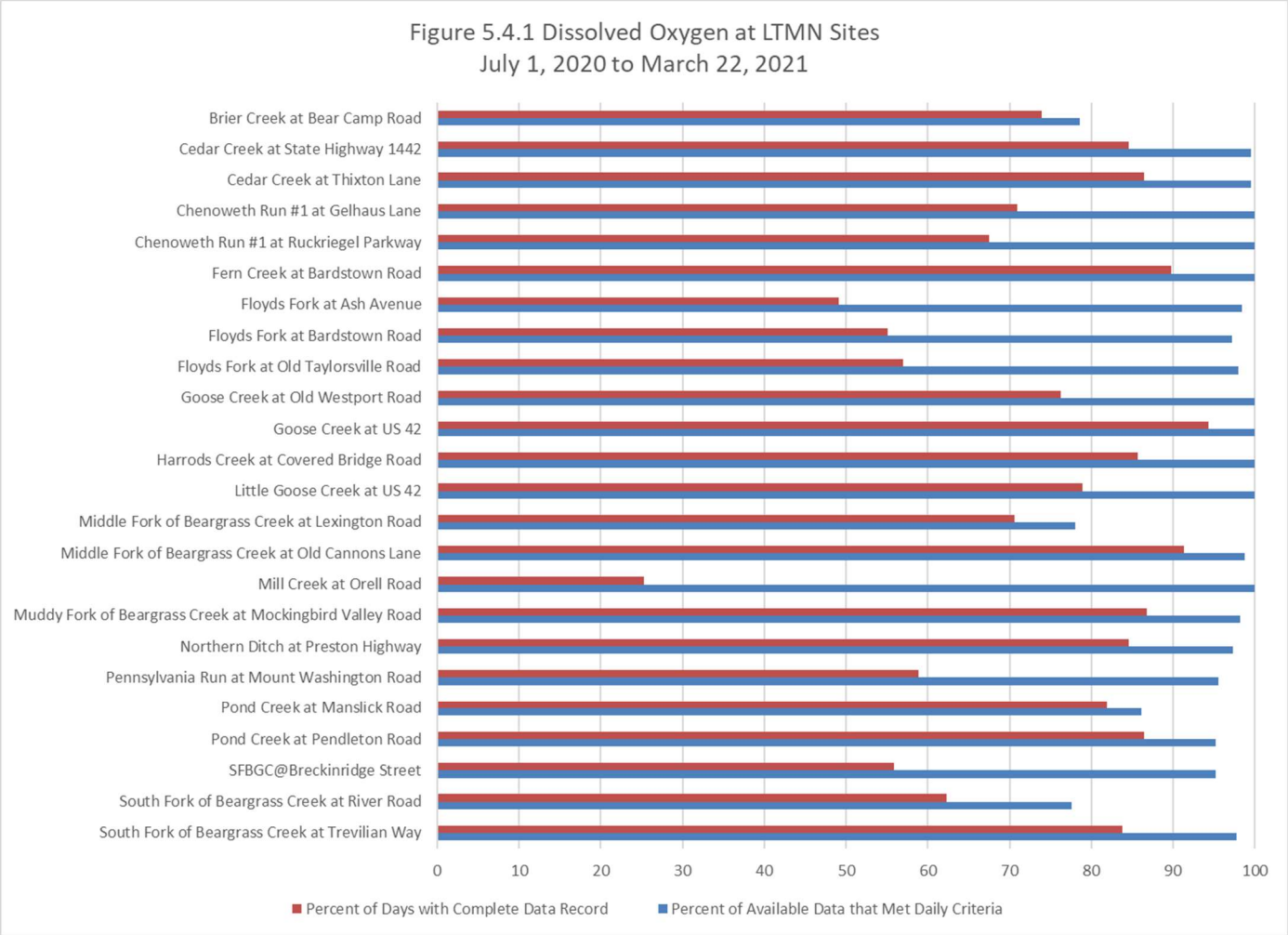


Table 5.4.1 – Continuous pH Data at LTMN Sites

MSD Site #	Name	Percent Complete	Minimum pH	Maximum pH	Percent Criteria Met
EHCHC001	Harrods Creek at Covered Bridge Road	49.4	7.1	9.0	100
EGCGC001	Goose Creek at Old Westport Road	58.1	6.9	8.4	100
EGCGC002	Goose Creek at US 42	89.8	7.1	8.6	100
EGCLG001	Little Goose Creek at US 42	55.8	7.3	8.7	100
EMUMU001	Muddy Fork of Beargrass Creek at Mockingbird Valley Road	6.4	6.9	7.8	100
EMIMI002	Middle Fork of Beargrass Creek at Old Cannons Lane	92.8	7.2	8.6	100
EMIMI010	Middle Fork of Beargrass Creek at Lexington Road	70.2	6.8	8.2	100
ESFSF001	South Fork of Beargrass Creek at Trevilian Way	83.8	6.9	8.6	100
ESFSF012	South Fork of Beargrass Creek at Breckinridge Street	63.0	6.2	8.4	100
ESFSF014	Beargrass Creek at River Road	75.1	6.2	8.3	100
EFFFF001	Floyds Fork at Ash Avenue	47.2	6.8	8.8	100
EFFFF003	Floyds Fork at Old Taylorsville Road	67.9	7.5	8.7	100
EFFFF002	Floyds Fork at Bardstown Road	69.8	7.1	8.5	100
EFFCR002	Chenoweth Run #1 at Ruckriegel Parkway	75.1	7.2	8.6	100
EFFCR001	Chenoweth Run #1 at Gelhaus Lane	43.4	7.1	9.1	98.3
ECCCC001	Cedar Creek at Thixton Lane	91.3	7.3	8.9	100
EPRPR001	Pennsylvania Run at Mount Washington Road	58.1	6.7	8.7	100
EPCFC001	Fern Creek at Bardstown Road	93.2	6.6	8.5	100
EPCND001	Northern Ditch at Preston Highway	65.7	7.0	8.7	100
EPCPC001	Pond Creek at Manslick Road	86.0	6.5	8.7	100
EPCPC002	Pond Creek at Pendleton Road	63.4	6.5	8.7	100
EPCBC001	Brier Creek at Bear Camp Road	86.0	6.2	7.3	100
EMCMC001	Mill Creek at Orell Road	24.9	7.4	9.4	98.5
ECBCB001	Cedar Creek at State Highway 1442	62.6	7.5	9.0	100

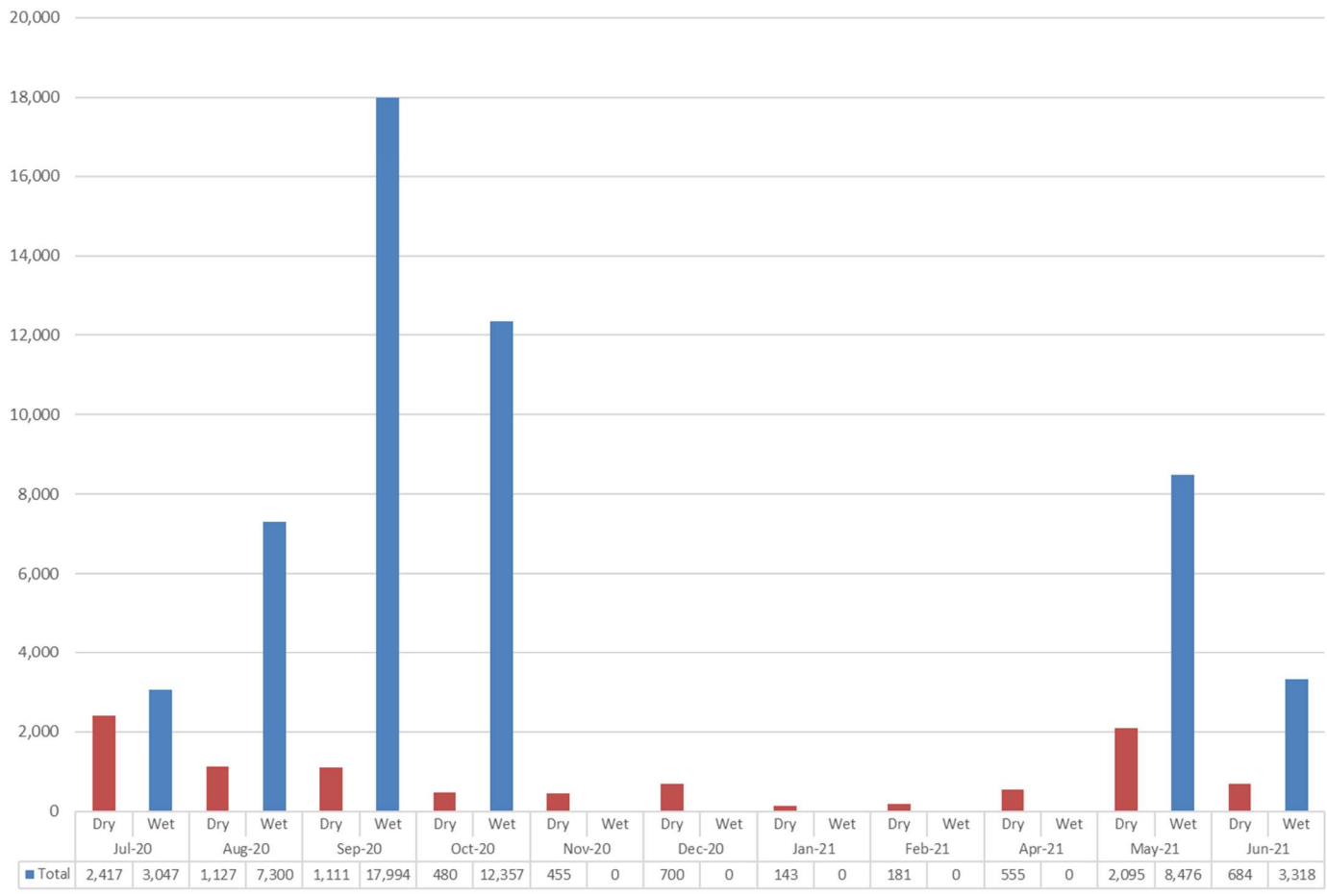
Any necessary adjustments to site location and setup to enhance data collection quality are being coordinated with the United States Geological Survey (USGS) on an on-going basis.

Bacteria: *E. coli* bacteria occur in the digestive tracts of humans and warm-blooded animals. *E. coli* bacteria do not reproduce outside the bodies of humans and animals. Thus, *E. coli* bacteria provide an indicator of fecal pollution that is not complicated by reproduction outside the hosts' digestive tracts. *E. coli* bacteria concentrations are measured as "Most Probable Number" (MPN) of bacteria in a 100 milliliter (ml) sample. As a reference, 100 ml is about 3.4 ounces.

Trained MSD staff collected and analyzed five *E. coli* samples within a 30-day period at each of the 27 LTMN sites during the six-month recreational season in 2020 (July to October) and in 2021 (May and June). The sample period coincides with the MS4 reporting period. During the remainder of the year, one sample per quarter was collected in October 2020, and in January and April 2021. *E. coli* samples were analyzed in MSD's laboratory using EPA approved methods. Bacteria monitoring data and analytical method information are provided in **Appendix 5B – Analyzed Quarterly Monitoring Data and Appendix 5D – Raw LIMS Data**.

Data were reviewed for quality assurance and final data were analyzed for this report. During the reporting period, 900 *E. coli* bacteria samples were collected at the 27 LTMN monitoring sites, including 763 samples collected under dry conditions and 137 collected under wet conditions. *E. coli* bacteria concentrations ranged from 0.5 MPN/100 ml to 141,000 MPN/100 ml and average concentrations are summarized on Figure 5.4.2. This graph highlights the highly variable nature of bacteria concentrations and the tendency for concentrations to be higher when stream flows were higher. Per program objectives, exceedances to *E. Coli* criteria will be reviewed over time and programmatic adjustments will be made on an as-needed basis.

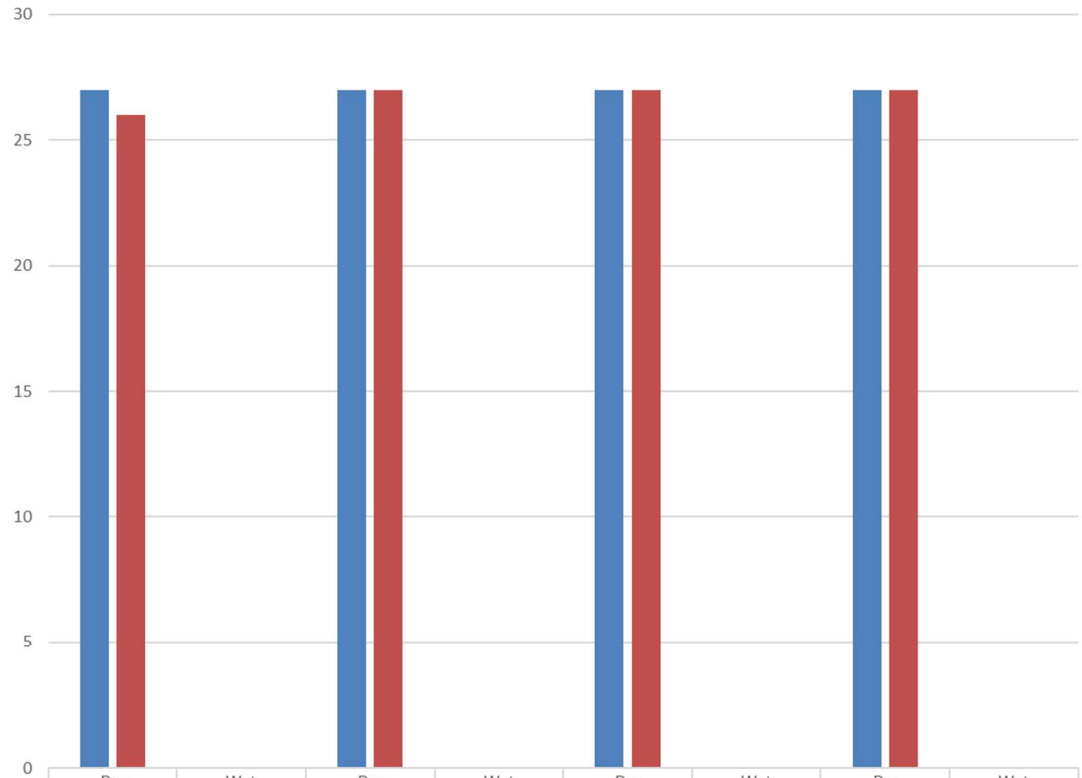
Figure 5.4.2 Average E. Coli Concentration (MPN / 100ml)
July 1, 2020 to June 30, 2021



	Jul-20		Aug-20		Sep-20		Oct-20		Nov-20		Dec-20		Jan-21		Feb-21		Apr-21		May-21		Jun-21	
	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet
Total	2,417	3,047	1,127	7,300	1,111	17,994	480	12,357	455	0	700	0	143	0	181	0	555	0	2,095	8,476	684	3,318

Copper: Between July 1, 2020 and June 30, 2021, 108 quarterly samples were analyzed for total recoverable copper, including 108 under dry conditions and no samples collected under wet conditions. Concentrations ranged from less than the Minimum Detection Limit to 14 parts per billion. Acute and chronic aquatic life criteria were met in 99% of the copper samples. Copper values are represented in Figure 5.4.3.

Figure 5.4.3 Copper Meeting Most Stringent Criterion
July 1, 2020 to June 30, 2021



	1st Quarter		2nd Quarter		3rd Quarter		4th Quarter	
	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet
Sample Count	27	0	27	0	27	0	27	0
Meeting Most Stringent Criterion	26	0	27	0	27	0	27	0

Monitoring results for parameters that do not have numeric water quality criteria are summarized in Table 5.4.2.

TABLE 5.4.2 SUMMARY FOR PARAMETERS WITHOUT NUMERIC WATER QUALITY CRITERIA

Parameter	Condition	Sample Count	Minimum Concentration (mg/l)	Average Concentration (mg/l)	Maximum Concentration (mg/l)
Oil and Grease (Total)	Dry	108	2.50	2.50	2.50
	Wet				
Total Nitrogen	Dry	108	0.39	2.03	20.34
	Wet				
Total Suspended Solids	Dry	108	1.50	8.42	65.00
	Wet				

Specific conductance is a measure of the ability of water to conduct electricity due to the presence of salts, which can stress aquatic life when elevated. Sources include natural geology, road salt application, wastewater discharges, and pavement weathering. The final specific conductance record ranged from 28.3% to 97.7% complete at the 24 sites with final records. Specific conductance ranged from 43 to 6,270 micro-siemens per centimeter (uS/cm).

Table 5.4.4 – Continuous Monitoring Specific Conductance Results

MSD Site #	Site Name	Specific Conductance (uS/cm)			
		% Complete	Minimum	Average	Maximum
EHCHC001	Harrods Creek at Covered Bridge Road	93.6	139	453	641
EGCGC001	Goose Creek at Old Westport Road	81.1	57	532	1660
EGCGC002	Goose Creek at US 42	97.0	127	550	1580
EGCLG001	Little Goose Creek at US 42	95.5	111	663	3340
EMUMU001	Muddy Fork of Beargrass Creek at Mockingbird Valley Road	85.7	71	682	2610
EMIMI002	Middle Fork of Beargrass Creek at Old Cannons Lane	92.5	77	684	3920
EMIMI010	Middle Fork of Beargrass Creek at Lexington Road	76.2	84	542	1820
ESFSF001	South Fork of Beargrass Creek at Trevilian Way	83.8	64	567	3810
ESFSF012	South Fork of Beargrass Creek at Breckinridge Street	58.9	93	501	930
ESFSF014	Beargrass Creek at River Road	89.1	113	685	2890
EFFFF001	Floyds Fork at Ash Avenue	52.1	144	459	586
EFFFF003	Floyds Fork at Old Taylorsville Road	77.7	165	508	783
EFFFF002	Floyds Fork at Bardstown Road	90.9	177	510	919
EFFCR002	Chenoweth Run #1 at Ruckriegel Parkway	92.1	57	774	6270
EFFCR001	Chenoweth Run #1 at Gelhaus Lane	70.2	53	569	2200
ECCCC001	Cedar Creek at Thixton Lane	84.2	65	611	1220
EPRPR001	Pennsylvania Run at Mount Washington Road	84.9	75	410	630
EPCFC001	Fern Creek at Bardstown Road	92.8	70	660	2340

MSD Site #	Site Name	Specific Conductance (uS/cm)			
		% Complete	Minimum	Average	Maximum
EPCND001	Northern Ditch at Preston Highway	97.7	135	572	1570
EPCPC001	Pond Creek at Manslick Road	91.7	85	572	3000
EPCPC002	Pond Creek at Pendleton Road	92.1	63	513	2580
EPCBC001	Brier Creek at Bear Camp Road	91.7	66	237	354
EMCMC001	Mill Creek at Orell Road	28.3	43	397	1260
ECBCB001	Cedar Creek at State Highway 1442	71.7	134	462	560

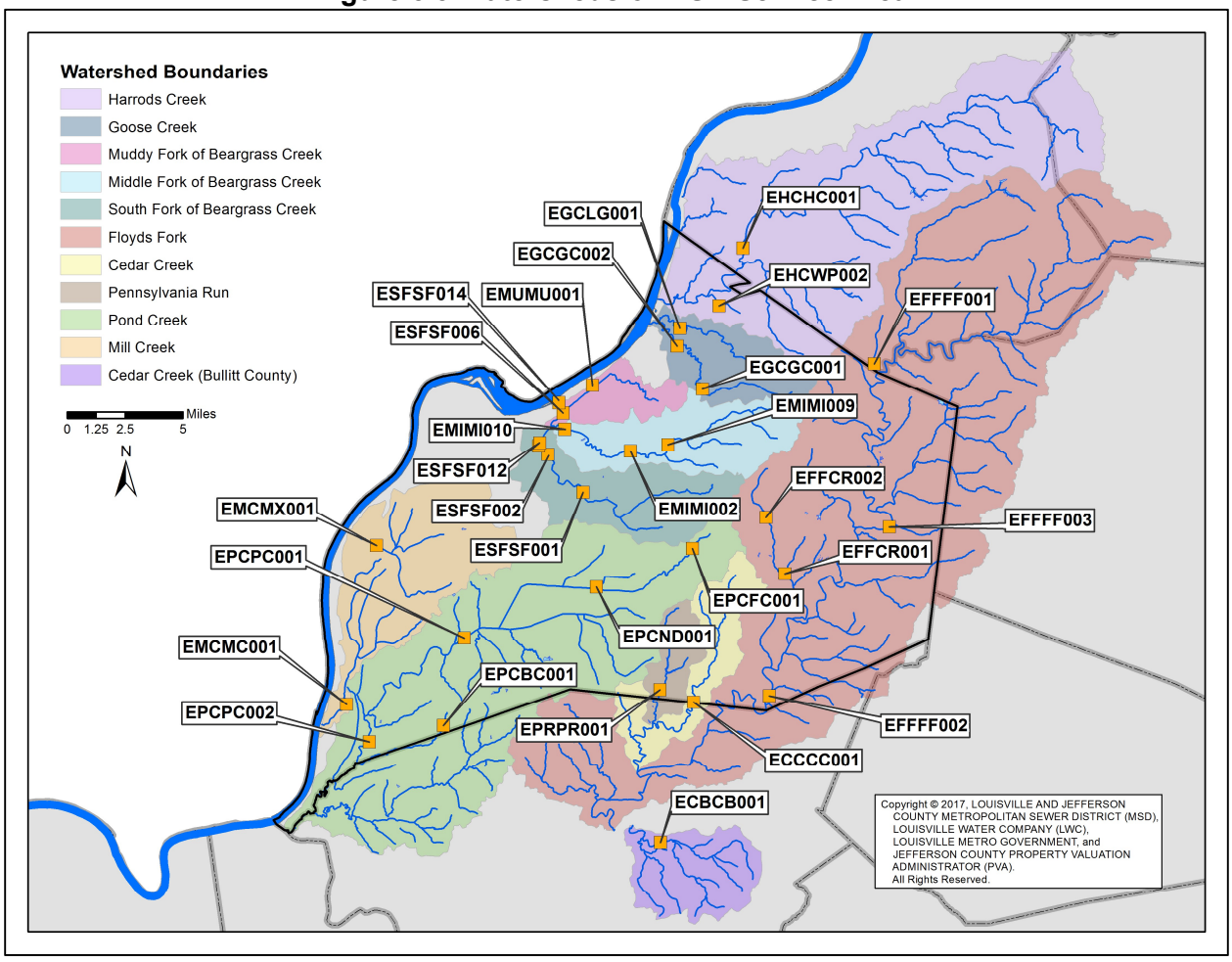
Data from the following sites will remain provisional and are not included in these statistics: EHCWP002 Wolf Pen Branch at 8200 Wolf Pen Branch Road (not telemetered), EMIMI009 Middle Fork of Beargrass Creek at Browns Lane (not telemetered), ESFSF006 South Fork of Beargrass Creek at Brownsboro Road (not telemetered), and EMCMC001 Mill Creek Cutoff at Cane Run Road (no sonde). South Fork of Beargrass Creek at Schiller Avenue was taken off-line in 2015; and it is replaced in the statistics by South Fork of Beargrass Creek at Breckinridge Street.

Wet Weather Sampling: MSD's updated Stormwater Permit requires sampling of three wet weather events during the permit term of February 1, 2017, to January 31, 2022. For the 2021 recreational season, MSD started a pilot program for wet weather collection. Based on this pilot, MSD has defined a wet weather event based on at least 48 hours of dry conditions prior to sampling and at least 0.1 inches of rain predicted in a 6-hour period across the service area. The watersheds have had two sampling events to date. On May 26, 2021, three sites were sampled including Cedar Creek, Pennsylvania Run, and the reference reach at Cedar Creek in Bullitt County. On June 2, 2021, the five sites in Floyds Fork were sampled, which includes Chenoweth Run.

5.5 Watershed Summaries

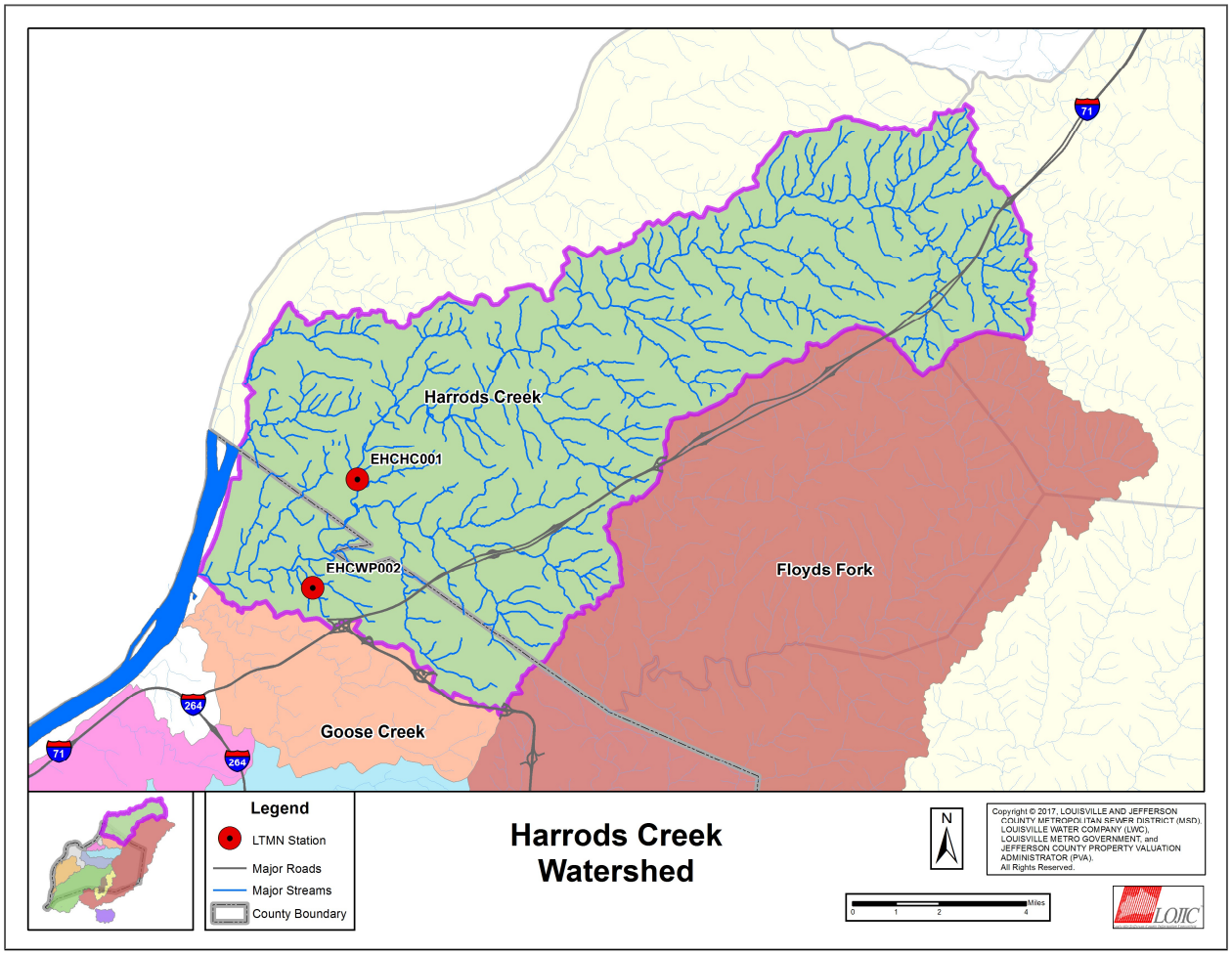
The following section provides a summary of water quality data for watersheds draining MSD's service area. A county-wide watershed map is shown again here as Figure 5.5.

Figure 5.5 Watersheds of MSD Service Area



5.5.1 Harrods Creek Watershed

Figure 5.5.1 Harrods Creek Watershed



Watershed Description: The small streams that eventually form Harrods Creek originate in Trimble County. Harrods Creek flows southwest through Oldham County and drains into the Ohio River in northern Jefferson County near Prospect. The Harrods Creek watershed drains approximately 92 square miles.

MSD has been monitoring water quality in Harrods Creek at Covered Bridge Road (EHCHC001) since 1999. There are 70.3 square miles of land draining to this site. This land is mostly agricultural and forest, with about 9% developed for urban and suburban uses. Approximately 1.3% of the land is covered by impervious surfaces.

MSD has been monitoring water quality in the Wolf Pen Branch (EHCWP002) tributary since 2002. Stream flow and continuous monitoring data are not collected at this location. There are 2.08 square miles of land draining to the monitoring site on Wolf Pen Branch. This land is a mix

of agricultural, forest, and 24% developed for urban and suburban uses. Approximately 7% of the land is covered by impervious surfaces.

Continuous Monitoring Results: Final continuous monitoring data were available between July 1, 2020 and March 22, 2021 in Harrods Creek at Covered Bridge Road. During this time period in Harrods Creek at Covered Bridge Road, the temperature data set was 94.3% complete and 100% of available values met the temperature criterion. The dissolved oxygen data set was 85.7% complete, average dissolved oxygen was 10.2 mg/l, and 100% of available values met the water quality criteria. During this time period in Harrods Creek at Covered Bridge Road, the pH data set was 49.4% complete and 100% of available values met the pH criterion. The specific conductance record was 93.6% complete and values ranged from 139 uS/cm to 641 uS/cm.

Quarterly Monitoring Results: At Harrods Creek at Covered Bridge Road and Wolf Pen Branch, four samples were collected under dry conditions. Average TSS concentrations were 4.75 mg/l and 6.75 mg/l, respectively, in Harrods Creek and Wolf Pen Branch. Average total nitrogen was 1.56 mg/l and 1.37 mg/l, respectively. The average oil and grease total for Harrods Creek at Covered Bridge Road and Wolf Pen Branch was at or below the minimum detection limit of 2.50 mg/l.

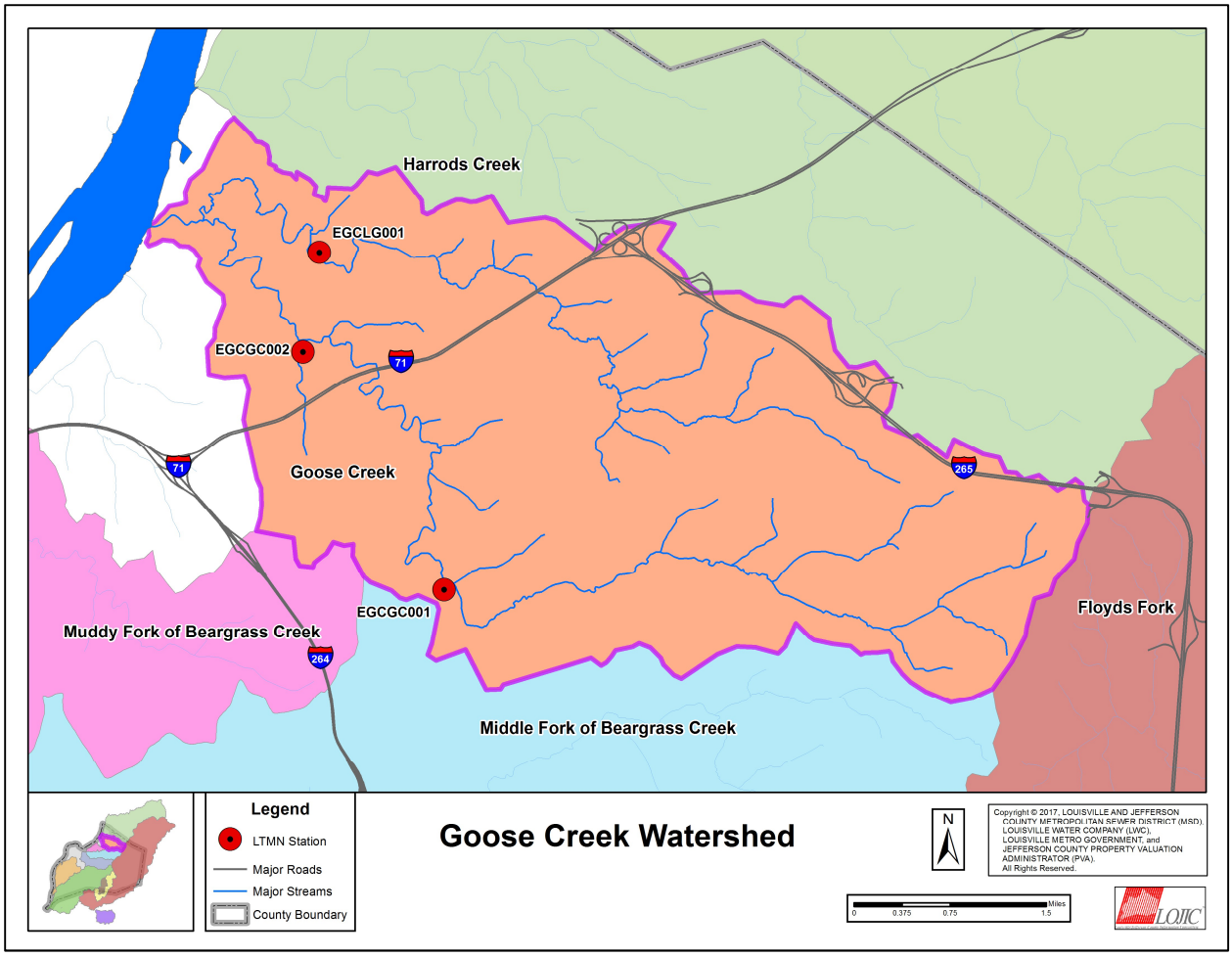
All quarterly samples were less than the hardness dependent chronic aquatic life criteria for copper.

Bacteria Monitoring Results: Average (geometric mean) concentrations of *E. coli* bacteria ranged from 86 MPN/100 ml to 962 MPN/100 ml in samples collected at two monitoring locations in the Harrods Creek watershed. The water quality criteria for *E. coli* were met in three of six months during the recreational season in Harrods Creek and zero of six months in Wolf Pen Branch.

Biological Monitoring Results: Macro communities were rated as “excellent” in Harrods Creek at Covered Bridge Road and “poor” in Wolf Pen Branch at 8200 Wolf Pen Branch Road, based on data collected in Spring 2021. Fish communities were rated as “good” and “excellent” in Harrods Creek at Covered Bridge Road based on data collected in Summer 2020 and Spring 2021 respectively. In Wolf Pen Branch, fish communities were rated as “fair” in both 2020 and 2021. Aquatic habitat quality was rated as “good” in Harrods Creek at Covered Bridge Road based on data collected in both Summer 2020 and Spring 2021. In Wolf Pen Branch, aquatic habitat quality was rated as “poor” in both 2020 and 2021. Algal communities were rated as “good” in 2020 in Harrods Creek at Covered Bridge Road and in Wolf Pen Branch at 8200 Wolf Pen Branch Road.

5.5.2 Goose Creek Watershed

Figure 5.5.2 Goose Creek Watershed



Watershed Description: The streams that form Goose Creek watershed, Little Goose Creek and Goose Creek, flow northwest from Anchorage to Glenview Acres. Goose Creek enters the Ohio River near Lime Kiln Lane and River Road. The Goose Creek watershed drains approximately 19 square miles.

MSD has been monitoring water quality in Goose Creek watershed at three sites since 2000: Goose Creek at Old Westport Road (EGCGC001), Goose Creek at US 42 (EGCGC002) and Little Goose Creek at US 42 (EGCLG001). There are 6.0 square miles of land draining to Goose Creek at Old Westport Road with 10% impervious surfaces. There are 10.1 square miles of land draining to Goose Creek at US 42 with 11% impervious surfaces. There are 5.8 square miles of land draining to the Little Goose Creek at US 42 with 18% impervious surfaces.

Continuous Monitoring Results: Final continuous monitoring data were available between July 1, 2020 and March 22, 2021 for three sondes in the Goose Creek watershed. During this time

period, the temperature data were 88.7% complete in Goose Creek at Old Westport Road, 100% complete at Goose Creek at US 42, and 99.2% complete at Little Goose Creek at US 42 with 100% of available values meeting the temperature criterion at all three sites. The dissolved oxygen data were 76.2% complete in Goose Creek at Old Westport Road, average dissolved oxygen was 9.9 mg/l, and 100% of available values met the water quality criteria. The dissolved oxygen data were 94.3% complete in Goose Creek at US 42, average dissolved oxygen was 9.9 mg/l, and 100% of available values met the water quality criteria. The dissolved oxygen data were 78.9% complete in Little Goose Creek at US 42, average dissolved oxygen was 9.6 mg/l, and 100.0% of available values met the water quality criteria. During this time period, the pH data were 58.1% complete in Goose Creek at Old Westport Road, 89.8% complete in Goose Creek at US 42, and 55.8% complete in Little Goose Creek at US 42 with 100% of available values meeting the pH criterion at Goose Creek at Old Westport Road, Goose Creek at US 42, and Little Goose Creek at US 42. The specific conductance record was 81.1% complete in Goose Creek at Old Westport Road, 97.0% complete in Goose Creek at US 42, and 95.5% complete in Little Goose Creek at US 42. Specific conductance ranged from 57 uS/cm to 3,340 uS/cm at these three sites.

Quarterly Monitoring Results: At Goose Creek at Old Westport Road, Goose Creek at US 42 and Little Goose Creek at US 42, all four samples were collected under dry conditions. Average TSS concentrations were 2.75 mg/l at Goose Creek at Old Westport Road, 7.12 mg/l at Goose Creek at US 42, and 13.0 mg/l at Little Goose Creek at US 42. Average total nitrogen was 1.51 mg/l at Goose Creek at Old Westport Road, 1.74 mg/l at Goose Creek at US 42, and 3.22 mg/l at Little Goose Creek at US 42. The average oil and grease total for Goose Creek at Old Westport Road, Goose Creek at US 42, and Little Goose Creek at US 42 was at or below the minimum detection limit of 2.50 mg/l.

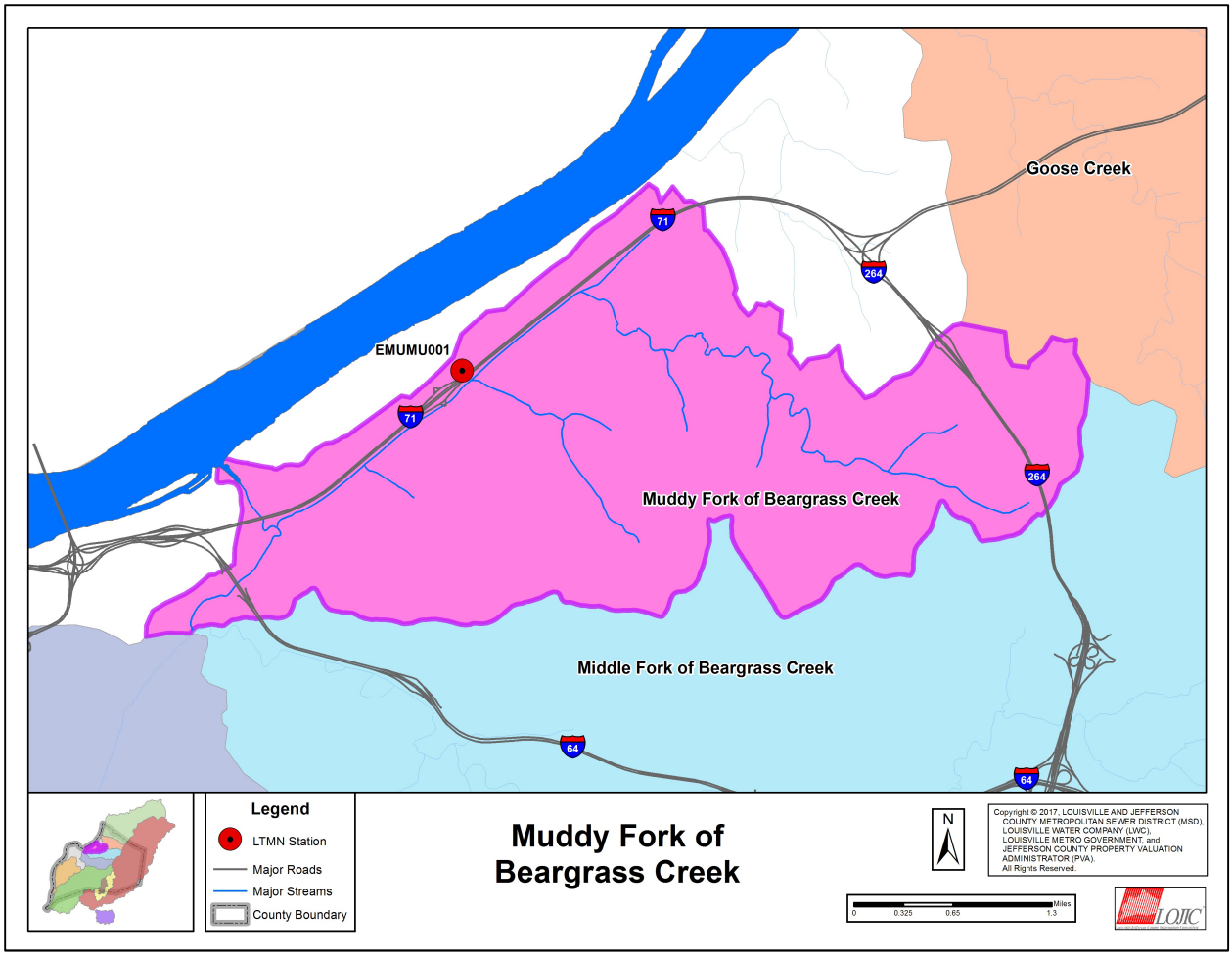
All quarterly samples were less than the hardness dependent chronic aquatic life criteria for copper.

Bacteria Monitoring Results: Average (geometric mean) concentrations of *E. coli* bacteria ranged from 113 MPN/100 ml to 994 MPN/100 ml in samples collected at three monitoring locations in the Goose Creek watershed. The water quality criteria for *E. coli* were met in zero of six months during the recreational season in Goose Creek at Old Westport Road and Little Goose Creek at US 42, and one out of six months in Goose Creek at US 42.

Biological Monitoring Results: Macro communities were rated as “poor” at Goose Creek at Old Westport Road (EGCGC001) and “fair” at both Goose Creek at US Highway 42 (EGCGC002) and Little Goose Creek at US Highway 42 (EGCLG001), based on data collected in Spring 2021. Fish communities were rated as “excellent” at Goose Creek at Old Westport Road, Goose Creek at US Highway 42, and at Little Goose Creek at U.S. Highway 42, based on data collected in both Summer 2020 and Spring 2021. Aquatic habitat quality was rated as “fair” at Goose Creek at Old Westport Road in both Summer 2020 and Spring 2021. For Goose Creek at US 42 and Little Goose Creek at US 42, aquatic habitat was rated as “good” for both the data collected in Summer 2020 and in Spring 2021. Algal communities were rated as “good” in 2020 at Goose Creek at Old Westport Road and Little Goose Creek at US 42; and “excellent” in 2020 at Goose Creek at US 42.

5.5.3 Muddy Fork of Beargrass Creek Watershed

Figure 5.5.3 Muddy Fork of Beargrass Creek Watershed



Watershed Description: The Muddy Fork is one of three streams that join to form the larger Beargrass Creek watershed. The Muddy Fork flows west from Windy Hills toward the Ohio River, then southwest along Interstate 71 before joining with the South Fork to become Beargrass Creek near Mellwood Avenue and Story Avenue. The Muddy Fork of Beargrass Creek drains nine square miles.

MSD has been monitoring water quality since 2002 in this watershed. The MSD monitoring station located at Muddy Fork at Mockingbird Valley Road (EMUMU001) drains 6.2 square miles. Approximately 9% of this watershed is covered by impervious surfaces.

Continuous Monitoring Results: Final continuous monitoring data were available between July 1, 2020 and March 22, 2021 at Muddy Fork at Mockingbird Valley Road. During this time period, the temperature data set was 86.8% complete and 100.0% of available values met the temperature criterion. The dissolved oxygen data set was 86.8% complete, average dissolved

oxygen was 9.4 mg/l, and 98.3% of available values met the water quality criteria. During this time period, the pH data set was 6.4% complete and 100% of available values met the pH criterion. The specific conductance record was 85.7% complete and values ranged from 71 uS/cm to 2,610 uS/cm.

Muddy Fork of Beargrass Creek at Mockingbird Valley Road has a very low complete record for pH during the 2021 water year (only 6% complete record). pH has been a historical problem at this site. USGS performed several sonde swaps at this location during the year but ran out of equipment to exchange due to repair and manufacturing delays. The sonde that was left on site recorded values as low as 4 and as high as 14 for pH. Due to this, little confidence was had for the validity of the data, and it was determined that removal of the date for this period was most accurate.

Quarterly Monitoring Results: At Muddy Fork at Mockingbird Valley Road, all four samples were collected under dry conditions. Average TSS concentrations were 4.25 mg/l. Average total nitrogen was 3.61 mg/l. The average oil and grease total for Muddy Fork at Mockingbird Valley Road was at or below the minimum detection limit of 2.50 mg/l.

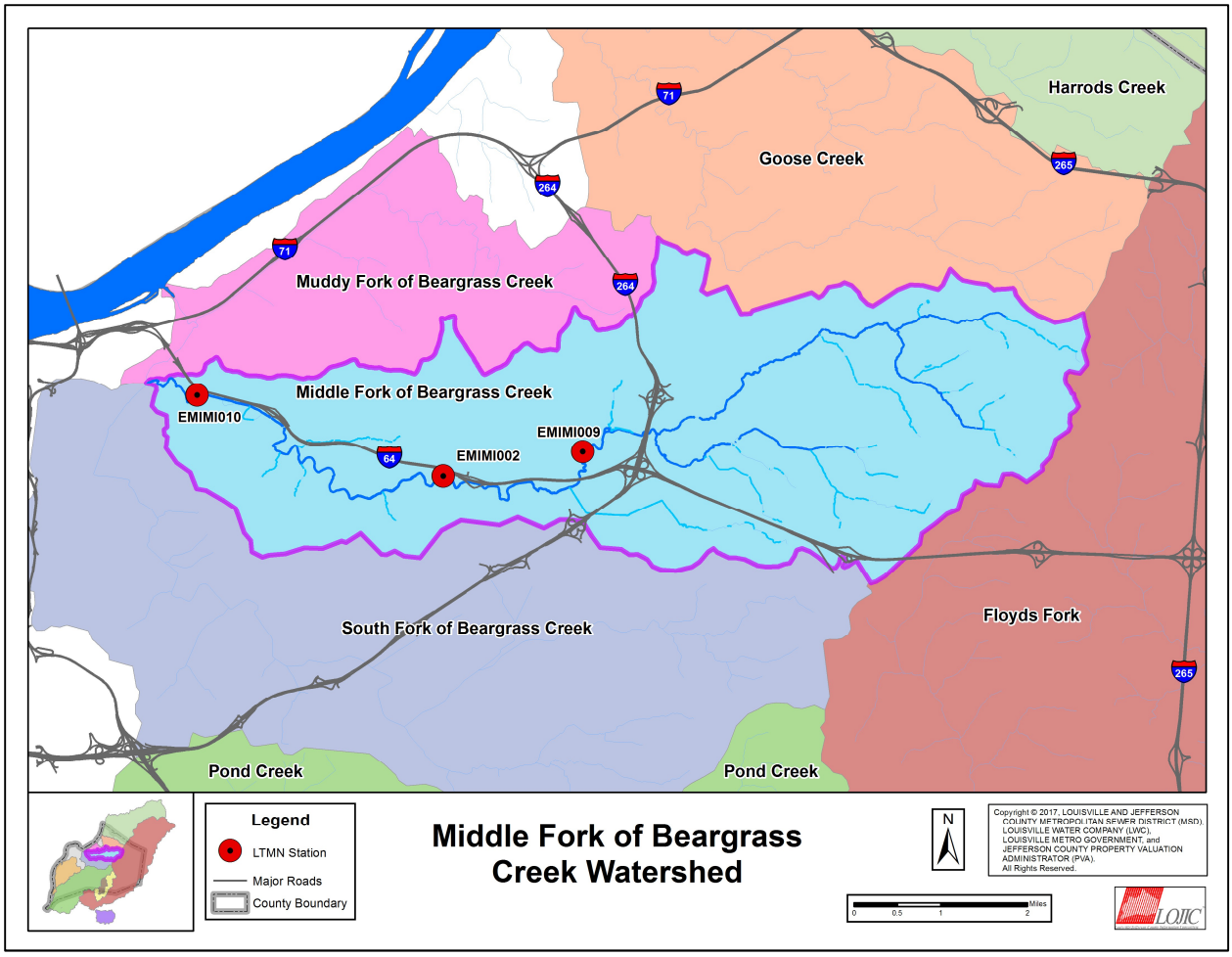
All quarterly samples were less than the hardness dependent chronic aquatic life criteria for copper.

Bacteria Monitoring Results: Average (geometric mean) concentrations of *E. coli* bacteria ranged from 245 MPN/100 ml to 732 MPN/100 ml in samples collected at Muddy Fork at Mockingbird Valley Road. The water quality criteria for *E. coli* were met in zero of six months during the recreational season in Muddy Fork of Beargrass Creek.

Biological Monitoring Results: Macro communities were rated as “poor,” based on data collected in Spring 2021. Fish communities were rated as “excellent,” based on data collected in both Summer 2020 and Spring 2021. Aquatic habitat quality was rated as “poor,” based on data collected in 2020 and 2021. Algal communities were rated as “good” in 2020 in the Muddy Fork of Beargrass Creek at Mockingbird Valley Road.

5.5.4. Middle Fork of Beargrass Creek Watershed

Figure 5.5.4 Middle Fork of Beargrass Creek Watershed



Watershed Description: The Middle Fork of Beargrass Creek is one of three streams that join to form the larger Beargrass Creek watershed. The small streams that eventually form the Middle Fork of Beargrass Creek originate in Middletown and Douglas Hills. The Middle Fork of Beargrass Creek flows west across St. Matthews before joining the South Fork of Beargrass Creek near Irish Hill. There are just over 25 square miles of land in the Middle Fork of Beargrass Creek. Prominent features of this watershed include Cherokee Park, Seneca Park and Cave Hill Cemetery. Combined sewers currently serve a portion of this part of Louisville.

Water quality data are collected at three locations in this watershed, listed from upstream to downstream: Browns Lane (EMIMI009), Old Cannons Lane (EMIMI002) and Lexington Road (EMIMI010). There are 15.2 square miles of land draining to the Browns Lane site, 18.9 square miles to the Old Cannons Lane site and 24.8 square miles to the Lexington Road site. Continuous monitoring data are collected at Old Cannons Lane and Lexington Road. Impervious surfaces cover about 23% of this watershed.

Continuous Monitoring Results: Final continuous monitoring data were available between July 1, 2020 and March 22, 2021 in the Middle Fork of Beargrass Creek at Old Cannons Lane and Lexington Road. During this time period, the temperature data set was 92.8% complete at Middle Fork of Beargrass Creek at Old Cannons Lane and 82.6% complete at Middle Fork of Beargrass Creek at Lexington Road with 100% of available values meeting the temperature criterion. At Old Cannons Lane, the dissolved oxygen record was 91.3% complete, average dissolved oxygen was 9.6 mg/l, and the dissolved oxygen criteria was met 98.8% of the days with a complete record. At Lexington Road, the dissolved oxygen record was 70.6% complete, average dissolved oxygen was 7.8 mg/l, and the dissolved oxygen criteria was met 78.1% of the days with a complete record. During this time period, the pH data set was 92.8% complete at Middle Fork of Beargrass Creek at Old Cannons Lane and 70.2% complete at Middle Fork of Beargrass Creek at Lexington Road and 100% of available values met the pH criterion. The specific conductance record was 92.5% complete at Middle Fork of Beargrass Creek at Old Cannons Lane and 76.2% complete at Middle Fork of Beargrass Creek at Lexington Road. Specific conductance ranged from 77 uS/cm to 3,920 uS/cm at these two sites.

Quarterly Monitoring Results: At the Middle Fork of Beargrass Creek at Old Cannons Lane and Lexington Road, all four samples were collected under dry conditions. At the Middle Fork of Beargrass Creek at Browns Lane, all five samples were collected under dry conditions (an additional sample was collected during the 4th quarter of 2020). Average TSS concentrations were 3.50 mg/l at Old Cannons Lane, 7.90 mg/l at Browns Lane, and 5.62 mg/l at Lexington Road. Average total nitrogen was 1.88 mg/l at Old Cannons Lane, 2.08 mg/l at Browns Lane, and 2.06 mg/l at Lexington Road. The average oil and grease total was at or below the minimum detection limit of 2.50 mg/l for all three sites.

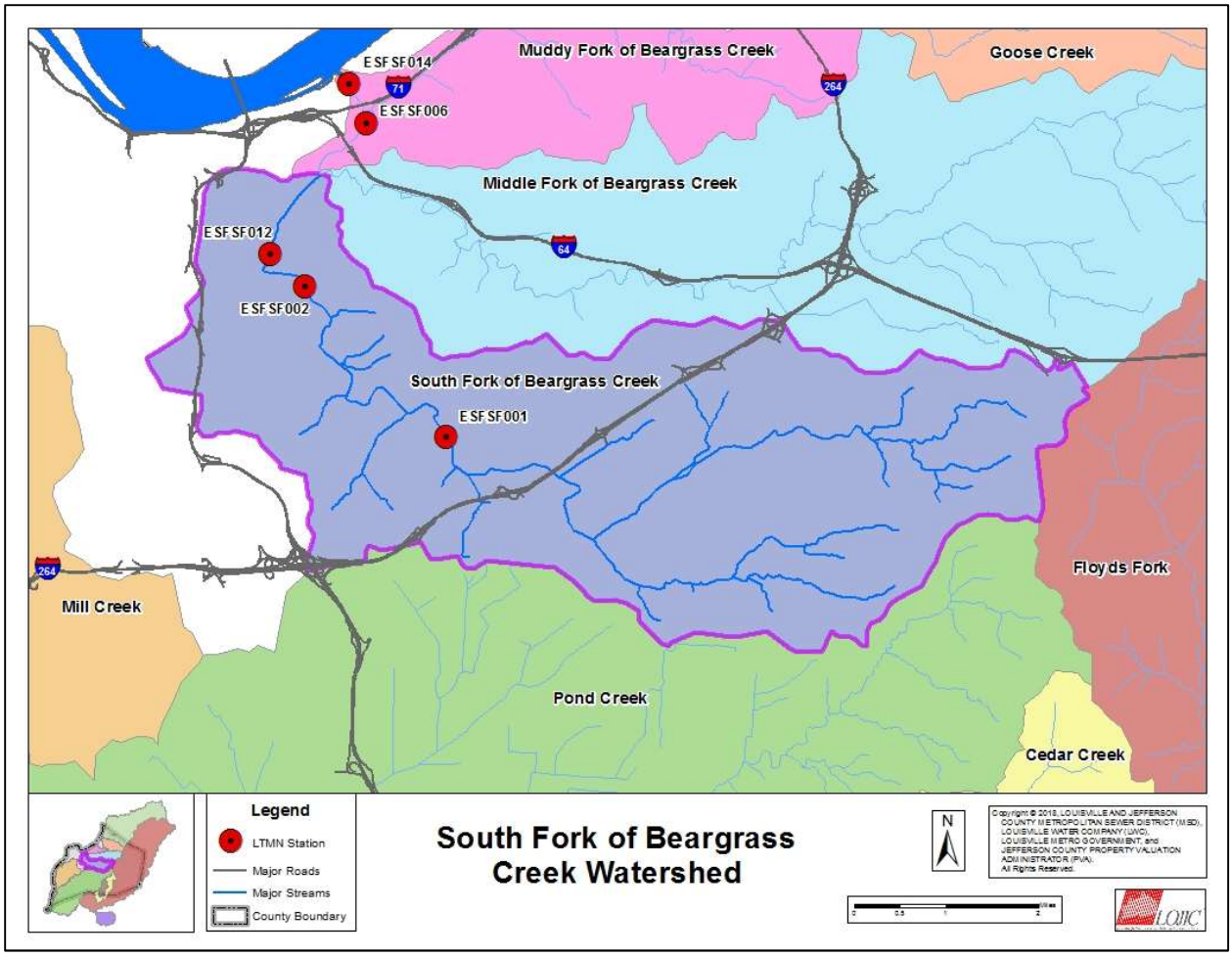
All quarterly samples were less than the hardness dependent chronic aquatic life criteria for copper.

Bacteria Monitoring Results: Average (geometric mean) concentrations of *E. coli* bacteria ranged from 195 MPN/100 ml to 2,059 MPN/100 ml in samples collected at three monitoring locations in the Middle Fork of Beargrass Creek watershed. The water quality criteria for *E. coli* were met in zero of six months during the recreational season in Browns Lane, Old Cannons Lane, and Lexington Road.

Biological Monitoring Results: Macro communities were rated as “poor” at Old Cannons Lane and Browns Lane and “fair” at Lexington Road based on data collected in Spring 2021. Fish communities were rated as “fair” at Browns Lane, “good” at Old Cannons Lane and “excellent” at Lexington Road, based on data collected in Summer 2020. For the data collected in Spring 2021, fish communities were rated as “excellent” at Old Cannons Lane and Lexington Road and “fair” at Browns Lane. Aquatic habitat quality was rated as “poor” at Browns Lane and Lexington Road, and “fair” at Old Cannons Lane, based on data collected in 2020. For the data collected in 2021, aquatic habitat was rated at “fair/good” for Old Cannons Lane and “fair” at Browns Lane and Lexington Road. Algal communities were rated as “excellent” in 2020 at Brown’s Lane and Lexington Road, and “good” at Old Cannons Lane.

5.5.5 South Fork of Beargrass Creek Watershed

Figure 5.5.5 South Fork of Beargrass Creek Watershed



Watershed Description: The South Fork of Beargrass Creek is one of three streams that join to form the Beargrass Creek watershed. The small streams that eventually form the South Fork of Beargrass Creek originate in Jeffersontown and Hurstbourne Acres. The South Fork of Beargrass Creek flows west across Buechel before joining the Middle Fork of Beargrass Creek near Irish Hill. The South Fork then joins the Muddy Fork to become Beargrass Creek near the intersection of Interstates 71 and 64. There are about 25 square miles of land in the South Fork of Beargrass Creek watershed. Some streams in this watershed were straightened and several miles were enclosed in concrete channels in the past to reduce flooding.

MSD monitors water quality at five locations in this watershed, listed from upstream to downstream: Trevilian Way (ESFSF001), Schiller Avenue Ramp (ESFSF002), Breckinridge Street (ESFSF012), Brownsboro Road (ESFSF006), and River Road (ESFSF014).

There are 17.2 square miles of land draining to the Trevilian Way site. At the lower end, 22.8 square miles of land drain to the Schiller Avenue site. There are 51.5 square miles of land draining to the Brownsboro Road site, which is below the confluence with the Middle Fork of Beargrass Creek. Impervious surfaces range from 28% to 32% at these monitoring sites.

Continuous Monitoring Results: Final continuous monitoring data were available between July 1, 2020 and March 22, 2021 at three sites in the South Fork Beargrass Creek watershed. During this time period, the temperature data set at Trevilian Way was 60.0% complete, 82.3% complete at Breckinridge Street, and River Road was 91.7% complete and 100% of available values met the temperature water quality criterion for all sites. At Schiller Avenue Ramp, no final data were available for this time period; rather, the sonde and water quality monitoring site was moved to the South Fork of Beargrass Creek at Breckinridge Street (ESFSF012).

At Trevilian Way, the dissolved oxygen data set was 83.8% complete, average dissolved oxygen was 8.8 mg/l, and the dissolved oxygen criteria was met 97.7% of the days with a complete record. At Breckinridge Street, the dissolved oxygen data set was 55.8% complete, average dissolved oxygen was 9.3 mg/l and the dissolved oxygen criteria was met 95.3% of the days with a complete record. At the River Road station (ESFSF014) in the downstream portion of the watershed, the dissolved oxygen data set was 62.3% complete, average dissolved oxygen was 8.5 mg/l, and the dissolved oxygen criteria was met 77.6% of the days with a complete record. The River Road station is influenced by backwater from the Ohio River, which may contribute to frequent stagnant conditions and low dissolved oxygen at this monitoring site. The dissolved oxygen data set at Schiller Avenue Ramp was not available for this time period.

At Trevilian Way, the pH data set was 83.8% complete and 100% of available values met the pH criterion. At Breckinridge Street, the pH data were 63.0% complete and 100% of available values met the pH criterion. At River Road, the pH data set was 75.1% complete and 100% of available values met the pH criterion. The specific conductance record was 83.8% complete at Trevilian Way, 58.9% complete at Breckinridge Street, and 89.1% complete at River Road. Specific conductance ranged from 64 uS/cm to 3,810 uS/cm for these three sites.

Beargrass Creek at River Road had the lowest percent of dissolved oxygen criteria met of complete record days. This is due to the frequent fowling that occurs at the sonde site due to backwater from the Ohio River, which leads to historically low dissolved oxygen and lower water quality criteria percentage statistics.

Quarterly Monitoring Results: At South Fork of Beargrass Creek at Trevilian Way, Brownsboro Road, and Breckinridge Street, four samples were collected under dry conditions. Average TSS concentrations were 8.50 mg/l at Trevilian Way, 4.75 mg/l at Brownsboro Road, and 2.38 mg/l at Breckinridge Street. Average total nitrogen was 2.00 mg/l at Trevilian Way, 2.19 mg/l at Brownsboro Road, and 2.00 mg/l at Breckinridge Street. The average oil and grease total for South Fork of Beargrass Creek at Trevilian Way, Brownsboro Road, and at Breckinridge Street was at or below the minimum detection limit of 2.50 mg/l.

Quarterly metals samples were compared to hardness dependent chronic aquatic life criteria. All quarterly samples for metals were less than chronic aquatic life criteria for copper, with the exception of one sample collected under dry conditions in South Fork of Beargrass Creek at

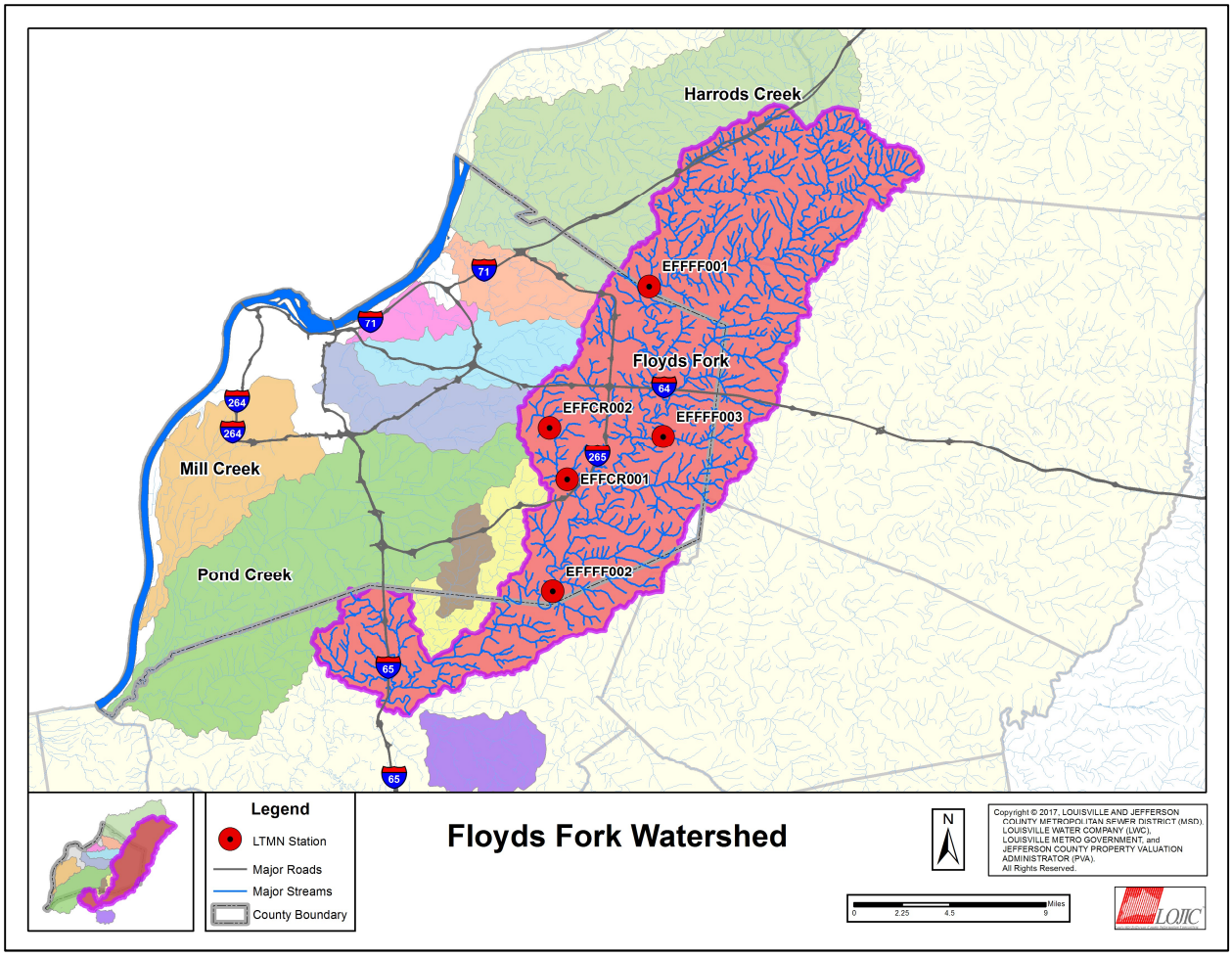
Breckinridge Street in July 2020, which had an elevated copper concentration (11 ug/l) that exceeded the acute and chronic aquatic life criterion.

Bacteria Monitoring Results: Average (geometric mean) concentrations of *E. coli* bacteria ranged from 136 MPN/100 ml to 3,470 MPN/100 ml in samples collected at three monitoring locations in the South Fork of Beargrass Creek watershed. The water quality criteria for *E. coli* was met in zero of six months during the recreational season in Trevilian Way, Brownsboro Road, and Breckinridge Street.

Biological Monitoring Results: Macro communities were rated as "poor" at Trevilian Way, Brownsboro Road, and East Breckinridge Street, based on data collected in Spring 2021. Fish communities were rated as "fair" at Trevilian Way, Brownsboro Road, and East Breckenridge Street, based on data collected in Summer 2020. For the data collected in Spring 2021, fish communities were rated as "fair" at Trevilian way and East Breckenridge Street, and "poor" at Brownsboro Road. Aquatic habitat quality was rated as "poor" at Trevilian Way, Brownsboro Road, and East Breckenridge Street, based on data collected in 2020. For data collected in 2021, aquatic habitat was rated as "poor" at Trevilian Way and East Breckenridge Street, and "poor/fair" at Brownsboro Road. Algal communities were rated as "good" in 2020 at Trevilian Way, Brownsboro Road, and East Breckenridge Street.

5.5.6 Floyds Fork Watershed

Figure 5.5.6 Floyds Fork Watershed



Watershed Description: The small streams that form Floyds Fork originate in Oldham, Henry, and Shelby counties. Floyds Fork flows south through Oldham County, eastern Jefferson County, and northern Bullitt County where it drains into the Salt River near Shepherdsville. This watershed drains 257 square miles and is the largest metro area watershed. Approximately 104 square miles of the Floyds Fork watershed lie within Jefferson County.

MSD monitors water quality at five locations in the Floyds Fork watershed. Along the main stem of Floyds Fork, monitoring stations are located at Ash Avenue (EFFFF001), Old Taylorsville Road (EFFFF003), and Bardstown Road (EFFFF002). The Ash Avenue site drains 80 square miles mostly in Henry and Oldham Counties. This monitoring location is downstream of the Ash Avenue wastewater treatment plant, which is operated by Oldham County. There are 138 square miles draining to the Old Taylorsville Road monitoring site (EFFFF003). This monitoring site is located downstream of the Floyds Fork Water Quality Treatment Center. There are 213 square miles draining to the Bardstown Road monitoring site (EFFFF002), near the border of Jefferson and

Bullitt Counties. There are two monitoring sites on Chenoweth Run, at Ruckriegel Parkway (EFFCR002) and Gelhaus Lane (EFFCR001), which drain 5.5 and 11.6 square miles, respectively. The Gelhaus Lane monitoring site is located downstream of the Jeffersontown Water Quality Treatment Center (WQTC), which was taken offline in January 2016.

Continuous Monitoring Results: Final continuous monitoring data were available between July 1, 2020 and March 22, 2021 at five sites in the Floyds Fork watershed. During this time period, the temperature data set was 57.7% complete at Ash Avenue, 79.2% at Old Taylorsville Road, 100% at Bardstown Road, 93.2% at Chenoweth Run at Ruckriegel Parkway, and 72.1% at Chenoweth Run at Gelhaus Lane. For Floyds Fork at Ash Avenue, Floyds Fork at Bardstown Road, Floyds Fork at Old Taylorsville Road, and Chenoweth Run at Ruckriegel Parkway, 100% of available values met the temperature criterion. 99.5% of available values met the temperature criterion at Chenoweth Run at Gelhaus Lane.

In Floyds Fork at Ash Avenue, the dissolved oxygen record was 49.1% complete, average dissolved oxygen was 8.3 mg/l, and the dissolved oxygen criteria was met 98.5% of the days with a complete record. In Floyds Fork at Old Taylorsville Road, the dissolved oxygen data set was 57.0% complete, average dissolved oxygen was 8.7 mg/l, and the dissolved oxygen criteria were met 98.0% of the days with a complete record. In Floyds Fork at Bardstown Road, the dissolved oxygen data set was 55.1% complete, average dissolved oxygen was 10.1 mg/l, and the dissolved oxygen criteria were met 97.3% of the days with a complete record. In Chenoweth Run at Ruckriegel Parkway, the dissolved oxygen data set was 67.5% complete, average dissolved oxygen was 9.7 mg/l, and the dissolved oxygen criteria was met 100% of the days with a complete record. In Chenoweth Run at Gelhaus Lane, the dissolved oxygen data set was 70.9% complete, average dissolved oxygen was 9.6 mg/l, and the dissolved oxygen criteria was met 100% of the days with a complete record.

During this time period, the pH data set was 47.2% complete at Ash Avenue, 67.9% at Old Taylorsville Road, 69.8% at Bardstown Road, 75.1% at Chenoweth Run at Ruckriegel Parkway, and 43.4% at Chenoweth Run at Gelhaus Lane. For Floyds Fork at Ash Avenue, Floyds Fork at Old Taylorsville Road, Floyds Fork at Bardstown Road, and Chenoweth Run at Ruckriegel Parkway, 100% of available values met the pH criterion. 98.3% of available values met the pH criterion at Chenoweth Run at Gelhaus Lane.

In Floyds Fork at Ash Avenue, the specific conductance record was 52.1% complete, 77.7% complete at Old Taylorsville Road, and 90.9% complete at Bardstown Road. Specific conductance values ranged from 144 uS/cm to 919 uS/cm. In Chenoweth Run, the record was 92.1% complete at Ruckriegel Parkway and 70.2% complete at Gelhaus Lane. Specific conductance values ranged from 53 uS/cm to 6,270 uS/cm in Chenoweth Run.

At Floyds Fork at Bardstown Road, several steps were taken to improve the low complete record that was occurring at this site. The site experienced issues due to outdated equipment and the general location of the sonde. Deployment of the sonde was switched to a hanging pipe and the equipment was changed from hydrolab to EXO (including a wiper) on 4/28/2021. After this equipment install, the complete record has since improved.

Quarterly Monitoring Results: At Floyds Fork at Ash Avenue, Floyds Fork at Old Taylorsville Road, Floyds Fork at Bardstown Road, Chenoweth Run at Ruckriegel Parkway, and Chenoweth

Run at Gelhaus Lane all four samples were collected under dry conditions. Average TSS concentrations were 9.69 mg/l at Floyds Fork at Ash Avenue, 4.62 mg/l at Floyds Fork at Old Taylorsville Road, 4.50 mg/l at Floyds Fork at Bardstown Road, 21.38 mg/l at Chenoweth Run at Ruckriegel Parkway, and 6.12 mg/l at Chenoweth Run at Gelhaus Lane. Average total nitrogen was 2.53 mg/l at Floyds Fork at Ash Avenue, 2.74 mg/l at Floyds Fork at Old Taylorsville Road, 2.94 mg/l at Floyds Fork at Bardstown Road, 1.36 mg/l at Chenoweth Run at Ruckriegel Parkway, and 1.04 mg/l at Chenoweth Run at Gelhaus Lane. The average oil and grease total for Floyds Fork at Old Taylorsville Road and Chenoweth Run at Ruckriegel Parkway was 1.50 mg/l. Average oil and grease total was at or below the minimum detection limit of 2.50 mg/l at Floyds Fork at Ash Avenue, Floyds Fork at Old Taylorsville Road, Floyds Fork at Bardstown Road, Chenoweth Run at Ruckriegel Parkway, and Chenoweth Run at Gelhaus Lane.

All quarterly samples were less than the hardness dependent chronic aquatic life criteria for copper.

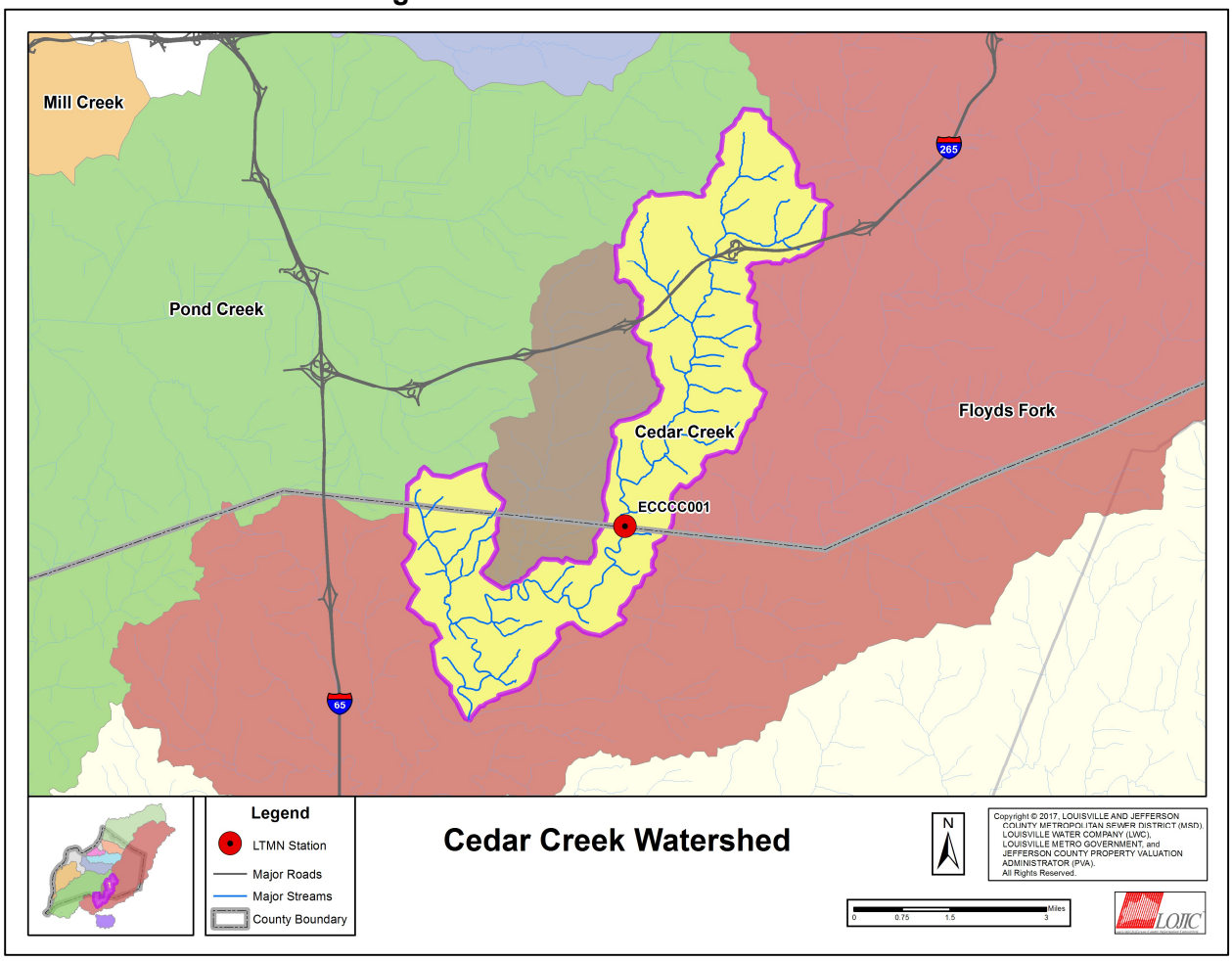
Bacteria Monitoring Results: Average (geometric mean) concentrations of *E. coli* bacteria ranged from 110 MPN/100 ml to 1,152 MPN/100 ml in samples collected at five monitoring locations in the Floyds Fork watershed. The water quality criteria for *E. coli* were met in one of six months during the recreational season in Floyd's Fork at Ash Avenue and zero out of six months in Floyd's Fork at Old Taylorsville Road, Floyd's Fork at Bardstown Road, Chenoweth Run at Ruckriegel Parkway, and Chenoweth Run at Gelhaus Lane.

Biological Monitoring Results: Macro communities were rated as "excellent" in Floyds Fork at Ash Avenue, Floyds Fork at Bardstown Road, and Floyds Fork at Old Taylorsville Road, based on data collected in Spring 2021. Fish communities were rated as "excellent" in Floyds Fork at Ash Avenue, Bardstown Road, and Old Taylorsville Road, based on data collected in Summer 2020. For the data collected in Spring 2021, fish communities were rated as "good" at Ash Avenue and "excellent" at Bardstown Road and Old Taylorsville Road. Aquatic habitat quality was rated as "fair" at Ash Avenue and Bardstown Road, and "good" at Old Taylorsville Road, based on data collected in 2020. For data collected in 2021, aquatic habitat was rated as "fair" at Ash Avenue, and "good" at Bardstown Road and Old Taylorsville Road. Algal communities were rated as "good" in 2020 in Floyds Fork at Ash Avenue, "excellent" in Floyds Fork at Old Taylorsville Road, and "fair" at Floyds Fork at Bardstown Road.

Macro communities were rated as "fair" at Chenoweth Run at Gelhaus Lane and "poor" at Ruckriegel Parkway, based on data collected in Spring 2021. Fish communities were rated as "good" at Gelhaus Lane and "fair" at Ruckriegel Parkway, based on data collected in Summer 2020. For data collected in Spring 2021, fish communities were rated as "good" at both sites. Aquatic habitat quality was rated as "fair" in Chenoweth Run at Ruckriegel Parkway and at Gelhaus Lane, based on data collected in 2020. For data collected in 2021, aquatic habitat was rated as "poor/fair" for Gelhaus Lane and "fair" for Ruckriegel Parkway. In Chenoweth Run, algal communities were rated as "excellent" in 2020 at both Gelhaus Lane and Ruckriegel Parkway.

5.5.7 Cedar Creek Watershed

Figure 5.5.7 Cedar Creek Watershed



Watershed Description: The small streams that eventually form Cedar Creek in Jefferson County originate in the Fern Creek area and flow south. Cedar Creek empties into Floyds Fork in Bullitt County east of Shepherdsville. There are 11.1 square miles of land draining to the Cedar Creek monitoring site at Thixton Lane (ECCCC001). About 10% of this watershed is covered by impervious surfaces. This monitoring site is located downstream of the Cedar Creek WQTC.

Continuous Monitoring Results: Final continuous monitoring data were available between July 1, 2020 and March 22, 2021 in Cedar Creek at Thixton Lane. During this time period in Cedar Creek at Thixton Lane, the temperature data set was 91.3% complete and 100% of available values met the temperature criterion. The dissolved oxygen data set was 86.4% complete, average dissolved oxygen was 9.7 mg/l, and 99.6% of available values met the water quality criteria. During this time period in Cedar Creek at Thixton Lane, the pH data set was 91.3% complete and 100% of available values met the pH criterion. The specific conductance record was 84.2% complete and values ranged from 65 uS/cm to 1,220 uS/cm.

Quarterly Monitoring Results: At Cedar Creek at Thixton Lane, four samples were collected under dry conditions. Average TSS concentrations were 5.38 mg/l. Average total nitrogen was 4.72 mg/l. The average oil and grease total for Cedar Creek at Thixton Lane was at or below the minimum detection limit of 2.50 mg/l.

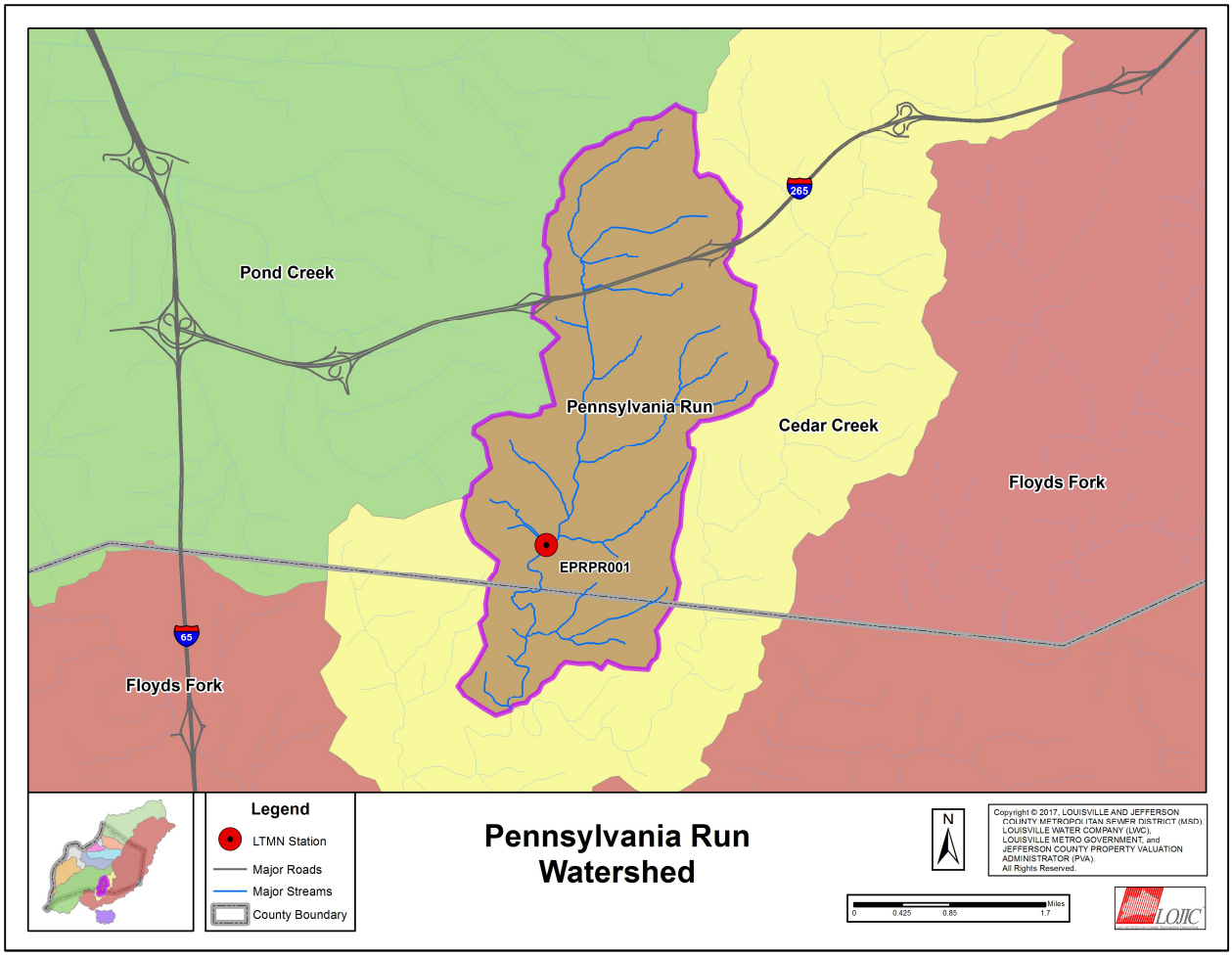
All quarterly samples were less than the hardness dependent chronic aquatic life criteria for copper.

Bacteria Monitoring Results: Average (geometric mean) concentrations of *E. coli* bacteria ranged from 246 MPN/100 ml to 773 MPN/100 ml in samples collected at Cedar Creek at Thixton Lane. The water quality criteria for *E. coli* were met in zero of six months during the recreational season in Cedar Creek at Thixton Lane.

Biological Monitoring Results: Macro communities were rated as “fair,” based on data collected in Spring 2021. Fish communities were rated as “excellent,” based on data collected in Summer 2020 and Spring 2021. Aquatic habitat quality was rated as “good” at Thixton Lane, based on data collected in both 2020 and 2021. Algal communities were rated as “fair” in 2020 in Cedar Creek at Thixton Lane.

5.5.8 Pennsylvania Run Watershed

Figure 5.5.8 Pennsylvania Run Watershed



Watershed Description: The small streams that eventually form Pennsylvania Run originate in the Highview area and flow south into McNeely Lake. Pennsylvania Run empties into Cedar Creek in Bullitt County east of Zoneton. MSD monitors water quality in Pennsylvania Run at Mount Washington Road (EPRPR001). This site drains 6.4 square miles of land and is located below McNeely Lake. Almost 9% of this watershed is covered by impervious surfaces.

Continuous Monitoring Results: Final continuous monitoring data were available between July 1, 2020 and March 22, 2021 in Pennsylvania Run at Mount Washington Road. During this period, the temperature data set was 96.6% complete and 100% of available values met the temperature criterion. The dissolved oxygen data set was 58.9% complete, average dissolved oxygen was 10.3 mg/l and the dissolved oxygen criteria were met 95.5% of the days with a complete record. During this period, the pH data set was 58.1% complete and 100% of available values met the pH criterion. The specific conductance record was 84.9% complete and values ranged from 75 uS/cm to 630 uS/cm.

Quarterly Monitoring Results: At Pennsylvania Run at Mount Washington Road, four samples were collected under dry conditions. Average TSS concentrations were 3.88 mg/l. Average total nitrogen was 1.37 mg/l. The average oil and grease total for Pennsylvania Run at Mount Washington Road was at or below the minimum detection limit of 2.50 mg/l.

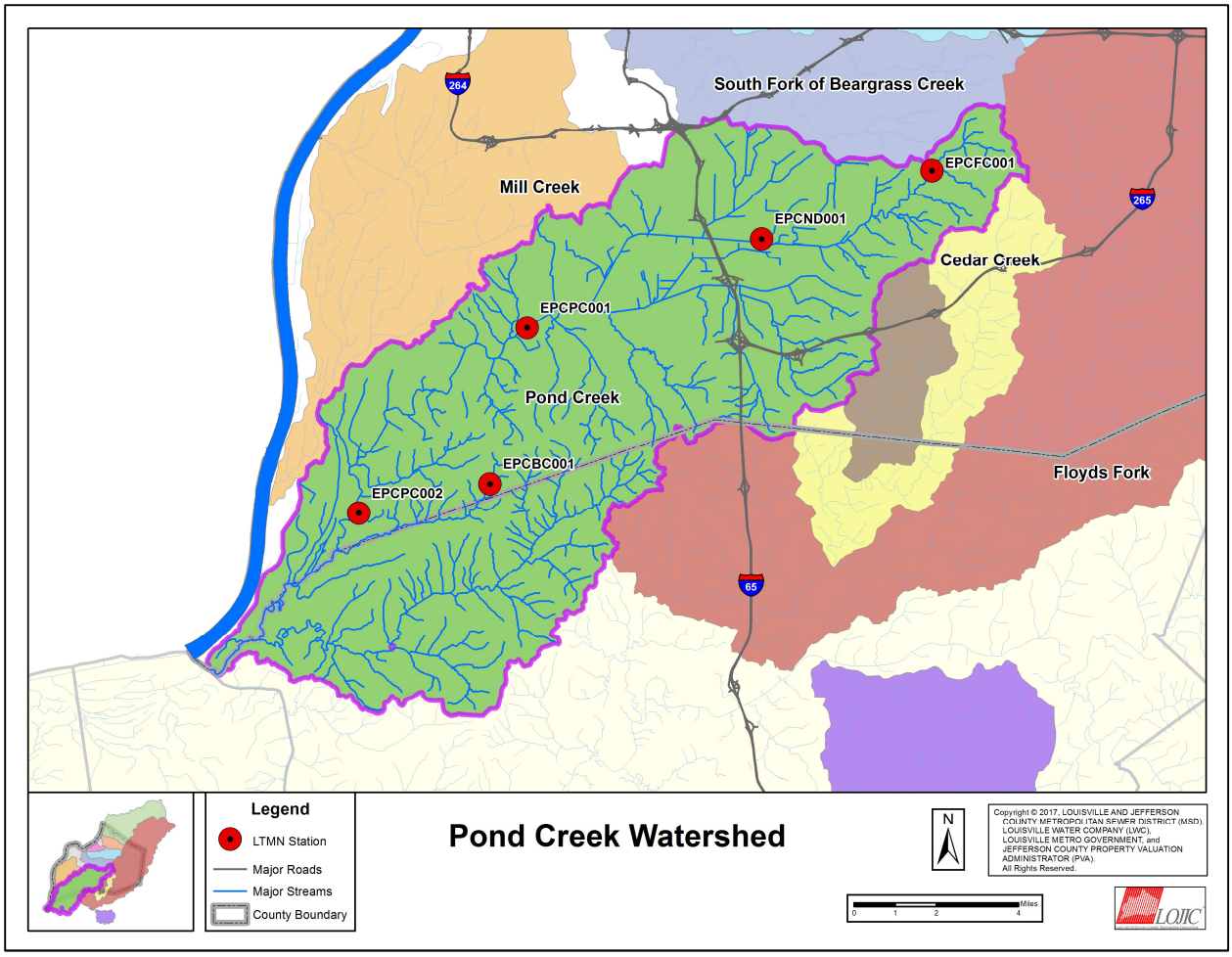
All quarterly samples were less than the hardness dependent chronic aquatic life criteria for copper.

Bacteria Monitoring Results: Average (geometric mean) concentrations of *E. coli* bacteria ranged from 205 MPN/100 ml to 1,387 MPN/100 ml in samples collected at Pennsylvania Run at Mount Washington Road. The water quality criteria for *E. coli* were met in zero of six months during the recreational season in Pennsylvania Run at Mount Washington Road.

Biological Monitoring Results: Macro communities were rated as “fair,” based on data collected in Spring of 2021. Fish communities were rated “excellent” based on data collected in Summer 2020 and Spring 2021. Aquatic habitat quality was rated as “fair,” based on data collected in 2020 and 2021. Algal communities were rated as “good” in 2020 in Pennsylvania Run at Mt. Washington Road.

5.5.9 Pond Creek Watershed

Figure 5.5.9 Pond Creek Watershed



Watershed Description: The Pond Creek watershed drains about 126 square miles in southwestern Louisville, where it flows into the Salt River near West Point. Approximately 89 square miles are located in Jefferson County and 37 square miles are located in Bullitt County. Small streams in Jeffersontown and Fern Creek join to form Northern Ditch and small streams in Highview and Okolona join to form Southern Ditch. Northern Ditch and Southern Ditch join to form Pond Creek near Outer Loop. The Louisville International Airport, the Outer Loop Landfill, large industrial complexes, and Jefferson Memorial Forest are prominent features in this watershed.

The relatively flat portion of the Pond Creek watershed was once a pond, which gradually filled with silt and debris to form a flat plain with standing water and dense swamp vegetation. Parts of this area were known as “wet woods” in the past. Starting in the 1850s, a system of man-made ditches was developed to reduce flooding and to increase the amount of land suitable for

development, which continued to expand rapidly before and after World War II. Many of the streams in Pond Creek watershed have been extensively channelized, and large flat areas are now drained by Northern Ditch and Southern Ditch.

MSD monitors water quality in this large watershed at five locations, listed from upstream to downstream: Fern Creek at Bardstown Road (EPCFC001), Northern Ditch at Preston Highway (EPCND001), Pond Creek at Manslick Road (EPCPC001), Pond Creek at Pendleton Road (EPCPC002) and Brier Creek at Bear Camp Road (EPCBC001). The amount of land draining to each site in square miles, respectively, is 3.5, 11.1, 64.0, 80.3 and 4.1. The amount of land area draining to the monitoring sites on Fern Creek, Northern Ditch and Pond Creek that is covered by impervious surfaces ranges from 16% to 24%. The land draining to Brier Creek at Bear Camp Road is quite different from the other four sites. This small tributary drains through steep, wooded areas southwest of Jefferson Memorial Forest, and land use consists mostly of forest and agriculture, and less than 1% is impervious surfaces.

Continuous Monitoring Results: Final continuous monitoring data were available between July 1, 2020 and March 22, 2021 at five monitoring sites in the Pond Creek watershed. During this time period, the temperature data set was 93.2% at Fern Creek at Bardstown Road, 100% at Northern Ditch at Preston Highway, 93.6% at Pond Creek at Manslick Road, 92.1% at Pond Creek at Pendleton Road, and 92.5% at Brier Creek at Bear Camp Road. At Fern Creek at Bardstown Road, Pond Creek at Manslick Road, Pond Creek at Pendleton Road, and Brier Creek at Bear Camp Road,100.0% of available values met the temperature criterion. At Northern Ditch at Preston Highway, 99.2% of available values met the temperature criterion.

In Fern Creek at Bardstown Road, the dissolved oxygen data set was 89.8% complete, average dissolved oxygen was 9.5 mg/l and the dissolved oxygen criteria was met 100% of the days with a complete record. In Northern Ditch at Preston Highway, the dissolved oxygen data set was 84.5% complete, average dissolved oxygen was 10.0 mg/l and the dissolved oxygen criteria was met 97.3% of the days with a complete record. In Pond Creek at Manslick Road, the dissolved oxygen data set was 81.9% complete, average dissolved oxygen was 9.0 mg/l and the dissolved oxygen criteria was met 86.2% of the days with a complete record. Further downstream, in Pond Creek at Pendleton Road, the dissolved oxygen data set was 86.4% complete, average dissolved oxygen was 8.8 mg/l and the dissolved oxygen criteria was met 95.2% of the days with a complete record. In Brier Creek at Bear Camp Road, the dissolved oxygen data set was 74.0% complete, average dissolved oxygen was 8.8 mg/l and the dissolved oxygen criteria was met 78.6% of the days with a complete record.

During this time period, the pH data set was 93.2% at Fern Creek at Bardstown Road, 65.7% at Northern Ditch at Preston Highway, 86.0% at Pond Creek at Manslick Road, 63.4% at Pond Creek at Pendleton Road, and 86.0% at Brier Creek at Bear Camp Road. At Fern Creek at Bardstown Road, Northern Ditch at Preston Highway, Pond Creek at Manslick Road, Pond Creek at Pendleton Road, and Brier Creek at Bear Camp Road, 100% of available values met the pH criterion. The specific conductance record was 92.8% at Fern Creek at Bardstown Road, 97.7% at Northern Ditch at Preston Highway, 91.7% at Pond Creek at Manslick Road, 92.1% at Pond Creek at Pendleton Road, and 91.7% at Brier Creek at Bear Camp Road. Specific conductance at these five sites ranged from 63 uS/cm to 3,000 uS/cm.

Quarterly Monitoring Results: At Fern Creek at Bardstown Road, Northern Ditch at Preston Highway, Pond Creek at Manslick Road, Pond Creek at Pendleton Road, and Brier Creek at Brier Camp Road all four samples were collected under dry conditions.

Average TSS concentrations were 8.00 mg/l at Fern Creek at Bardstown Road, 3.12 mg/l at Northern Ditch at Preston Highway, 29.75 mg/l at Pond Creek at Manslick Road, 12.88 mg/l at Pond Creek at Pendleton Road, and 2.12 mg/l at Brier Creek at Bear Camp Road. Average total nitrogen was 1.42 mg/l at Fern Creek at Bardstown Road, 1.12 mg/l at Northern Ditch at Preston Highway, 1.02 mg/l at Pond Creek at Manslick Road, 0.96 mg/l at Pond Creek at Pendleton Road, and 0.68 mg/l at Brier Creek at Bear Camp Road. The average oil and grease total was at or below the minimum detection limit of 2.50 mg/l at Fern Creek at Bardstown Road, Northern Ditch at Preston Highway, Pond Creek at Manslick Road, Pond Creek at Pendleton Road, and Brier Creek at Brier Camp Road

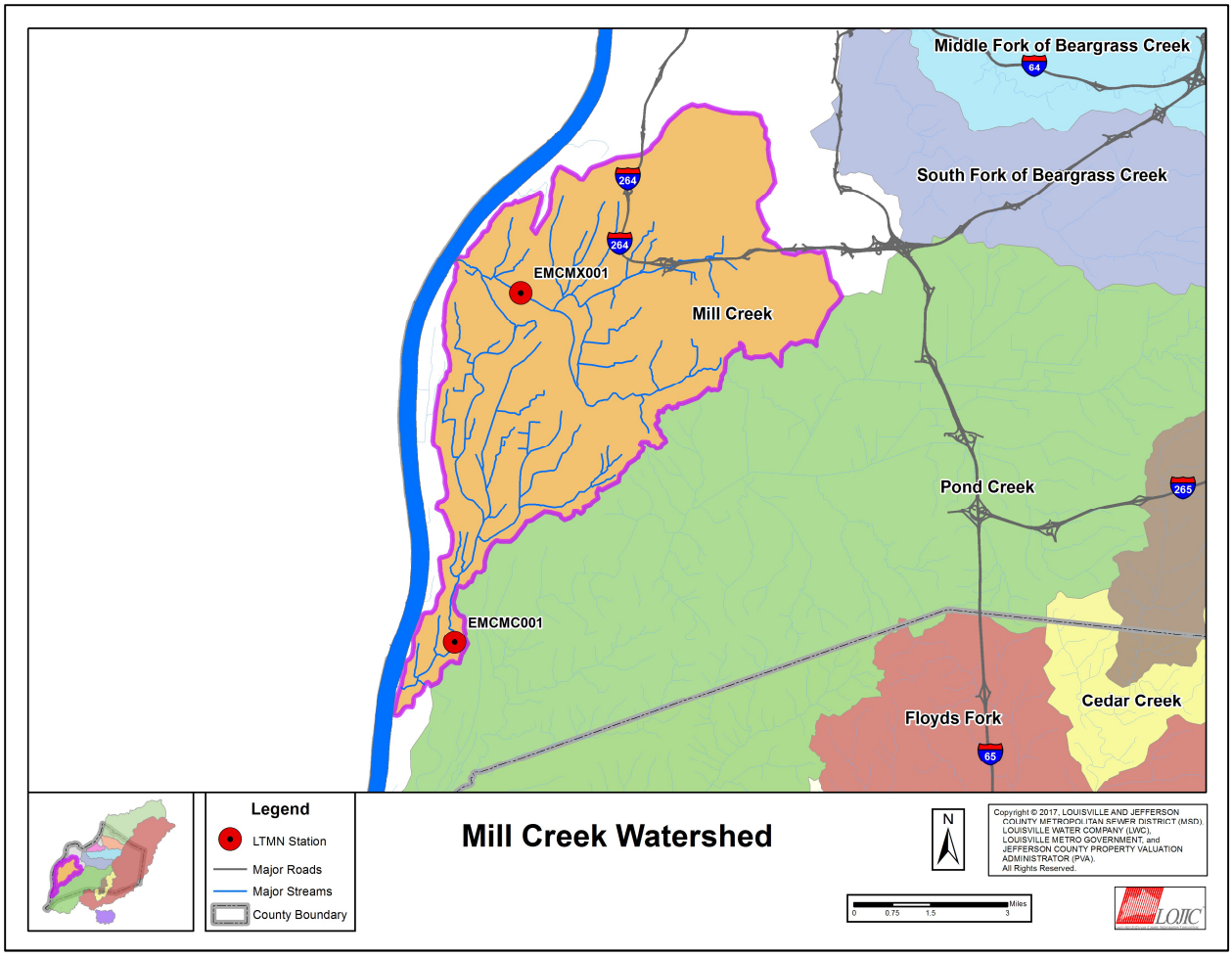
All quarterly samples were less than the hardness dependent chronic aquatic life criteria for copper.

Bacteria Monitoring Results: Average (geometric mean) concentrations of *E. coli* bacteria ranged from 66 MPN/100 ml to 1,370 MPN/100 ml in samples collected at five monitoring locations in the Pond Creek watershed. The water quality criteria for *E. coli* were met in zero of six months during the recreational season in Fern Creek at Bardstown Road, Northern Ditch at Preston Highway, Pond Creek at Manslick Road, Pond Creek at Pendleton Road, and Brier Creek at Brier Camp Road.

Biological Monitoring Results: Macro communities were rated as “poor” in Fern Creek at Old Bardstown Road and Pond Creek at Pendleton Road, and “fair” in Northern Ditch at Preston Highway, Pond Creek at Manslick Road, and Brier Creek at Bear Camp Road, based on data collected in Spring 2021. Fish communities were rated as “fair” in Fern Creek at Old Bardstown Road and Pond Creek at Pendleton Road, “good” at Northern Ditch at Preston Highway and Brier Creek at Bear Camp Road, and “poor” at Pond Creek at Manslick Road, based on data collected in Summer 2020. For data collected in Spring 2021, fish communities were rated as “poor” in Fern Creek at Bardstown Road, “excellent” in Northern Ditch at Preston Highway, “fair” in Pond Creek at Manslick Road and Pond Creek at Pendleton Road, and “good” at Brier Creek at Bear Camp Road. Aquatic habitat quality was rated as “poor” at Brier Creek at Bear Camp Road, Northern Ditch at Preston Highway, Pond Creek at Manslick Road, Pond Creek at Pendleton Road, and Fern Creek at Old Bardstown Road, based on data collected in 2020. For data collected in 2021, aquatic habitat was rated as “poor” at Fern Creek at Bardstown Road, Pond Creek at Manslick Road, Pond Creek at Pendleton Road, and Brier Creek at Bearcamp Road, and “fair” at Northern Ditch at Preston Highway. Algal communities were rated as “good” in 2020 in Fern Creek at Old Bardstown Road, “excellent” in Northern Ditch at Preston Highway and Brier Creek at Bear Camp Road, “poor” Pond Creek at Manslick Road, and “fair” in Pond Creek at Pendleton Road.

5.5.10 Mill Creek Watershed

Figure 5.5.10 Mill Creek Watershed



Watershed Description: The Mill Creek watershed drains about 34 square miles in western Louisville, near the Ohio River. The northern part of the watershed includes streams that drain to the Mill Creek Cutoff, which flows directly into the Ohio River near Shively. The southern part of the watershed flows south through Pleasure Ridge Park and then into the Ohio River near Watson Lane. Many of the streams in this watershed have been straightened or channelized in the past to reduce flooding and to increase the amount of land suitable for development.

MSD collects quarterly and biological samples in Mill Creek Cutoff at Cane Run Road (EMCMX001) and Mill Creek at Orell Road (EMCMC001). MSD monitors water quality continuously in Mill Creek at Orell Road; Mill Creek Cutoff at Cane Run Road has a flow gage but not a water quality sonde. There are 24.4 square miles draining to Mill Creek Cutoff at Cane Run Road and about 38% of the land in this subwatershed is covered by impervious surfaces. There are 13.5 square miles draining to Mill Creek at Orell Road and about 21% of the land in this subwatershed is covered by impervious surfaces.

Continuous Monitoring Results: Final continuous monitoring data were available between July 1, 2020 and March 22, 2021 in Mill Creek at Orell Road. During this time period, no data were available for Mill Creek Cutoff at Cane Run. During this time period for Mill Creek at Orell Road, the temperature data set was 28.3% complete and 100% of available values met the temperature criterion. The dissolved oxygen data set was 25.3% complete, average dissolved oxygen was 12.7 mg/l, and the dissolved oxygen criteria was met 100% of the days with a complete record. During this time period, the pH data set was 24.9% complete and 98.5% of available values met the pH criterion. The specific conductance data were 28.3% complete and ranged from 43 uS/cm to 1,260 uS/cm.

Mill Creek at Orell Road during the drier months of the year (July-December) has historically low flow, and the sonde meter will frequently come out of the water and fail to record values. Due to this, Mill Creek at Orell Road has significantly lower complete record for the first half of the water year. Data improves starting in the first quarter of 2021.

Quarterly Monitoring Results: At Mill Creek Cutoff at Cane Run Road four samples were collected under dry conditions. During the 4th Quarter sampling in 2020, Mill Creek at Orell Road had zero flow and no sampling was able to be conducted. Only three samples were collected during the year for Mill Creek at Orell Road, and all three samples were collected under dry conditions. Average TSS concentrations were 17.00 mg/l and 10.33 mg/l, respectively, at Cane Run Road and Orell Road. Average total nitrogen was 0.89 mg/l at Cane Run Road and 7.35 mg/l at Orell Road. The average oil and grease total for Mill Creek Cutoff at Cane Run Road and Mill Creek at Orell Road was at or below the minimum detection limit of 2.50 mg/l.

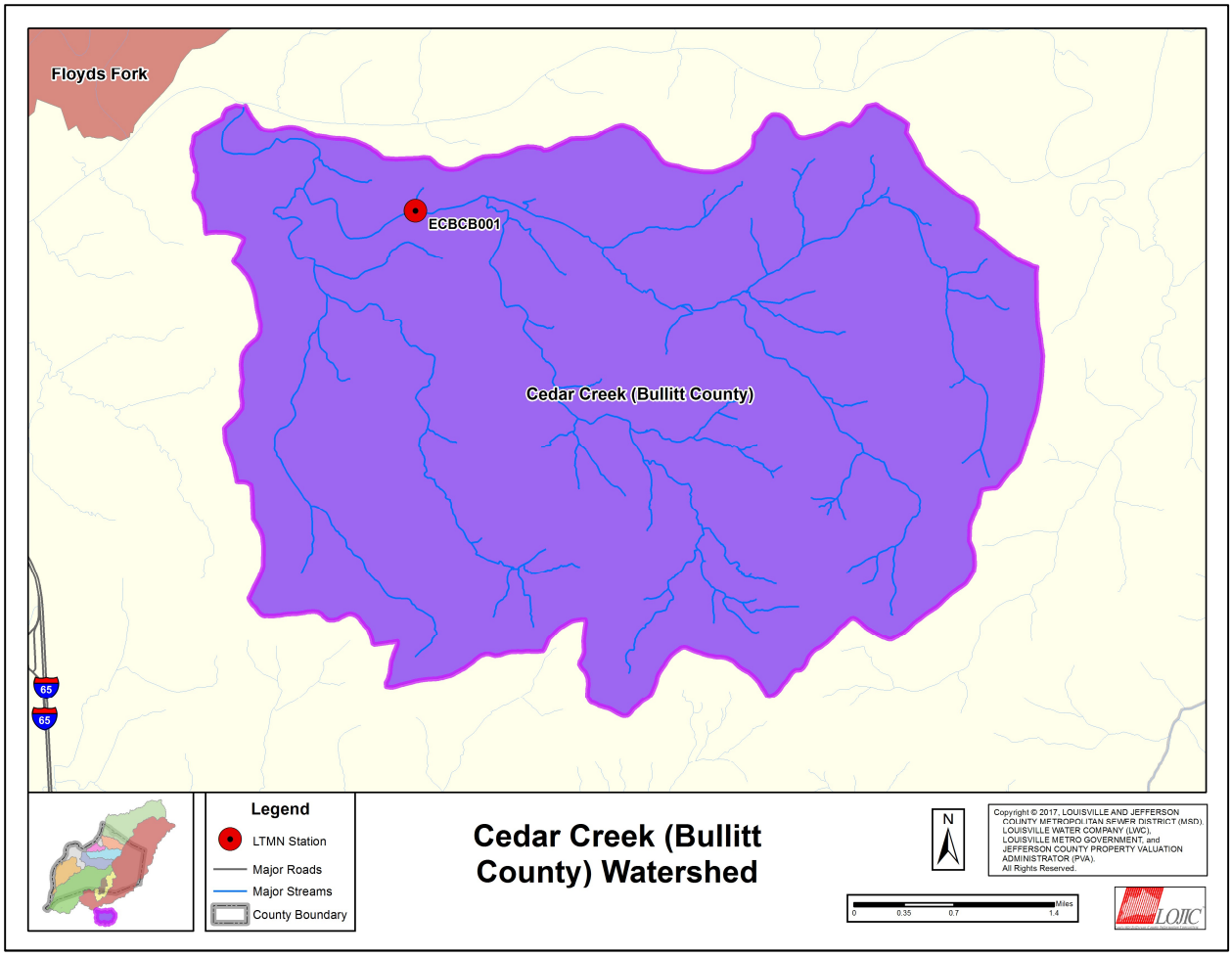
All quarterly samples were less than the hardness dependent chronic aquatic life criteria for copper.

Bacteria Monitoring Results: Average (geometric mean) concentrations of *E. coli* bacteria ranged from 104 MPN/100 ml to 1,693 MPN/100 ml in samples collected at two monitoring locations in the Mill Creek watershed. The water quality criteria for *E. coli* were met in one of six months during the recreational season at Old Cane Run Road and zero of six months at Orell Road.

Biological Monitoring Results: Macro communities were rated as “poor” in the Mill Creek Cutoff at Cane Run Road and “fair” at Mill Creek at Orell Road, based on data collected in Spring 2021. Fish communities were rated as “poor” in the Mill Creek Cutoff at Cane Run Road and “fair” at Mill Creek at Orell Road, based on data collected in Summer 2020. For data collected in Spring 2021, fish communities were rated as “fair” at both Mill Creek sites. Aquatic habitat quality at both locations was rated as “poor,” based on data collected in 2020 and also for the data collected in 2021. Algal communities were rated as “good” in 2020 in the Mill Creek Cutoff and “poor” in 2020 in Mill Creek at Orell Road.

5.5.11 Cedar Creek Watershed (Bullitt County)

Figure 5.5.11 Cedar Creek (Bullitt County) Watershed



Watershed Description: The small streams that eventually form Cedar Creek originate in the Cedar Grove area in Bullitt County. Cedar Creek flows north and empties into the Salt River east of Shepherdsville.

MSD monitors water quality in Cedar Creek at State Highway 1442 (ECBCB001). This site drains 12.1 square miles of land. This watershed is mostly forested and impervious area covers only 0.2% of the watershed.

Continuous Monitoring Results: Final continuous monitoring data were available between July 1, 2020 and March 22, 2021 in Cedar Creek at State Highway 1442. During this time period, the temperature data set was 87.9% complete and 100% of available values met the temperature criterion. The dissolved oxygen data set was 84.5% complete, average dissolved oxygen was

10.2 mg/l, and the dissolved oxygen criteria was met 99.6% of the days with a complete record. During this time period, the pH data set was 62.6% complete and 100% of available values met the pH criterion. The specific conductance data at Cedar Creek at State Highway 1442 were 71.7% complete and ranged from 134 uS/cm to 560 uS/cm.

Quarterly Monitoring Results: At Cedar Creek at State Highway 1442, all four samples were collected under dry conditions. Average TSS concentrations were 18.00 mg/l. Average total nitrogen was 0.82 mg/l. The average oil and grease total for Cedar Creek at State Highway 1442 was at or below the minimum detection limit of 2.50 mg/l.

All quarterly samples were less than the hardness dependent chronic aquatic life criteria for copper.

Bacteria Monitoring Results: Average (geometric mean) concentrations of *E. coli* bacteria ranged from 141 MPN/100 ml to 1,333 MPN/100 ml in samples collected at Cedar Creek at State Highway 1442. The water quality criteria for *E. coli* were met in zero of six months during the recreational season in Cedar Creek at State Highway 1442.

Biological Monitoring Results: In Cedar Creek at State Highway 1442 the macro community was rated as “excellent,” based on data collected in Spring 2021. Fish communities were rated as “excellent,” based on data collected in both Summer 2020 and Spring 2021. Aquatic habitat quality was rated as “good” in both 2020 and 2021. Algal communities were rated as “excellent” in 2020 in Cedar Creek at State Highway 1442 (Bullitt County).

APPENDIX 1.0 DEFINITIONS, ACRONYMS AND UNITS

DEFINITIONS, ACRONYMS AND UNITS

Baseline. The existing conditions. An initial set of observations or data used as a comparison or starting point from which the magnitudes of an alternative's effects are measured.

BMPs, Best Management Practices. Management procedures, equipment or facilities that either prevents pollutant from contaminating runoff or that treat runoff before it enters a stream. BMPs may also reduce runoff velocity or volume in order to prevent stream degradation from excessive erosive forces. BMPs also include treatment requirements, operating procedures, and practice to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

BIA, Building Industry Association of Greater Louisville. MSD coordinates with this organization to educate the development and construction community on the requirements of the stormwater quality permit.

BOD, Biochemical Oxygen Demand. A measurement of the amount of oxygen used by the decomposition of organic material over a specified time period (usually 5 days) in a wastewater sample. Used as a measurement of the readily decomposable organic content of water. Also referred to as BOD5, this is a measure of the amount of oxygen required by microbes to consume the pollutants in a sample of water during the five days after the sample is taken.

CFR, Code of Federal Regulations. A codification of the general and permanent rules published by the Federal Register by the executive departments and agencies of the federal government.

Clean Water Act. The MS4 permit is a result of the 1987 amendments to the Clean Water Act, where congress mandated that the EPA address non-point source pollution in stormwater runoff.

Consent Decree. Is a judicially recognized and enforceable voluntary settlement of potential claims, charges or violations in which a party agrees to take or perform specific actions, without admitting fault or guilt for the situation that led to the potential charges, in resolution of the potential case.

CPESC, Certified Professional in Erosion and Sediment Control. A CPESC is a recognized specialist in soil erosion and sediment control by EnviroCert International, Inc. CPESCs have educational training, demonstrated expertise, experience in controlling erosion and sedimentation, and meet certification standards.

CPSWQ, Certified Professional in StormWater Quality. A CPSWQ is a recognized specialist in stormwater quality by EnviroCert International, Inc. CPSWQs have educational training, demonstrated expertise, experience in managing storm water quality, and meet certification standards.

CRS, Community Rating System. The CRS was developed by the National Flood Insurance Program (NFIP) and is a voluntary incentive-based program that recognizes and encourages community floodplain management activities that exceed the minimum NFIP requirements. Benefits of participation in the program include reduced flood insurance premium rates and reduced flood risk due to community action to meet the goals of the CRS.

CS, Construction Site stormwater management. One of the requirements (section 2.4) under the NPDES stormwater program to address erosion prevention and sediment control issues on construction sites.

CSO, Combined Sewer Overflow. An outfall identified as a combined sewer overflow or CSO in MSD's KPDES permit for the Morris Forman WQTC, from which MSD is authorized to discharge during wet weather. Dry Weather CSO – An unauthorized overflow from a permitted outfall identified as a combined sewer overflow or CSO in MSD's Morris Forman WQTC KPDES permit that is not the result of a wet weather event. Wet Weather CSO - An overflow from a permitted outfall identified as a combined sewer overflow or CSO in MSD's Morris Forman WQTC KPDES permit that is the result of a wet weather event. Combined sewers carry both sanitary waste and stormwater drainage. CSOs are outlets that relieve sewers into streams and rivers, keeping the sewers from backing up into homes, businesses and streets when it rains.

CSS, Combined Sewer System. The portion of MSD's Sewer System designed to convey municipal sewage (domestic, commercial, and industrial wastewaters) and stormwater runoff through a single-pipe system to MSD's Morris Forman WQTC or CSOs. The system of drainage pipes built in the urban area of the City of Louisville after a public water supply was provided in the 1860s. The CSS conveys combined stormwater and sewage away from urbanized areas into the Ohio River and Beargrass Creek during wet weather. During dry weather, sewage is conveyed to the water quality treatment plant. The MS4 does not include the CSS area.

DO, Dissolved Oxygen. A measurement of the amount of oxygen dissolved in water, typically expressed in mg/L.

Drainage and Flood Protection, MSD's (formerly Infrastructure and Flood Protection) crews address improvements associated with the combined and storm sewer systems as well as inspect and repair the levee system to improve community flood protection.

DRI, Drainage Response Initiative. Project DRI is a partnership between Louisville Metro government and MSD that was created to respond to local drainage issues.

EPA, Environmental Protection Agency. The US federal agency responsible for regulating environmental hazards.

EPSC, Erosion Prevention and Sediment Control. EPSC measures and best management practices are designed to reduce sediment runoff and erosion from occurring on construction sites and other locations.

ERPI, Emergency Response Pretreatment Inspector. MSD utilizes with ERPIs to respond to spills, including HAZMAT response, to comply with illicit discharge detection and elimination components of this permit. This has been renamed to Senior Environmental Compliance Inspector.

FEMA, Federal Emergency Management Agency. An agency of the US Department of Homeland Security that was created to coordinate response to disasters, recovery efforts, and disaster preparation and planning.

FPO, Floodplain Management Ordinance. The local ordinance enacted in 1997. The FPO has specific requirements for storage of hazardous materials in the floodplain as well as limits on development and redevelopment.

GDP, General Discharge Permit. A general discharge permit is issued to a category of dischargers and covers all projects or activities associated with their permit.

GHP2, Good Housekeeping and Pollution Prevention. Programs and activities performed to reduce pollution by not creating it or by not releasing it from the source at municipal facilities. Includes materials substitution by use of less-toxic alternatives, management procedures that minimize the quantity of waste generated, housekeeping practices that reduce spillage and recover materials, reuse of materials recovered and recycling of waste.

GIS, Geographic Information System. An information system for capturing, storing, analyzing, managing and presenting data which are spatially referenced. MSD uses GIS platforms to efficiently and effectively manage and store data associated with its storm sewer system and stormwater permit. This capability includes producing maps, displaying the results of data queries, and conducting spatial analysis.

Gray Infrastructure. Constructed structures such as treatment facilities, sewer systems, stormwater systems, or storage basins. The term “gray” refers to the fact that such structures are typically made of, or involve the use of concrete and steel.

Green Infrastructure. An adaptable term used to describe an array of materials, technologies, and practices that use natural systems—or engineered systems that mimic natural processes—to enhance overall environmental quality and provide utility services. As a general principal, green infrastructure techniques use soils and vegetation to infiltrate, evapotranspirate, and/or recycle stormwater runoff. Examples of green infrastructure include green roofs, porous pavement, rain gardens, and vegetated swales. “Green” infrastructure is a combination of natural and engineered infrastructure that is designed to reduce the environmental footprint of the system.

IPS®. Trademark name of the database and software program used by MSD for recording, tracking, and reporting geocoded data. IPS® houses MSD sewer and drainage system asset data, the MIDAS property and permit data, the customer service request data and the pretreatment program permit and hazardous materials response program data. IPS® geocoded tables are theme layers in the LOJIC GIS.

HMO, Hazardous Materials Ordinance. First adopted in 1986, the local HMO requires HMPC plans and local HAZMAT release reporting. The amended HMO was approved July 2, 2007.

HMPC, Hazardous Materials (spill) Prevention and Control. Local facilities that store reportable quantities of hazardous materials are required to file a plan application with MSD. There are currently over 3,000 approved plans. HMPC plans include requirements for adequate secondary containment, training, release response, and reporting requirements.

HSPF, Hydrological Simulation Program – A comprehensive package developed by the USEPA for simulation of watershed hydrology and water quality for both conventional and toxic organic pollutants. The program incorporates hydrology and water quality to allow the integrated simulation of land and soil contaminant runoff processes with in-stream hydraulic and sediment-chemical interactions.

IDDE, Illicit Discharge Detection and Elimination. One of the requirements (section 2.2) under the NPDES stormwater program to address non-stormwater discharges into waterways through regulatory measures, identification and removal.

IWD, Industrial Waste Department. The MSD Industrial Waste Department is part of the Support Services Division. It administers the WDRs through the industrial pretreatment program, the customer service request response and HAZMAT incident response program, and the HMO through the hazardous materials plan program. The motor vehicle accident (MVA) mitigation program is also administered by IWD.

JCPS, Jefferson County Public Schools. JCPS is the local countywide public school system. MSD coordinates with JCPS on several public education, outreach and involvement initiatives associated with the stormwater permit.

KDOW, Kentucky Division of Water. (In the Department for Environmental Protection in the Environment and Public Protection Cabinet). Responsible for issuing all permits for discharges into the waters of the Commonwealth.

KPDES, Kentucky Pollutant Discharge Elimination System. Any National Pollutant Discharge Elimination System permit issued to MSD by the Cabinet pursuant to the authority of the Clean Water Act and Kentucky Revised Statues (KRS) Chapter 224 and the regulations promulgated thereunder. KPDES is the state regulatory permitting program through which MSD's stormwater program is directed.

KPPC, Kentucky Pollution Prevention Center. The KPPC at the University of Louisville provides pollution prevention and energy efficiency services to Kentucky's businesses, industries, state government agencies and communities. KPPC also provides free, non-regulatory waste assessments to Kentucky businesses.

KRS, Kentucky Administrative Regulations. Administrative regulations published by the Kentucky Legislative Commission. An unofficial posting of the KAR is available via the Commission's website at www.lrc.ky.gov.

KWA, Kentucky Waterways Alliance. A non-profit organization that promotes networking, communication and mutual support among groups, government agencies, and businesses working on waterway issues.

KYTC, Kentucky Transportation Cabinet. The Kentucky Transportation Cabinet operates storm sewers on their properties and state road and highway rights-of-way within the Louisville Metro MS4. KYTC was previously co-permitted with MSD, and in 2011 received an individual MS4 stormwater permit. KYTC continues to partner with MS4 communities across the state to implement their permit.

LDP, Louisville Downtown Partnership. Formed in 2013 and is comprised of two governmental entities: the Louisville Downtown Management District (LDMD) and the Louisville Downtown Development Corporation. The mission of the partnership is to improve the economy of Louisville Metro by coordinating an aggressive public/private program to promote the redevelopment, vitality and economic growth of the Central Business District and surrounding areas and to promote Downtown's quality of life by creating a safer, cleaner and more enjoyable environment.

LIMS, Laboratory Information Management System. This database houses the monitoring location and analytical results for MSD monitoring.

LLW, Living Lands and Waters. An organization that promotes the riparian restoration of watersheds and mobilizes local volunteers to participate in stream clean up, planting and invasive species removal efforts.

LMDPHW, Louisville Metro Department of Public Health and Wellness. A branch of the Louisville Metro Government operating under the direction of the Mayor and Louisville Metro Council, with the role of improving health and wellness in the Louisville Metro area.

LMEMA, Louisville Metro Emergency Management Agency. A branch of the Louisville Metro Government responsible for preparation, mitigation, response, and recovery from natural and manmade disasters.

LMFD, Louisville Metro Fire Department. A branch of the Louisville Metro Government that provides fire protection, prevention, environmental protection, education, building inspection, and fire cause determination throughout the Louisville Metro area.

LMPD, Louisville Metro Police Department. A branch of the Louisville Metro Government and built through the merger of the City of Louisville and Jefferson County governments. LMPD provides law enforcement, security, and education for the Louisville Metro area.

LNC, Louisville Nature Center. A community resource that provides nature education and recreation for community members to enjoy. Projects and resources are sponsored by community donations and supported by MSD.

Loading. Pounds of pollutants per day in running water calculated as concentration in parts per million (mg/L), multiplied by water flow in million gallons per day (MGD), multiplied by 8.34 pounds per gallon: Parts/million × million gallons/day × 8.34 pounds/gallon = pounds/day.

LOJIC, Louisville and Jefferson County Information Consortium. The local ArcView GIS project founded by MSD in partnership with the Louisville Water Company, Louisville Metro Government and the Jefferson County Property Valuation Administration. LOJIC mapping capabilities include physical, commercial, socioeconomic and political geographic information. The LOJIC ArcView and the HANSEN® data tables are linked. LOJIC mapping is available to the public at www.lojic.org.

LTMN, Long Term Monitoring Network. System of in-stream monitoring locations that have a data sonde continuously recording water quality parameters and USGS flow gages. Samples are taken and laboratory analyses performed for other pollutants of concern as described in this SWQMP. Data is available online at http://waterdata.usgs.gov/ky/nwis.

M, Monitoring. One of the requirements (section 2.7 and Chapter 5) under the NPDES stormwater program to monitor improvements to local water quality and the overall effectiveness of permit activities.

Mg/L, Milligrams per Liter. Unit of concentration of pollutants in water in parts per million.

MGD, Million Gallons per Day. Unit of measure for water flow used to calculate pollutant loading.

MIDAS, Metro Information, Development and Assets System. The portion of the HANSEN® database used by Louisville Metro government for permit and inspection programs.

MS4, Municipal Separate Storm Sewer System. Jefferson County contains MS4s operated by MSD, Anchorage, Jeffersontown, St. Matthews, and Shively. The Kentucky Transportation Cabinet also operates storm sewers on their properties and state road and highway rights-of-way within the other Metro MS4s. Louisville Metro Government provides for stormwater conveyance in public streets and parks.

MSD, the Louisville and Jefferson County Metropolitan Sewer District. MSD is responsible for wastewater collection, conveyance and treatment, stormwater drainage and flood control within its District except for those drainage areas operated by the co-permittees and those areas located outside the boundaries of the MS4 drainage service area. MSD is also responsible for response, mitigation, notification, and reporting of overflows, including unauthorized discharges. MSD administers the Louisville Metro Erosion Prevention and Sediment Control Ordinance, the Floodplain Ordinance, the Hazardous Materials Ordinance and the Wastewater/Stormwater Discharge Regulations. www.msdlouky.org

NOD, Notice of Deficiency. Permittees not meeting the regulatory intent of their permit may receive a NOD. A NOD includes the deficient item or items and necessary corrective actions.

NOV, Notice of Violation. Permittees not meeting the regulatory requirements of their permit may receive a NOV. A NOV may include the item or items in violation, corrective actions and fines incurred.

NPDES, National Pollutant Discharge Elimination System. NPDES is the federal regulatory permitting program through which MSD's stormwater program is directed.

NPS, Nonpoint Source. Nonpoint source pollution is caused by rainfall or snowmelt moving over and through the ground. As the runoff moves, it picks up and carries away natural and human-made pollutants, and eventually deposits them into lakes, rivers, wetlands and other waterbodies. Nonpoint source pollutants often include excess fertilizers and herbicides from agricultural and residential areas, oil and grease from urban areas, sediment from improperly managed construction sites and eroding streambanks, and bacteria and nutrients from livestock and pet wastes.

OHWM, Ordinary High Water Mark. Ephemeral streams that are tributary to other waters of the U. S. are also waters of the U. S., as long as they possess an OHWM. The upstream limit of waters of the United States is the point where the OHWM is no longer perceptible (see 51FR 41217). An ephemeral stream that does not have an OHWM is not a water of the United States. The frequency and duration at which water must be present to develop an OHWM has not been established for the USACE regulatory program. District engineers use their judgment on a case-by-case basis to determine whether an OHWM is present. http://www.epa.gov/owow/wetlands/regs/nwpfinal.pdf

PAR, Program Assessment and Reporting. One of the requirements under the NPDES stormwater program to evaluate the stormwater program on a regular basis to determine program improvement and progress, and to document activities for regulatory compliance.

PAT, Project Activity Tracking – Access database used to track plan development project names and numbers.

Pathogen. An organism capable of causing disease, including disease-causing bacteria, protozoa, and viruses.

PC, Post-Construction stormwater runoff and pollutant controls. One of the requirements (section 2.5) under the NPDES stormwater program to manage stormwater runoff and maintain stormwater best management practices in a sustainable fashion to allow effective long-term stormwater treatment.

PCR, Primary Contact Recreation. PCR is a surface water use of full-body contact recreation that includes immersion of the head and face, such as swimming.

PEOPLE, Public Education, Outreach, Participation and Learning Experiences. One of the requirements (section 2.1) under the NPDES stormwater program to improve the knowledge of the general public and target audiences to make individual behavior changes to improve stormwater quality.

PER, Program Evaluation and Reporting. One of the requirements under the NPDES stormwater program to evaluate the stormwater program on a regular basis to determine program improvement and progress, and to document activities for regulatory compliance.

POTW, Publicly Owned Treatment Works. Wastewater collection, conveyance and treatment utility owned and operated by a public agency. MSD is a POTW.

Project XL, Project eXcellence in Leadership Program. The US EPA national pilot program designed to allow selected sewage treatment agencies to test whether better and more cost-effective methods can be used to improve water quality.

PRR, Preliminary Response Report. A report issued by IWD in response to a hazardous materials release incident call and investigation. The report is issued to the responsible party and directs them to immediate corrective actions that are required. PRRs and inspection findings are reviewed by the IWD Response Group.

PS, Point Source. Point source pollution is a single, identifiable point discharge of pollution. An example of a point source discharge would include a sewage treatment plant or an industrial discharge facility.

PY, Permit Year. A permit year starts on August 1 and ends July 31 of the following year.

QA/QC, Quality Assurance/Quality Control. This is a process to check the quality of work and activities.

QPCI Training, Qualified Post Construction Inspector Training. This training course produced by MSD is intended to transfer knowledge of proper Green Management Practice (GMP) inspection and maintenance protocols to individuals responsible for maintaining GMPs in Jefferson County.

S&F, Solids and Floatables. Materials in sewage that are large enough to be visibly recognizable. Most solids and floatables in combined sewage are comprised of street litter and debris, but some plastic and paper products flushed down toilets stay in a visibly recognizable form, and are objectionable to some people.

Sanitary Sewer. A pipe or conduit (sewer) intended to carry wastewater or water-borne wastes from homes, businesses, and industries to the publicly owned treatment works.

SCR, Secondary Contact Recreation. SCR is a surface water use for recreational contact with surface waters that does not include full-body immersion.

SEC, Specific Electrical Conductance. The measure of the electrical conductance of water normalized to a unit length and a unit cross-section at a specific temperature.

SIU, Significant Industrial User. As defined by the EPA, any industry which is designated as such on the basis that the industrial user has a reasonable potential for adversely affecting the operation of the collection system or treatment plant, or violating any pretreatment requirement.

SOP, Standard Operating Procedure. These procedures are defined by MSD and are followed by MSD staff and personnel.

SSO, Sanitary Sewer Overflow. Any discharge of wastewater to waters of the United States from MSD's Sewer System through a point source not authorized by a KPDES permit, as well as any release of wastewater from MSD's Sewer System to public or private property that does not reach Waters of the United States, such as a release to a land surface or structure that does not reach Waters of the United States; provided, however, that releases or wastewater backups into buildings that are caused by blockages, flow conditions, or malfunctions in a building lateral, or in other piping or conveyance system that is not owned or operationally controlled by MSD are not SSOs.

SSS, Sanitary Sewer System**.** The portion of MSD's sewer system designed to convey only municipal sewage (domestic, commercial, and industrial wastewaters) to MSD's WQTCs.

Stream. Surface water channel having well-defined banks and bed, either constantly or intermittently flowing. "Ephemeral stream" means a watercourse which only flows in direct response to precipitation in the immediate watershed, or in response to the melting of a cover of snow and ice, and which has a channel bottom that is above the local water table. An ephemeral stream is a water of the United States, provided it has an OHWM. "Intermittent stream" means a steam or part of a stream that does not flow continuously throughout the calendar year; but that has a bed below the local water table for at least one month of the calendar year during which it obtains its flow from both surface water and ground water discharge. The term does not include an ephemeral stream. "Perennial stream" means a stream or part of a stream that flows continuously during all of the calendar year as a result of ground-water discharge or surface runoff. The term does not include "intermittent stream" or "ephemeral stream".

Surface Waters. Those waters having well-defined banks and beds, either constantly or intermittently flowing; lakes and impounded waters; marshes and wetlands; and any subterranean waters flowing in well-defined channels and having a demonstrable hydrologic connection with the surface.

SWO, Stop Work Order. A permit holder or regulatory authority may issue a stop work order for permit violations within their jurisdiction.

SWPPP, Stormwater Pollution Prevention Plan. A plan for stormwater discharge that when implemented will decrease nonpoint source pollution.

SWQMP, Stormwater Quality Management Plan. As stated in the MSD's MS4 Permit, the SWQMP is a plan that MSD is required to develop, implement, and enforce. This includes controls intended to reduce the discharge of pollutants from MS4 conveyances.

TDS, Total Dissolved Solids. The fine particles that are suspended in water as measured by a laboratory analysis. TDS are typically small enough to pass through a sieve size of two micrometers.

TMDL, Total Maximum Daily Load. A calculation of the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards, and an allocation of that amount to the pollutant's sources.

TTO, Total Toxic Organics. The sum of the analytical results greater than 0.01 mg/L of a list of toxic organics as specified by EPA.

TSS, Total Suspended Solids. The fine particles suspended in water as measured by a laboratory analysis. High TSS causes adverse water quality conditions for sensitive aquatic organisms.

TVS, Total Volatile Solids. TVS includes organic compounds of animal or plant origin.

Unauthorized Discharge. (a) any discharge of wastewater to waters of the United States from MSD's Sewer System or WQTCs through a point source not authorized by a KPDES permit and (b) any Bypass at MSD's WQTCs prohibited pursuant to the provisions of 40 CFR § 122.41(m)(2) and (4) or 401 KAR 5:065, Section 1(13)(a) and (c).

USACE, U.S. Army Corps of Engineers. A branch of the US Government, made up of civilians and military members with a wide diversity of disciplines. From biologists, engineers, geologists, hydrologists, natural resource managers, to other professionals needed within this entity. The Corps plans, designs, builds, operates, and regulates water resources projects that are crucial to the citizens of the United States.

USGS, United States Geological Survey. A division of the US Government, Department of Interior. USGS is the sole science agency for the Department of Interior.

WAH, Warm Water Aquatic Habitat. "Warm Water Aquatic Habitat" or "WAH" means any surface water and associated substrate capable of supporting indigenous warm water aquatic life.

WASP, Water Quality Analysis Simulation Program. This is a model created by the EPA to model contaminant fate and transport in surface waters.

WAT!, Watershed Assessment Tool! A spreadsheet watershed characterization tool that models point and non-point source pollution loads to assess green infrastructure.

Water. From KRS 224.1-010 (33) "Water" or "waters of the Commonwealth" means and includes any and all rivers, streams, creeks, lakes, ponds, impounding reservoirs, springs, wells, marshes, and all other bodies of surface or underground water, natural or artificial, situated wholly or partly within or bordering upon the Commonwealth or within its jurisdiction; Effluent ditches and lagoons used for waste treatment which are situated on property owned, leased, or

under valid easement by a KPDES-permitted discharger are not considered to be waters of the Commonwealth. From USEPA 40 CFR 230.3 "waters of the United States" means all waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flows of the tide, all interstate waters including interstate wetlands, and territorial seas. This also includes all bodies of water near the aforementioned waters including wetlands, ponds, lakes, oxbows, impoundments, and similar waters.

Watershed. Land area that drains to a common waterway, such as a stream, lake, estuary, wetland, or ultimately the ocean.

WDR, Jefferson County Wastewater/Stormwater Discharge Regulations. The WDR applies to all users of the sewer collection system as well as the MS4. It contains regulations that prohibit discharge of materials that could cause damage to the sewer system or the environment in WDR Section 2. WDR Section 5 prohibits discharges to stormwater conveyances. Penalties and enforcement are authorized by WDR Section 6. MSD's IWD administers the WDR.

WQS, Water Quality Standards. Standards that set the goals, pollution limits, and protection requirements for each waterbody. These standards are composed of designated (beneficial) uses, numeric and narrative criteria, and antidegradation policies and procedures.

WQTC, Water Quality Treatment Center. MSD owns and operates five wastewater treatment centers in Louisville Metro. These include the Morris Forman, Derek R. Guthrie, Hite Creek, Cedar Creek, and Floyds Fork WQTCs. Jeffersontown WQTC was eliminated December 2015.

ACRONYMS & UNITS

APCD	Air Pollution Control District
BIA	Building Industry Association of Greater Louisville
BMP	Best Management Practice
BOD	Biochemical Oxygen Demand
CFR	Code of Federal Regulations
cfs	Cubic feet per second
cfu	Colony forming unit
CMF	Central maintenance facility
COD	Chemical oxygen demand
CPESC	Certified Professional in Erosion and Sediment Control
CPSWQ	Certified Professional in StormWater Quality
CRS	Community Rating System
CS	Construction Site
CSO	Combined sewer overflow
CSRs	Customer Service Requests
CSS	Combined sewer system
CWA	Clean Water Act
DAG	Developers Advisory Group
DMR	Discharge monitoring report
DO	Dissolved oxygen
DWS	Drinking Water Standard
E. Coli	Escherichia Coli
EMS	Emergency Management Service
EPA	U.S. Environmental Protection Agency
EPSC	Erosion Prevention and Sediment Control
ERP	Enforcement Response Plan
ERPI	Emergency Response Pretreatment Inspector
EWB	Engineers without Borders
FAQS	Frequently Asked Questions
FEMA	Federal Emergency Management Agency
FOG	Fats, oils, and grease
FPMP	Floodplain Management Plan
FPO	Floodplain Management Ordinance
FS	Fully Supports the Use
FTE	Full time equivalents

FY	Fiscal Year
GDP	General Discharge Permit
GH	Good Housekeeping
GH/P2	Good Housekeeping/ Pollution Prevention
GIS	Geographic Information System
GMP	Green Management Practice
GPD	Gallons per day
GPP	Groundwater Protection Plan
HMO	Hazardous Materials Ordinance
HMPC	Hazardous Materials (spill) Prevention and Control
HRIFs	High Risk Industrial Facilities
HSPF	Hydrological Simulation Program – FORTRAN
IDDE	Illicit Discharge Detection and Elimination
IFPD	Infrastructure and Flood Protection Division
IOAP	Integrated Overflow Abatement Plan
IP	Industrial Program
IPCC	Intergovernmental Panel on Climate Change
IWD	Industrial Waste Department
JCPS	Jefferson County Public Schools
JTown	Jeffersontown
KAMM	Kentucky Association of Mitigation Managers
KAR	Kentucky Administrative Regulations
KDEP	Kentucky Department of Environmental Protection
KDOW	Kentucky Division of Water
KEEC	Kentucky Environmental Education Council
KEPSC	Kentucky Erosion Prevention and Sediment Control
KPDES	Kentucky Pollutant Discharge Elimination System
KPPC	Kentucky Pollution Prevention Center
KRS	Kentucky Revised Statute
KSA	Kentucky Stormwater Association
KWA	Kentucky Waterway Alliance
KYTC	Kentucky Transportation Cabinet
LD	Legal Department
LDC	Louisville Development Code
LDMD	Louisville Downtown Management District
LEED	Leadership in Energy and Environmental Design
LG&E	Louisville Gas & Electric

LIMS	Laboratory Information Management System
LLW	Living Land & Water
LMDPHW	Louisville Metro Department of Public Health and Wellness
LMEMA	Louisville Metro Emergency Management Agency
LMFD	Louisville Metro Fire Department
LMG	Louisville Metro Government
LNC	Louisville Nature Center
LOJIC	Louisville and Jefferson County Information Consortium
LTCP	Long-Term Control Plan
LTMN	Long Term Monitoring Network
LWC	Louisville Water Company
M	Monitoring
MEP	Maximum Extent Practicable
mg/L	Milligrams per liter
MGD	Million gallons per day
MIDAS	Metro Information, Development and Assets System
MS4	Municipal Separate Storm Sewer System
MSD	Louisville and Jefferson County Metropolitan Sewer District
MVA	Motor Vehicle Accident
NEXRAD	Next-Generation Radar
NFIP	National Flood Insurance Program
NICET	National Institute for Certification in Engineering Technologies
NMC	Nine Minimum Controls
NOAA	National Oceanographic and Atmospheric Administration
NOD	Notice of Deficiency
NOV	Notice of Violation
NPDES	National Pollutant Discharge Elimination System
NPS	Nonpoint Source
NS	Non-Support of the use
NWS	National Weather Service
O&M	Operations and Maintenance
OHWM	Ordinary High Water Mark
ORSANCO	Ohio River Sanitation Commission
OSHA	Occupational Safety and Health Administration
P2	Pollution Prevention
PAR	Program Assessment and Reporting
PAT	Project Activity Tracking

PC	Post construction
PCR	Primary Contact Recreation
PE	Professional Engineer
PEOPLE	Public Education, Outreach, Participation and Learning Experiences
PER	Program Evaluation and Reporting
PIO	Public Information and Outreach
PM	Preventive maintenance
POTW	Publicly owned treatment works
Project DRI	Project Drainage Response Initiative
Project WIN	Project Waterway Improvements Now
Project XL	Project eXcellence in Leadership Program
PRR	Preliminary Response Report
PS	Point Source
PVA	Jefferson County Property Valuation Administrator
PVC	Polyvinyl chloride
PY	Permit Year
QA/QC	Quality Assurance / Quality Control
QAPP	Quality Assurance Project Plan
QPCI	Qualified Post-Construction Inspector
RBP	Stream Rapid Bioassessment Protocol
ROW	Right-of-way
RTC	Real time control
S&F	Solids and Floatables
SCADA	Supervisory Control and Data Acquisition
SCR	Secondary Contact Recreation (wading or boating)
SEC	Specific Electrical Conductance
SIU	Significant Industrial User
SMMP	Stormwater Management Master Plan
SOP	Standard Operating Procedure
SORP	Sewer Overflow Response Protocol
SPCC	Spill Prevention, Control and Countermeasure
SPCC	Spill Prevention, Control and Countermeasure
SSDP	Sanitary Sewer Discharge Plan
SSES	Sanitary Sewer Evaluation Survey
SSO	Sanitary Sewer Overflow
SSOP	Sanitary Sewer Overflow Plan
SSS	Sanitary Sewer System

SWMM	Stormwater and Wastewater Management Model
SWO	Stop work order
SWPPP	Stormwater Pollution Prevention Plan
SWQMP	Stormwater Quality Management Plan
TARC	Transit Authority of River City
TDS	Total Dissolved Solids
TKN	Total Kjeldahl Nitrogen
TMDL	Total maximum daily load
TRI	Toxic Release Inventory
TSS	Total suspended solids
TTO	Total Toxic Organics
TVS	Total Volatile Solids
U of L	University of Louisville
UAA	Use Attainability Analysis
UPS	United Parcel Service
USACE	United States Army Corps of Engineers
USGS	United States Geological Survey
WAH	Warm Water Aquatic Habitat
WASP	Water Quality Analysis Simulation Program
WATERS	Watershed Approach to Environmentally Responsible Stewardship
WDR	Wastewater/Stormwater Discharge Regulations
WEF	Water Environment Federation
WERF	Water Environment Research Foundation
WLA	Waste Load Allocation
WQS	Water Quality Standards
WQT	Water Quality Tool
WQTC	Water Quality Treatment Center
WWT	Wet Weather Team

APPENDIX 1.1 CURRENT ORGANIZATION CHART



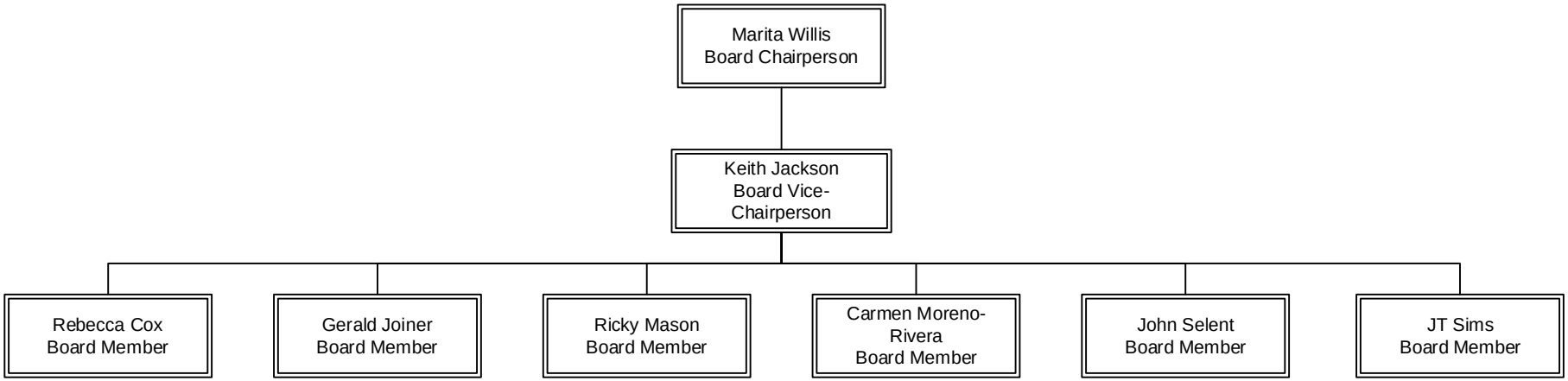
Louisville and Jefferson County Metropolitan Sewer District

Organizational Chart
Effective 10/5/2021

Organizational Summary

	Total Positions	Current Actual	Vacant (Budgeted)	New/Unbudgeted (Vacant)	Exempt	Non-Exempt	Union	Net Overbudget
Executive Offices Division								
Executive Offices	14	14	0	0	11	3	0	0
Innovation, Customer Relations and Dispatch	25	19	6	0	6	19	0	0
Facilities, Safety & Security	22.5	21	1.5	0	13	9.5	0	0
Records and Information Governance	9	7	2	0	3	6	0	0
Community Benefits and Partnerships	7	3	4	0	5	2	0	0
Supply Chain and Economic Inclusion Division	23	18	5	0	12	11	0	0
Legal Division	10	7	3	0	8	2	0	0
Human Resources Division	18	16	2	0	12	6	0	0
Information Technology Division	31.5	26.5	5	0	26	5.5	0	0
Finance Division	19	17	2	0	6	13	0	0
Engineering Division								
Eng Admin, Reg Compliance, Records & GIS	17	15	2	0	11	6	0	0
Engineering Technical Services	46.5	44	2.5	0	24	22.5	0	0
Development & Stormwater Services	31	30	1	0	20	11	0	0
Operations Division								
Administration	3	2	1	0	2	1	0	0
Collections System and Flood Protection	76	69	7	0	17	15	44	0
Treatment Facilities	88	79	9	0	19	15	54	0
Treatment Facilities (Maintenance)	41	39	2	0	5	2	34	0
Support Services	38	27	11	0	13	25	0	0
Wastewater and Drainage	128	122	6	0	15	13	100	0
Wastewater and Drainage (Sanitary)	77	69	8	0	11	0	66	0
Fleet Services	19	19	0	0	4	1	14	0
DISTRICT TOTAL	**743.5**	**663.5**	**80**	**0**	**243**	**188.5**	**312**	**0**

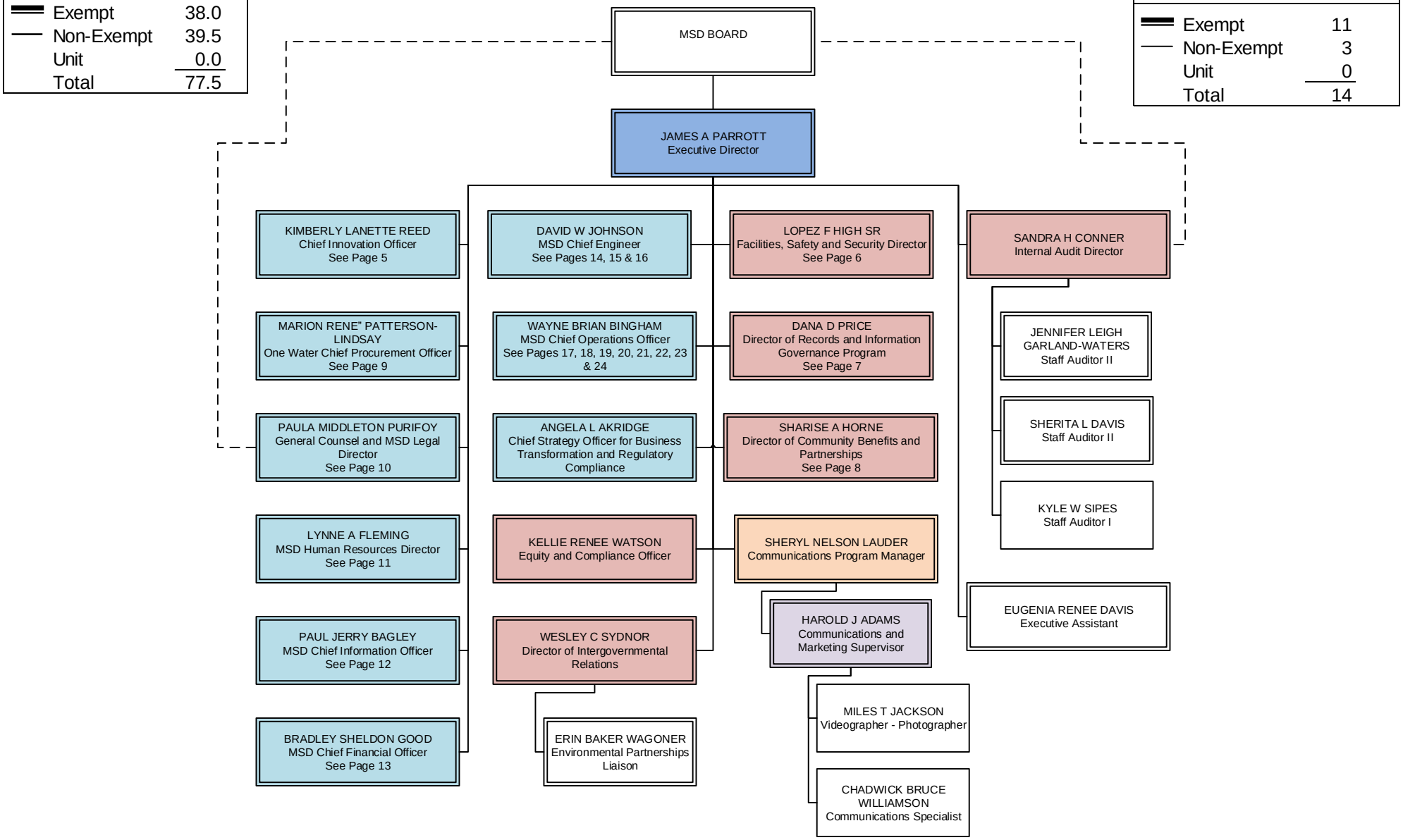
Board Members



Executive Offices Division
Executive Offices

DIVISION BUDGET STATUS	
Actual	64.0
Vacant	13.5
Authorized	77.5
Exempt	38.0
Non-Exempt	39.5
Unit	0.0
Total	77.5

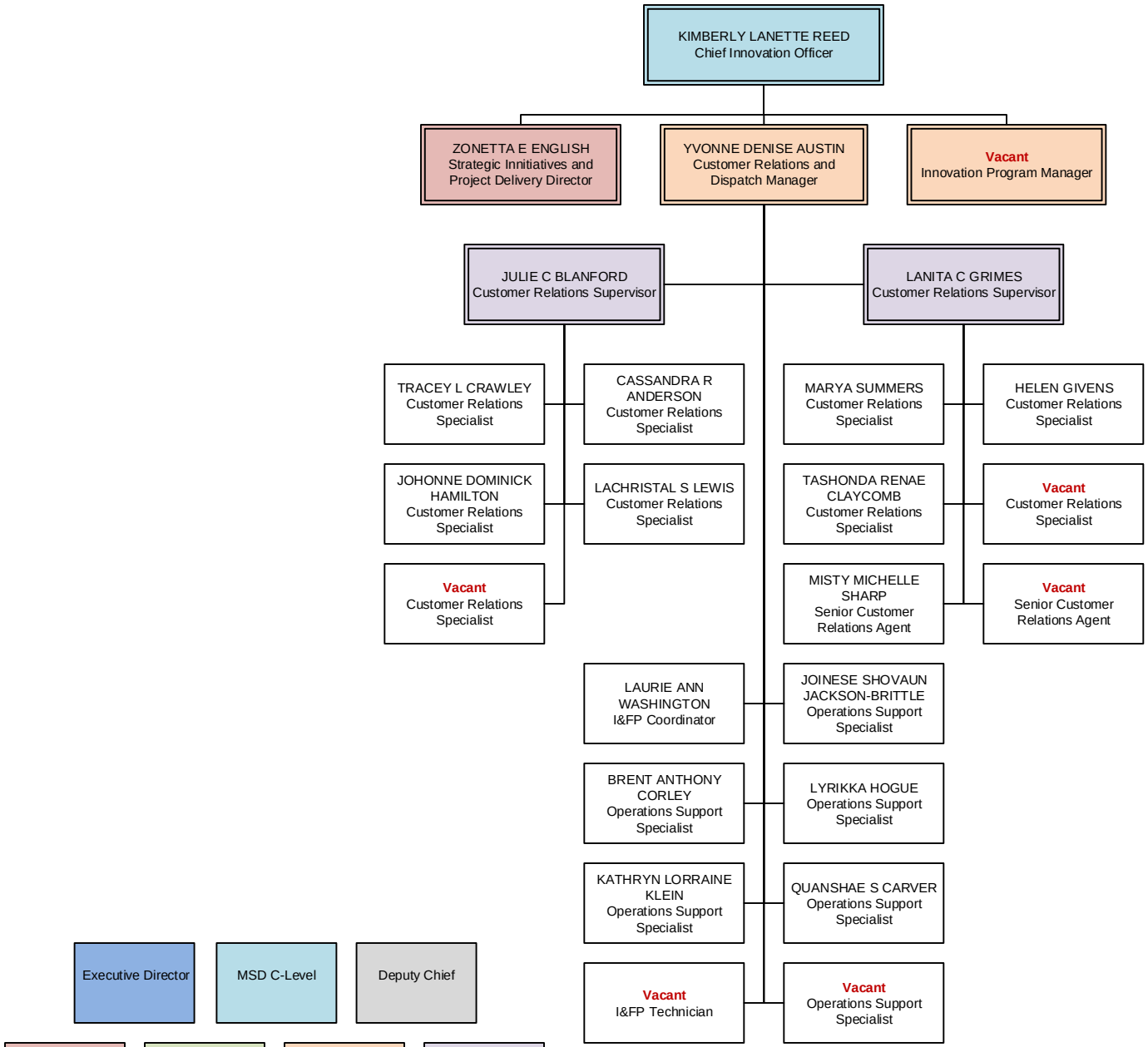
BUDGET STATUS	
Actual	14
Vacant	0
Authorized	14
Exempt	11
Non-Exempt	3
Unit	0
Total	14



Executive Director | MSD C-Level | Deputy Chief | Director | Assistant Director | Manager | Supervisor

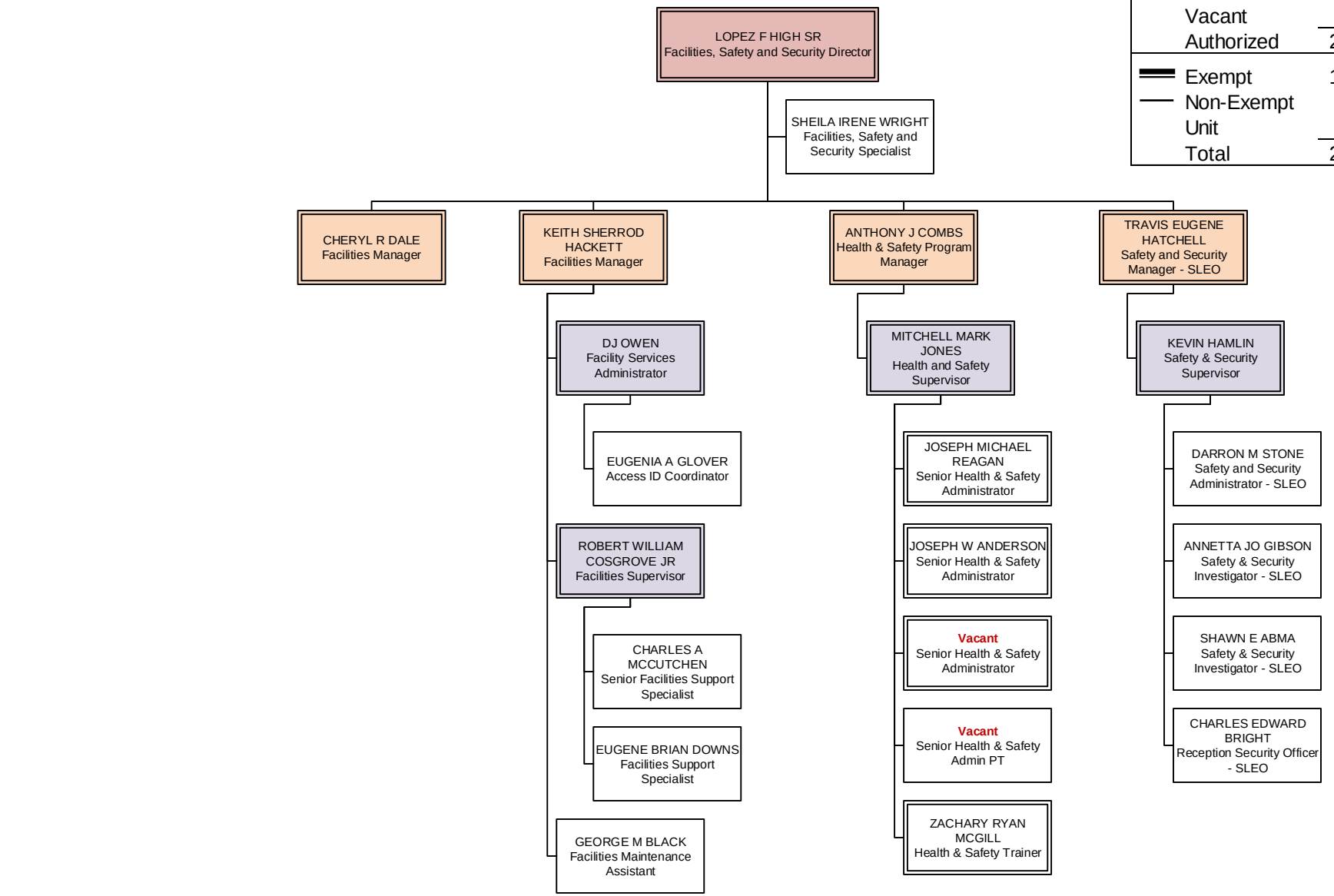
Executive Offices Division
Innovation, Customer Relations & Dispatch

BUDGET STATUS	
Actual	19
Vacant	6
Authorized	25
Exempt	6
Non-Exempt	19
Unit	0
Total	25



Executive Offices Division
Facilities, Safety & Security

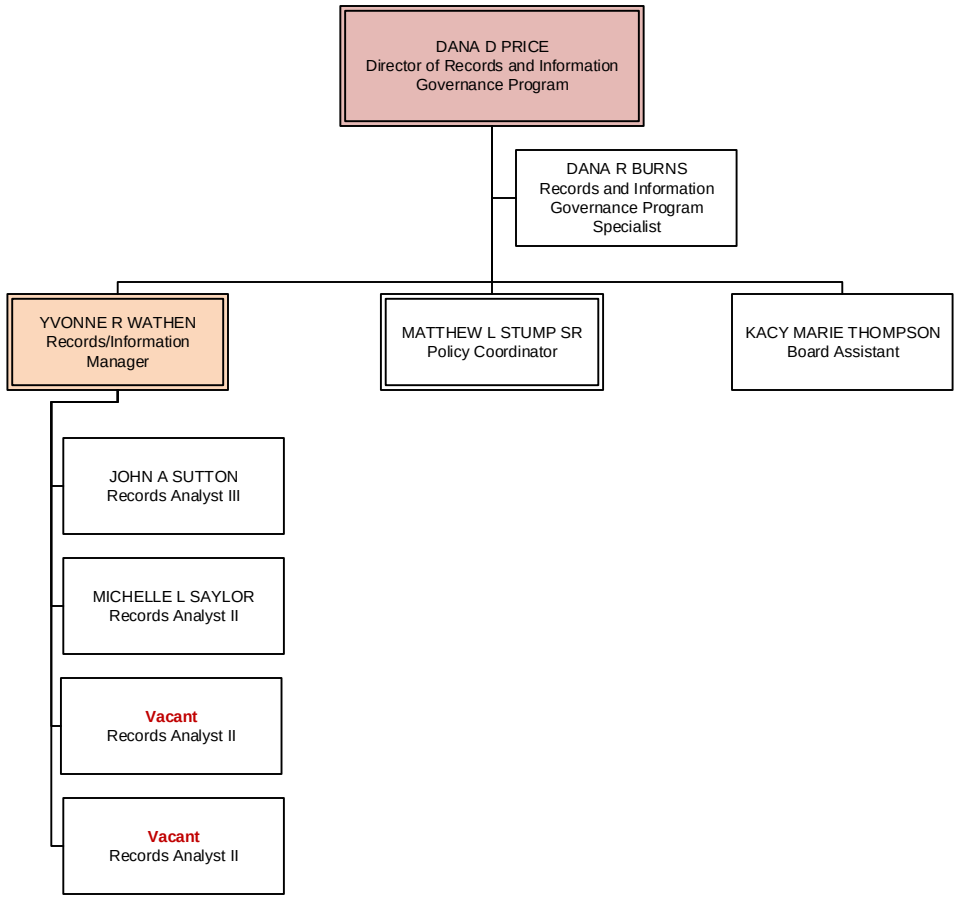
BUDGET STATUS	
Actual	21.0
Vacant	1.5
Authorized	22.5
Exempt	13.0
Non-Exempt	9.5
Unit	0.0
Total	22.5



Executive Director | MSD C-Level | Deputy Chief | Director | Assistant Director | Manager | Supervisor

Executive Offices Division
Records and Information Governance

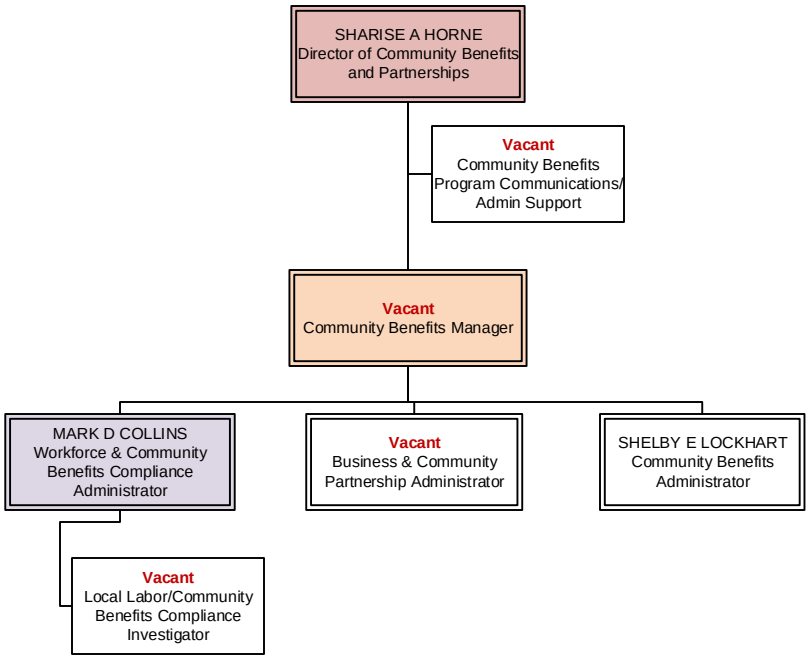
BUDGET STATUS	
Actual	7
Vacant	2
Authorized	9
Exempt	3
Non-Exempt	6
Unit	0
Total	9



Executive Director | MSD C-Level | Deputy Chief | Director | Assistant Director | Manager | Supervisor

Executive Offices Division
Community Benefits and Partnerships

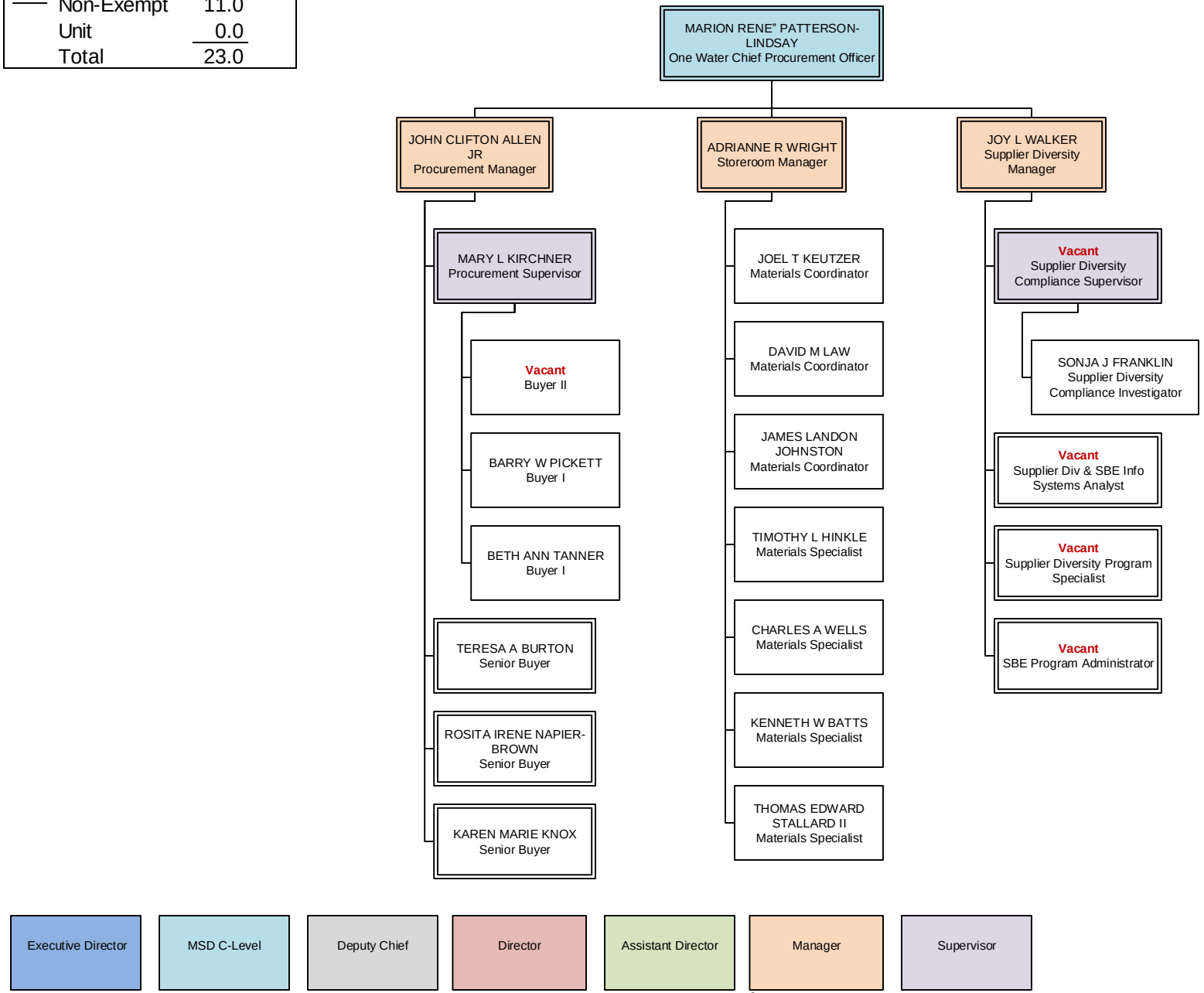
BUDGET STATUS	
Actual	3
Vacant	4
Authorized	7
Exempt	5
Non-Exempt	2
Unit	0
Total	7



Executive Director | MSD C-Level | Deputy Chief | Director | Assistant Director | Manager | Supervisor

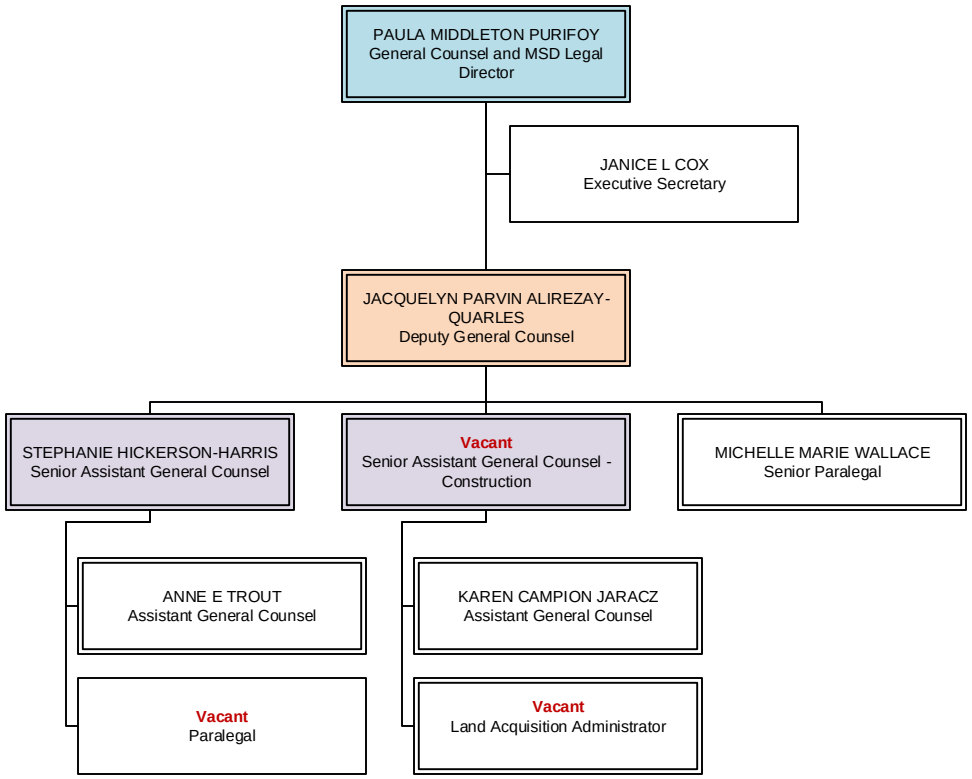
DIVISION BUDGET STATUS	
Actual	18.0
Vacant	5.0
Authorized	23.0
Exempt	12.0
Non-Exempt	11.0
Unit	0.0
Total	23.0

Supply Chain and Economic Inclusion Division
Procurement, Storeroom & Supplier Diversity



Legal Division

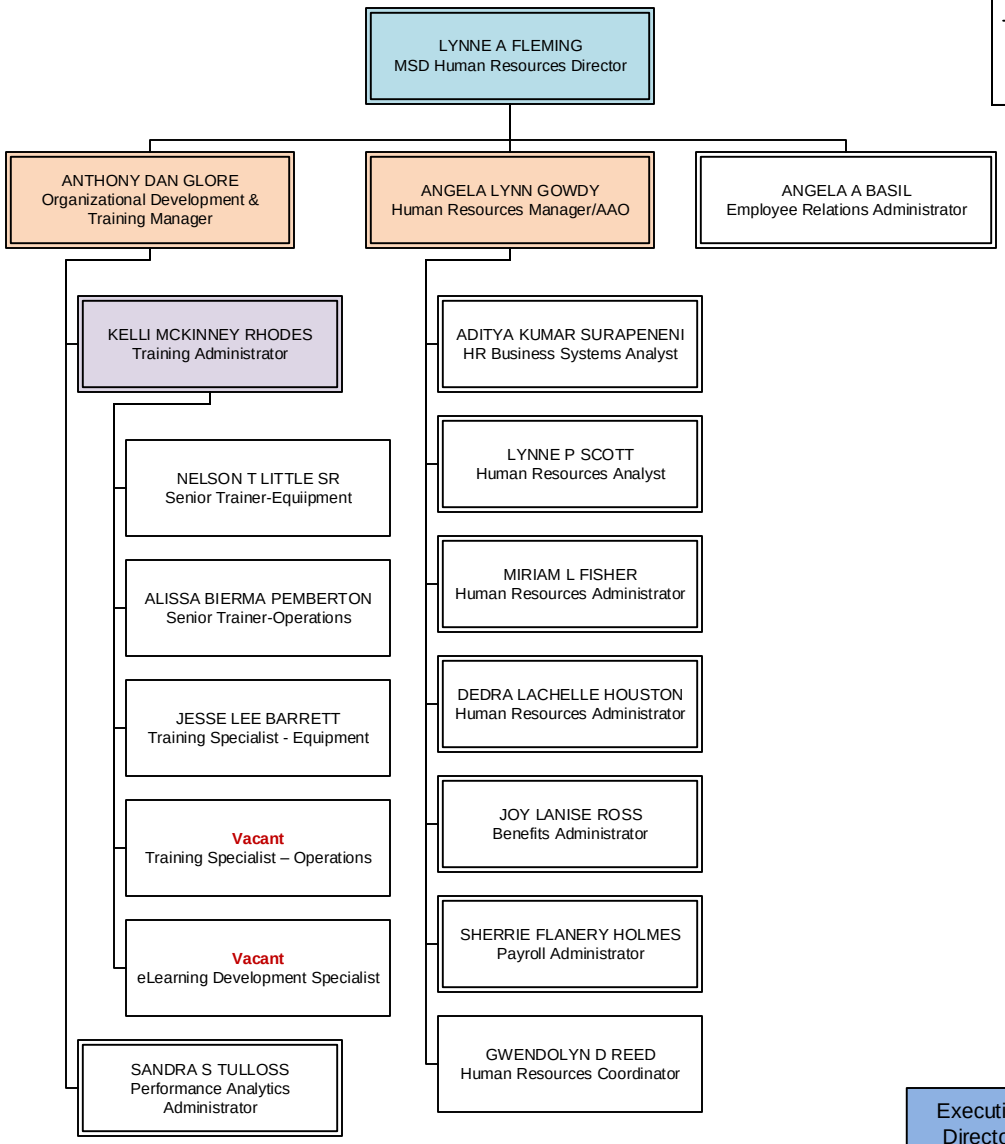
BUDGET STATUS	
Actual	7
Vacant	3
Authorized	10
Exempt	8
Non-Exempt	2
Unit	0
Total	10



Executive Director | MSD C-Level | Deputy Chief | Director | Assistant Director | Manager | Supervisor

Human Resources Division

BUDGET STATUS	
Actual	16.0
Vacant	2.0
Authorized	18.0
Exempt	12.0
Non-Exempt	6.0
Unit	0.0
Total	18.0

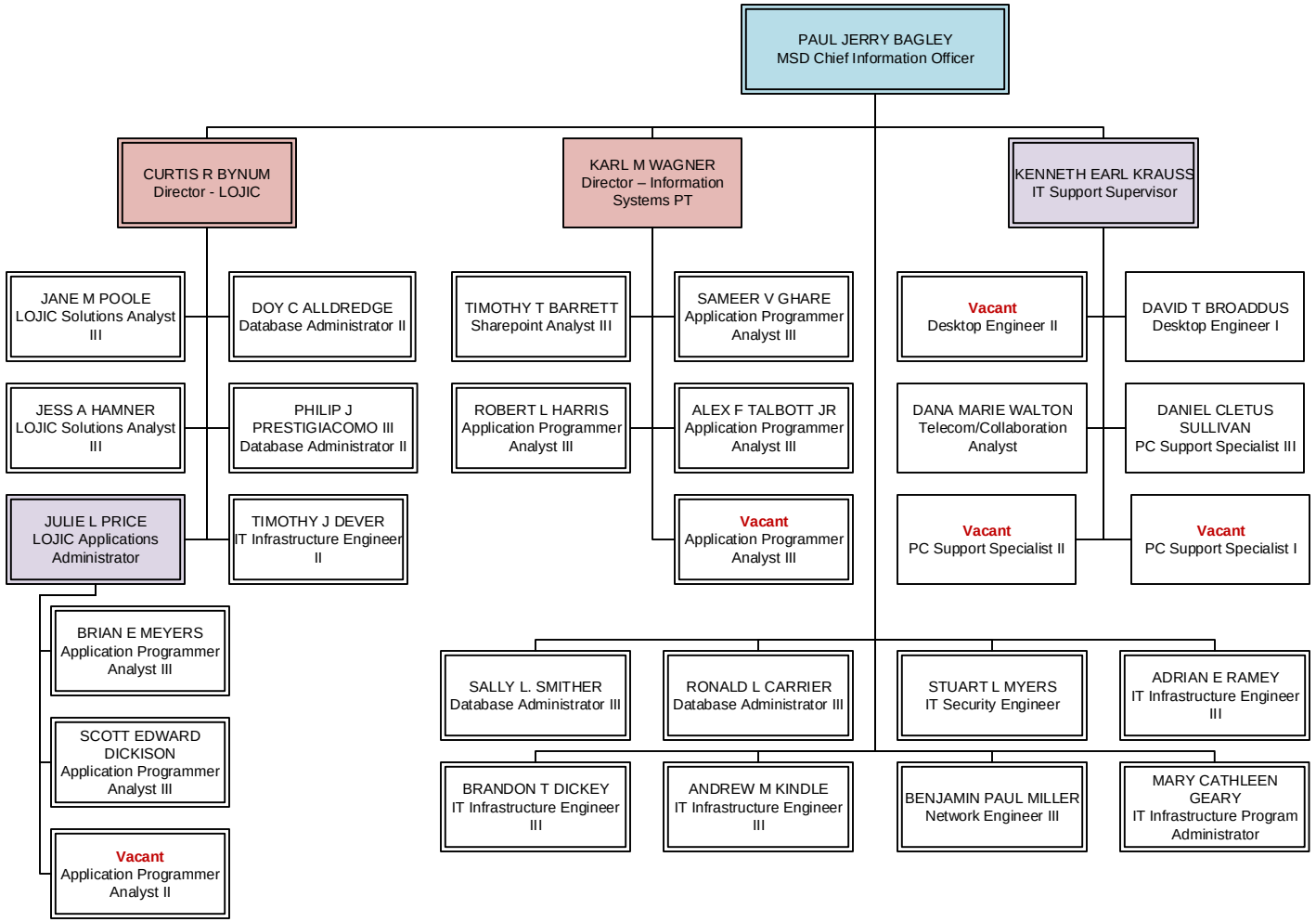


Executive Director | MSD C-Level | Deputy Chief

Director | Assistant Director | Manager | Supervisor

Information Technology Division

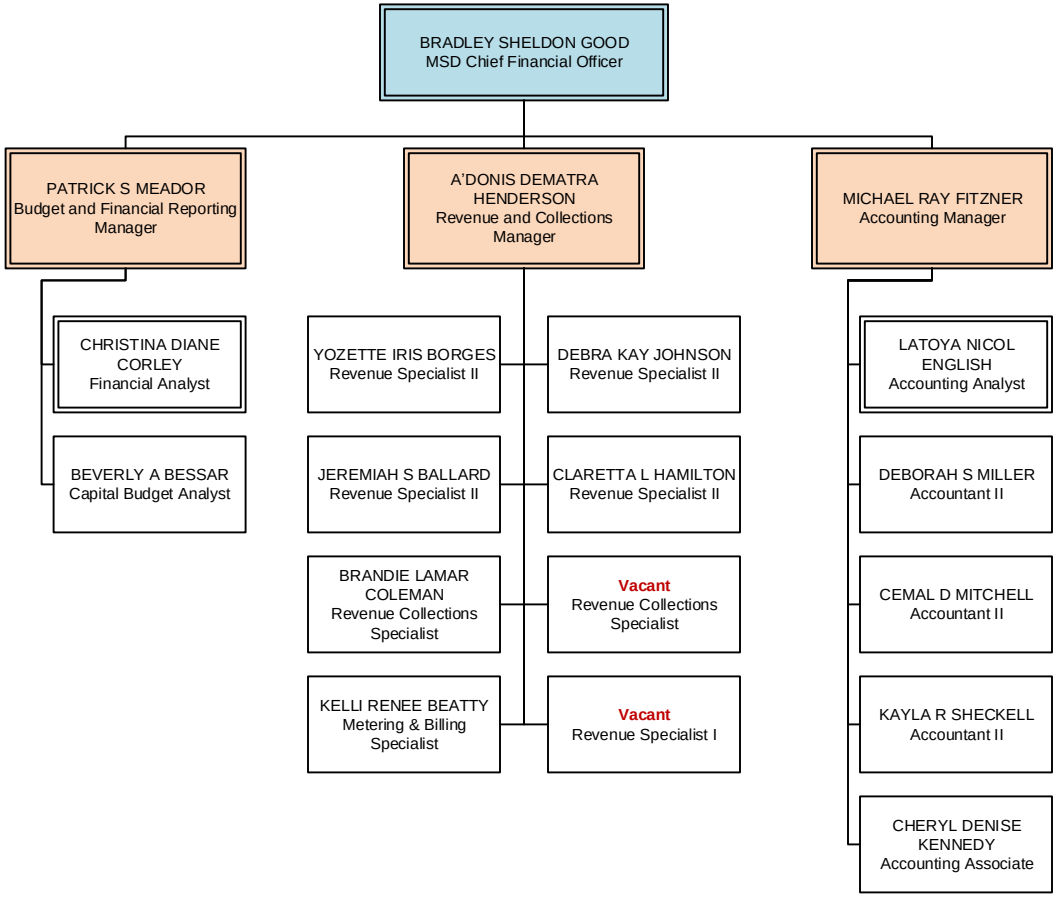
BUDGET STATUS	
Actual	26.5
Vacant	5.0
Authorized	31.5
Exempt	26.0
Non-Exempt	5.5
Unit	0.0
Total	31.5



Executive Director | MSD C-Level | Deputy Chief | Director | Assistant Director | Manager | Supervisor

Finance Division

BUDGET STATUS	
Actual	17
Vacant	2
Authorized	19
Exempt	6
Non-Exempt	13
Unit	0
Total	19

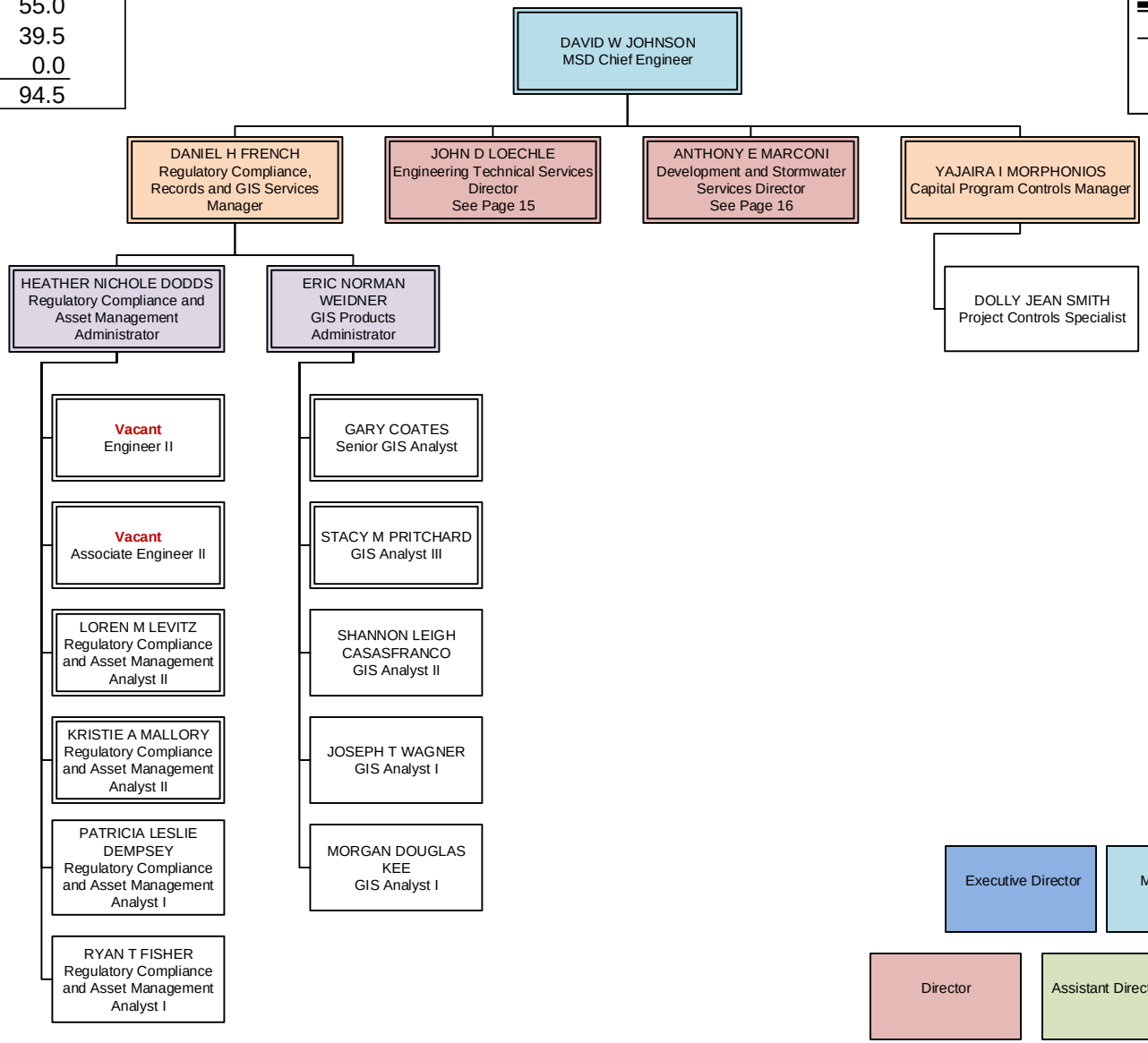


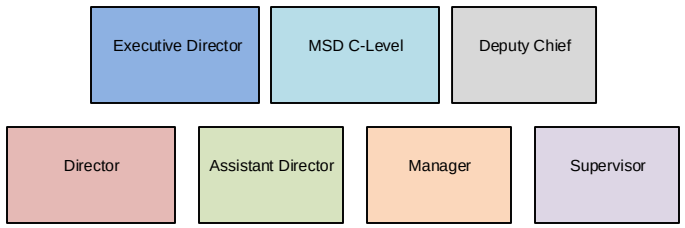
Executive Director | MSD C-Level | Deputy Chief | Director | Assistant Director | Manager | Supervisor

Engineering Division
Engineering Admin, Regulatory Compliance, Records & GIS

DIVISION BUDGET STATUS	
Actual	89.0
Vacant	5.5
Authorized	94.5
Exempt	55.0
Non-Exempt	39.5
Unit	0.0
Total	94.5

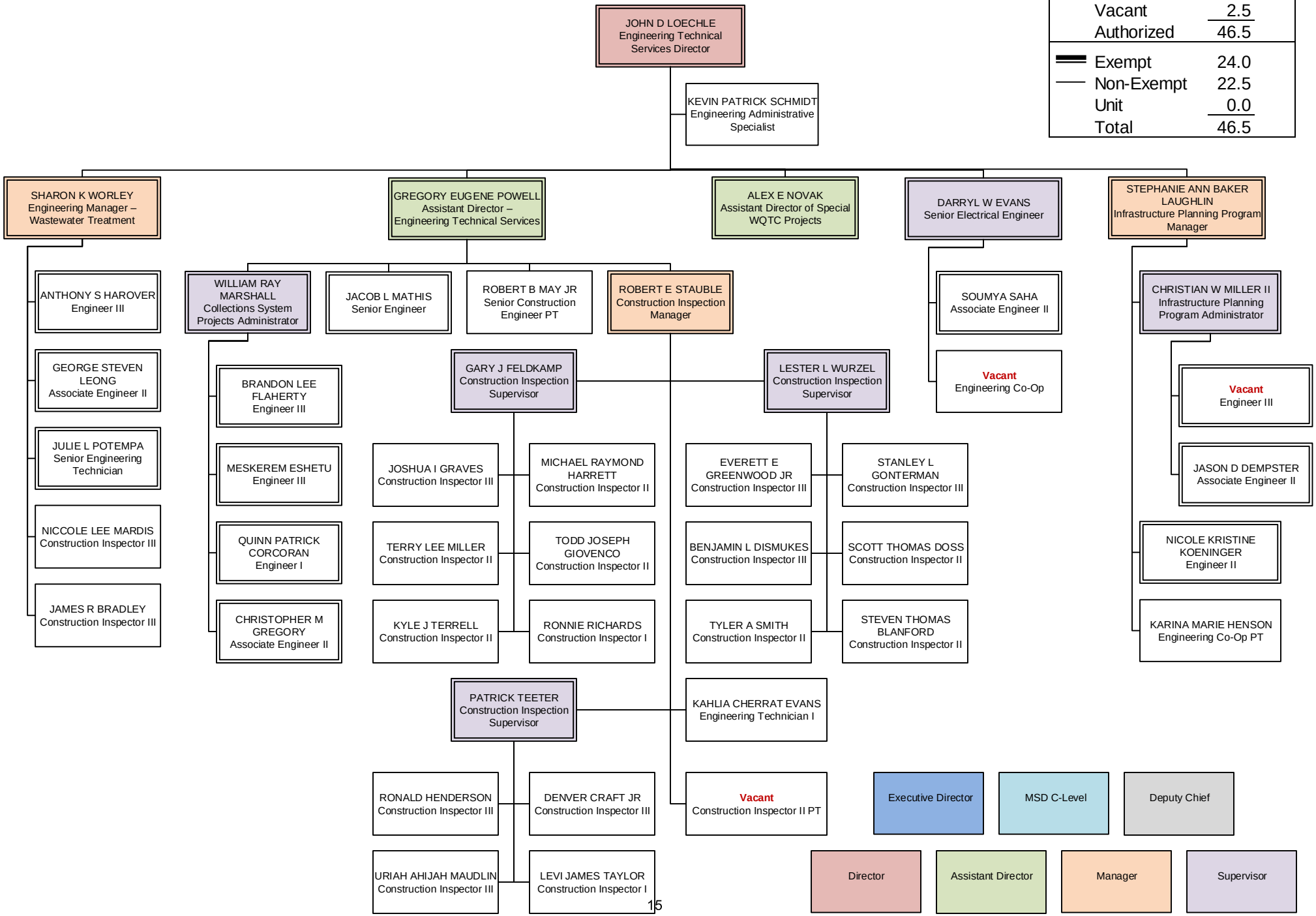
BUDGET STATUS	
Actual	15.0
Vacant	2.0
Authorized	17.0
Exempt	11.0
Non-Exempt	6.0
Unit	0.0
Total	17.0





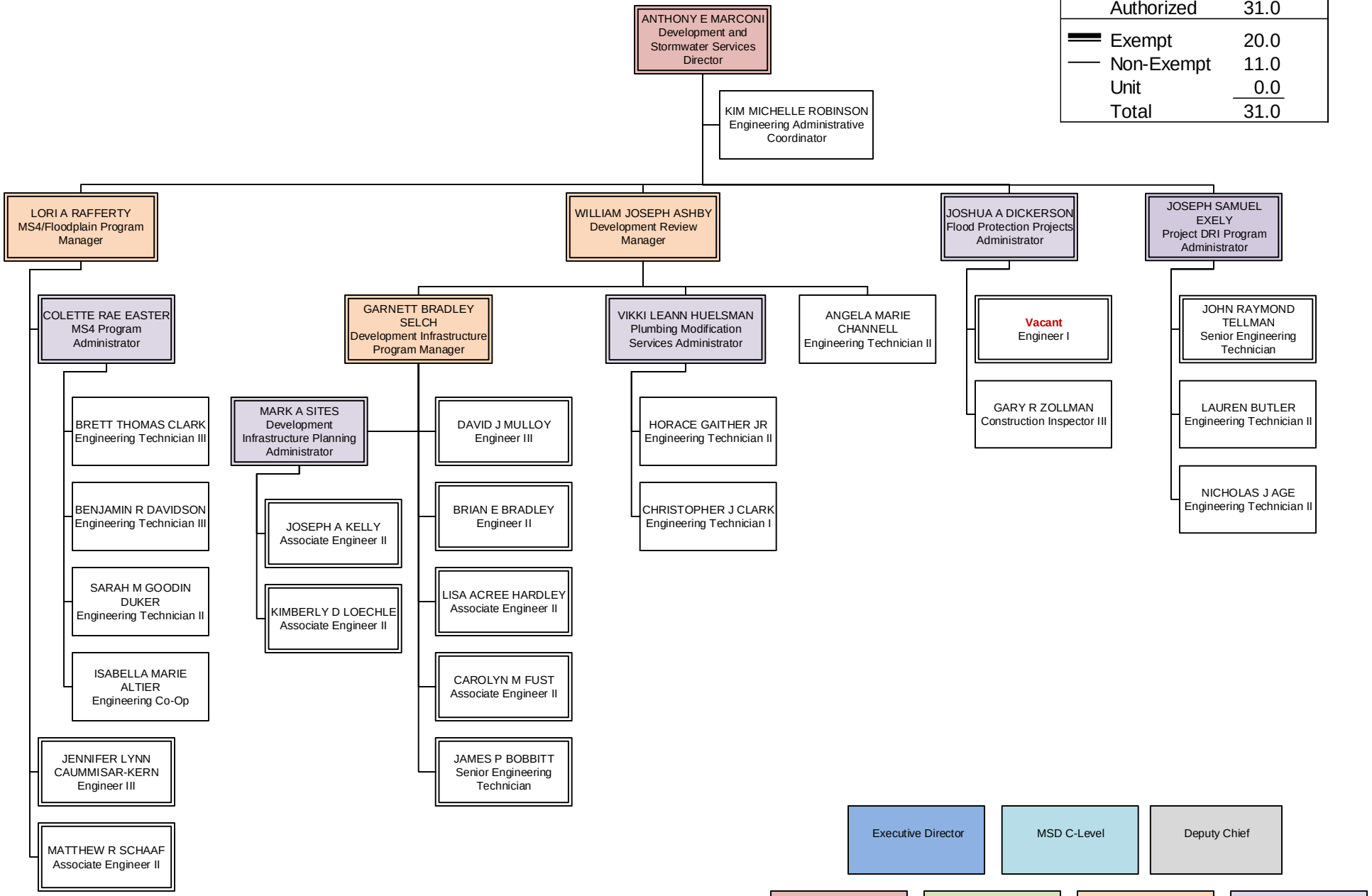
Engineering Division
Engineering Technical Services

BUDGET STATUS	
Actual	44.0
Vacant	2.5
Authorized	46.5
Exempt	24.0
Non-Exempt	22.5
Unit	0.0
Total	46.5



Engineering Division
Development & Stormwater Svcs

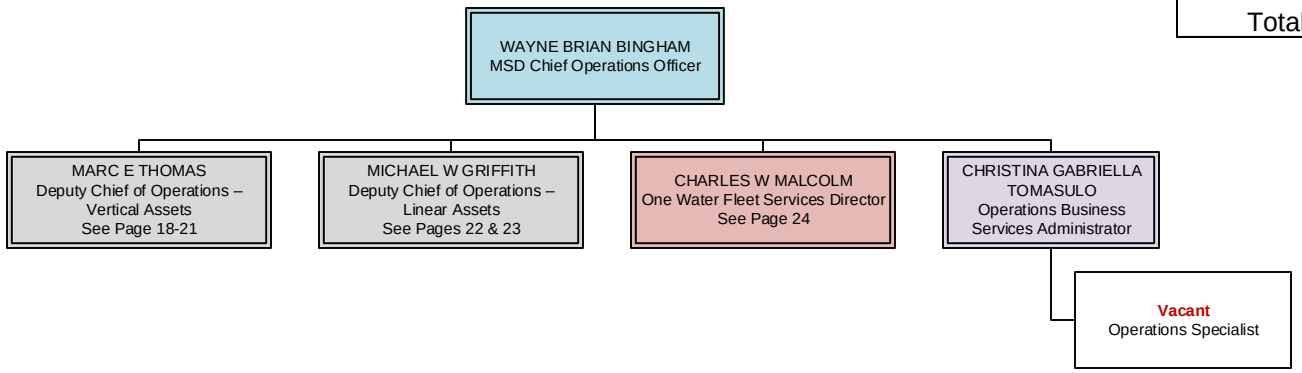
BUDGET STATUS	
Actual	30.0
Vacant	1.0
Authorized	31.0
Exempt	20.0
Non-Exempt	11.0
Unit	0.0
Total	31.0

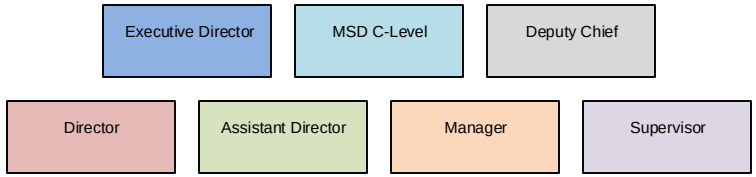


Operations Division Administration

DIVISION BUDGET STATUS	
Actual	426
Vacant	44
Authorized	470
Exempt	86
Non-Exempt	72
Unit	312
Total	470

BUDGET STATUS	
Actual	2
Vacant	1
Authorized	3
Exempt	2
Non-Exempt	1
Unit	0
Total	3





Operations Division (Vertical Assets)
Collections System, Flood Protection & Emergency Response

BUDGET STATUS	
Actual	69
Vacant	7
Authorized	76
Exempt	17
Non-Exempt	15
Unit	44
Total	76

MARC E THOMAS
Deputy Chief of Operations – Vertical Assets

THERESA LYNN SINGLETON
Administrative Assistant - Collections

TROY A SMITH
Operations Efficiency and Capital Program Administrator

MICHAEL E BRAZEL
Operations Director – Collections System and Emergency Response

JOHN P CARSONE
Emergency Preparedness & Operations Resiliency Administrator

DANE EDMOND ANDERSON
Operations Director - Flood Protection

DAYMOND M TALLEY
Operations Director – Treatment Facilities
See Pages 19 & 20

MICHAEL A MOORE
Operations Director – Support Services
See Page 21

JEREMY M GOODWIN
Collections System & Emergency Response Manager

JOHN J KOZUMPLIK
Operations Control Manager

GLEN COOPER II
Flood Protection Manager

CLAUDE L ROTTET JR
Collections System Supervisor

- 7 -Maintenance Mechanic III
- 1 -Maintenance Mechanic I
- 2 -Maintenance Mechanic Apprentice

PAUL R GRAY JR
Collections System Supervisor

- 1 -Maintenance Electrician I **(1 vac.)**

MICHAEL F CATALANO JR
Collections System Supervisor

- 2 -Maintenance Mechanic III
- 3 -Maintenance Electrician II
- 1 -Maintenance Mechanic I

C ALEXANDER SMITHER
Collections System Supervisor

- 1 -Maintenance Electrician III
- 2 -Maintenance Electrician II
- 2 -Maintenance Electrician I
- 6 -Laborer – Collections **(1 vac.)**

NOBLE L MARKS JR
Maintenance Planner

IBN LAWRENCE GREEN
Maintenance Planner

Vacant
Collections System Supervisor

BENJAMIN P AUCLAIR
Automation Controls Supervisor

- JAMES LAWRENCE SPEAKER – Automation Controls Specialist
- GEORGE W ANDERSON – Automation Controls Specialist
- JAMES DURANT JACKSON – Automation Controls Specialist
- **Vacant** – Automation Controls Specialist
- **Vacant** – Automation Controls Specialist

Vacant
Automation Controls Supervisor

- MARK B KELLER – Automation Controls Specialist
- RONALD EUGENE SIMPSON JR – Automation Controls Specialist
- BRANDON COLE HEIL – Automation Controls Specialist
- STEVEN G ROBBINS – Industrial Controls Lead Technician
- THOMAS DAVID ARMISTEAD – Industrial Controls Technician
- MICHAEL J ROACH – Industrial Controls Technician

DANNY M JANSSEN
Flood Protection Supervisor

- 4 -Floodwall Maintenance Mechanic III
- 2 -Floodwall Maintenance Mechanic I
- 1 -Floodwall Laborer
- 2 -Maintenance Mechanic Apprentice

ERIC RYAN HOTTEL
Flood Protection Supervisor

- 3 -Floodwall Maintenance Electrician II
- 3 -Floodwall Maintenance Mechanic III **(1 vac.)**
- 1 -Floodwall Maintenance Mechanic II

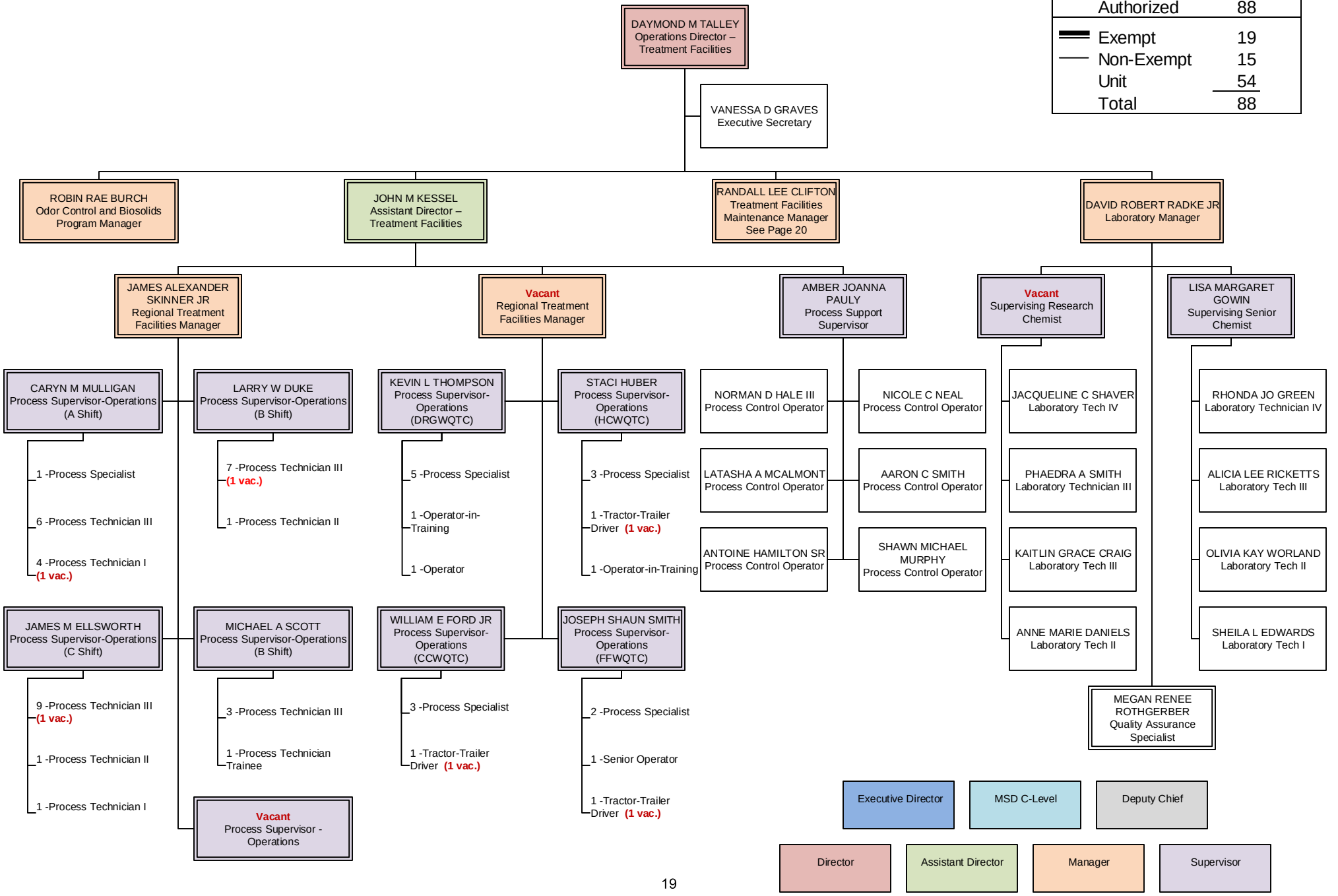
LONNIE D GAINES
Maintenance Planner

Executive Director | MSD C-Level | Deputy Chief

Director | Assistant Director | Manager | Supervisor

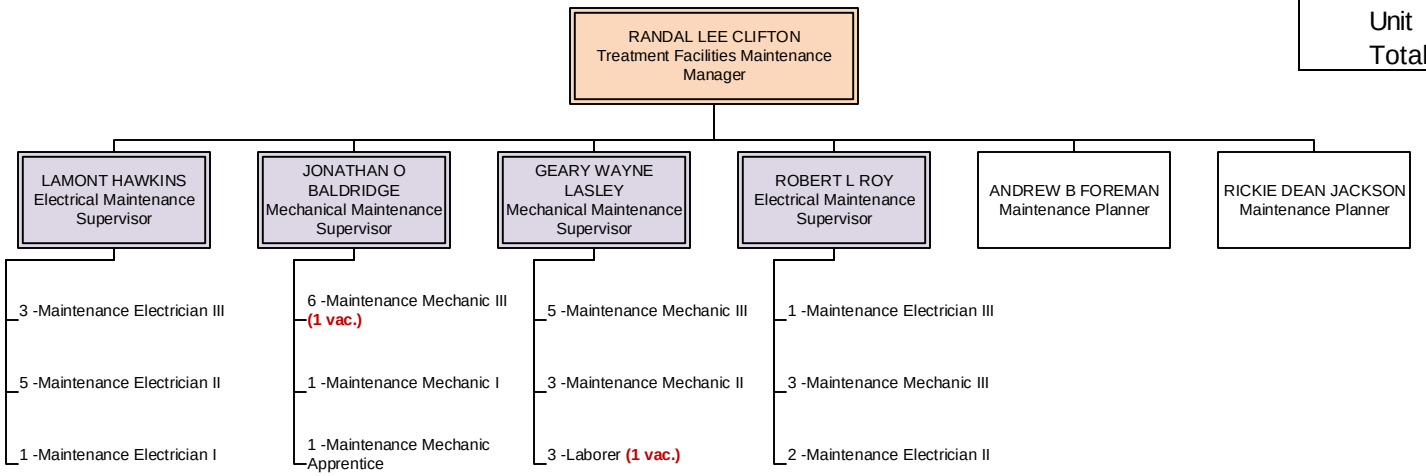
Operations Division (Vertical Assets)
Treatment Facilities

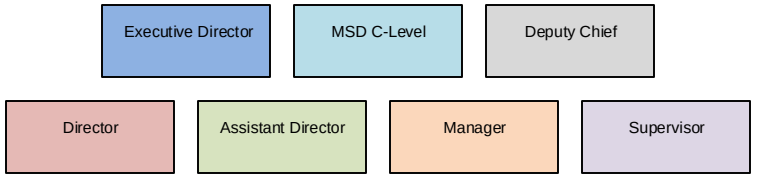
BUDGET STATUS	
Actual	79
Vacant	9
Authorized	88
Exempt	19
Non-Exempt	15
Unit	54
Total	88



Operations Division (Vertical Assets)
Treatment Facilities (Maintenance)

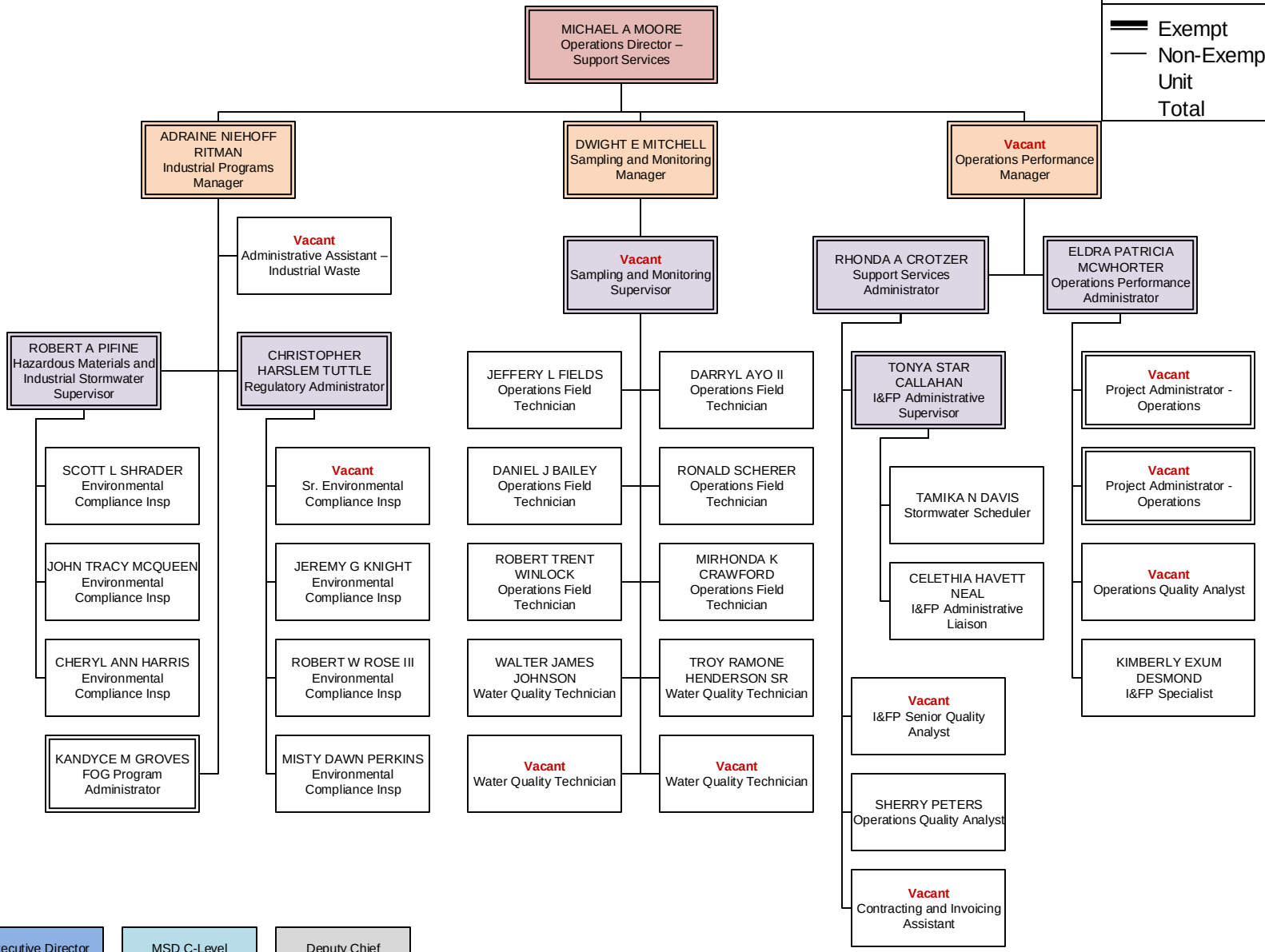
BUDGET STATUS	
Actual	39
Vacant	2
Authorized	41
Exempt	5
Non-Exempt	2
Unit	34
Total	41





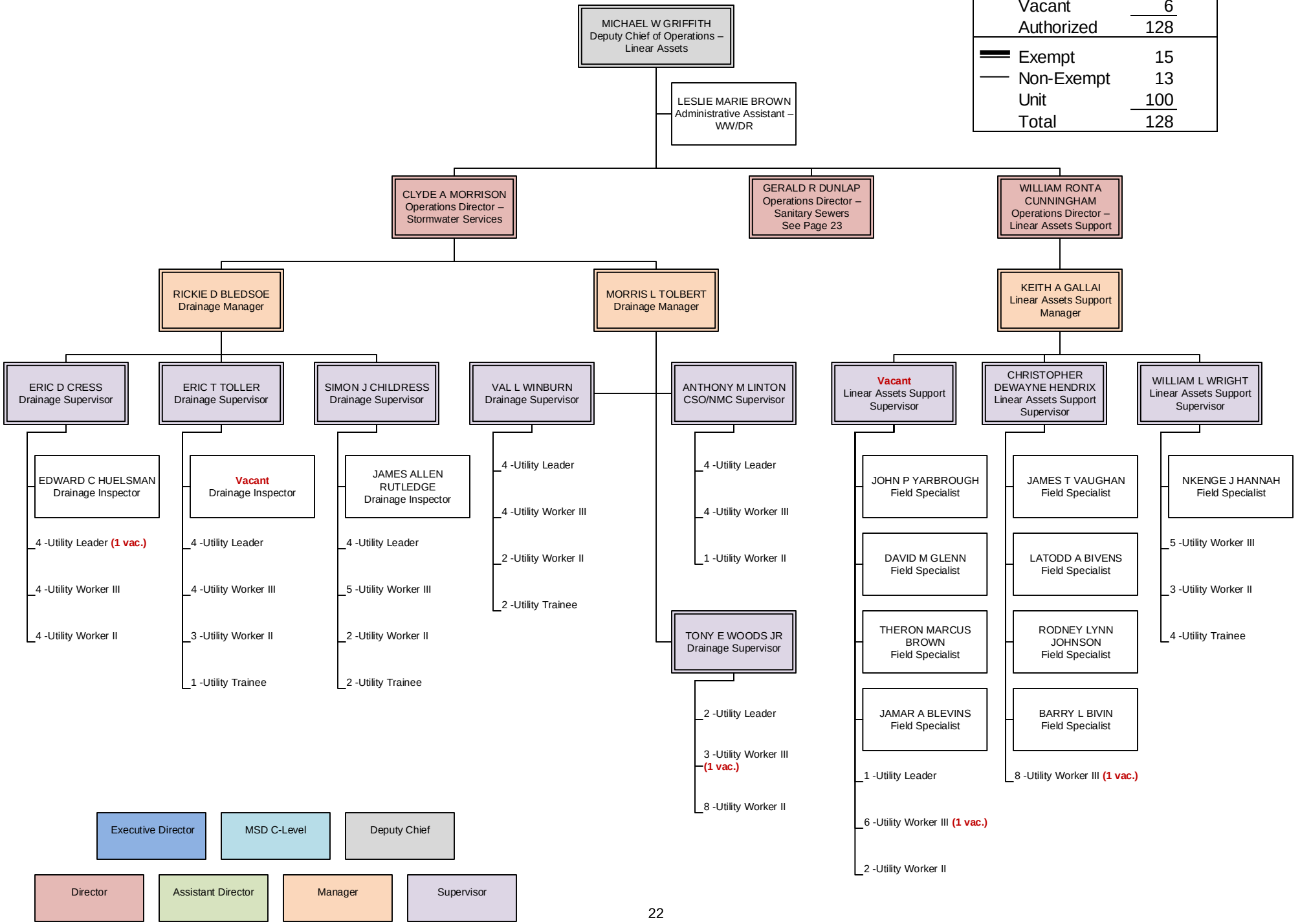
Operations Division (Vertical Assets)
Support Services

BUDGET STATUS	
Actual	27
Vacant	11
Authorized	38
Exempt	13
Non-Exempt	25
Unit	0
Total	38



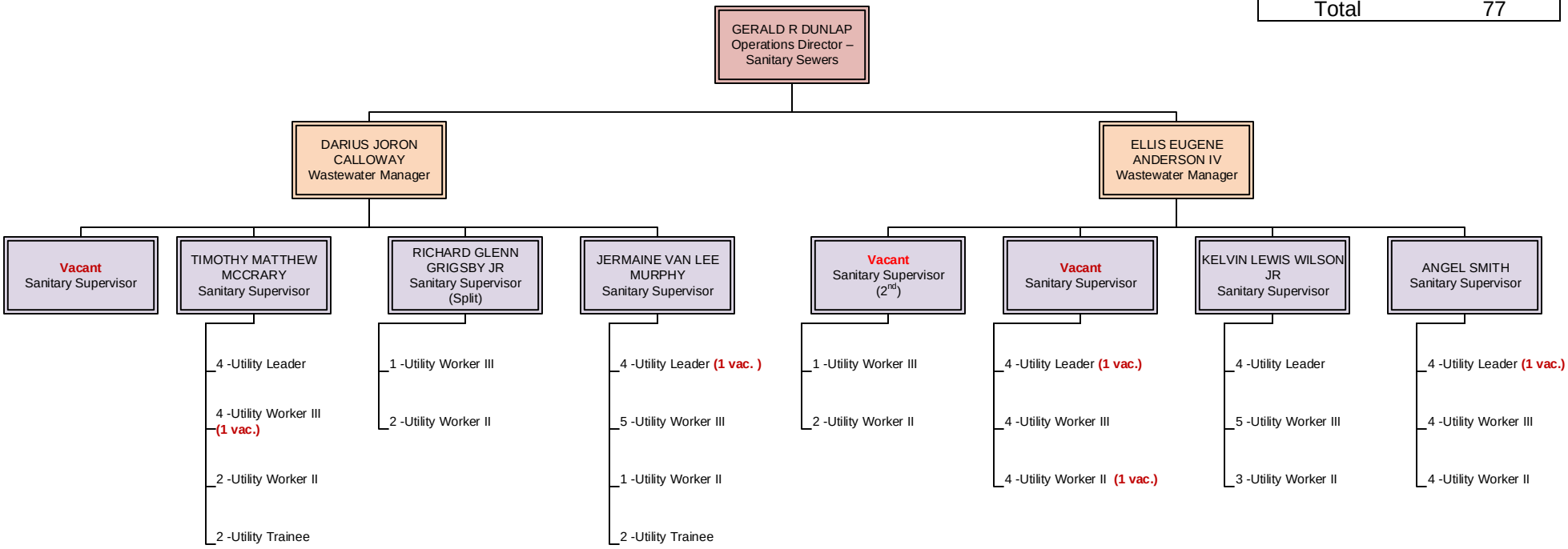
Operations Division (Linear Assets)
Wastewater and Drainage

BUDGET STATUS	
Actual	122
Vacant	6
Authorized	128
Exempt	15
Non-Exempt	13
Unit	100
Total	128



Operations Division (Linear Assets)
Wastewater and Drainage (Sanitary)

BUDGET STATUS	
Actual	69
Vacant	8
Authorized	77
Exempt	11
Non-Exempt	0
Unit	66
Total	77

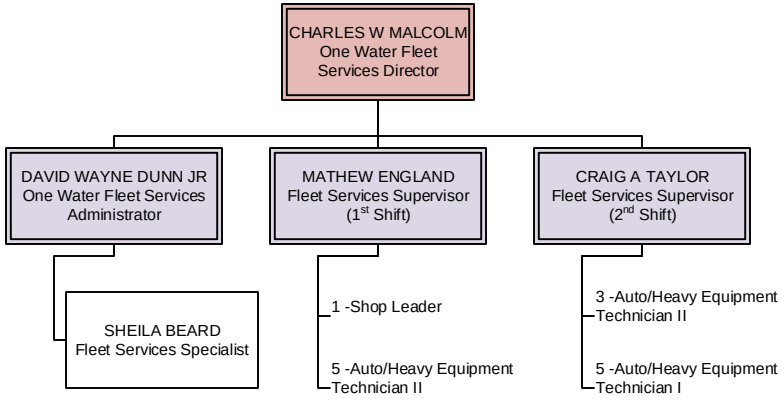


Executive Director | MSD C-Level | Deputy Chief

Director | Assistant Director | Manager | Supervisor

Operations Division
Fleet Services

BUDGET STATUS	
Actual	19
Vacant	0
Authorized	19
Exempt	4
Non-Exempt	1
Unit	14
Total	19



Executive Director | MSD C-Level | Deputy Chief

Director | Assistant Director | Manager | Supervisor

APPENDIX 2.1.1 MASS MEDIA INTEGRATION

700 West Liberty Street | Louisville, KY 40203-1911
Phone: 502.540.6000 | LouisvilleMSD.org

MEDIA RELEASE

September 29, 2020

CONTACT:
Sheryl Lauder
Sheryl.Lauder@LouisvilleMSD.org
502.540.6552

MSD marks a true 'breakthrough'

Excavation phase of Waterway Protection Tunnel now complete

LOUISVILLE, KY – "Let her rip," exclaimed Jesse Salai, Shea Traylor JV Operations Manager on MSD's Waterway Protection Tunnel, as he contacts to the tunnel boring machine driver. Salai and several others were suspended in a metal basket about 180 feet into the retrieval shaft, waiting for the tunnel boring machine's breakthrough.

A moving, mechanical drill longer than a football field – that has been excavating a tunnel 18 stories below Louisville for more than a year – broke through its final wall of bedrock. The "breakthrough" marks a significant milestone in creating MSD's Waterway Protection Tunnel, a four-mile tunnel that will reduce damaging and potentially dangerous sewer overflows that occur during heavy rains.

"This is one of the largest infrastructure construction projects you may never see," said MSD Executive Director Tony Parrott. "With excavation complete, we will now shift to the next phase and keep the momentum going on this crucial public improvement."

When complete next year, the 20-foot diameter Waterway Protection Tunnel will have the capacity to store up to 55 million gallons of combined stormwater and wastewater. Storing this until treatment capacity is available will help prevent sewer overflows that pollute area waterways, harm wildlife and plants, and create the risk of exposing people to harmful bacteria and pathogens.

The tunnel boring machine – nicknamed "Bumblebee," in honor of Muhammad Ali's famous "float like a butterfly, sting like a bee" phrase – excavated more than 625,000 tons of rock on its journey from 12th and Rowan streets just west of downtown to near Lexington Road and Grinstead Drive. The next phase of the project is to line the tunnel's entire interior with 12-inch concrete to seal it and ready it to store stormwater and wastewater.

"Bumblebee has lived up to her nickname, as we've been hard at work virtually unnoticed underground while the Louisville community has gone about its business above ground," said Jacob Mathis, MSD's project

manager for the Waterway Protection Tunnel. “By tunneling, we’ve been able to greatly reduce the disruption caused by a major construction project like this.”

MSD approved the tunnel project to take the place of four storage basin projects and provide more storage capacity and greater operational efficiency, resulting in significant cost savings. The $200 million project is part of MSD’s Consent Decree with the federal government to reduce sewer overflows caused by heavy rains significantly.

###

VIDEO PACKAGE OF TUNNEL BREAKTHROUGH

https://www.webcargo.net/l/0Vsqx0uMBp/

Fun Fact:

Samples of the rock MSD dug through as part of the excavation are on display at the Kentucky Science Center’s Waterway Protection Tunnel exhibit. The rock core samples reveal a bit of Louisville’s history as local geologists have determined they contain fossilized remains of sea creatures from more than 300 million years ago when Louisville was located near the equator. These fossils include horn corals and brachiopods that look like small clams.

About MSD

The Louisville/Jefferson County Metropolitan Sewer District (MSD) works to achieve and maintain clean, environmentally safe waterways for a healthy and vibrant community. The organization’s more than 670 employees provide wastewater management, drainage and flood protection services across the 376 square miles of Louisville Metro. In addition to operating and maintaining Louisville Metro’s sewer system, floodwall system, water quality treatment centers and flood pumping stations, MSD invests in hundreds of infrastructure improvement projects each year, plants more than 1,000 trees and other vegetation annually to enhance water filtration and reduce runoff, and provides numerous outreach programs to inform and educate the community about protecting our waterways.

700 West Liberty Street | Louisville, KY 40203-1911
Phone: 502.540.6000 | LouisvilleMSD.org

MEDIA RELEASE

October 29, 2020

CONTACT:
Sheryl Lauder
Sheryl.Lauder@LouisvilleMSD.org
502.540.6552
502.919.0325

Volunteers needed to clean the banks of the Middle Fork of Beargrass Creek

COVID-19 cautious event planned for November 7

LOUISVILLE, KY— Picking up trash along our waterways is a little thing that can make a big difference for our streams. Louisville MSD, Louisville Metro Parks and Kentucky Watershed Alliance (KWA) are hosting a "COVID-19 cautious" volunteer effort to improve water quality in the Middle Fork of Beargrass Creek.

This free event is Saturday, November 7, from 8:30 AM to noon. Volunteers must wear a mask and practice social distancing during the event. MSD, Metro Parks and KWA will provide trash bags, gloves, a free t-shirt, a sanitizing station and trash pickup.

To keep our groups to 10 or less, please register one of five locations at **https://bit.ly/31olNbh.**

- Cherokee Park at Lexington Road
- Cherokee Park near Big Rock
- Arthur K. Draught Park
- AB Sawyer Park
- Forest Green Trail

About one-third of all water that falls in the Beargrass Creek watershed lands on impervious surfaces, such as roofs and pavement—collecting toxins, pollutants, and sediments as it makes its way to the creek. Picking up trash in and around the area helps reduce pollution in our waterways.

This event is part of the 319 Grant Watershed Planning effort.

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Phone: 502.540.6000 | LouisvilleMSD.org

MEDIA RELEASE
November 24, 2020

CONTACT:
Sheryl Lauder
Sheryl.Lauder@LouisvilleMSD.org

Properly dispose of cooking fats and protect your home from sewer backups

Never pour fats, oils or grease down a drain

Keeping your home sewer line in working order is essential. When greasy wastes wash into the plumbing system through your sink or garbage disposal, they can stick to the pipes. Using your garbage disposal or a grease-cutting detergent does not keep fats, oils and grease out of the plumbing system.

“Garbage disposals shred solid material into smaller pieces but do not prevent fats, oils and grease from flowing down the drain. Grease dissolving detergents can pass fats, oils and grease through your household plumbing, but the grease may still cause problems in the sewer lines as they leave your home,” states MSD Operations Director Wastewater and Drainage Mike Griffith. “The grease and food debris builds up over time, making the pipe's interior smaller and smaller, which can cause a messy sewer backup into your home.”

Can the grease!

- Never pour fats, oils and grease down a sink, drain or toilet. Pour used grease into an empty, heat-safe container, such as a soup can, and store it in the freezer. Toss the can into the garbage after the grease becomes solid.
- Scrape your food waste into the trash. Wipe all pots, pans, dishes and cooking utensils with a paper towel to soak up grease before washing them.
- Catch the scraps in your sink with a basket or strainer, instead of using the garbage disposal, and throw them away in the trash can.
- Do not pour deep-fryer oil on the ground or in a storm drain. This can pollute our waterways and clog the storm pipe.
- Recycle your deep-fryer oil by taking it to Louisville Metro’s grease drop-off locations.
  To find a full-service recycling center near you, go to https://louisvilleky.gov/government/public-works/used-cooking-oil-recycling

If you do have a problem with a sewer backup, call MSD Customer Relations at **502.540.6000** or send us an email at CustomerRelations@LouisvilleMSD.org. **Make us your first call.** Determining if the problem is located on the public side of the system will help to avoid unnecessary plumber expense.

For more information about disposing of fats, oil, and grease go to www.LouisvilleMSD.org/athome.

####

About MSD
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700 West Liberty Street | Louisville, KY 40203-1911
Phone: 502.540.6000 | LouisvilleMSD.org

MEDIA ADVISORY

December 7, 2020

CONTACT:
Sheryl Lauder
Sheryl.Lauder@LouisvilleMSD.org
502.540.6552

MSD completes stream and wetland corridor restoration at protected conservation easement along Middle Fork Beargrass Creek tributary

Louisville MSD and the Louisville-Jefferson County Environmental Trust (LJCET) have partnered to restore a stream and wetland corridor that drains into the Middle Fork of Beargrass Creek near S. Peterson Avenue and Grinstead Drive. People drive by this site daily; most have no idea there is a waterway in what was an area overgrown with invaisive species.

What: Visit recently restored stream and wetlands corridor along busy city street

Where: Northwest corner of Grinstead Drive and S. Peterson Avenue

When: Tuesday, December 8 at 10 AM

Who: **Kurt Mason,** Chair, Louisville-Jefferson County Environmental Trust
Erin Wagoner, MSD Environmental Partnerships Liaison and LJCET Board member

More: Media are welcome to access the site for upclose views of restoration
Muddy terrain, boots are advised
Interviews with Kurt Mason and Erin Wagoner

About MSD
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MEDIA RELEASE

CONTACT:
Sheryl Lauder
Sheryl.Lauder@LouisvilleMSD.org

April 29, 2021

Green infrastructure under Churchill Downs parking lots protects from localized flooding and sewer overflows

LOUISVILLE, KY – Churchill Downs' storied history includes the Kentucky Derby, Kentucky Oaks, and hosting the Breeders' Cup nine times. But the Kentucky institution can also be recognized for its efforts to help maintain safe, clean waterways in Louisville Metro with its participation in Louisville MSD's Green Infrastructure Program.

The track's parking lot renovations include two underground basins, which hold a series of 96-inch corrugated steel pipes underneath both the Derby Museum and Longfield parking areas. The pipes—draining more than 50 acres—act as a storage basin during heavy rainfall events. The basins provide 3 million gallons of stormwater storage, which slowly seeps into the sandy soil under the parking lot into the Ohio River Alluvial Aquifer, keeping stormwater out of the sewer system, reducing sewer overflows and stress on wastewater treatment facilities.

The green infrastructure project exceeds all projections of effectiveness in controlling the amount of stormwater entering the sewer system. The underground basins went into service in April 2019 and have exceeded their capacity only once. As total capacity exceeds the storage amount, the stormwater overflows the underground basins into MSD's combined sewer system.

Additional Facts about the Churchill Downs Infiltration Basins:

- Each basin is the length of a football field and roughly 17 feet underground
- Basins have 3-million-gallon storage capacity total - equivalent to 4.5 Olympic-size swimming pools
- They capture more than 60 million gallons of water each year and will prevent about 12 million gallons of sewer overflow each year
- And are large enough to handle a 2.13" rain event - this is the largest rain event in a typical year of rainfall.
    - This means that, in a typical year, every drop of rain that falls on the 55-acre parking lot will infiltrate back into the ground
- More than 900 trees were planted at Churchill Downs as part of this project

For more information visit LouisvilleMSD.org/Green

LouisvilleMSD

About MSD

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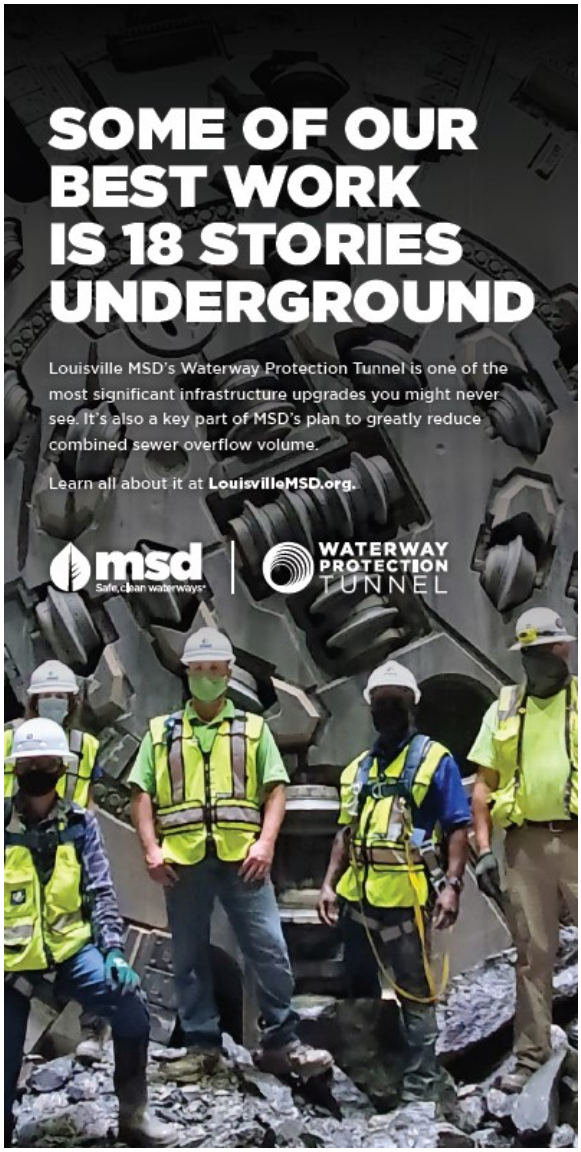
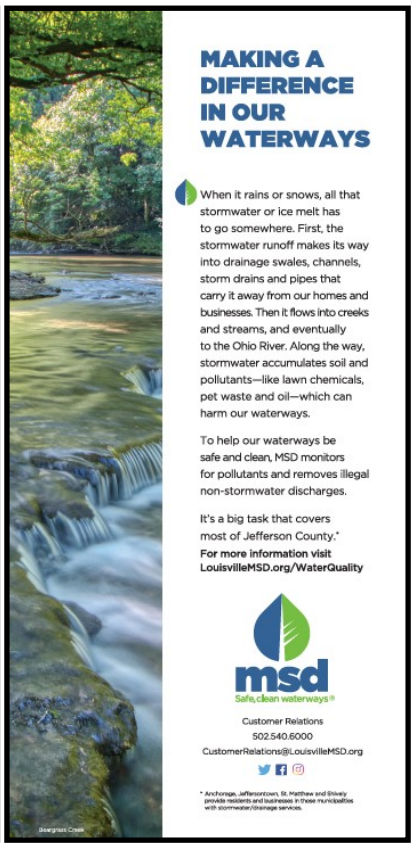
October 2020



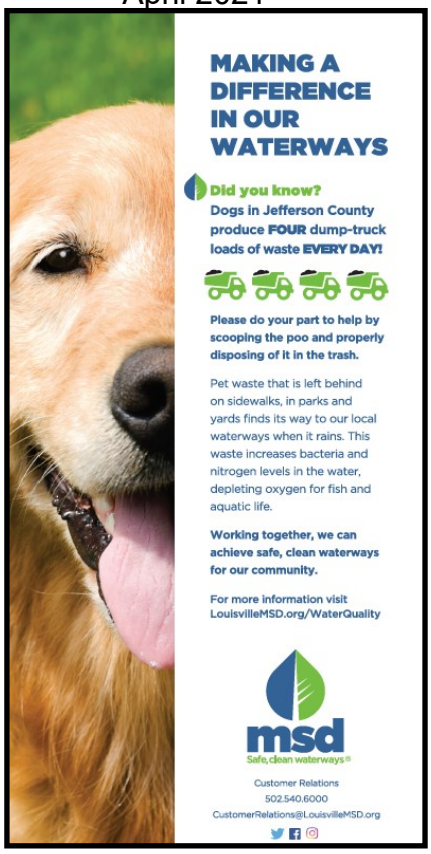
February 2021



March 2021



April 2021



May 2021



June 2021



Print Mass Media: The Anchor Age (September 2020)

2.1.1-D

the ANCHOR AGE
Incorporated 1878
Phone: 502/245-4654 Fax: 502/245-5651
The Honorable Neil Ramsey
Mayor of Anchorage
September 2020

POOL DRAINING SAFETY



Be kind to the environment and neighbors when you drain your pool. Warm pool water full of chemicals is toxic and will kill aquatic life and plants if drained to a stream or drainage channel. Protect our watershed! Follow these simple steps to avoid flooding, water back-up, or harming the environment when you drain your pool this fall:

- Test pool water and allow chlorine to drop below 0.1 ppm
- Ensure the pH level is between 6 and 8 (normal range)
- Do not drain your pool during or up to 48 hours after a rain.
- Slowly drain the pool to a grassy area on your property, and allow water to soak into the ground. It should not flow directly into a street, stream, catch basin, or your neighbor's property.

For more information, visit https://louisvillemsd.org/sites/default/files/inline-files/MSD%20Media%20Release--Safe%20Pool%20Closings.pdf or call MSD Customer Relations at (502) 540-6000 with your pool draining questions.

Kentucky Conservation Conversations Podcast with MSD Executive Director Tony Parrott (10/16/2020)

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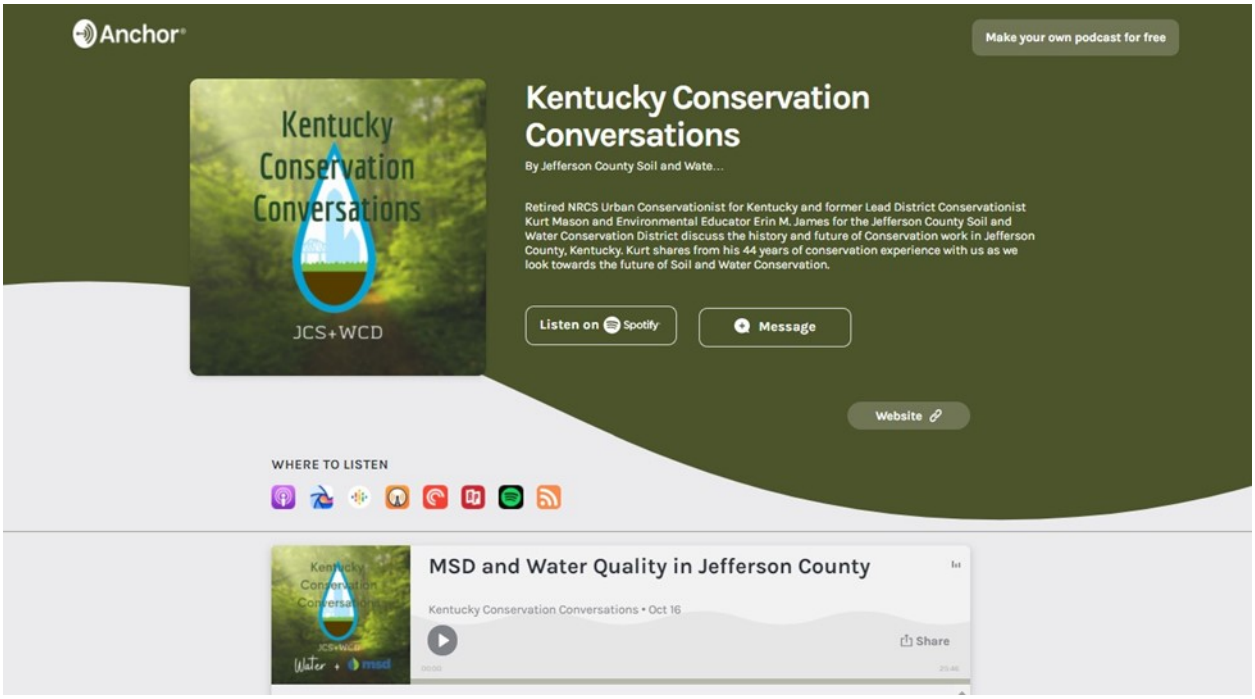

Social Media Account Information
(Facebook, Twitter, Instagram, You Tube)

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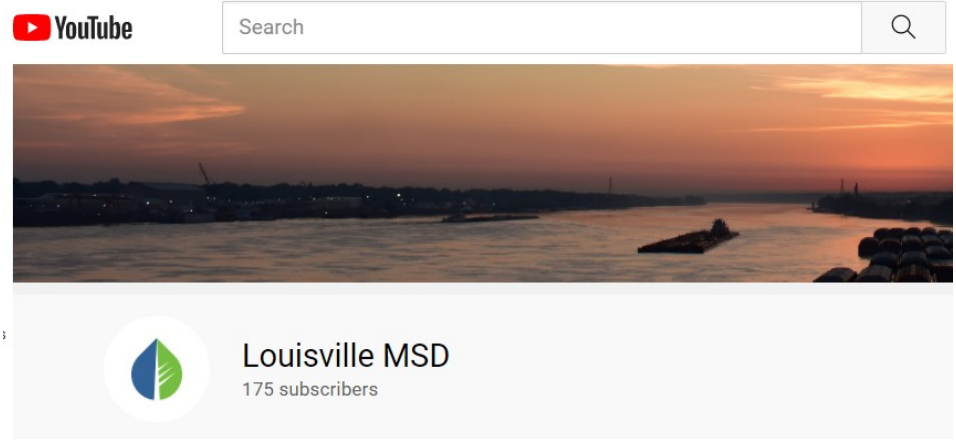


Louisville MSD
July 12 at 10:35 AM ·

Want to help ensure #safecleanwaterways? Delay using washing machines and dishwashers during peak rain events—they can fill up the sanitary sewers and contribute to sewer overflows.
https://www.youtube.com/watch?v=3ykUUXvM6ME



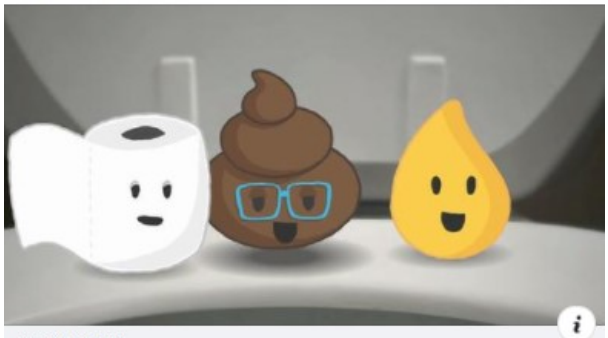
YOUTUBE.COM
Laundry

Louisville MSD
April 9 ·

Yes, you should definitely floss every day—and then you should dispose of it in the garbage and NOT flush it down the toilet! #Sticktothe3Ps to help maintain #safecleanwaterways.

Learn more about the #BowlPatrol at http://ow.ly/KchF50EI2NQ.

http://ow.ly/hvsU50EI2NP



YOUTUBE.COM
Floss fight
You finish flossing and flush it and think, "Hey, what harm can a littl...

LouisvilleMSD @louisvillemsd · Apr 13
Did you floss this morning? (You should have!)

Then did you flush your dental floss? (You *shouldn't* have!)

And here's why. 👇👇👇

Floss fight
You finish flossing and flush it and think, "Hey, what harm can a little dental floss do?"To sewer lines, ...
youtube.com

1 1

Louisville MSD
April 13 ·

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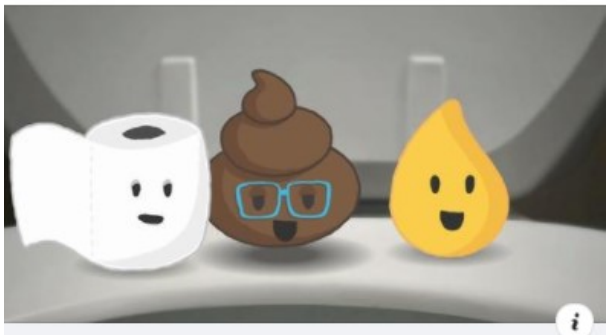


YOUTUBE.COM
Floss fight
You finish flossing and flush it and think, "Hey, what harm can a littl...

LouisvilleMSD @louisvillemsd · Apr 9
Yes, you should definitely floss every day—and then you should dispose of it in the garbage and NOT flush it down the toilet! #Sticktothe3Ps to help maintain #safecleanwaterways.

Learn more about the #BowlPatrol at ow.ly/YKXD50EI2NO.

Floss fight
You finish flossing and flush it and think, "Hey, what harm can a little dental floss do?"To sewer lines, ...
youtube.com

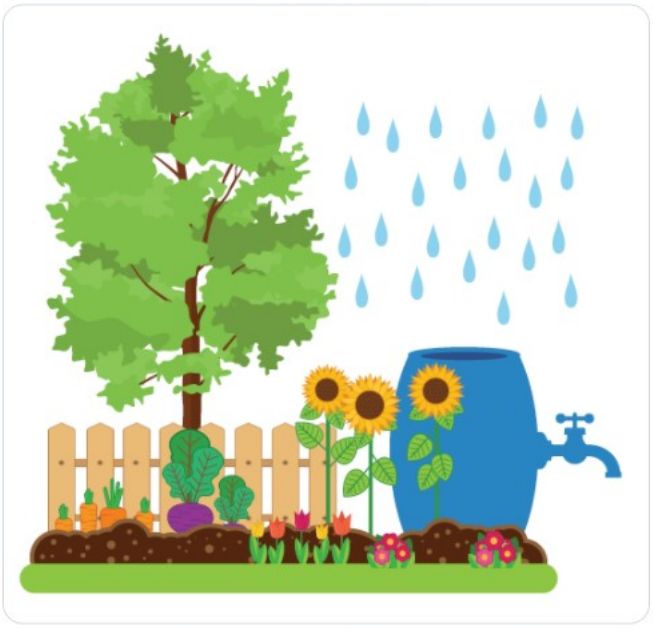
Louisville MSD
June 15 ·

Be part of the fight for #safecleanwaterways: Plant a tree, construct a rain garden, or replace your downspout with a rain barrel garden to help absorb stormwater! Find more tips at http://ow.ly/Z0Ln50FaN0r.



LouisvilleMSD @louisvillemsd · Jun 15

Be part of the fight for #safecleanwaterways: Plant a tree, construct a rain garden, or replace your downspout with a rain barrel garden to help absorb stormwater! Find more tips at ow.ly/vBGX50FaN0q.



4

LouisvilleMSD @louisvillemsd · Mar 18

Rain gardens consist of native plants with deep, dense root systems that can capture and infiltrate stormwater runoff. Rain gardens keep stormwater out of our combined sewer systems, relieving sewer overflows, and playing an important role in #safecleanwaterways.



1 1

LouisvilleMSD @louisvillemsd · Mar 18

Want to start your own rain garden? We're giving away free seed packets at our main office at 700 West Liberty. Request 10 packets or more and we'll mail them to you! Email brett.clark@louisvillemsd.org for more information. Learn more at ow.ly/aqKn50DXrpQ.

1 1

Louisville MSD
March 18 ·

For today's #ThrowbackThursday it's all the way back to ...

2018! (It seems forever ago to us also.)

But this was when an ecology class at Louisville Male High School developed a plan for and installed a rain garden at the school. Rain gardens consist of native plants with deep, dense root systems that can capture and infiltrate stormwater runoff. Rain gardens keep stormwater out of our combined sewer systems, relieving sewer overflows, playing an important role in #safecleanwaterways.

Want to start your own rain garden? We're giving away free seed packets at our main office at 700 West Liberty. Request 10 packets or more and we'll mail them to you! Email brett.clark@louisvillemsd.org for more information. Learn more at http://ow.ly/aqKn50DXrpQ.



LouisvilleMSD @louisvillemsd · May 18

MSD partnered with Louisville Grows, Metro's Division of Community Forestry, and Brightside to plant 167 trees in the Iroquois and Southside neighborhoods Saturday. MSD engineer Colette Easter participated with her son and members of the Citizen Forestry Group. 1/2



1 2

LouisvilleMSD @louisvillemsd · May 18

This is part of the campaign to help reduce the urban heat island effect and reduce runoff to the combined sewer system. These types of events help to ensure #safecleanwaterways and reduce stormwater runoff.

1



louisville.msd

louisville.msd Stream restoration project located at Grinstead and S Peterson Dr - Enhances the stream, reconnects the wetlands hydraulically to the channel and will increase the habitat of the site for aquatic species, birds and soil.

28w

95 views

JANUARY 5

Add a comment... Post

Louisville MSD
June 9 ·

Dispose of pet waste in the trash so that it isn't washed down storm drains. Dogs in Jefferson County produce four dump-truck loads of waste every day.

Learn what you can do for #safecleanwaterways at http://ow.ly/IKSB50F6KTf.



LouisvilleMSD @louisvillemsd · Jun 9

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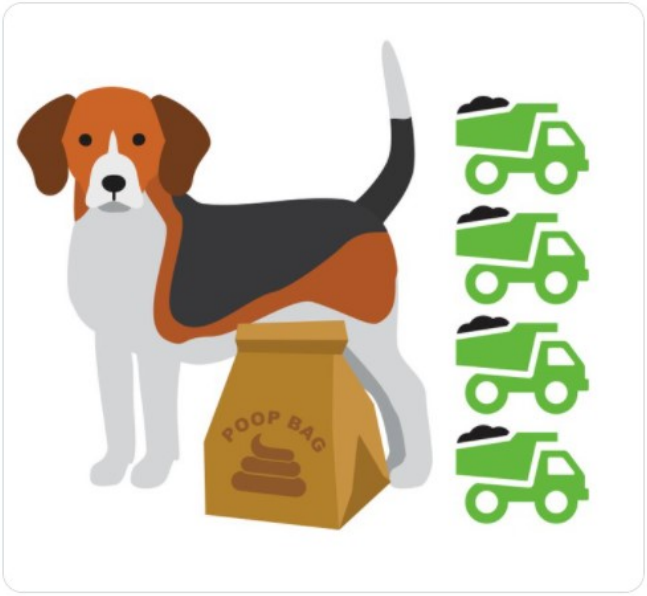


1 3

Louisville MSD
June 25 ·

We all appreciate a well-kept lawn, but did you know reducing yard runoff helps maintain #safecleanwaterways? Composting grass clippings and decreasing the use of fertilizer and pesticides keeps those chemical out of streams following rain. #FlushableFriday



LouisvilleMSD @louisvillemsd · Jun 25

We all appreciate a well-kept lawn, but did you know reducing yard runoff helps maintain #safecleanwaterways? Composting grass clippings and decreasing the use of fertilizer and pesticides keeps those chemical out of streams following rain. #FlushableFriday



2

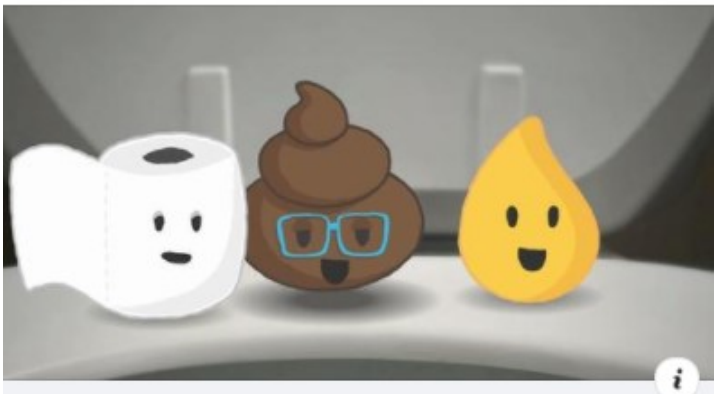
Louisville MSD
April 13 ·

Did you floss this morning? (You should have!)

Then did you flush your dental floss? (You *shouldn't* have!)

And here's why. 👇👇👇

https://www.youtube.com/watch?v=PQ9IPxOG8H4



YOUTUBE.COM

Floss fight

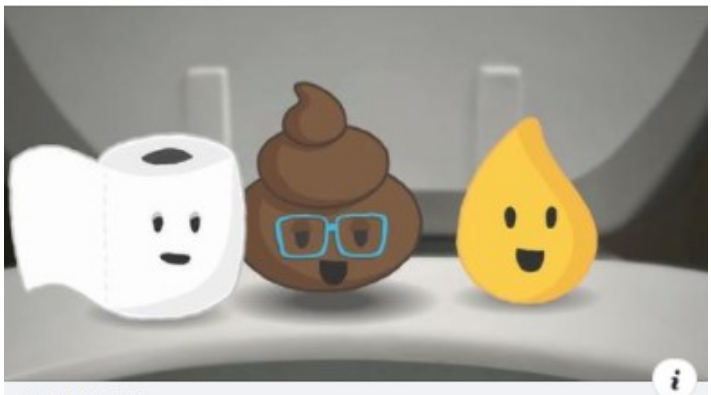
You finish flossing and flush it and think, "Hey, what harm can a littl...

Louisville MSD
April 9 ·

Yes, you should definitely floss every day—and then you should dispose of it in the garbage and NOT flush it down the toilet! #Sticktothe3Ps to help maintain #safecleanwaterways.

Learn more about the #BowlPatrol at http://ow.ly/KchF50EI2NQ.

http://ow.ly/hvsU50EI2NP



YOUTUBE.COM

Floss fight

You finish flossing and flush it and think, "Hey, what harm can a littl...

Louisville MSD
February 20 ·

ICYMI: Where we again remind you to #Sticktothe3Ps and only flush pee, poo and paper, but do so after you've already had lunch. #BowlPatrol

http://ow.ly/Teeu50DEPWU



THEGUARDIAN.COM

Workers clear 'huge, disgusting' fatberg from London sewer

3

Louisville MSD
April 23 ·

Psst

Hey you.

"Flushable" wipes aren't flushable.

But for the back of the room:

STICK 👏 to 👏 the 👏 3 👏 Ps 👏 and 👏 only 👏 flush 👏 pee 👏 poo 👏 and 👏 toilet paper.

Thanks.

#FlushableFriday

http://ow.ly/1fFT50EvwjU



KSAT.COM

What happens to 'flushable' wipes after they leave your toilet bowl?

Louisville MSD
April 16 ·

Save yourself some time, trouble and mess and #sticktothe3Ps. Only flush pee, poo and toilet paper! #FlushableFriday



Louisville MSD
June 4 ·

Save yourself from future trouble and #Sticktothe3Ps (FYI: that's pee, poo and toilet paper). Learn more about what you can do to ensure #safecleanwaterways at louisvillemsd.org. #FlushableFriday



Like Comment Share

Louisville MSD
February 12 ·

We're all for putting on your dancing shoes, but keep the clogs where they belong: On your feet. #Sticktothe3Ps and only flush pee, poo and toilet paper. #BowlPatrol



Louisville MSD
April 1 ·

There's no foolin' around when it comes to why you should #Sticktothe3Ps. Only flush pee, poo and toilet paper to prevent clogs and damage to pipes—and that's no joke. #KeepYourFlushGameSimple #BowlPatrol



1 1 Share

Louisville MSD
March 13 ·

Today would be a good day to make sure the only thing you're flushing is pee, poo and toilet paper. Tomorrow is great for that also. In fact, every day is great.

Can we do every day?

Yes we can.

#Sticktothe3Ps #BowlPatrol #safecleanwaterways



Louisville MSD
February 14 ·

Roses are red
Violets are blue
We bet you can guess what's next
But oh whatever; only flush paper, pee and poo.... See More



Louisville MSD
May 28 ·

A #FlushableFriday reminder for the three-day weekend to keep your #FlushGame simple and always #Sticktothe3Ps.



LouisvilleMSD @louisvillemsd · Jun 4

Save yourself from future trouble and #Sticktothe3Ps (FYI: that's pee, poo and toilet paper). Learn more about what you can do to ensure #safecleanwaterways at louisvillemsd.org. #FlushableFriday



1

LouisvilleMSD @louisvillemsd · Apr 16

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1 8

LouisvilleMSD @louisvillemsd · Jul 2

We won't dance around the issue; we need everyone to keep their #FlushGame simple and #Sticktothe3Ps.



1

Louisville MSD
July 2 at 4:15 PM ·

We won't dance around the issue; we need everyone to keep their #FlushGame simple and #Sticktothe3Ps.



LouisvilleMSD @louisvillemsd · Jun 18

It's easy to be part of the fight for #safecleanwaterways: Just #Sticktothe3Ps. Learn what else you can do at louisvillemsd.org/athome. #FlushableFriday



1

LouisvilleMSD @louisvillemsd · May 28

A #FlushableFriday reminder for the three-day weekend to keep your #FlushGame simple and always #Sticktothe3Ps.



1

LouisvilleMSD @louisvillemsd · Mar 13

Today would be a good day to make sure the only thing you're flushing is pee, poo and toilet paper. Tomorrow is great for that also. In fact, every day is great.

Can we do every day?

Yes we can.

#Sticktothe3Ps #BowlPatrol #safecleanwaterways



LouisvilleMSD @louisvillemsd · Feb 14

Roses are red
Violets are blue
We bet you can guess what's next
But oh whatever; only flush paper, pee and poo.

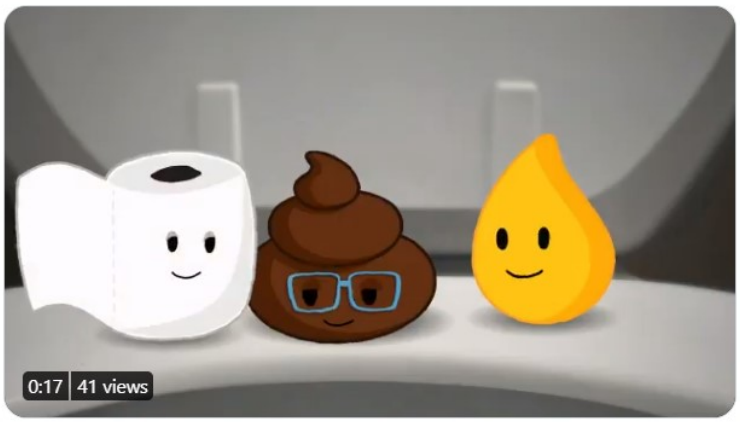
Happy #ValentinesDay2021 from The Bowl Patrol!
#FlushableWipesArentFlushable
#Sticktothe3Ps



1 2

LouisvilleMSD @louisvillemsd · Apr 1

There's no foolin' around when it comes to why you should #Sticktothe3Ps. Only flush pee, poo and toilet paper to prevent clogs and damage to pipes —and that's no joke. #KeepYourFlushGameSimple #BowlPatrol



2 2

Louisville MSD

February 19 ·

Temperatures are expected to be on the rise, and when it does, this week's snowfall has to melt, and the water has to go somewhere.

That's where we come in!

Learn more about MSD and stormater/drainage at http://ow.ly/xqeg50DEM2K.



LouisvilleMSD @louisvillemsd · Feb 14
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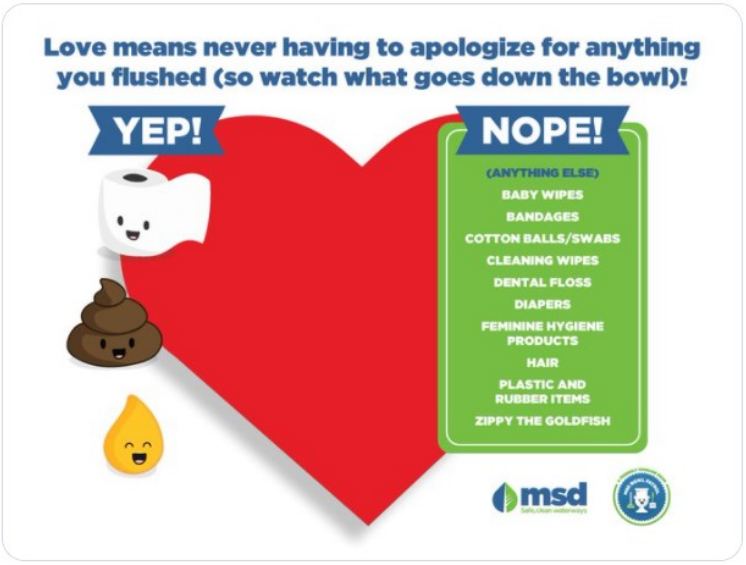


1 2

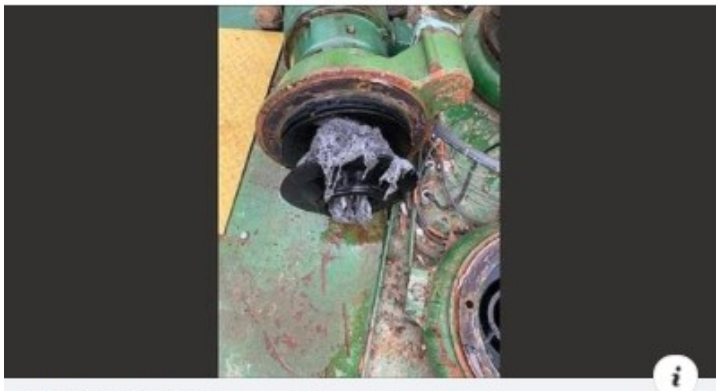
Louisville MSD
June 5 ·

A poem:

No matter where you go
No matter what you do
Keep your #FlushGame simple
Only flush paper, pee and poo.

Remember: "Flushable" wipes aren't flushable. #Sticktothe3Ps.

https://www.arkansasonline.com/.../flushable-wipes-clog.../



ARKANSASONLINE.COM
'Flushable' wipes clog sewers
"Flushable" wipes are flushable, right?

4 2 Shares

Like Comment Share

Louisville MSD
June 18 ·

It's easy to be part of the fight for #safecleanwaterways: Just #Sticktothe3Ps. Learn what else you can do at https://louisvillemsd.org/athome. #FlushableFriday



LouisvilleMSD @louisvillemsd · Jun 5
A poem:

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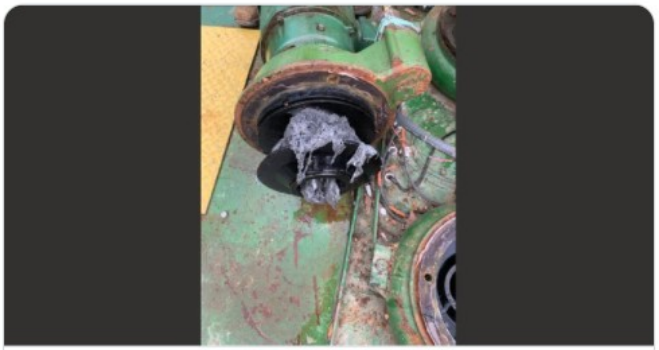


'Flushable' wipes clog sewers
"Flushable" wipes are flushable, right?
arkansasonline.com

1



Plan your rain garden now

Rain gardens help infiltrate rainwater before it reaches the drainage system, and reduce the amount of stormwater and pollutants running into storm drains, combined sewers or streams.

For your **FREE Rain Garden Guide,** look online at **LouisvilleMSD.org/Green** or contact MSD Customer Relations at **502.540.6000** or **CustomerRelations@LouisvilleMSD.org**.

STREAMLINE

News and Events at Louisville MSD · January 2021



Isabella Altier left, and Ryan Fisher place tile as part of MS4's algae tile program. Algae that grow on the tile are analyzed to determine stream health.

Algae tile program

—Continued from page 1

sheets of 1-inch tile squares are left in place for about 16 days in the fall, allowing algae to grow on the tiles. They are then collected for laboratory study of the algae.

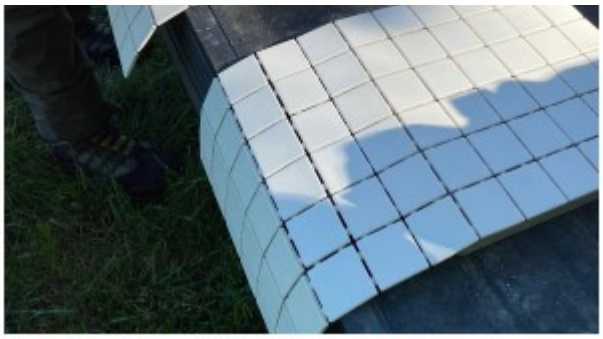
"Algae are an interesting indicator of stream health," said **Colette Easter,** an engineer with the MS4 program. "If there are no algae, there are no nutrients in the stream and no opportunity for life growth. Too many algae and it's toxic, removing the nutrients from the water and eliminating the chance for life growth."

These studies take place in each of our community's 11 watersheds. The federally-required study allows for long-term modeling for possible future stream restoration projects. Tile placement, usually done by contractors, was performed this year by MSD employees. "By getting our staff involved, it exposed everyone to what our long-term network looked like, and it offered greater buy-in for new employees unfamiliar with the program," Easter said. She added Engineering Co-Op **Isabella Altier** managed the effort. "She did an incredible job of organizing the project."

Georgia State University biologists are analyzing the tiles and will provide their findings. MSD will include the data in the State of the Stream report, 2021.

Algae tile program offers data for future stream restoration sites

When MSD employees in the Municipal Separate Storm Sewer System (MS4) program talk about putting down new tile, it's a little different than what you might expect for your kitchen or bathroom. The algae tile program is conducted every other year by placing ceramic tiles in stream bottoms throughout Jefferson County. Half a dozen 6- by 12-inch



Half a dozen 6- by 12-inch sheets of 1-inch tile squares are left in place in the waterway for about 16 days in the fall, allowing algae to grow on the tiles.

For more information on the water quality of our local waterways, visit LouisvilleMSD.org/WaterQuality.

STREAMLINE

News and Events at Louisville MSD · February 2021



Plan your rain garden now

Rain gardens help infiltrate rainwater before it reaches the drainage system, and reduce the amount of stormwater and pollutants running into storm drains, combined sewers or streams.

For your **FREE Rain Garden Guide,** contact MSD Customer Relations at **502.540.6000,** or online at **CustomerRelations@LouisvilleMSD.org.**



Working together, we can achieve safe, clean waterways

Make sure that you safely and properly dispose of expired prescription drugs and other medications. It is never safe to flush pharmaceutical products down the toilet or drain. They can kill bacteria or produce drug-resistant bacteria in sewage treatment plants and septic systems.

For a safe disposal site near you visit: https://bit.ly/3tJp3dK



A stream and wetland restoration project near S. Peterson Avenue and Grinstead Drive will improve water quality of a tributary to Middle Fork Beargrass Creek.

Improving water quality along a busy urban corridor

Healthy waterways, wetlands, and riparian areas improve the community's quality of life and provide environmental benefits that we all can enjoy. Louisville MSD and the Louisville-Jefferson County Environmental Trust (LJCET) partnered to restore a stream and wetland corridor that drains into the Middle Fork of Beargrass Creek near S. Peterson Avenue and Grinstead Drive.

"The area is protected by a conservation easement, which preserves the land's wildlife, ecological, and scenic properties. The restorations are improving water quality in Beargrass Creek supporting native plant and animal species in the area," states MSD Environmental Partnerships Liaison and LJCET Board member Erin Wagoner.

The project includes invasive species removal and treatment and stream and wetland corridor restoration. The removal of invasive woody shrubs and vines allows native plants to thrive and supports healthy riparian habitat. The improvements also restore proper hydrologic function to the stream and wetlands, creating a stable stream channel for aquatic, terrestrial, and avian wildlife.

"I am hopeful that regenerative projects such as this one will encourage property owners in the watershed to make land-use changes that have a positive impact on habitat and water quality," says Kurt Mason, LJCET Board Chair.

For more information visit: LouisvilleMSD.org/WaterQuality

msd Safe, clean waterways

STREAMLINE

News and Events at Louisville MSD · March 2021

Trash travels

Have you noticed more trash than usual along our roadways? The heavy rains of early March brought a lot of improperly disposed of trash to our streams, including a green recliner.

Moving water is a powerful force. For instance, if you leave a paper cup in a parking lot at one of the east end malls, the wind and rain can carry that cup to Beargrass Creek or one of its tributaries in the area. It may even go down a storm drain in the parking lot that drains directly to the stream. The cup then travels the swollen waterway to the Butchertown area, where MSD's Beargrass Flood Pumping Station straddles the creek near the Ohio River.

When the pumping station is in service, the stream water stops at the closed gates. MSD utilizes mechanical trash rakes to lift the trash out of the water and into a dumpster for proper disposal.

For more information about water quality visit: http://www.louisvillemsd.org/WaterQuality

For information about organizing a stream cleanup in your area contact: Rhonda.Crotzer@louisvillemsd.org



Flood Protection staff find a green recliner chair in the trash rakes at MSD's Beargrass Flood Pumping Station.



Plan your rain garden now and get **FREE** seed packets!

Rain gardens help infiltrate rainwater before it reaches the drainage system, and reduce the amount of stormwater and pollutants running into storm drains, combined sewers or streams.

For your **FREE Rain Garden Guide and FREE seed packets,** contact MSD Customer Relations at **502.540.6000,** or online at **CustomerRelations@LouisvilleMSD.org.** Or download the brochure at **LouisvilleMSD.org/HowYouCanHelp**

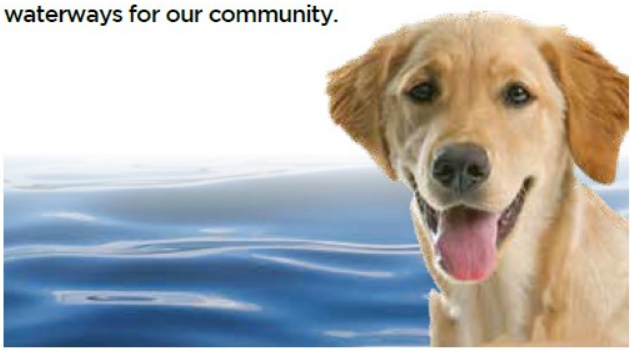


Jefferson County dogs produce four dump-truck loads of waste EVERY day.

Pet waste that is left behind on sidewalks, in parks and at home finds its way to local waterways when it rains. Please do your part to help by scooping the poop!

Properly dispose of it in the trash.

Working together, we can achieve safe, clean waterways for our community.



msd Safe, clean waterways

STREAMLINE

News and Events at Louisville MSD · May/June 2021



You can help
Improve our waterways by...

Composting grass clippings, and decreasing your use of fertilizer and pesticides.

Rainwater flows over rooftops, lawns, parking lots and roadways as it travels to storm drains and ditches. This water accumulates pollutants along its journey—such as lawn chemicals, oil, litter and pet waste—which flow directly to our waterways.

For more information visit LouisvilleMSD.org/AtHome

FLOODPLAIN NEWS

November 2020

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Safe, clean waterways

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The innovative regional utility for safe, clean waterways

Drainage problems

To solve a drainage problem, look to see if removing obstructions or grading your yard can resolve the drainage issue. Also, check to see if a clogged ditch could be the source of any flooding problems. Clogged ditches, creeks, and channels can cause water to overflow or divert into yards and onto roads.

Never dump grass clippings or yard waste into a stream or ditch. Dumping anything in our streams is illegal and can cause flooding or water quality problems. To report obstructions or illegal dumping, contact MSD 24/7 at **502.540.6000**.

Help keep our streams clean

- **Decrease your use of fertilizer and pesticides**. Stormwater runoff containing these chemicals can enter our waterways and cause increased algae, which depletes oxygen in the water.
- **Put pet waste in the trash**. When left on the ground, it too can cause depleted oxygen in streams.
- **Plant a tree or rain garden**—they are great filters for stormwater runoff.
- **Dechlorinate your swimming pool water before draining it**.

MSD Bill Stuffers (August/September 2020)

A MESSAGE TO THE COMMUNITY

August/September 2020

At Louisville MSD, our focus is safe, clean waterways and improving the quality of life in Louisville. Much of our work happens out-of-sight, but we are an essential provider of wastewater treatment, stormwater management and flood protection.



Tony Parrott
MSD Executive Director

We are making significant progress toward our Consent Decree requirements to reduce sewer overflows that pollute area rivers and streams. We have completed all the required combined sewer overflow basins, and excavation of our 4-mile long Waterway Protection Tunnel will be complete this fall. When operational in 2021, the tunnel will capture an additional 55 million gallons of stormwater and wastewater and hold it until system capacity is available for treatment and release to the Ohio River.

We continue to manage our flood-protection system, stormwater drainage systems, wastewater treatment plants and thousands of miles of underground sewer pipes that date back 50 to 100 years or more.

All this work requires careful planning and of course dollars. On July 27, the MSD Board approved our 2020-2021 fiscal year budget that includes more than $194 million for 152 projects and a final rate resolution to support these projects.

We have combed through our budget to hold the line on costs because no one wants to increase rates in our current environment, but we still face a challenging situation. This rate resolution allows us to continue our vital service to the community, meet our bond obligations in a financially responsible way, and enact an assistance program to help those experiencing difficulties.

MSD offers new rate assistance program

The impacts of COVID-19 have been far-reaching in our economy. To help those who are finding it challenging to pay bills during this time, MSD developed an Emergency Wastewater Rate Assistance Program or EWRAP. With this, qualifying customers may receive a 10-percent discount on MSD's wastewater charges.

To learn more and to apply, visit **LouisvilleMSD.org/EWRAP** or call **502.540.6000.**

Average Monthly Residential Customer Bill with EWRAP Discount

Wastewater	
Monthly Service Charge	$ 51.45
EWRAP Discount	**$ - 5.15**
Stormwater/Drainage Service Charge	$ 11.11
Total Wastewater and Drainage Charges As of August 1, 2020 with EWRAP	$ 57.42

Senior Citizen Discount

Senior citizens who are age 65 or older, have a gross annual household income of $35,000 or less and are both Louisville Water Company and MSD customers may request an application for a 30 percent discount on wastewater charges and the Consent Decree surcharge through MSD's website, **LouisvilleMSD.org,** or by calling Customer Relations at **502.540.6000.**



MSD Rates on August 1, 2020

The MSD Board approved a final rate resolution for MSD customers **effective August 1, 2020.*** The average monthly residential wastewater bill—based on 4,000 gallons per month of water usage—**increases $2.45.** The monthly drainage service charge **increases 53 cents.** Consent Decree surcharge fee is $14.45 beginning August 1, 2020.

*Rate increase does not apply to former Oldham County Environmental Authority customers, or Glen Oaks and Moser Farms residents.

Average Monthly Residential Customer Bill
Based on 4,000 gallons of monthly usage

	08/01/19	08/01/20
Wastewater	$ 49.00	$ 51.45
Stormwater/Drainage	$ 10.58	$ 11.11
Total	**$ 59.58**	**$ 62.56**

Sample Monthly Residential Customer Bill
Based on 4,000 gallons of monthly usage

Wastewater	
Monthly Service Charge	$ 17.68
Monthly Volume Charge ($4.83 per 1,000 gallons)	$ 19.32
Consent Decree Surcharge	$ 14.45
Wastewater Charges	$ 51.45
Stormwater/Drainage Service Charge	$ 11.11
Total Wastewater and Drainage Charges As of August 1, 2020	**$62.56**

Commercial and Industrial Customers

Wastewater, drainage volume, and service charges, as well as optional and quality charge rates, increase 5-percent beginning August 1, 2020, for MSD Commercial and Industrial customers. For a complete schedule of Rates, Rentals and Charges visit **LouisvilleMSD.org/Rates.**

For an explanation of the charges on your bill, visit: LouisvilleMSD.org/customer-relations/pay-my-bill

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OUR VISION
The innovative, regional utility for safe, clean waterways

CUSTOMER RELATIONS
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You can make a difference in the health of our streams.

Reduce Yard Runoff
Compost grass clippings, and decrease use of fertilizer and pesticides. When it rains, these chemicals make their way to our streams.



Clean Up After Your Pet
Dispose of pet waste in the trash so that it isn't washed down storm drains. Dogs in Jefferson County produce four dump-truck loads of waste every day.



Soak Up Rainwater
Plant a tree, construct a rain garden, or replace your downspout with a rain barrel garden to help absorb excess stormwater.





Protect yourself with flood insurance

MSD has earned Louisville Metro a Class 3 status—allowing our residents to automatically receive a 35 percent discount on flood insurance premiums through the National Flood Insurance Program's Community Rating System.

To find out if a property is located in a floodplain, visit: http://apps.lojic.org/msdfloodddetermination/

You smell that, dontcha?

When there's a suspicious odor outside—you know what we're talking about—that's when to contact MSD at 502.540.6000!

A call to MSD Customer Relations means we can respond quickly and find the source of the problem.
LouisvilleMSD.org/odor



Smell something. . . say something!

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OUR VISION
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CUSTOMER RELATIONS
502.540.6000
CustomerRelations@LouisvilleMSD.org

LouisvilleMSD

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MetroTV - MSD Air Time

Day	Date	Channel	Type	Program	Episode	Actual Start	Actual Durat	Categories
Wed	7/1/2020	Metro TV	Playout	MSD Shawnee Park Basin Project	MSD Shawnee Park Basin Project	3:30:10	1:16:22	Special Feature, MSD Meetings
Sun	7/12/2020	Metro TV	Playout	MSD Shawnee Park Basin Project	MSD Shawnee Park Basin Project	0:30:10	1:16:22	Special Feature, MSD Meetings
Sun	7/12/2020	Metro TV	Playout	MSD: Portland CSO Basin Storage Conceptual Design Mtg	Portland CSO Basin	7:30:10	0:46:35	Special Feature, MSD Meetings
Wed	7/22/2020	Metro TV	Playout	MSD Shawnee Park Basin Project	MSD Shawnee Park Basin Project	1:00:10	1:16:22	Special Feature, MSD Meetings
Sat	7/25/2020	Metro TV	Playout	MSD Shawnee Park Basin Project	MSD Shawnee Park Basin Project	1:00:10	1:16:22	Special Feature, MSD Meetings
Sun	8/9/2020	Metro TV	Playout	MSD: Portland CSO Basin Storage Conceptual Design Mtg	Portland CSO Basin	1:00:11	0:46:36	Special Feature, MSD Meetings
Tue	8/11/2020	Metro TV	Playout	MSD Shawnee Park Basin Project	MSD Shawnee Park Basin Project	0:30:10	1:16:22	Special Feature, MSD Meetings
Mon	8/17/2020	Metro TV	Playout	MSD: Ohio River Tunnel Stakeholders Meeting	Ohio River Tunnel	1:00:10	0:38:54	Special Feature, MSD Meetings
Mon	8/24/2020	Metro TV	Playout	MSD Shawnee Park Basin Project	MSD Shawnee Park Basin Project	0:30:10	1:16:22	Special Feature, MSD Meetings
Sun	8/30/2020	Metro TV	Playout	MSD: Ohio River Tunnel Stakeholders Meeting	Ohio River Tunnel	1:00:10	0:38:54	Special Feature, MSD Meetings
Wed	9/2/2020	Metro TV	Playout	MSD Shawnee Park Basin Project	MSD Shawnee Park Basin Project	0:30:10	1:16:22	Special Feature, MSD Meetings
Tue	9/8/2020	Metro TV	Playout	MSD: Ohio River Tunnel Stakeholders Meeting	Ohio River Tunnel	1:00:10	0:38:53	Special Feature, MSD Meetings
Sun	9/13/2020	Metro TV	Playout	MSD Shawnee Park Basin Project	MSD Shawnee Park Basin Project	0:00:10	1:16:22	Special Feature, MSD Meetings
Mon	9/14/2020	Metro TV	Playout	MSD: Ohio River Tunnel Stakeholders Meeting	Ohio River Tunnel	1:00:10	0:38:53	Special Feature, MSD Meetings
Wed	9/23/2020	Metro TV	Playout	MSD Shawnee Park Basin Project	MSD Shawnee Park Basin Project	0:00:10	1:16:22	Special Feature, MSD Meetings
Mon	9/28/2020	Metro TV	Playout	MSD Shawnee Park Basin Project	MSD Shawnee Park Basin Project	0:44:17	1:16:22	Special Feature, MSD Meetings
Mon	10/5/2020	Metro TV	Playout	MSD Shawnee Park Basin Project	MSD Shawnee Park Basin Project	0:00:10	1:16:21	Special Feature, MSD Meetings
Mon	10/12/2020	Metro TV	Playout	MSD Shawnee Park Basin Project	MSD Shawnee Park Basin Project	1:00:10	1:16:22	Special Feature, MSD Meetings
Wed	10/14/2020	Metro TV	Playout	MSD Shawnee Park Basin Project	MSD Shawnee Park Basin Project	0:00:10	1:16:22	Special Feature, MSD Meetings
Mon	10/19/2020	Metro TV	Playout	MSD: Ohio River Tunnel Stakeholders Meeting	Ohio River Tunnel	1:00:10	0:38:53	Special Feature, MSD Meetings
Tue	10/20/2020	Metro TV	Playout	MSD: Portland CSO Basin Storage Conceptual Design Mtg	Portland CSO Basin	1:00:10	0:46:36	Special Feature, MSD Meetings
Mon	10/26/2020	Metro TV	Playout	MSD Shawnee Park Basin Project	MSD Shawnee Park Basin Project	0:30:10	1:16:22	Special Feature, MSD Meetings
Fri	10/30/2020	Metro TV	Playout	MSD: Ohio River Tunnel Stakeholders Meeting	Ohio River Tunnel	1:00:10	0:38:54	Special Feature, MSD Meetings
Wed	11/4/2020	Metro TV	Playout	MSD Shawnee Park Basin Project	MSD Shawnee Park Basin Project	0:00:10	1:16:22	Special Feature, MSD Meetings
Sat	11/7/2020	Metro TV	Playout	MSD: Ohio River Tunnel Stakeholders Meeting	Ohio River Tunnel	1:00:10	0:38:53	Special Feature, MSD Meetings
Mon	11/9/2020	Metro TV	Playout	MSD: Ohio River Tunnel Stakeholders Meeting	Ohio River Tunnel	1:00:10	0:38:54	Special Feature, MSD Meetings
Sat	11/14/2020	Metro TV	Playout	MSD Shawnee Park Basin Project	MSD Shawnee Park Basin Project	1:00:10	1:16:22	Special Feature, MSD Meetings
Mon	11/16/2020	Metro TV	Playout	MSD Shawnee Park Basin Project	MSD Shawnee Park Basin Project	0:30:10	1:16:22	Special Feature, MSD Meetings
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Wed	12/9/2020	Metro TV	Playout	MSD: Ohio River Tunnel Stakeholders Meeting	Ohio River Tunnel	1:00:10	0:38:54	Special Feature, MSD Meetings
Sat	12/12/2020	Metro TV	Playout	MSD: Ohio River Tunnel Stakeholders Meeting	Ohio River Tunnel	1:00:10	0:38:53	Special Feature, MSD Meetings
Sun	12/13/2020	Metro TV	Playout	MSD: Ohio River Tunnel Stakeholders Meeting	Ohio River Tunnel	1:00:10	0:38:53	Special Feature, MSD Meetings
Tue	12/8/2020	Metro TV	Playout	MSD	Ohio River Tunnel	1:00:10	0:21:41	Special Features, Local Program
Tue	12/8/2020	Metro TV	Playout	MSD: Ohio River Tunnel Stakeholders Meeting	Ohio River Tunnel	1:30:10	0:38:53	Special Feature, MSD Meetings
Mon	12/14/2020	Metro TV	Playout	MSD	Ohio River Tunnel	1:00:10	0:21:41	Special Features, Local Program
Tue	12/15/2020	Metro TV	Playout	MSD: Ohio River Tunnel Stakeholders Meeting	Ohio River Tunnel	1:00:10	0:38:53	Special Feature, MSD Meetings
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Mon	1/4/2021	Metro TV	Playout	MSD: Ohio River Tunnel Stakeholders Meeting	Ohio River Tunnel	1:00:10	0:38:53	Special Feature, MSD Meetings
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Tue	1/12/2021	Metro TV	Playout	MSD Shawnee Park Basin Project	MSD Shawnee Park Basin Project	1:00:10	1:16:22	Special Feature, MSD Meetings
Mon	1/18/2021	Metro TV	Playout	MSD Shawnee Park Basin Project	MSD Shawnee Park Basin Project	1:00:10	1:16:22	Special Feature, MSD Meetings
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Mon	2/1/2021	Metro TV	Playout	MSD Shawnee Park Basin Project	MSD Shawnee Park Basin Project	0:33:53	1:16:22	Special Feature, MSD Meetings
Wed	2/3/2021	Metro TV	Playout	MSD: Ohio River Tunnel Stakeholders Meeting	Ohio River Tunnel	1:00:10	0:38:53	Special Feature, MSD Meetings
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Tue	2/9/2021	Metro TV	Playout	MSD: Ohio River Tunnel Stakeholders Meeting	Ohio River Tunnel	1:00:10	0:38:53	Special Feature, MSD Meetings
Wed	2/10/2021	Metro TV	Playout	MSD: Portland CSO Basin Storage Conceptual Design Mtg	Portland CSO Basin	1:00:10	0:46:36	Special Feature, MSD Meetings
Sun	2/14/2021	Metro TV	Playout	MSD Shawnee Park Basin Project	MSD Shawnee Park Basin Project	1:00:10	1:16:22	Special Feature, MSD Meetings
Mon	2/15/2021	Metro TV	Playout	MSD Shawnee Park Basin Project	MSD Shawnee Park Basin Project	1:00:10	1:16:22	Special Feature, MSD Meetings
Wed	2/17/2021	Metro TV	Playout	MSD: Ohio River Tunnel Stakeholders Meeting	Ohio River Tunnel	0:30:09	0:38:53	Special Feature, MSD Meetings
Fri	2/19/2021	Metro TV	Playout	MSD	Ohio River Tunnel	1:00:10	0:21:41	Special Features, Local Program
Sat	2/20/2021	Metro TV	Playout	MSD Shawnee Park Basin Project	MSD Shawnee Park Basin Project	0:30:10	1:16:22	Special Feature, MSD Meetings
Tue	2/16/2021	Metro TV	Playout	MSD: Portland CSO Basin Storage Conceptual Design Mtg	Portland CSO Basin	1:00:10	0:46:36	Special Feature, MSD Meetings
Mon	2/22/2021	Metro TV	Playout	MSD: Ohio River Tunnel Stakeholders Meeting	Ohio River Tunnel	1:00:10	0:38:53	Special Feature, MSD Meetings
Tue	2/23/2021	Metro TV	Playout	MSD	Ohio River Tunnel	1:00:10	0:21:41	Special Features, Local Program
Thu	2/25/2021	Metro TV	Playout	MSD: Portland CSO Basin Storage Conceptual Design Mtg	Portland CSO Basin	0:30:10	0:46:36	Special Feature, MSD Meetings
Fri	2/26/2021	Metro TV	Playout	MSD	Ohio River Tunnel	0:30:05	0:21:41	Special Features, Local Program
Mon	3/1/2021	Metro TV	Playout	MSD: Ohio River Tunnel Stakeholders Meeting	Ohio River Tunnel	1:00:20	0:38:53	Special Feature, MSD Meetings
Tue	3/2/2021	Metro TV	Playout	MSD: Ohio River Tunnel Stakeholders Meeting	Ohio River Tunnel	1:00:10	0:38:53	Special Feature, MSD Meetings
Sat	3/6/2021	Metro TV	Playout	MSD Shawnee Park Basin Project	MSD Shawnee Park Basin Project	1:02:06	1:16:22	Special Feature, MSD Meetings
Mon	3/8/2021	Metro TV	Playout	MSD: Portland CSO Basin Storage Conceptual Design Mtg	Portland CSO Basin	1:00:10	0:46:36	Special Feature, MSD Meetings
Tue	3/9/2021	Metro TV	Playout	MSD: Portland CSO Basin Storage Conceptual Design Mtg	Portland CSO Basin	1:00:10	0:46:35	Special Feature, MSD Meetings
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Sat	3/13/2021	Metro TV	Playout	MSD Shawnee Park Basin Project	MSD Shawnee Park Basin Project	1:00:10	1:16:21	Special Feature, MSD Meetings
Mon	3/15/2021	Metro TV	Playout	MSD	Ohio River Tunnel	1:00:10	0:21:41	Special Features, Local Program
Tue	3/16/2021	Metro TV	Playout	MSD Shawnee Park Basin Project	MSD Shawnee Park Basin Project	1:00:10	1:16:22	Special Feature, MSD Meetings
Sat	3/20/2021	Metro TV	Playout	MSD: Ohio River Tunnel Stakeholders Meeting	Ohio River Tunnel	1:00:10	0:38:53	Special Feature, MSD Meetings
Tue	3/23/2021	Metro TV	Playout	MSD: Ohio River Tunnel Stakeholders Meeting	Ohio River Tunnel	1:15:10	0:38:53	Special Feature, MSD Meetings
Wed	3/24/2021	Metro TV	Playout	MSD	Ohio River Tunnel	1:30:10	0:21:41	Special Features, Local Program
Thu	3/25/2021	Metro TV	Playout	MSD Shawnee Park Basin Project	MSD Shawnee Park Basin Project	0:43:38	1:16:22	Special Feature, MSD Meetings
Sun	3/28/2021	Metro TV	Playout	MSD Shawnee Park Basin Project	MSD Shawnee Park Basin Project	1:00:10	1:16:22	Special Feature, MSD Meetings
Mon	3/29/2021	Metro TV	Playout	MSD: Portland CSO Basin Storage Conceptual Design Mtg	Portland CSO Basin	1:00:10	0:46:36	Special Feature, MSD Meetings
Wed	3/31/2021	Metro TV	Playout	MSD Shawnee Park Basin Project	MSD Shawnee Park Basin Project	1:00:10	1:16:22	Special Feature, MSD Meetings
Sun	4/4/2021	Metro TV	Playout	MSD: Ohio River Tunnel Stakeholders Meeting	Ohio River Tunnel	1:00:10	0:38:53	Special Feature, MSD Meetings
Mon	4/5/2021	Metro TV	Playout	MSD	Ohio River Tunnel	1:30:10	0:21:41	Special Features, Local Program
Tue	4/6/2021	Metro TV	Playout	MSD Shawnee Park Basin Project	MSD Shawnee Park Basin Project	0:00:10	1:16:22	Special Feature, MSD Meetings
Thu	4/8/2021	Metro TV	Playout	MSD	Ohio River Tunnel	1:00:10	0:21:41	Special Features, Local Program
Sat	4/10/2021	Metro TV	Playout	MSD	Ohio River Tunnel	1:30:10	0:21:41	Special Features, Local Program
Sun	4/11/2021	Metro TV	Playout	MSD Shawnee Park Basin Project	MSD Shawnee Park Basin Project	1:00:10	1:16:22	Special Feature, MSD Meetings
Mon	4/12/2021	Metro TV	Playout	MSD: Ohio River Tunnel Stakeholders Meeting	Ohio River Tunnel	1:00:10	0:38:53	Special Feature, MSD Meetings
Sat	4/17/2021	Metro TV	Playout	MSD: Ohio River Tunnel Stakeholders Meeting	Ohio River Tunnel	1:00:10	0:38:54	Special Feature, MSD Meetings
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Sun	4/25/2021	Metro TV	Playout	MSD Shawnee Park Basin Project	MSD Shawnee Park Basin Project	1:00:10	1:16:22	Special Feature, MSD Meetings
Mon	4/26/2021	Metro TV	Playout	MSD: Ohio River Tunnel Stakeholders Meeting	Ohio River Tunnel	1:00:10	0:38:53	Special Feature, MSD Meetings

Thu	4/29/2021	Metro TV	Playout	MSD	Ohio River Tunnel	1:30:10	0:21:41	Special Features, Local Program
Sat	5/1/2021	Metro TV	Playout	MSD: Ohio River Tunnel Stakeholders Meeting	Ohio River Tunnel	1:09:17	0:38:53	Special Feature, MSD Meetings
Mon	5/3/2021	Metro TV	Playout	MSD	Ohio River Tunnel	1:30:10	0:21:41	Special Features, Local Program
Tue	5/4/2021	Metro TV	Playout	MSD: Portland CSO Basin Storage Conceptual Design Mtg	Portland CSO Basin	1:00:10	0:46:36	Special Feature, MSD Meetings
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Mon	5/17/2021	Metro TV	Playout	MSD Shawnee Park Basin Project	MSD Shawnee Park Basin Project	1:00:10	1:16:22	Special Feature, MSD Meetings
Tue	5/18/2021	Metro TV	Playout	MSD	Ohio River Tunnel	1:30:10	0:21:41	Special Features, Local Program
Sat	5/22/2021	Metro TV	Playout	MSD Shawnee Park Basin Project	MSD Shawnee Park Basin Project	0:30:10	1:16:22	Special Feature, MSD Meetings
Mon	5/24/2021	Metro TV	Playout	MSD	Ohio River Tunnel	1:00:10	0:21:41	Special Features, Local Program
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Mon	5/31/2021	Metro TV	Playout	MSD	Ohio River Tunnel	1:30:10	0:21:41	Special Features, Local Program
Mon	6/7/2021	Metro TV	Playout	MSD: Ohio River Tunnel Stakeholders Meeting	Ohio River Tunnel	1:00:10	0:38:53	Special Feature, MSD Meetings
Fri	6/11/2021	Metro TV	Playout	MSD Shawnee Park Basin Project	MSD Shawnee Park Basin Project	1:00:10	1:16:22	Special Feature, MSD Meetings
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Tue	6/22/2021	Metro TV	Playout	MSD	Ohio River Tunnel	22:30:00	0:21:41	Special Features, Local Program
Wed	6/23/2021	Metro TV	Playout	MSD: Portland CSO Basin Storage Conceptual Design Mtg	Portland CSO Basin	1:00:10	0:46:36	Special Feature, MSD Meetings
Wed	6/23/2021	Metro TV	Playout	MSD	Ohio River Tunnel	0:30:00	0:21:40	Special Features, Local Program
Sun	6/27/2021	Metro TV	Playout	MSD: Ohio River Tunnel Stakeholders Meeting	Ohio River Tunnel	1:00:10	0:38:53	Special Feature, MSD Meetings
						Total	**99:46:39**	

Catch Basin Signage (On-Going)

2.1.1-K



APPENDIX 2.1.2 DIRECT INTERACTION

Waterway Protection Tunnel Exhibit at the Louisville Science Center and Social Media Promotion (On-going)

2.1.2-A



LouisvilleMSD @louisvillemsd · Jan 5

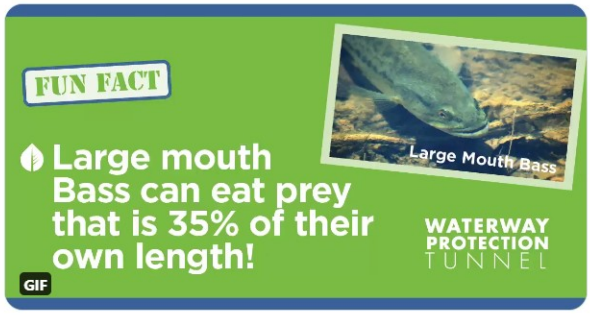
MSD and @KYScience are teaming up to get the word out about the Waterway Protection Tunnel. The tunnel will help keep waterways safe and clean for you and our local wildlife. To learn about the project visit: ow.ly/4VnJ50D0xvs.



1 7

LouisvilleMSD @louisvillemsd · Mar 2

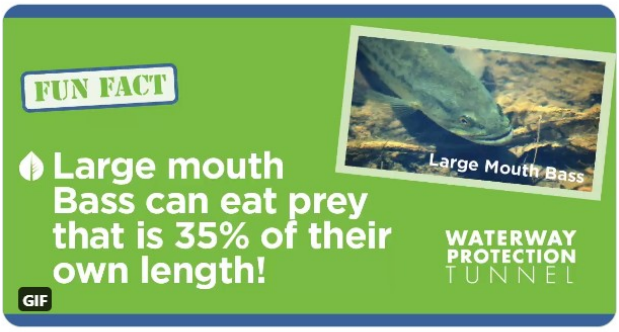
MSD and @KYScience are teaming up to get the word out about the Waterway Protection Tunnel. The tunnel will help keep waterways safe and clean for you and our local wildlife. To learn about the project visit: ow.ly/4VnJ50D0xvs.



2 6

LouisvilleMSD @louisvillemsd · Apr 6

MSD and @KYScience are working together to get the word out about the Waterway Protection Tunnel. The tunnel will help keep waterways safe and clean for you and our local wildlife. To learn about the project visit: ow.ly/4VnJ50D0xvs.



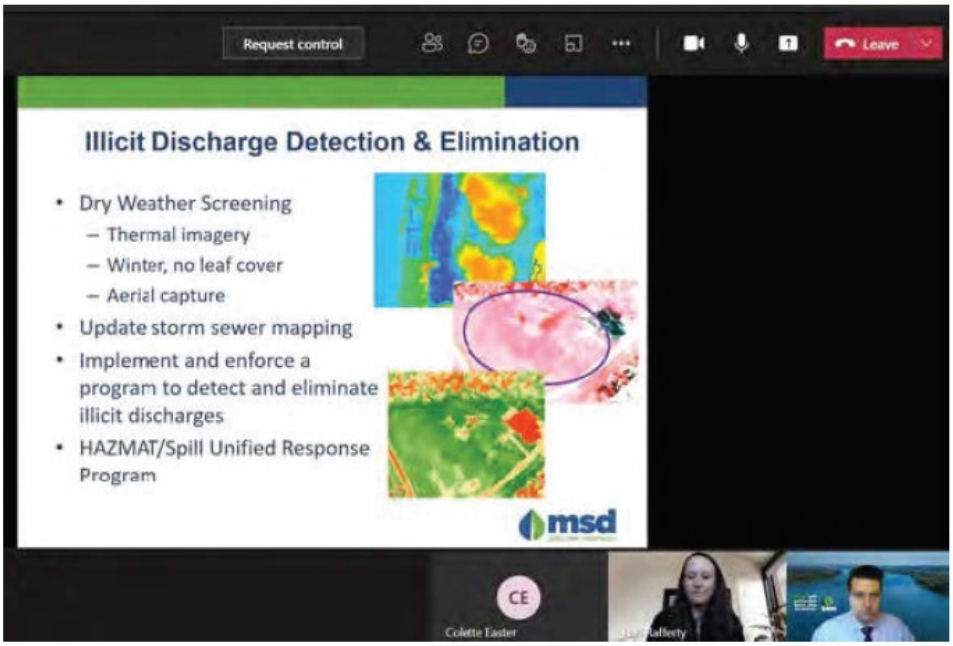
3

MSD offers expertise for UofL Green Engineering Course

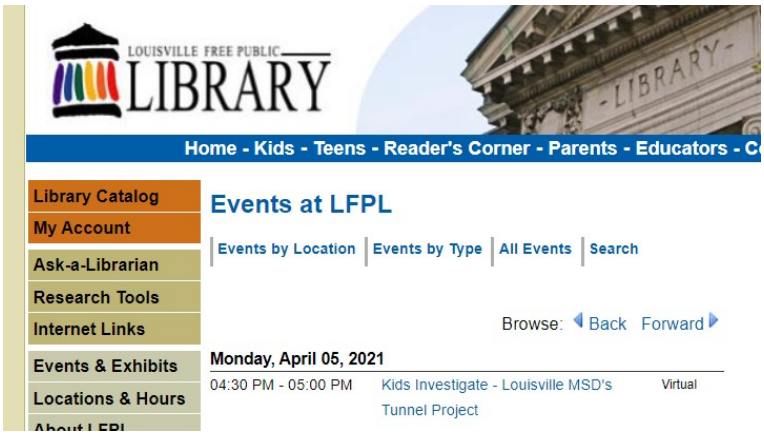
MSD employees presented to the University of Louisville's Green Engineering Course on March 9 on topics ranging from our innovation efforts, to stormwater quality, to Water Quality Treatment Center technology.

UofL reached out to MSD Director of Intergovernmental Relations Wes **Sydnor** to provide expertise and teaching assistance for a civil engineering class.

Sydnor introduced the MSD team and gave an overview of the agency. Engineer Colette **Easter** described the recently released American Society of Civil Engineers Report Card and MSD's Innovation Program. Floodplain CRS Administrator Lori **Rafferty** discussed the Municipal Separate



Storm Sewer System (MS4) Water Quality Program, the MSD Green Infrastructure Program, and buyouts of flood-prone properties. Operations Director-Treatment Facilities Daymond **Talley** presented MSD Treatment innovations and the Co-Immunity Project with U of L, in which samples are pulled from the MSD wastewater collection system and analyzed for COVID-19 markers.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Monday, April 05, 2021
04:30 PM - 05:00 PM Kids Investigate - Louisville MSD's Tunnel Project Virtual


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Monday, April 12, 2021
04:30 PM - 05:00 PM Kids Investigate - Louisville MSD's Tunnel Project Virtual


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Monday, April 19, 2021
04:30 PM - 05:00 PM Kids Investigate - Louisville MSD's Tunnel Project Virtual


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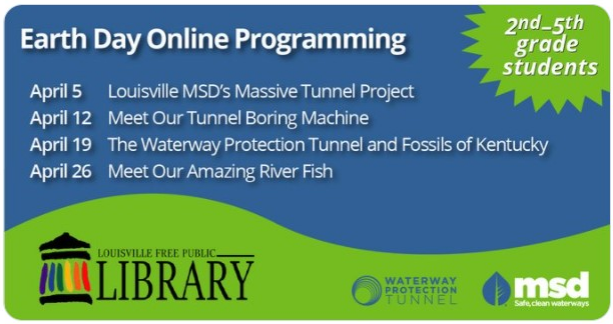
Monday, April 26, 2021
11:00 AM How-To Prep for Tim Robertson Pigment Transfer Workshop Virtual
04:30 PM - 05:00 PM Kids Investigate - Louisville MSD's Virtual

Louisville Free Public Library Presentations Social Media Promotion (4/5/2021, 4/12/2021, 4/19/2021, 4/26/2021)

LouisvilleMSD @louisvillemsd · Mar 19

Join MSD and @LFPL for 4 unique programs highlighting the Waterway Protection Tunnel Project.

Ages: 2nd - 5th grade
Time: 4:30- 5pm (30 minute program)
Dates: Monday April 5, 12, 19, 26
To register: Email kate@lfpl.org for a Zoom link for each program.



4 5

LFPL @LFPL · Apr 12

Join @louisvillemsd for a special kid's Zoom workshop all about the Massive Waterway Protection Tunnel Project. Today we'll look at how the tunnel boring machine works & how the tunnel will help keep our waterways safe.
Mon., 4/12, 4:30pm.
Email kate@lfpl.org for the link



2 3

Louisville MSD
April 22 ·

Join us on April 26 for "Meet our River Fish." We'll look at the ecosystem in our local streams and how the Waterway Protection Tunnel helps keep #safecleanwaterways.

Ages: 2nd-5th grade
Time: 4:30-5 p.m.
Date: Monday, April 26... See More



LouisvilleMSD @louisvillemsd · Mar 29

Join us with @LFPL from 4:30-5 p.m. on Monday, April 5 for our online program highlighting the Waterway Protection Tunnel. Learn how it was built and how it will help keep #safecleanwaterways!

Ages: 2nd-5th grade
To register: Email kate@lfpl.org and for a Zoom link



4 7

Holy Cross High School River to River Program (April 19, 2021)

2.1.2-D

Monday, April 19, 2021

Freshman Academy Agenda

(Period 1 8:34-9:28) 8:34-8:54 Opening/Introductions in General Room in Cafeteria
-Describe the work of MSD
-Why is MSD important to the city and the city-works?

(Period 2 9:32-10:27) 8:59-9:35 Session 1
-Group 1 Goes to Wastewater Breakout Room 1 in Room 10
-Group 2 Goes to Flood Model Breakout Room 2 in Room 115

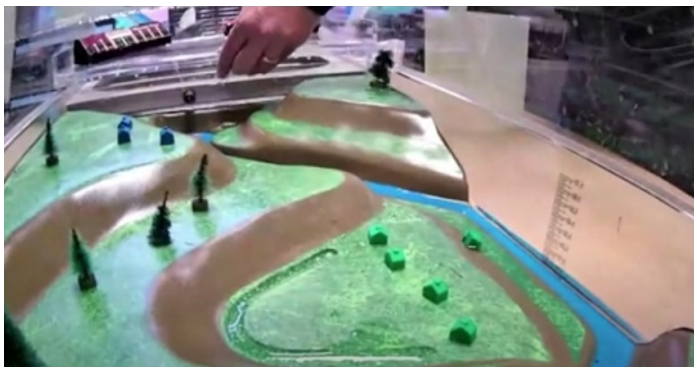
9:45-10:15 Session 2
-Group 2 Goes to Flood Model Breakout Room 2 in Room 115
-Group 1 Goes to Wastewater Breakout Room 1 in Room 10

10:20-10:40 Closing/Reflection in General Room where the Groups are

Portland Elementary School River to River Program (April 23, 2021)

2.1.2-E

Heritage Engineering used the MSD flood model to give a presentation to 3rd graders at Portland Elementary School about flood safety and flooding and how development impacts watersheds.





Louisville Nature Center Field Trips, Scout Programs, Workshops, Pre-School Age Programs and Day Camps (Year Round)

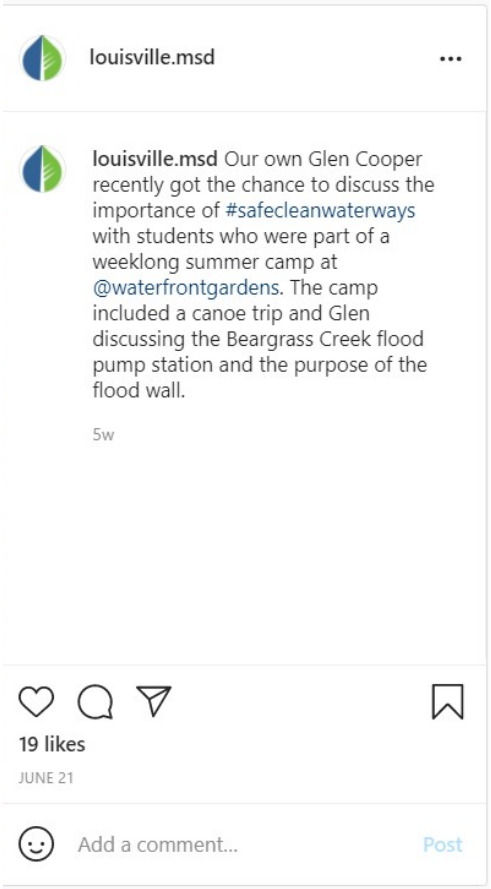
2.1.2-F



Plan your fall, winter, or spring field trip to Louisville Nature Center! School classes, scouts, nature enthusiasts, senior citizens, and home-school groups are welcome to spend a couple of hours learning about the native flora and fauna of our area. **Spots fill up quickly–often months in advance–so contact us early!**

Waterfront Botanical Gardens Summer Camp Tour (06/11/2021)

2.1.2-G





Boat tour makes stop at flood pumping station

MSD Flood Protection Supervisor Glen **Cooper** met Nativity Academy eighth grade students canoeing Beargrass Creek as part of a week-long camp at the Waterfront Botanical Gardens on June 11. Cooper explained the purpose of the flood protection system, as well as the renovated research station on the site. The students will use the research station to further explore the stream.

Subject	UofL Public Health Interview
Location	https://zoom.us/j/92388818916?pwd=dVlMWHNmd2g1UkxsN2JlRGswL3h5UT09
Start time	Thu 11/19/2020 9:30 AM ☐ All day event
End time	Thu 11/19/2020 10:00 AM

Hi Erin,

While I don't go through question by question, it will give you an idea of what they want to know. (See below for questions and zoom invite.)

Robin

Robin Elise Weiss, PhD, AdvCD(DONA) (she/hers) is inviting you to a scheduled Zoom meeting.

Topic: Erin and Robin
Time: Nov 19, 2020 09:30 AM Eastern Time (US and Canada)

Join Zoom Meeting
https://zoom.us/j/92388818916?pwd=dVlMWHNmd2g1UkxsN2JlRGswL3h5UT09

Meeting ID: 923 8881 8916
Passcode: 823550
One tap mobile
+13017158592,,92388818916#,,,,,,0#,,823550# US (Washington D.C)
+13126266799,,92388818916#,,,,,,0#,,823550# US (Chicago)

APPENDIX 2.1.3 MEETING TOPIC INTEGRATION

Waterfront Botanical Gardens unveils new Beargrass Creek Pathway

The Waterfront Botanical Gardens cut the ribbon for the new Beargrass Creek Pathway

Share

WLKY Updated: 11:22 PM EDT Sep 2, 2020

Infinite Scroll Enabled

Kaelin Massey



Ribbon Cutting for Beargrass Creek Pathway SOURCE: WLKY

YouTube



Kentucky Division of Water Nature-Based Solutions

283 views • Sep 17, 2020 6 0 SHARE SAVE ...

Kentucky Energy and Environment Cabinet
309 subscribers

SUBSCRIBE

There are opportunities to strengthen and empower Kentucky's communities, while simultaneously addressing water quality and quantity issues. In doing so, we can mitigate flooding while promoting social, economic and environmental wellbeing.

The Division of Water and its partners can assist community planners, risk managers, and watershed groups interested in practices that mutually address water quality and quantity issues. Learn more at eec.ky.gov.

Louisville Metro Government

601 W. Jefferson Street
Louisville, KY 40202

Action Summary - Final

Thursday, December 10, 2020

6:00 PM

45. O-535-20

AN ORDINANCE APPROVING THE RESOLUTION ADOPTED BY THE BOARD OF THE LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT (HEREINAFTER THE "DISTRICT") EXTENDING THE AUTHORIZED FINAL MATURITY DATE OF THE DISTRICT'S SEWER AND DRAINAGE SYSTEM SUBORDINATED PROGRAM NOTES IN THE MAXIMUM OUTSTANDING PRINCIPAL AMOUNT OF $500,000,000 FROM JULY 1, 2021 TO JUNE 30, 2023, THE PROCEEDS OF SUCH NOTES BEING USE TO PAY ALL OR A PORTION OF THE COSTS OF THE ACQUISITION OR CONSTRUCTION OF IMPROVEMENTS, ADDITIONS, OR EXTENSIONS TO THE DISTRICT'S SEWER AND DRAINAGE SYSTEM, INCLUDING CAPITAL ASSETS AND FACILITIES INCIDENT AND RELATED TO THEIR OPERATION, MAINTENANCE, AND ADMINISTRATION.

Sponsors: Primary Brandon Coan (D-8)

Attachments: O-535-20 V.1 111920 Extending Authorized Final Maturity Date for MSD Notes.pdf
Program Note Renewal Ordinance (12-1-20).pdf
ORD 159 2020.pdf

This Ordinance was passed on the Consent Calendar.

Enactment No: Ordinance 159-2020

Louisville Metro Government

Action Summary - Final

Thursday, June 24, 2021

6:00 PM

31. AP061521RC

APPOINTMENT OF REBECCA COX TO THE METROPOLITAN SEWER DISTRICT (MSD) BOARD. (TERM EXPIRES AUGUST 31, 2023)

Attachments: APT Metropolitan Sewer District (MSD) Board 06.07.21.pdf
Rebecca Cox 06.07.21.pdf
Applicants for Board - Metropolitan Sewer District Board 06.07.21.pdf
Current Board - Metropolitan Sewer District Board 06.07.21.pdf

This Appointment was approved on the Consent Calendar.

Co-Immunity Study Webinar (January 19, 2021)

2.1.3-D

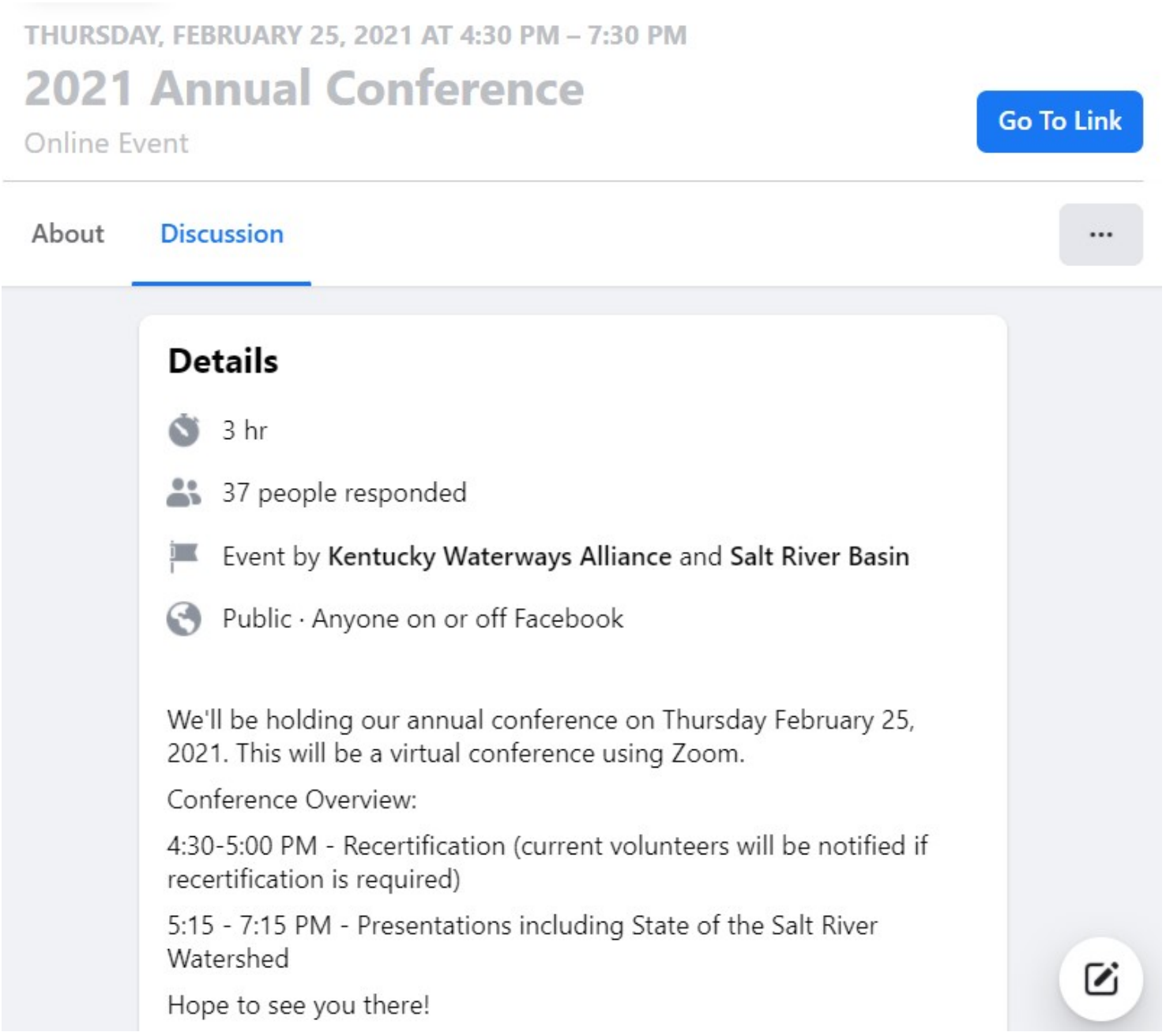
What is the Co-Immunity Project?

In partnership with the Christina Lee Brown Envirome Institute, the Center for Predictive Medicine, and the University of Louisville, Kentucky Waterways Alliance is participating in the Co-Immunity Project, a multi-phase study to better understand the spread of SARS-CoV-2 virus, the virus that causes COVID-19, in Louisville. This research project has multiple phases including a healthcare worker study, wastewater-based epidemiology study, surface water study, and community study. KWA and other partners including Louisville Metropolitan Sewer District (MSD) are participating in the wastewater and surface water phase, where this week KWA started surface water sampling looking for the presence of SARS-CoV-2 virus in the Middle and South Forks of Beargrass Creek. More information on the Co-Immunity study can be found here.



Watch a recording of our January 19, 2021 webinar to get updated on this project.

Website: https://zoom.us/rec/share/P84J7YFiHXfgVp6f_sDe-ainT_OmB7n2KAVc4dGip5xeDfQXVDS5pu5h70lMH4Rh.p7tOR7kjlrhWkxAM?fbclid=IwAR2QhC3V46RXEnhrPKd1mBUO4OgbIRXCJUkZjC0dJAxpxpg_4Ta2X_V_bRM
Passcode: gx9.+=a1


THURSDAY, FEBRUARY 25, 2021 AT 4:30 PM – 7:30 PM
2021 Annual Conference
Online Event
Go To Link
About
Discussion
Details
3 hr
37 people responded
Event by Kentucky Waterways Alliance and Salt River Basin
Public · Anyone on or off Facebook
We'll be holding our annual conference on Thursday February 25, 2021. This will be a virtual conference using Zoom.
Conference Overview:
4:30-5:00 PM - Recertification (current volunteers will be notified if recertification is required)
5:15 - 7:15 PM - Presentations including State of the Salt River Watershed
Hope to see you there!



Currys Fork Watershed Stakeholder Meeting

17 views • May 17, 2021

0 0 SHARE SAVE ...

Currys Fork Watershed
7 subscribers

SUBSCRIBE

Recording of the April 29, 2021 Stakeholder Meeting for the Currys Fork Watershed.

IMAGE OF THE ISSUE: CLIFF AVE POLLINATOR GARDEN

The MSD lot at 4701 Cliff Ave is now a community serving pollinator garden! Thanks to a partnership between Jefferson County Soil and Water Conservation District, Beechmont Neighborhood Association, and MSD, the former vacant lot is now benefiting from new intentional plantings and care!

If you would like to volunteer or learn more: Contact the council office and we will connect your with neighbor and Soil and Water Conservation employee Erin James!



Shawnee Park Boat Ramp Ribbon Cutting Celebration (May 21, 2021) **2.1.3-H**

Send Update

To... Wesley Sydnor; Sheryl Lauder

Subject: Shawnee Boat Ramp Ribbon Cutting - 12:15 pm

Location: Shawnee Boat Ramp (near the parking area at the corner of SW Parkway and Shawnee Park Road)

Start time: Fri 5/21/2021 12:00 PM ☐ All day event

End time: Fri 5/21/2021 2:00 PM

Attached: Shawnee Invitation 521.png 3 MB

LOUISVILLE PARKS AND RECREATION

WILDERNESS LOUISVILLE, INC

KENTUCKY DEPT OF FISH & WILDLIFE RESOURCES

natural areas LOUISVILLE METRO PARKS

LOUISVILLE ECHO ENGAGING CHILDREN OUTDOORS

Louisville Parks and Recreation, Wilderness Louisville, Mayor Greg Fischer and Councilwoman Donna Purvis cordially invite you to:



A celebration of new and future amenities at Shawnee Park, including the new boat ramp and future Shawnee Outdoor Learning Center.



Friday, May 21, at 1 p.m.

Shawnee Park

4501 W. Broadway

Please RSVP to:
morgan.woodrum@louisvilleky.gov

RECENT IMPROVEMENTS TO SHAWNEE PARK INCLUDE RESTORED LILY POND, FLOATING VEGETATIVE ISLANDS, AND THREE CHESS TABLES

LOUISVILLE, KY (June 11, 2021) — Mayor Greg Fischer and other community leaders joined officials with the Olmsted Parks Conservancy, LG&E and KU Foundation and Heine Brothers today to celebrate new improvements to Shawnee Park at an event near the Lily Pond. Through its Community Grant program, the LG&E and KU Foundation recently awarded Olmsted Parks Conservancy funding for three chess tables and benches. This new amenity at Shawnee Park includes ADA accessible spaces at each of the tables. The Shawnee Neighborhood Association and West Louisville Chess Club both expressed an interest in chess tables at Shawnee, leading the Conservancy to apply for funding for this project.



Representatives from Olmsted Parks Conservancy, Shawnee Neighborhood Association, Louisville Parks & Recreation, MSD, LG&E KU Energy, Councilperson Donna Purvis, and Mayor Greg Fischer.




You're Invited
RIPPLE EFFECTS
Exploring Water in Louisville
Student Photo Contest
AWARDS CEREMONY
MONDAY, JUNE 21, 5 P.M.
WATERFRONT PARK • BROWN-FORMAN AMPHITHEATER
CHAIRS AND BLANKETS ARE WELCOMED FOR THIS OUTDOOR PRESENTATION.
IN CASE OF SIGNIFICANT RAIN, THE CEREMONY WILL BE MOVED TO THE NEARBY LOUISVILLE COMMUNITY BOATHOUSE.
LIBRARY
UNIVERSITY OF LOUISVILLE
Friends of Waterfront Park
msd
SALT RIVER WATCH
KENTUCKY CENTER FOR AFRICAN AMERICAN HERITAGE
Beargrass
PHOTO
KWA
THE COOKIE PROJECT
ED ALLGEIER



28

MONDAY, JUNE 28, 2021 AT 7 PM

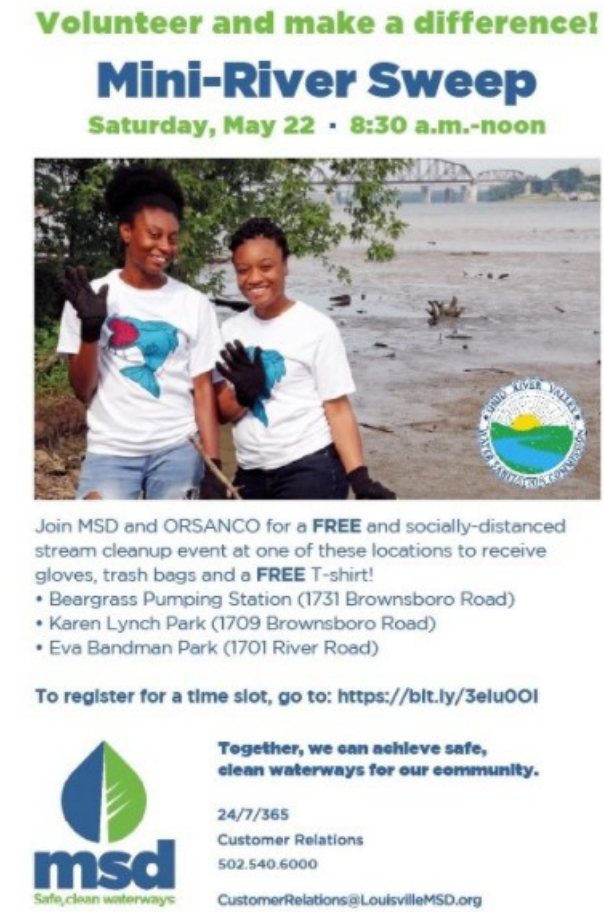
June Meeting of Beargrass Creek Alliance

Louisville Ky

APPENDIX 2.1.4 VOLUNTEER PARTICIPATION AND PROMOTION

Louisville MSD
May 21 ·

The weather's looking great for tomorrow's Middle Fork Beargrass Creek cleanup, and there's still time to sign up for a slot to help ensure #safecleanwaterways! Go to https://bit.ly/3elu0OI to join the fun!



Louisville MSD
May 19 ·

Plan on joining us for a fun and socially-distanced stream cleanup on May 22. Help the environment by ensuring #safecleanwaterways AND get a FREE T-shirt! To register for a time slot, go to: https://bit.ly/3elu0OI.



Mayors Give A Day (April 1-30, 2021)

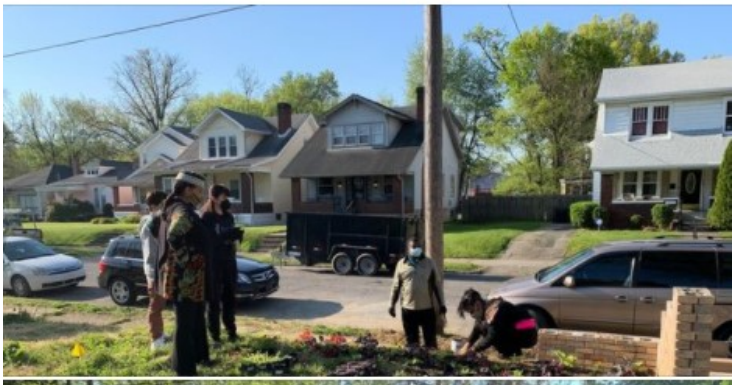
GIVE A DAY | MAYOR'S WEEK OF SERVICE

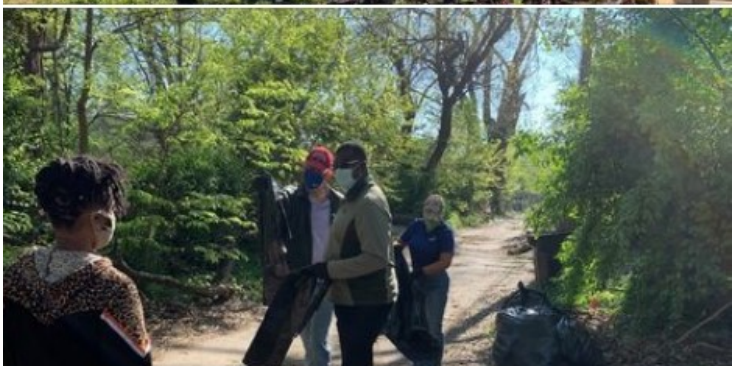
WITH SUPPORT FROM METRO UNITED WAY

Louisville MSD
April 20 ·

MSD employees Joe Wagner, Saundra Gibson, Shelby Lockhart, Mark Collins, Yajaira Morphonios, Erin Wagoner and Shannon Casasfranco joined Ambassador Shabazz to help the neighborhood cleanup of Muhammad Ali's historic home on Grand Avenue as part of Mayor's Give A Day.

There's still time to lend a hand throughout the city; find out how at http://ow.ly/IgEW50EtpTN.





LouisvilleMSD @louisvillemsd · Apr 19

It was a good weekend to help the community as MSD employees Alex Novak, Tony Marconi and Brett Clark restored an outdoor education area at the Louisville Nature Center. Looking to lend a hand yourself? Check out the Mayor's Give A Day at metrounitedway.org/give-a-day-may....



2 3

LouisvilleMSD @louisvillemsd · Apr 29

We beat the rain yesterday! MSD employees and community volunteers came together before the downpour to plant trees at the Seventh Street Garden. Thanks to Metro Parks Community Forestry for donating more than 50 trees to help beautiful the area.



3

LouisvilleMSD @louisvillemsd · Mar 12

Join #NationalPlantAFlowerDay and help #safecleanwaterways! Packets of native seeds are available at our main office at 700 West Liberty. Request 10 or more and we'll mail them free! Email brett.clark@louisvillemsd.org for more information. Learn more at ow.ly/aqKn50DXrpQ.



LouisvilleMSD @louisvillemsd · Mar 1

Rain garden are a part of #safecleanwaterways! Packets of native seeds are available at the MSD main office at 700 West Liberty or request 10 or more packets, and we'll mail them free! Email brett.clark@louisvillemsd.org for more information. Lear more at bit.ly/3aTEecV.



1 3

MSD Native Seed Give Away Distribution List

Spring 2021

Date	Name	Mailing Address
3/1/2021	Jessica May	Office Pickup
3/2/2021	Loren Levitz	Office Pickup
3/2/2021	Mike Brazel	Office Pickup
3/18/2021	Charles Sullivan	Office Pickup
3/23/2021	Rebecca Cundiff	907 E Washington St, Apartment 1, Louisville, KY 40206
3/23/2021	Kim Hill	8004 Kellerman Rd, Louisville, KY 40219
3/23/2021	Mary Singer	9200 Aristada Pl, Crestwood, KY 40014
3/23/2021	David Hance	1419 Flat Rock Rd, Louisville, KY 40245
3/23/2021	Leslie Slaughter	13520 Saddlecreek Dr, Louisville, KY 40245
3/23/2021	Teresa Rogstad	7709 Nevia Way, Louisville, KY 40220
3/23/2021	Nina Jordan-Smith	4213 Brookhaven Ave, Louisville, KY 40220
3/23/2021	Mary Kimmel	119106 Locust Rd, Louisville, KY 40243
3/23/2021	Larry Eul	1011 Golden Creek Cir, Louisville, KY 40223
3/23/2021	Lauren Goralski	9509 Applewood Cir, Crestwood, KY 40014
3/23/2021	Stephanie Reese	2400 Fallsview Rd, Louisville, KY 40207
3/23/2021	Judy Allen	10302 Venado Dr, Louisville, KY 402914
3/23/2021	Diana Parker	710 Flat Rock Rd, Louisville, KY 40245
3/23/2021	Suzanne Dodson	8627 Oaks Way, Louisville, KY 40299
3/23/2021	Jeffrey Barrick	616 Rudy Ln, Louisville, KY 40207
3/23/2021	Cherie Hill Fowler	624 W Muhammad Ali Blvd, Louisville, KY 40203
3/23/2021	Bhanu Calvert	4945 Spring Farm Rd, Prospect, KY 40059
3/23/2021	Lisa Ponton	2324 Emerson Ave, Louisville, KY 40205
3/23/2021	Caleb Sheehan	303 E Esplanade Ave, Louisville, KY 40214
3/23/2021	Alex Roberts	1831 Payne St, Louisville, KY 40206
3/23/2021	Steve Martin	2838 Eleanor Ave, Louisville, KY 40205
3/23/2021	Daniel Bird	3351 Dayton Ave, Louisville, KY 40207
3/23/2021	Mary Wooden	11709 Blade Way, Louisville, KY 40291
3/23/2021	Dana Martin	8106 Barbour Manor Dr, Louisville, KY 40241
3/23/2021	Paul Gilles	9113 Collingwood Rd, Louisville, KY 40299
3/23/2021	Nancy Rose	3302 Ingle Ave, Louisville, KY 40206
3/23/2021	Andrew Thai	427 Trinity Hills Ln, Louisville, KY 40207
3/23/2021	Gloria Bishop	167 N Ewing Ave, Louisville, KY 40206
3/23/2021	Malory Beritsky	700 Nottingham Pkwy, Louisville, KY 40222
3/23/2021	Rebecca Hilton	1123 Carlisle Ave, Louisville, KY 40215
3/23/2021	Matt Livers	4216 S 1st St, Louisville, KY 40214
3/23/2021	Brenda Huffman	1409 S 28th St, Louisville, KY 40208
3/23/2021	Linda LaCosse	4600 Wolf Creek Pkwy, Louisville, KY 40241
3/23/2021	Eric Reusch	1845 Trough Spring Ln, Louisville, KY 40205
3/23/2021	Virginia Roehrig	10302 Rock Falls Ct, Louisville, KY 40223
3/23/2021	Catherine Dawn	203 Staebler Ave, Louisville, KY 40207
3/23/2021	Tony Yanez	5709 Locust Way, Louisville, KY 40229
3/23/2021	Michael Johnson	10311 Going Ct, Louisville, KY 40241
3/23/2021	Doug Kalmey	6713 Regal Rd, Louisville, KY 40222
3/23/2021	Arlette McDaniel	1717 Spring Dr, Louisville, KY 40205
3/23/2021	Mary Hermann	4021 Gilman Ave, Louisville, KY 40207
3/23/2021	Cyndi Hook	700 Marquette Dr, Louisville, KY 40222

3/23/2021	Matthew Belcher	7601 Wind Haven Ct, Louisville, KY 40291
3/23/2021	Jane Feger	4501 Sunridge Ave, Louisville, KY 40220
3/23/2021	Heidi Raines	3507 Sasse Way, Louisville, KY 40245
3/23/2021	Jan Cogburn	1703 Arnold Palmer Blvd, Louisville, KY 40245
3/23/2021	Tammy Gnagy	12408 Aquarius Rd, Louisville, KY 40243
3/23/2021	Nancy Pendleton	3619 Gaymont Ct, Louisville, KY 40214
3/23/2021	Alex Kemper	1830 Overlook Terrace, Louisville, KY 40205
3/23/2021	Kimberly Cipkowski	10106 Landwood Dr, Louisville, KY 49291
3/23/2021	Dave Hiatt	4425 Buttonbush Glen Dr, Louisville, KY 40241
3/23/2021	John Schnitzer	5503 Easum Pine Ct, Louisville, KY 40299
3/23/2021	Shari Weathers	4302 High Meadow Pl, Louisville, KY 40299
3/23/2021	Judy Spidle	4715 Lunenburg Dr, Louisville, KY 40245
3/23/2021	Andrew Gottworth	1030 Carlisle Ave, Louisville, KY 40215
3/23/2021	Samer AlQuran	6104 Springhouse Farms Ln, Louisville, KY 40222
3/23/2021	Cherry Kelly	12302 Taylorsville Rd, Louisville, KY 40299
3/23/2021	Nichole Ebner	12105 Wayside Ln, Goshen, KY 40026
3/23/2021	Julie Razavi	8905 Pennsylvania Run Rd, Louisville, KY 40228
3/23/2021	Beverly Camic	206 Kim Ct, Louisville, KY 40214
3/23/2021	Mike Kaiser	3929 Manner Dale Dr, Louisville, KY 40220
3/23/2021	Bobby Brimmer	11711 Peyote Pl, Louisville, KY 40299
3/23/2021	Mona Vollmer	1317 Hull St, Louisville, KY 40204
3/23/2021	Martha Jane Crowley	48 Hill Rd, Louisville, KY 40204
3/23/2021	Aleta McCubbins	4005 Hispanyola Ct, Louisville, KY 40229
3/23/2021	Jennifer O'Hearn Sanderson	4514 High Top Ct, Louisville, KY 40299
3/24/2021	Sarah Flarsheim	1633 Rosewood Ave, Louisville, KY 40204
3/24/2021	Dan Kabbes	407 Bermuda Way, Louisville, KY 40243
3/24/2021	Lisbeth Britt	2901 Butler Ct, Louisville, KY 40218
3/24/2021	Ray White	14108 Bentley Ct, Louisville, KY 40245
3/24/2021	Linda Davis	705 Macdonald Rd, Fairdale, KY 40118
3/24/2021	Amy Holliday	959 Eastern Pkwy, Louisville, KY 40217
3/24/2021	Erin Cruiz	6107 Manse Dr, Louisville, KY 40258
3/24/2021	Janet Ries	3330 Natchez Ln, Louisville, KY 40206
3/24/2021	Ron Downs	5613 McDeane Rd, Louisville, KY 40216
3/24/2021	Lydia Soowoo	636 Chieftain Dr, Louisville, KY 40118
3/24/2021	Greg Laird	1520 Crosstimbers Dr, Louisville, KY 40245
3/24/2021	Valicia Starks	4335 Charlotte Ann Dr, Louisville, KY 40216
3/24/2021	Barb Pate	10609 Ledbury Ct, Louisville, KY 40243
3/24/2021	Valerie White	2118 Oregon Ave, Louisville, KY 40210
3/24/2021	Mark Reilly	12005 Green Valley Dr, Louisville, KY 40243
3/24/2021	Emily Peterson	501 Cheskirk Pl, Louisville, KY 40243
3/25/2021	Steph Miller	4001 Naomi Dr, Louisville, KY 40219
3/25/2021	Emily Murphy	4949 Old Brownsboro Rd, Ste 220, Louisville, KY 40222
3/25/2021	Shannon Loss	1255 Union Ave, Louisville, KY 40213
3/25/2021	Omar Isa	15916 Long Meadow Way, Louisville, KY 40245
3/25/2021	Danny Reinstedler	11301 Tarrence Rd, Louisville, KY 40299
3/25/2021	Terry Roberts	6715 Oak Valley Dr, Louisville, KY 40214
3/25/2021	Edward Long	4211 Southern Pkwy, Louisville, KY 40214
3/25/2021	Karen Coons	8303 Gloxinia Dr, Louisville KY 40258
3/25/2021	Nicole Mcgrath	8206 Gloxinia Dr, Louisville KY 40258

3/25/2021	Peggy Druck	6128 Arlone Ct, Lousville, KY 40216
3/25/2021	Phillip Velino	434 E Lee St, Louisville, KY 40217
3/25/2021	Sandra Moody	1302 Weyler Ave, Louisville, KY 40215
3/26/2021	Deborah Robben	2225 Sieger Villa Ct, Louisville, KY 40218
4/21/2021	Melody Knopf	208 Eastwood-Fisherville Road, Fisherville, KY 40023
4/21/2021	The Frazier Household	2814 W Madison, Louisville, KY 40211
4/21/2021	Mary Frances Brown	830 Eastern Pkwy, Louisville, KY 40217
4/21/2021	Jeff Wells	7522 3rd Street Rd, Louisville, KY 40214
4/21/2021	Terry Rogstad	7709 Nevia Way, Louisville, KY 40220
4/21/2021	Jessica Howington	1105 Rammers Ave, Louisville, KY 40204
4/21/2021	Jeni Church	1605 Ormsby Lane, Louisville, KY 40222
4/21/2021	Elizabeth Horstmeier	9902 White Blossom Blvd, Louisville, KY 40241

Tree Planting at Sutherland Dr (April 15, 2021)

2.1.4-D

LouisvilleMSD @louisvillemsd · Apr 16

The MS4 team took advantage of yesterday's great weather to plant trees at a FEMA buyout properties off of Sutherland Drive. Thanks to Brett Clark, Colette Easter, Sarah Goodin, Jennifer Kern, Gloria Mullins, Lori Rafferty and Matt Schaff for their hard work!



1 2 6

LouisvilleMSD @louisvillemsd · Apr 16

The trees planted were selected and placed based on the pocket park design created by Gresham Smith. While a pocket park for the entire property hasn't been decided on, the trees complement the plan and can be incorporated in the future.

3

Louisville MSD
April 16 ·

The MS4 team took advantage of yesterday's great weather to plant trees at a FEMA buyout property off Sutherland Drive. Thanks to Brett Clark, Colette Easter, Sarah Goodin, Jennifer Kern, Gloria Mullins, Lori Rafferty and Matt Schaff for their hard work!

The trees were selected and placed based on the pocket park design created by engineering firm Gresham Smith. While a pocket park for the entire property hasn't been decided on, the trees complement the plan and can be incorporated in the future.



https://www.wdrb.com/community/beautification-campaign-in-south-louisville-begins-with-100-trees-planted/article_81be297c-b5cc-11eb-ba89-13bc943d90f8.html

Beautification campaign in south Louisville begins with 100 trees planted

May 15, 2021

LOUISVILLE, Ky. (WDRB) -- Volunteers worked together to kickoff a beautification campaign in Louisville's south end on Saturday.

With the goal of restoring the tree canopy in the Iroquois and Southside neighborhoods, around 100 trees were planted Saturday, according to Councilwoman Nicole George (D-21).

Metropolitan Sewer District (MSD), Louisville Grows, Metro Louisville's Division of Community Forestry and Brightside partnered to provide the south Louisville neighborhoods with 167 new trees. MSD provided $40,000 toward the project.

George said the project addresses an array of community needs, like drainage issues, reducing urban heat islands, improving quality and increasing community action. District 21 has a low tree canopy of 16%, according to a news release.

Red maples and poplar tulips were planted to mark the start of the campaign.

Trees are planned to be planted on private property and public rights of way.

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Nicole George

Metro Council District 21



Seventh Street Garden Tree Planting (April 24, 2021)

2.1.1-E

MSD is putting our vacant parcels of land to use to support the community and the environment. Some land that MSD owns must never be developed in the traditional sense due to the critical structures that serve our community far below the surface but can be used to beautify a neighborhood.

One such parcel of property in the Taylor-Berry area now serves as a community garden. Deep below the surface where more than 300 gardeners work the land is the largest sewer pipe in MSD's vast system.

In partnership with Catholic Charities and Common Earth Gardens, Jefferson County Cooperative Extension manages the Seventh Street Community Garden. These six acres of urban farmland—rented by farmers—provide more than 230,400 pounds of produce to local gardeners annually, supporting the gardeners and their families.

This spring, volunteers planted more than 50 trees provided by Louisville Metro Parks and Community Forestry. The trees will not only beautify the site but add to the urban tree canopy. Careful planning ensures that roots will not go deep enough to interfere with any of the pipes.



Beechmont Pollinator Garden (May 2021)

2.1.4-G

Another MSD owned parcel of vacant land—where deep below the surface is a large sewer interceptor pipe—is now home to a pollinator garden in the Beechmont Neighborhood. In May, the Jefferson County Soil and Water Conservation District, in partnership with the Beechmont Neighborhood Association, kicked off the installation of the garden bringing new life to the third-of-an-acre property. The two groups have agreed to maintain the property.











LOUISVILLE PARKS AND RECREATION

Project Location: Bear Grass Pumping Station
Project Date: 5/22/21
Volunteer Activity: Mini River Sweep
Staff Supervisor: Eric Hottel

	Volunteer Name	Email Address	Phone Number
1	Sean Craig	SCRAIG212@yahoo.com	(270) 304-5270
2	Taylor Smith	tsmithmmtb@gmail.com	502-640-6195
3	Allison Smith	metzae@hotmail.com	502-876-9442
4	Payton Nunn	paytonbnunn@gmail.com	(502) 457-5166
5	Katie Zalla	katieannzalla@gmail.com	502-836-3953
6	Stacey Inman	glambarbie@yahoo.com	502-649-8162
7	Chris Gerstle	cmgers01@gmail.com	502-893-5263
8			



LouisvilleMSD @louisvillemsd · Apr 22

Want to do even more? Join us Saturday for the Beargrass Creek stream cleanup as part of the District 8 Community Cleanup. The event is organized by @cassie4council. For more information, go to bit.ly/3twbttG. #EarthDay 6/7

Councilwoman Chambers Armstrong puts out the ... – Spring is in full swing and Councilwoman Cassie Chambers Armstrong is putting out the call for ...
louisvilleky.gov

1

Councilwoman Chambers Armstrong puts out the call for volunteers for a District 8 Community Cleanup

April 19, 2021

Louisville – Spring is in full swing and Councilwoman Cassie Chambers Armstrong is putting out the call for volunteers as she hosts a District 8 Community Cleanup this Saturday April 24th.

At least seventeen groups and organizations are already planning to be involved but if you are not part of a group and want to roll up your sleeves and join in, the Councilwoman encourages you to help out.

"I am so thrilled that we have so many neighborhood associations, non-profits, small businesses, and other organizations coming together to make the Highlands cleaner, greener, and more beautiful," says Chambers Armstrong. "I'll be out there doing my part on Saturday, and I hope anyone who is able will join me at 10 am."

These groups have already committed to the Community Cleanup:

Belknap Neighborhood Association

Bonnycastle Homstead Association

Cherokee Triangle Association

Cherosen Neighborhood Association

Deer Park Neighborhood Association

The Girl Scouts

The Highland Commerce Guild

Highlands Douglass Neighborhood Association

MSD

Olmsted Parks Conservancy

Original Highlands Neighborhood Association

St. Agnes School

St. Paul United Methodist Church

Tyler Park Neighborhood Association

Upper Highlands Neighborhood Association

Anytime Waste Solutions

Parkside Bikes

APPENDIX 2.1.5 MS4 CUSTOMER COMPLAINTS

Metro Call Hotline and MSD Customer Relations Summary

MSD's Customer Relations Call Center is staffed 24 hours per day, seven days per week and responds to customer calls and web requests for service. Requests are recorded and coded in the IPS database and routed to the appropriate staff for follow-up. Responses are recorded in the database. The department also assists walk-in customers.

In FY15, MSD began implementation of the Effective Utility Management (EUM) program, which includes metrics for customer satisfaction. Through this program, MSD tracks customer data through four best practice areas: Minimize Customer Complaints, Achieve Target Level of Customer Service, Receive Positive Customer Perceptions, and Efficiently Deliver Customer Service.

Request Date	Priority	Address	Resolved Date	Resolution Code	Inspection Completed	Inspection Started
7/1/2020 13:54	HIGH	5307 CEDRUS CIR LOUISVILLE KY 40213-0000	7/1/2020 18:20	CUST	7/1/2020 16:05	7/1/2020 15:30
7/1/2020 14:54	HIGH	2408 W JEFFERSON ST LOUISVILLE KY 40212-0000	7/1/2020 19:30	CUST	7/1/2020 19:30	7/1/2020 18:45
7/1/2020 16:24	HIGH	6600 OUTER LOOP 11 LOUISVILLE KY 40228-0000	7/2/2020 12:49	CUST	7/1/2020 20:30	7/1/2020 20:00
7/2/2020 10:35	HIGH	7903 ROYCEWOOD RD LOUISVILLE KY 40214-0000	7/2/2020 11:40	CUST	7/2/2020 11:40	7/2/2020 10:50
7/2/2020 13:10	HIGH	6000 BROWNSBORO RD LOUISVILLE KY 40222-0000	7/2/2020 15:11	NOMSD	7/2/2020 15:11	7/2/2020 14:39
7/2/2020 13:49	HIGH	3430 W MARKET ST LOUISVILLE KY 40212-0000	7/2/2020 15:20	CUST	7/2/2020 15:20	7/2/2020 14:50
7/2/2020 15:20	HIGH	1038 ELLISON AVE LOUISVILLE KY 40204-0000	7/9/2020 15:00	WOCOM	7/2/2020 17:00	7/2/2020 16:30
7/2/2020 21:51	HIGH	2507 CEDAR ST 1 LOUISVILLE KY 40212-0000	7/2/2020 22:40	CUST	7/2/2020 22:40	7/2/2020 22:30
7/4/2020 12:46	HIGH	2224 AMBOY DR SHIVELY KY 40216-0000	7/4/2020 16:26	CUST	7/4/2020 16:26	7/4/2020 15:51
7/4/2020 12:49	HIGH	718 BROOK PARK DR LOUISVILLE KY 40214-0000	7/16/2020 8:09	WOCOM	7/4/2020 17:27	7/4/2020 16:30
7/4/2020 13:42	HIGH	6802 FOXCROFT RD PROSPECT KY 40059-0000	7/4/2020 17:11	WOCOM	7/4/2020 14:52	7/4/2020 14:33
7/5/2020 8:27	HIGH		7/6/2020 0:00	CLOSED	7/6/2020 15:15	7/6/2020 0:00
7/5/2020 11:02	HIGH	636 HARRISON AVE LOUISVILLE KY 40217-0000	7/5/2020 12:53	CUST	7/5/2020 12:53	7/5/2020 12:28
7/5/2020 15:28	HIGH	1017 CARLISLE AVE LOUISVILLE KY 40215-0000	7/5/2020 18:20	CUST	7/5/2020 18:20	7/5/2020 18:00
7/5/2020 19:10	HIGH	3111 HORTON AVE LOUISVILLE KY 40220-0000	7/5/2020 20:30	CUST	7/5/2020 20:30	7/5/2020 20:00
7/6/2020 12:14	HIGH	8433 GRANDEL FOREST WAY LOUISVILLE KY 40258-0000	7/6/2020 19:48	CUST	7/6/2020 15:35	7/6/2020 15:21
7/6/2020 15:09	HIGH	305 W MARKET ST LOUISVILLE KY 40202-0000	7/6/2020 21:55	CUST	7/6/2020 21:55	7/6/2020 21:40
7/6/2020 15:21	HIGH	1034 S 7TH ST LOUISVILLE KY 40203-0000	7/6/2020 21:32	CUST	7/6/2020 21:32	7/6/2020 21:27
7/6/2020 15:35	HIGH	2615 BYRON AVE STRATHMOOR VILLAGE KY 40205-0000	7/6/2020 19:30	NOPRB	7/6/2020 19:30	7/6/2020 19:15
7/6/2020 16:53	HIGH	6900 ARBOR MANOR WAY LOUISVILLE KY 40228-0000	7/13/2020 10:42	INSPT	7/7/2020 16:15	7/7/2020 15:45
7/7/2020 10:58	HIGH	8003 LYNDON CENTRE WAY LYNDON KY 40222-0000	7/21/2020 0:00	WOCOM	7/7/2020 13:26	7/7/2020 12:27
7/7/2020 13:24	HIGH	706 ZANE ST LOUISVILLE KY 40203-0000	7/7/2020 14:55	CUST	7/7/2020 14:55	7/7/2020 14:00
7/7/2020 14:22	HIGH	4413 SAVAGE DR SHIVELY KY 40216-0000	7/7/2020 16:45	CUST	7/7/2020 16:45	7/7/2020 16:15
7/8/2020 15:11	HIGH	423 S 17TH ST LOUISVILLE KY 40203-0000	7/8/2020 16:27	NOMSD	7/8/2020 16:27	7/8/2020 16:10
7/9/2020 7:01	HIGH	4306 E INDIAN TRL LOUISVILLE KY 40213-0000	7/9/2020 18:43	CUST	7/9/2020 9:20	7/9/2020 8:50
7/9/2020 13:42	HIGH	10604 PARK AVE JEFFERSONTOWN KY 40299-0000	7/12/2020 14:00	WOCOM	7/12/2020 14:00	7/9/2020 14:21
7/9/2020 17:12	HIGH	3013 MONTANA AVE LOUISVILLE KY 40208-0000	7/10/2020 8:45	CUST	7/9/2020 18:00	7/9/2020 17:30
7/9/2020 17:38	HIGH	1043 LAVISTA WAY LOUISVILLE KY 40219-0000	7/10/2020 8:00	CUST	7/9/2020 21:00	7/9/2020 20:30
7/10/2020 15:52	HIGH	6001 HAVEN MANOR WAY LOUISVILLE KY 40228-0000	7/10/2020 17:30	CUST	7/10/2020 17:30	7/10/2020 17:00
7/12/2020 17:53	HIGH	2242 LANDAN DR LOUISVILLE KY 40218-0000	7/12/2020 19:00	CUST	7/12/2020 19:00	7/12/2020 18:30
7/14/2020 14:56	HIGH	6602 PUTMAN ST LOUISVILLE KY 40216-0000	7/14/2020 16:15	CUST	7/14/2020 16:15	7/14/2020 15:45
7/14/2020 16:32	HIGH	10802 STONESTREET RD LOUISVILLE KY 40272-0000	7/15/2020 14:43	REFER	7/15/2020 11:30	7/15/2020 10:30
7/14/2020 17:50	HIGH	323 E KENTUCKY ST LOUISVILLE KY 40203-0000	7/14/2020 19:06	CUST	7/14/2020 19:06	7/14/2020 18:46
7/15/2020 13:43	HIGH	105 CAMBRIDGE STATION RD JEFFERSONTOWN KY 40223-0000	7/16/2020 14:00	WOCOM	7/15/2020 15:33	7/15/2020 14:12
7/16/2020 11:33	HIGH	213 WILLOUGHBY CT LOUISVILLE KY 40245-0000	7/16/2020 12:23	NOMSD	7/16/2020 12:23	7/16/2020 12:11
7/16/2020 18:07	HIGH	126 POPE ST LOUISVILLE KY 40206-0000	7/17/2020 11:54	CUST	7/16/2020 19:30	7/16/2020 19:00
7/17/2020 16:39	HIGH	7208 GREENLAWN RD LOUISVILLE KY 40222-0000	7/17/2020 19:30	CUST	7/17/2020 19:30	7/17/2020 19:00
7/18/2020 11:08	HIGH	4311 SHENANDOAH DR FINCASTLE KY 40241-0000	7/19/2020 12:59	NOFRTH	7/19/2020 12:59	7/19/2020 10:29
7/18/2020 19:30	HIGH	1204 CENTRAL AVE LOUISVILLE KY 40208-0000	7/19/2020 12:48	CUST	7/18/2020 20:30	7/18/2020 20:00
7/19/2020 12:55	HIGH	2400 TAVENER DR BANCROFT KY 40242-0000	9/17/2020 16:59	WOCOM	7/19/2020 15:58	7/19/2020 15:04
7/19/2020 18:21	HIGH		7/19/2020 19:45	CUST	7/19/2020 19:45	7/19/2020 19:30
7/20/2020 6:33	HIGH	4700 STONY BROOK DR JEFFERSONTOWN KY 40299-0000	7/20/2020 0:00	WOCOM	7/20/2020 11:39	7/20/2020 9:52
7/20/2020 13:48	HIGH	6105 ATHENS DR LOUISVILLE KY 40219-0000	7/21/2020 16:00	WOCOM	7/20/2020 14:50	7/20/2020 14:15
7/20/2020 14:21	HIGH	7208 EDMONSON PL PROSPECT KY 40059-0000	7/20/2020 15:02	INFO	7/20/2020 15:02	7/20/2020 14:45
7/21/2020 11:20	HIGH	808 E WASHINGTON ST 1 LOUISVILLE KY 40206-0000			7/21/2020 12:32	7/21/2020 11:50
7/21/2020 16:08	HIGH	2243 CEDAR ST LOUISVILLE KY 40212-0000	7/21/2020 17:58	CUST	7/21/2020 17:58	7/21/2020 17:44
7/21/2020 21:14	HIGH	2238 LANDAN DR LOUISVILLE KY 40218-0000	7/21/2020 22:30	WOCOM	7/21/2020 22:30	7/21/2020 22:11
7/22/2020 10:00	HIGH	3817 KLONDIKE LN LOUISVILLE KY 40218-0000	7/23/2020 16:00		7/22/2020 12:02	7/22/2020 10:20
7/22/2020 11:56	HIGH	1913 GRIFFITHS AVE LOUISVILLE KY 40203-0000	7/28/2020 15:00	WOCOM	7/22/2020 12:55	7/22/2020 12:25
7/22/2020 13:29	HIGH	3807 RIVER PARK DR LOUISVILLE KY 40211-0000	7/22/2020 14:30	CUST	7/22/2020 14:30	7/22/2020 14:00
7/23/2020 13:02	HIGH	4114 BOLLING BROOK DR LOUISVILLE KY 40299-0000	7/23/2020 14:19	WOCOM	7/23/2020 14:19	7/23/2020 13:34
7/23/2020 16:47	HIGH	5302 ALPINE WAY LOUISVILLE KY 40214-0000	7/24/2020 12:00	CUST	7/23/2020 17:30	7/23/2020 17:00
7/23/2020 20:26	HIGH	109 POPLAR LEVEL CT LOUISVILLE KY 40219-0000	7/23/2020 20:30	CUST	7/23/2020 20:30	7/23/2020 20:00
7/24/2020 10:53	HIGH	2301 BRENNEN BUSINESS CT JEFFERSONTOWN KY 40299-0000	7/29/2020 15:00	WOCOM	7/24/2020 15:02	7/24/2020 12:41
7/24/2020 12:52	HIGH	5007 BROADMOOR BLVD LOUISVILLE KY 40218-0000	7/24/2020 14:51	CUST	7/24/2020 14:51	7/24/2020 14:34
7/24/2020 16:06	HIGH	3211 STEGNER AVE LOUISVILLE KY 40216-0000	7/25/2020 9:47	CUST	7/24/2020 17:30	7/24/2020 17:00
7/25/2020 19:25	HIGH	9821 VIEUX CARRE DR 10 LOUISVILLE KY 40223-0000	7/26/2020 13:47	WOCOM	7/25/2020 21:45	7/25/2020 21:30
7/28/2020 8:34	HIGH	763 S SHELBY ST LOUISVILLE KY 40203-0000	8/17/2020 12:45	WOCOM	7/28/2020 9:56	7/28/2020 9:46
7/29/2020 14:25	HIGH	5301 CEDRUS CIR LOUISVILLE KY 40213-0000			7/29/2020 15:01	7/29/2020 14:47
7/29/2020 15:17	HIGH	5307 WINDY WILLOW DR LOUISVILLE KY 40241-0000	7/29/2020 16:00	CUST	7/29/2020 16:00	7/29/2020 15:45
7/29/2020 19:07	HIGH	1556 W BRECKINRIDGE ST LOUISVILLE KY 40210-0000	7/29/2020 20:30	CUST	7/29/2020 20:30	7/29/2020 20:00
7/30/2020 12:36	HIGH	1265 ROYAL AVE LOUISVILLE KY 40204-0000	7/30/2020 16:06	CUST	7/30/2020 16:06	7/30/2020 16:06
7/30/2020 14:24	HIGH	3631 CRAIG AVE LOUISVILLE KY 40215-0000	7/31/2020 11:40	CUST	7/30/2020 15:30	7/30/2020 15:20
7/30/2020 16:30	HIGH	1321 E MAIN ST LOUISVILLE KY 40206-0000	7/31/2020 18:19	CUST	7/30/2020 16:55	7/30/2020 16:45
7/30/2020 19:55	HIGH	700 ALGONQUIN PKY LOUISVILLE KY 40208-0000	7/30/2020 19:00	CUST	7/30/2020 19:00	7/30/2020 18:45
7/31/2020 9:24	HIGH	1501 S BROOK ST LOUISVILLE KY 40208-0000	7/31/2020 12:02	NOPRB	7/31/2020 12:02	7/31/2020 11:47
7/31/2020 10:26	HIGH	315 E BROADWAY 185 LOUISVILLE KY 40202-0000	7/31/2020 12:48	NOPRB	7/31/2020 12:48	7/31/2020 12:30
7/31/2020 14:11	HIGH	1300 S 17TH ST LOUISVILLE KY 40210-0000	8/20/2020 14:16	WOCOM	7/31/2020 15:20	7/31/2020 15:08
8/2/2020 12:37	HIGH	7300 SHADWELL LN PROSPECT KY 40059-0000			8/2/2020 14:47	8/2/2020 13:57
8/2/2020 16:29	HIGH	4407 STONY BROOK DR JEFFERSONTOWN KY 40299-0000	8/2/2020 18:30	CUST	8/2/2020 18:30	8/2/2020 18:00
8/3/2020 11:33	HIGH	4004 FARMVIEW AVE LOUISVILLE KY 40218-0000	8/19/2021 13:29	WOCOM	8/3/2020 13:59	8/3/2020 13:31
8/3/2020 12:09	HIGH	4911 UNSELD BLVD LOUISVILLE KY 40218-0000	8/3/2020 17:01	CUST	8/3/2020 12:51	8/3/2020 12:35
8/3/2020 12:20	HIGH	11608 HERRICK LN MIDDLETOWN KY 40243-0000	8/3/2020 15:24	WOCOM	8/3/2020 15:24	8/3/2020 15:00
8/3/2020 13:48	HIGH	7803 ST ANDREWS CHURCH RD 16 LOUISVILLE KY 40214-0000	8/3/2020 15:00	CUST	8/3/2020 15:00	8/3/2020 15:00
8/3/2020 17:02	HIGH	1528 HUNTOON AVE LOUISVILLE KY 40215-0000	8/3/2020 17:56	NOPRB	8/3/2020 17:56	8/3/2020 17:50
8/3/2020 19:04	HIGH	5410 DURHAMTREE PL LOUISVILLE KY 40229-0000	9/15/2020 8:59	WOCOM	8/3/2020 20:54	8/3/2020 20:31
8/4/2020 7:59	HIGH	1110 BROADFIELDS DR LOUISVILLE KY 40207-0000	8/5/2020 14:51	WOCOM	8/4/2020 11:20	8/4/2020 10:10
8/4/2020 12:56	HIGH	1806 WOODFILL WAY LOUISVILLE KY 40205-0000	8/4/2020 18:02	WOCOM	8/4/2020 18:02	8/4/2020 17:27
8/5/2020 11:02	HIGH	728 ZORN AVE 13 LOUISVILLE KY 40206-0000	8/5/2020 12:30	WOCOM	8/5/2020 12:30	8/5/2020 11:40
8/5/2020 14:24	HIGH	740 HEYWOOD AVE LOUISVILLE KY 40208-0000	8/6/2020 10:42	CUST	8/5/2020 15:10	8/5/2020 14:45
8/5/2020 15:46	HIGH	1310 DAHL RD LOUISVILLE KY 40213-0000	8/5/2020 16:00	CUST	8/5/2020 16:00	8/5/2020 15:46
8/5/2020 16:00	HIGH	827 PERENNIAL DR PARKWAY VILLAGE KY 40217-0000	8/6/2020 9:40	CUST	8/5/2020 16:45	8/5/2020 16:30
8/5/2020 18:09	HIGH	101 STAEBLER AVE ST MATTHEWS KY 40207-0000	8/5/2020 19:00	CUST	8/5/2020 19:00	8/5/2020 18:30
8/6/2020 9:30	HIGH	2801 JOAN AVE LOUISVILLE KY 40205-0000	8/7/2020 12:59	REFER	8/6/2020 15:30	8/6/2020 15:00
8/7/2020 8:39	HIGH	4717 FERRER WAY JEFFERSONTOWN KY 40299-0000	8/7/2020 0:00	CLOSED	8/7/2020 0:00	8/7/2020 0:00
8/7/2020 10:45	HIGH	1109 W HILL ST LOUISVILLE KY 40210-0000	8/7/2020 11:37	CUST	8/7/2020 11:37	8/7/2020 11:22
8/7/2020 12:21	HIGH	8708 WHARTON CT LOUISVILLE KY 40291-0000	8/7/2020 15:19	NOPRB	8/7/2020 15:19	8/7/2020 15:13
8/7/2020 15:36	HIGH	8601 FERNDALE RD LOUISVILLE KY 40291-0000	8/7/2020 16:45	NOMSD	8/7/2020 16:45	8/7/2020 15:30
8/8/2020 16:23	HIGH	2205 DOUGLASS BLVD LOUISVILLE KY 40205-0000	8/8/2020 16:30	CUST	8/8/2020 16:30	8/8/2020 16:23

Request Date	Priority	Address	Resolved Date	Resolution Code	Inspection Completed	Inspection Started
8/10/2020 11:21	HIGH	1241 DIXIE HWY LOUISVILLE KY 40210-0000			8/10/2020 13:00	8/10/2020 12:50
8/10/2020 11:32	HIGH	1528 HUNTOON AVE LOUISVILLE KY 40215-0000	8/11/2020 7:53	CUST	8/10/2020 14:00	8/10/2020 13:50
8/10/2020 16:53	HIGH	4402 HALE AVE LOUISVILLE KY 40211-0000	8/10/2020 17:34	CUST	8/10/2020 17:34	8/10/2020 17:19
8/10/2020 21:53	HIGH	1700 S 35TH ST LOUISVILLE KY 40211-0000	8/10/2020 22:36	CUST	8/10/2020 22:36	8/10/2020 22:15
8/11/2020 13:58	HIGH	6624 ASHBY LN LOUISVILLE KY 40272-0000	8/11/2020 14:24	WOCOM	8/11/2020 14:24	8/11/2020 13:58
8/11/2020 15:45	HIGH	6608 GLASTONBURG LN LOUISVILLE KY 40291-0000	8/11/2020 18:34	CUST	8/11/2020 18:34	8/11/2020 18:20
8/12/2020 10:05	HIGH	4511 CASPIAN DR LOUISVILLE KY 40219-0000	8/27/2020 20:53	WOCOM	8/12/2020 11:26	8/12/2020 11:10
8/12/2020 12:30	HIGH	4004 NORBOURNE BLVD NORBOURNE ESTATES KY 40207-0000	1/8/2021 10:54	WOCOM	8/12/2020 13:33	8/12/2020 13:08
8/12/2020 15:45	HIGH	7000 FOX HARBOR RD PROSPECT KY 40059-0000	8/12/2020 18:23	NOFRTH	8/12/2020 18:23	8/12/2020 18:08
8/12/2020 23:35	HIGH	1816 MYDDLETON DR MIDDLETOWN KY 40243-0000	8/13/2020 8:35	WOCOM	8/13/2020 1:25	8/13/2020 0:49
8/13/2020 15:36	HIGH	3763 GLENMEADE RD LOUISVILLE KY 40218-0000	8/13/2020 16:48	CUST	8/13/2020 16:48	8/13/2020 16:34
8/13/2020 16:03	HIGH	3418 LARKWOOD AVE LOUISVILLE KY 40212-0000	8/19/2021 13:33	WOCOM	8/13/2020 20:26	8/13/2020 19:22
8/14/2020 10:03	HIGH	8217 GLIMMER WAY LOUISVILLE KY 40214-0000			8/14/2020 11:37	8/14/2020 11:16
8/14/2020 13:28	HIGH	327 TOWNEPARK CIR MIDDLETOWN KY 40243-0000	8/14/2020 14:24	NOMSD	8/14/2020 14:24	8/14/2020 13:57
8/15/2020 13:51	HIGH	601 CAMBRIDGE STATION RD JEFFERSONTOWN KY 40223-0000	8/15/2020 14:40	NOPRB	8/15/2020 14:40	8/15/2020 14:30
8/16/2020 18:17	HIGH	11816 MONDAMON DR LOUISVILLE KY 40272-0000	8/16/2020 19:48	CUST	8/16/2020 19:48	8/16/2020 19:00
8/17/2020 10:25	HIGH	1142 ROSTREVOR CIR LOUISVILLE KY 40205-0000	8/18/2020 14:13	CUST	8/17/2020 12:07	8/17/2020 11:39
8/17/2020 10:30	HIGH	2137 ROWAN ST LOUISVILLE KY 40212-0000			8/17/2020 12:35	8/17/2020 12:00
8/17/2020 14:56	HIGH	9901 MERIONETH DR JEFFERSONTOWN KY 40299-0000	8/18/2020 13:00	WOCOM	8/17/2020 20:24	8/17/2020 18:33
8/17/2020 20:32	HIGH	6112 YELLOW PINE DR LOUISVILLE KY 40229-0000	8/18/2020 0:23	CUST	8/18/2020 0:23	8/18/2020 0:05
8/17/2020 21:15	HIGH	106 BURNLEY RD DOUGLASS HILLS KY 40243-0000	8/17/2020 23:38	CUST	8/17/2020 23:38	8/17/2020 23:15
8/18/2020 11:51	HIGH	978 S 3RD ST LOUISVILLE KY 40203-0000	12/14/2020 5:39	WOCOM	8/18/2020 13:25	8/18/2020 12:40
8/18/2020 14:49	HIGH	804 PALATKA RD LOUISVILLE KY 40214-0000	8/18/2020 15:40	NOMSD	8/18/2020 15:40	8/18/2020 15:15
8/19/2020 8:36	HIGH	15811 WATERSTONE CT LOUISVILLE KY 40245-0000	8/19/2020 12:50	NOFRTH	8/19/2020 10:00	8/19/2020 9:30
8/19/2020 12:09	HIGH	2600 WATTERSON TRL JEFFERSONTOWN KY 40299-0000	8/20/2020 16:26	CUST	8/19/2020 15:36	8/19/2020 12:51
8/19/2020 16:40	HIGH	7102 RIDGE FARM CT LOUISVILLE KY 40291-0000	8/19/2020 16:30	CUST	8/19/2020 16:30	8/19/2020 16:15
8/19/2020 21:26	HIGH	5128 FREY DR LOUISVILLE KY 40219-0000	5/21/2020 20:55	CUST	8/19/2020 23:30	8/19/2020 23:00
8/20/2020 14:26	HIGH	7501 ELNORA AVE LOUISVILLE KY 40258-0000	8/24/2020 14:28	WOCOM	8/20/2020 16:02	8/20/2020 15:31
8/21/2020 10:48	HIGH	728 ZORN AVE 1 LOUISVILLE KY 40206-0000	8/21/2020 15:00	INFO	8/21/2020 15:00	8/21/2020 14:50
8/21/2020 12:11	HIGH	106 BURNLEY RD DOUGLASS HILLS KY 40243-0000	8/21/2020 13:54	WOCOM	8/21/2020 13:54	8/21/2020 13:10
8/21/2020 12:43	HIGH	3505 GRISSOM WAY LOUISVILLE KY 40229-0000	8/21/2020 14:08	NSF	8/21/2020 14:08	8/21/2020 14:00
8/21/2020 12:46	HIGH	4141 S 5TH ST LOUISVILLE KY 40214-0000	8/21/2020 13:33	NOPRB	8/21/2020 13:33	8/21/2020 13:23
8/22/2020 8:38	HIGH	857 E WATER ST LOUISVILLE KY 40206-0000	8/22/2020 12:26	INSPT	8/22/2020 10:00	8/22/2020 9:00
8/23/2020 18:28	HIGH	120 W BROADWAY LOUISVILLE KY 40202-0000	8/23/2020 18:58	CUST	8/23/2020 18:58	8/23/2020 18:28
8/24/2020 9:05	HIGH	805 N POPE LICK RD MIDDLETOWN KY 40243-0000	8/27/2020 15:15	WOCOM	8/24/2020 11:53	8/24/2020 10:53
8/24/2020 12:11	HIGH	6600 OUTER LOOP 1 LOUISVILLE KY 40228-0000	8/24/2020 14:15	WOCOM	8/24/2020 14:15	8/24/2020 13:35
8/24/2020 14:11	HIGH	5309 RED OAK LN LOUISVILLE KY 40218-0000			8/24/2020 15:05	8/24/2020 14:30
8/26/2020 16:37	HIGH	14 HAWTHORN HL LOUISVILLE KY 40204-0000	12/3/2020 7:43	WOCOM	8/26/2020 18:00	8/26/2020 17:30
8/28/2020 10:03	HIGH	2415 DUMESNIL ST LOUISVILLE KY 40210-0000	8/28/2020 11:45	CUST	8/28/2020 11:45	8/28/2020 11:15
8/29/2020 22:02	HIGH	4001 WHITEBLOSSOM ESTATES CT LOUISVILLE KY 40241-0000	8/29/2020 23:00	CUST	8/29/2020 23:00	8/29/2020 22:30
8/30/2020 17:37	HIGH	6114 COOPER CHAPEL RD LOUISVILLE KY 40229-0000	9/2/2020 12:00	WOCOM	8/30/2020 20:00	8/30/2020 19:30
8/30/2020 19:39	HIGH	11100 BROOK BEND CT LOUISVILLE KY 40229-0000	8/30/2020 23:00	CUST	8/30/2020 23:00	8/30/2020 22:30
8/31/2020 9:44	HIGH	3901 ALTON RD ST MATTHEWS KY 40207-0000	8/31/2020 16:00	WOCOM	8/31/2020 11:02	8/31/2020 10:14
8/31/2020 11:48	HIGH	4312 TAGGART DR ST MATTHEWS KY 40207-0000	8/31/2020 18:42	CUST	8/31/2020 14:01	8/31/2020 13:38
8/31/2020 11:57	HIGH	7018 SHALLOW LAKE RD PROSPECT KY 40059-0000	10/14/2020 10:00	CUST	8/31/2020 13:14	8/31/2020 12:48
9/1/2020 8:01	HIGH	15013 FOREST OAKS DR LOUISVILLE KY 40245-0000			9/1/2020 10:08	9/1/2020 9:36
9/1/2020 12:07	HIGH	8210 SEALSTON DR LOUISVILLE KY 40228-0000	9/4/2020 12:30	WOCOM	9/1/2020 14:00	9/1/2020 13:00
9/1/2020 18:07	HIGH	4714 GRASTON AVE LOUISVILLE KY 40216-0000	9/2/2020 10:39	CUST	9/1/2020 19:03	9/1/2020 18:45
9/2/2020 9:17	HIGH	2146 DUNCAN ST LOUISVILLE KY 40212-0000	8/19/2021 13:52	WOCOM	9/2/2020 10:40	9/2/2020 10:10
9/2/2020 11:30	HIGH	1626 SUTHERLAND DR LOUISVILLE KY 40205-0000	9/6/2020 12:14	CUST	9/2/2020 13:25	9/2/2020 11:52
9/2/2020 17:11	HIGH	5305 ALPINE WAY LOUISVILLE KY 40214-0000	9/2/2020 19:30	CUST	9/2/2020 19:30	9/2/2020 19:15
9/2/2020 18:42	HIGH	1361 S BROOK ST 1 LOUISVILLE KY 40208-0000	9/2/2020 20:30	CUST	9/2/2020 20:30	9/2/2020 20:15
9/3/2020 9:14	HIGH	1038 ELLISON AVE LOUISVILLE KY 40204-0000	9/3/2020 17:33	CUST	9/3/2020 17:33	9/3/2020 16:41
9/3/2020 11:24	HIGH	4343 PRUITT CT LOUISVILLE KY 40218-0000			9/3/2020 12:30	9/3/2020 12:15
9/3/2020 16:57	HIGH	9217 WHITEGATE CT HURSTBOURNE KY 40222-0000	9/3/2020 19:00	CUST	9/3/2020 19:00	9/3/2020 18:45
9/4/2020 13:03	HIGH	4915 SHUMAKE CT LOUISVILLE KY 40218-0000	9/4/2020 18:15	CUST	9/4/2020 14:40	9/4/2020 14:20
9/4/2020 13:19	HIGH	1502 WINTER AVE LOUISVILLE KY 40204-0000			9/4/2020 14:36	9/4/2020 14:01
9/4/2020 19:10	HIGH	3120 HOUSTON BLVD HOUSTON ACRES KY 40220-0000	9/4/2020 17:50	CUST	9/4/2020 17:50	9/4/2020 17:30
9/6/2020 14:15	HIGH	4221 WINCHESTER RD ST MATTHEWS KY 40207-0000			9/6/2020 15:20	9/6/2020 14:45
9/8/2020 10:20	HIGH	2550 GRIFFITHS AVE LOUISVILLE KY 40212-0000	9/9/2020 13:14	CUST	9/8/2020 12:15	9/8/2020 11:15
9/8/2020 17:12	HIGH	205 SOUTHSIDE CT LOUISVILLE KY 40214-0000	9/8/2020 18:40	CUST	9/8/2020 18:40	9/8/2020 18:31
9/8/2020 18:43	HIGH	6601 QUEENS FALLS CT LOUISVILLE KY 40229-0000	9/8/2020 20:33	CUST	9/8/2020 20:33	9/8/2020 20:07
9/9/2020 9:47	HIGH	765 LOGAN ST LOUISVILLE KY 40204-0000	9/9/2020 9:47	NOMSD	9/9/2020 9:47	9/9/2020 9:47
9/9/2020 10:59	HIGH	212 N 20TH ST LOUISVILLE KY 40203-0000	9/9/2020 13:41	CUST	9/9/2020 12:15	9/9/2020 11:45
9/9/2020 13:39	HIGH	4807 SEVILLE DR LOUISVILLE KY 40272-0000	9/10/2020 12:00	WOCOM	9/9/2020 15:15	9/9/2020 14:15
9/9/2020 15:16	HIGH	214 MERRIMAN RD ST MATTHEWS KY 40207-0000	9/9/2020 18:48	WOCOM	9/9/2020 18:48	9/9/2020 17:43
9/10/2020 8:37	HIGH	10707 TAYLORSVILLE RD JEFFERSONTOWN KY 40299-0000	9/10/2020 8:47	NOMSD	9/10/2020 8:47	9/10/2020 8:47
9/10/2020 11:48	HIGH	3626 DOWNING WAY LOUISVILLE KY 40218-0000	9/11/2020 10:00	WOCOM	9/10/2020 15:04	9/10/2020 13:07
9/10/2020 15:10	HIGH	1748 FRANKFORT AVE LOUISVILLE KY 40206-0000	9/10/2020 19:39	CUST	9/10/2020 19:39	9/10/2020 19:27
9/10/2020 16:38	HIGH	2906 HEWITT PLACE CT JEFFERSONTOWN KY 40299-0000	9/10/2020 21:57	WOCOM	9/10/2020 21:57	9/10/2020 21:35
9/10/2020 17:13	HIGH	5347 PARK RD LOUISVILLE KY 40214-0000	9/11/2020 11:44	CUST	9/10/2020 18:15	9/10/2020 17:55
9/10/2020 20:11	HIGH	2303 LONEY LN SHIVELY KY 40216-0000	9/11/2020 10:37	CUST	9/10/2020 23:48	9/10/2020 23:18
9/11/2020 10:01	HIGH	167 CHARTER OAKS DR LOUISVILLE KY 40241-0000	9/12/2020 0:00	WOCOM	9/11/2020 12:49	9/11/2020 11:07
9/11/2020 11:24	HIGH	4907 S 5TH ST LOUISVILLE KY 40214-0000	9/12/2020 15:59	CUST	9/11/2020 12:25	9/11/2020 12:00
9/11/2020 14:28	HIGH	8211 TOLLS LN LOUISVILLE KY 40214-0000	9/11/2020 17:00	WOCOM	9/11/2020 17:00	9/11/2020 16:05
9/11/2020 14:41	HIGH	112 E OAK ST 1 LOUISVILLE KY 40203-0000	9/12/2020 15:10	CUST	9/11/2020 15:40	9/11/2020 15:20
9/11/2020 17:50	HIGH	7908 CANDLEGLOW LN LOUISVILLE KY 40214-0000	9/14/2020 14:27	CUST	9/11/2020 18:45	9/11/2020 18:15
9/12/2020 8:18	HIGH	8214 GLOXINIA DR LOUISVILLE KY 40258-0000	9/14/2020 10:25	CUST	9/12/2020 9:15	9/12/2020 9:02
9/13/2020 19:50	HIGH	3515 ROBIN DR SHIVELY KY 40216-0000	9/15/2020 18:45	CUST	9/13/2020 21:35	9/13/2020 20:27
9/14/2020 9:03	HIGH	3425 MAPLE RD JEFFERSONTOWN KY 40299-0000	9/16/2020 11:30	WOCOM	9/14/2020 10:18	9/14/2020 9:30
9/14/2020 16:28	HIGH	1909 OVERLOOK TER LOUISVILLE KY 40205-0000	9/15/2020 10:01	CUST	9/14/2020 21:09	9/14/2020 20:30
9/15/2020 10:20	HIGH	2128 SPEED AVE LOUISVILLE KY 40205-0000	11/11/2020 0:00	WOCOM	9/15/2020 11:49	9/15/2020 11:16
9/15/2020 12:00	HIGH	1644 HUNTOON AVE LOUISVILLE KY 40215-0000	9/15/2020 13:15	CUST	9/15/2020 13:15	9/15/2020 12:30
9/15/2020 12:27	HIGH	7433 APPLE MILL DR LOUISVILLE KY 40228-0000	9/15/2020 14:15	CUST	9/15/2020 14:15	9/15/2020 13:45
9/15/2020 15:21	HIGH	5405 RUSTIC WAY LOUISVILLE KY 40218-0000	9/15/2020 17:16	CUST	9/15/2020 17:16	9/15/2020 16:45
9/16/2020 9:00	HIGH	1207 E WASHINGTON ST LOUISVILLE KY 40206-0000	9/16/2020 15:55	NOPRB	9/16/2020 15:56	9/16/2020 9:02
9/16/2020 9:10	HIGH	3801 FRONTIER TRL LOUISVILLE KY 40220-0000	9/24/2020 16:28	WOCOM	9/24/2020 16:28	9/24/2020 16:00
9/16/2020 9:44	HIGH	10505 TAYLORSVILLE RD JEFFERSONTOWN KY 40299-0000	9/16/2020 10:45	NOMSD	9/16/2020 10:47	9/16/2020 10:10
9/16/2020 11:03	HIGH	3505 SUSANNA DR LOUISVILLE KY 40213-0000	9/16/2020 13:00	NOMSD	9/16/2020 13:00	9/16/2020 12:40
9/16/2020 12:57	HIGH	3106 HUNSINGER BLVD HOUSTON ACRES KY 40220-0000			9/16/2020 14:09	9/16/2020 13:49
9/17/2020 13:52	HIGH	13516 LAVERTON AVE LOUISVILLE KY 40272-0000			9/17/2020 15:20	9/17/2020 14:45
9/18/2020 11:30	HIGH	9921 BUCKINGHAM DR LOUISVILLE KY 40118-0000	9/18/2020 12:16	NOFRTH	9/18/2020 12:16	9/18/2020 12:08
9/18/2020 15:13	HIGH	7200 NATIONAL TPKE 101 LOUISVILLE KY 40214-0000	9/18/2020 0:00	NOFRTH	9/18/2020 0:00	9/18/2020 0:00
9/19/2020 10:34	HIGH	4822 FIELDING WAY LOUISVILLE KY 40216-0000	9/20/2020 7:45	CUST	9/19/2020 11:46	9/19/2020 11:35
9/19/2020 16:56	HIGH	4000 LOMOND DR SHIVELY KY 40216-0000	9/19/2020 19:06	CUST	9/19/2020 19:06	9/19/2020 23:00
9/21/2020 9:39	HIGH	7808 SUNBURY LN LOUISVILLE KY 40220-0000	9/21/2020 11:45	WOCOM	9/21/2020 11:45	9/21/2020 11:00
9/22/2020 11:16	HIGH	11100 BROOK BEND CT LOUISVILLE KY 40229-0000	9/22/2020 14:30	CUST	9/22/2020 14:30	9/22/2020 13:45

Request Date	Priority	Address	Resolved Date	Resolution Code	Inspection Completed	Inspection Started
9/23/2020 8:55	HIGH	2615 W JEFFERSON ST LOUISVILLE KY 40212-0000	9/23/2020 10:00	NOMSD	9/23/2020 10:00	9/23/2020 9:30
9/23/2020 9:24	HIGH	2217 THURMAN DR SHIVELY KY 40216-0000	9/25/2020 6:10	CUST	9/23/2020 11:00	9/23/2020 10:20
9/24/2020 6:52	HIGH	1838 NOBEL PL SHIVELY KY 40216-0000	9/24/2020 8:45	REFER	9/24/2020 8:45	9/24/2020 8:25
9/24/2020 8:43	HIGH	3134 TALISMAN RD LOUISVILLE KY 40220-0000			9/24/2020 10:39	9/24/2020 10:18
9/24/2020 15:06	HIGH	3804 CHATHAM RD LOUISVILLE KY 40218-0000	10/14/2020 10:49	WOCOM	9/24/2020 16:30	9/24/2020 16:00
9/24/2020 15:18	HIGH	914 ALBEMARLE CT HURSTBOURNE KY 40222-0000	9/25/2020 0:00	NOPRB	9/25/2020 0:00	9/25/2020 0:00
9/25/2020 18:40	HIGH	201 MERIDIAN AVE 101 LOUISVILLE KY 40207-0000	9/25/2020 19:30	CUST	9/25/2020 19:30	9/25/2020 19:00
9/28/2020 11:31	HIGH	1203 PIGEON PASS RD LYNNVIEW KY 40213-0000	9/28/2020 14:20	CUST	9/28/2020 14:20	9/28/2020 13:35
9/30/2020 11:32	HIGH	1800 W MUHAMMAD ALI BLVD LOUISVILLE KY 40203-0000	9/30/2020 12:30	NOFRTH	9/30/2020 12:30	9/30/2020 12:00
10/1/2020 7:54	HIGH	107 W HILL ST 100 LOUISVILLE KY 40208-0000	10/1/2020 12:00	NOMSD	10/1/2020 12:00	10/1/2020 7:30
10/2/2020 9:36	HIGH	3547 NANZ AVE LOUISVILLE KY 40207-0000	10/2/2020 10:52	CUST	10/2/2020 10:52	10/2/2020 10:18
10/2/2020 10:20	HIGH	632 N BIRCHWOOD AVE LOUISVILLE KY 40206-0000	10/2/2020 11:40	CUST	10/2/2020 11:40	10/2/2020 11:28
10/2/2020 12:48	HIGH	4416 GINKGO TRL LOUISVILLE KY 40245-0000	10/3/2020 17:34	CUST	10/2/2020 14:18	10/2/2020 13:58
10/2/2020 13:14	HIGH	2633 W KENTUCKY ST LOUISVILLE KY 40211-0000			10/2/2020 14:15	10/2/2020 13:50
10/3/2020 17:57	HIGH	2609 MEADOW RD SENECA GARDENS KY 40205-0000	10/3/2020 19:15	CUST	10/3/2020 19:15	10/3/2020 18:45
10/5/2020 12:46	HIGH	6618 DAYTONA AVE LOUISVILLE KY 40216-0000	10/5/2020 13:35	REFER	10/5/2020 13:35	10/5/2020 13:05
10/6/2020 11:47	HIGH	427 DOWNES TER LOUISVILLE KY 40214-0000			10/6/2020 14:00	10/6/2020 13:30
10/6/2020 23:56	HIGH		10/9/2020 15:40	CUST	10/9/2020 15:40	10/9/2020 15:40
10/7/2020 10:49	HIGH	3751 WOODGREEN CT 1 LOUISVILLE KY 40215-0000	10/7/2020 14:25	REFER	10/7/2020 13:30	10/7/2020 13:00
10/7/2020 15:02	HIGH	640 S SHELBY ST 101 LOUISVILLE KY 40202-0000	10/8/2020 11:01	CUST	10/7/2020 19:00	10/7/2020 18:45
10/7/2020 17:37	HIGH	1110 BROADFIELDS DR LOUISVILLE KY 40207-0000	10/7/2020 18:15	CUST	10/7/2020 18:15	10/7/2020 18:00
10/8/2020 8:58	HIGH	101 STAEBLER AVE ST MATTHEWS KY 40207-0000	10/8/2020 10:00	CUST	10/8/2020 10:00	10/8/2020 9:20
10/8/2020 12:30	HIGH	1601 GREYLING DR LOUISVILLE KY 40272-0000	10/8/2020 14:30	NOFRTH	10/8/2020 13:30	10/8/2020 13:30
10/9/2020 8:44	HIGH	1412 CHRISTY AVE LOUISVILLE KY 40204-0000	10/9/2020 12:55	CUST	10/9/2020 12:55	10/9/2020 9:25
10/9/2020 13:14	HIGH	219 N 28TH ST LOUISVILLE KY 40212-0000	10/10/2020 8:47	CUST	10/9/2020 14:20	10/9/2020 13:50
10/12/2020 8:40	HIGH	4902 GRANADA DR LOUISVILLE KY 40272-0000	10/12/2020 10:15	CUST	10/12/2020 10:15	10/12/2020 9:30
10/12/2020 10:17	HIGH	7410 RONAN DR LOUISVILLE KY 40258-0000	10/14/2020 16:00	WOCOM	10/12/2020 12:00	10/12/2020 11:15
10/12/2020 11:57	HIGH	1322 CECIL AVE LOUISVILLE KY 40211-0000	10/12/2020 14:35	CUST	10/12/2020 14:35	10/12/2020 14:05
10/12/2020 15:36	HIGH	4200 SHELBYVILLE RD ST MATTHEWS KY 40207-0000	10/12/2020 17:04	NOPRB	10/12/2020 17:04	10/12/2020 16:42
10/12/2020 18:15	HIGH	2470 BARDSTOWN RD LOUISVILLE KY 40205-0000	10/12/2020 19:33	WOCOM	10/12/2020 19:33	10/12/2020 18:53
10/13/2020 11:34	HIGH	2512 RALPH AVE SHIVELY KY 40216-0000	10/13/2020 13:55	CUST	10/13/2020 13:55	10/13/2020 13:30
10/13/2020 21:02	HIGH	636 S SHELBY ST 101 LOUISVILLE KY 40202-0000	10/14/2020 7:51	WOCOM	10/13/2020 20:23	10/13/2020 20:10
10/14/2020 17:59	HIGH	2928 DUMESNIL ST LOUISVILLE KY 40211-0000	10/14/2020 19:30	CUST	10/14/2020 19:30	10/14/2020 19:00
10/15/2020 11:34	HIGH	8303 TRAKIA CT LOUISVILLE KY 40219-0000			10/15/2020 13:00	10/15/2020 12:25
10/15/2020 12:28	HIGH	7112 GREENWICH RD LOUISVILLE KY 40218-0000	10/16/2020 10:28	CUST	10/15/2020 15:00	10/15/2020 14:30
10/15/2020 19:31	HIGH	517 VIRGINIA AVE ST MATTHEWS KY 40222-0000	10/15/2020 21:30	CUST	10/15/2020 21:30	10/15/2020 21:00
10/18/2020 10:04	HIGH	11209 MINFORD CT LOUISVILLE KY 40229-0000	10/18/2020 10:57	CUST	10/18/2020 10:57	10/18/2020 10:39
10/18/2020 16:04	HIGH	300 DORSEY LN LOUISVILLE KY 40223-0000	10/18/2020 18:30	CUST	10/18/2020 18:30	10/18/2020 18:00
10/19/2020 10:51	HIGH	3801 W BROADWAY LOUISVILLE KY 40211-0000	10/19/2020 12:45	NOMSD	10/19/2020 12:45	10/19/2020 12:20
10/19/2020 11:01	HIGH	924 S 39TH ST LOUISVILLE KY 40211-0000	10/22/2020 14:51	WOCOM	10/19/2020 12:15	10/19/2020 11:45
10/20/2020 8:50	HIGH	3710 W MARKET ST LOUISVILLE KY 40212-0000	10/20/2020 9:30	NOMSD	10/20/2020 9:30	10/20/2020 9:15
10/20/2020 11:34	HIGH	2928 VIRGINIA AVE LOUISVILLE KY 40211-0000	10/21/2020 9:17	CUST	10/20/2020 15:45	10/20/2020 15:15
10/20/2020 13:44	HIGH	2943 RIO RITA AVE LOUISVILLE KY 40220-0000	12/8/2020 8:27	WOCOM	10/20/2020 15:57	10/20/2020 14:58
10/21/2020 10:15	HIGH	9250 WESTPORT RD ROLLING HILLS KY 40242-0000	10/21/2020 20:47	CUST	10/21/2020 11:50	10/21/2020 10:45
10/21/2020 13:51	HIGH	1727 BAIRD ST LOUISVILLE KY 40203-0000	10/21/2020 14:45	CUST	10/21/2020 14:45	10/21/2020 14:25
10/22/2020 10:27	HIGH	1005 W JEFFERSON ST LOUISVILLE KY 40203-0000	10/22/2020 12:30	WOCOM	10/22/2020 12:30	10/22/2020 11:15
10/22/2020 11:09	HIGH	8098 DIXIE HWY LOUISVILLE KY 40258-0000	10/22/2020 14:45	NOMSD	10/22/2020 14:45	10/22/2020 14:20
10/22/2020 11:36	HIGH	2221 PARIS DR LOUISVILLE KY 40218-0000	10/27/2020 7:14	WOCOM	10/22/2020 14:30	10/22/2020 14:00
10/23/2020 11:01	HIGH	5505 CROSSWOOD CT LOUISVILLE KY 40291-0000	10/25/2020 16:23	WOCOM	10/23/2020 12:18	10/23/2020 11:50
10/23/2020 14:27	HIGH	2618 W BROADWAY LOUISVILLE KY 40211-0000	10/23/2020 14:56	DUPLI	10/23/2020 14:56	10/23/2020 14:56
10/23/2020 14:30	HIGH	2613 W BROADWAY LOUISVILLE KY 40211-0000	10/27/2020 11:35	NOPRB	10/27/2020 11:36	10/23/2020 15:45
10/23/2020 14:41	HIGH	250 GRANVIL DR LOUISVILLE KY 40218-0000	10/23/2020 20:27	CUST	10/23/2020 15:21	10/23/2020 15:14
10/24/2020 13:14	HIGH	4421 SOUTH RIDGE DR LOUISVILLE KY 40272-0000	10/27/2020 14:46	WOCOM	10/24/2020 14:43	10/24/2020 14:00
10/24/2020 17:08	HIGH	9902 DANIEL DR LOUISVILLE KY 40118-0000	10/26/2020 8:19	WOCOM	10/24/2020 17:35	10/24/2020 17:00
10/26/2020 8:36	HIGH	9904 DANIEL DR LOUISVILLE KY 40118-0000	10/26/2020 11:10	WOCOM	10/26/2020 11:10	10/26/2020 10:45
10/27/2020 16:09	HIGH	817 FOUNTAIN AVE LOUISVILLE KY 40222-0000	10/28/2020 9:17	CUST	10/28/2020 9:17	10/27/2020 19:44
10/28/2020 13:41	HIGH	7533 BEECHSPRING FARM BLVD LOUISVILLE KY 40241-0000			10/28/2020 14:31	10/28/2020 14:11
10/29/2020 9:26	HIGH	5406 E MANSLICK RD LOUISVILLE KY 40219-0000	11/2/2020 11:42	CUST	10/29/2020 18:00	10/29/2020 16:30
10/29/2020 13:55	HIGH	4505 ST CLAUDE CT JEFFERSONTOWN KY 40299-0000	11/6/2020 9:39	INFO	10/29/2020 18:24	10/29/2020 16:27
10/29/2020 15:30	HIGH	7011 SHALLOW LAKE RD PROSPECT KY 40059-0000	10/30/2020 10:00	NOFRTH	10/29/2020 18:00	10/29/2020 16:00
10/29/2020 15:31	HIGH	323 E ST CATHERINE ST LOUISVILLE KY 40203-0000	10/29/2020 17:45	CUST	10/29/2020 17:45	10/29/2020 17:30
10/30/2020 8:46	HIGH	6508 LANTANA CT LOUISVILLE KY 40229-0000	10/30/2020 10:35	CUST	10/30/2020 10:35	10/30/2020 9:50
10/30/2020 15:36	HIGH	2906 PETTY JAY RD LOUISVILLE KY 40220-0000	10/31/2020 15:25	CUST	10/30/2020 16:00	10/30/2020 15:30
11/1/2020 12:30	HIGH	1010 FRANKLIN ST LOUISVILLE KY 40206-0000			11/1/2020 13:38	11/1/2020 13:18
11/1/2020 17:22	HIGH	7107 NATHAN HALE WAY LOUISVILLE KY 40272-0000	11/1/2020 19:00	CUST	11/1/2020 19:00	11/1/2020 18:30
11/2/2020 11:05	HIGH	10707 ALLEN DR HOLLYVILLA KY 40118-0000	11/2/2020 13:10	CUST	11/2/2020 13:10	11/2/2020 12:30
11/2/2020 11:28	HIGH	4421 SAVAGE DR SHIVELY KY 40216-0000	11/5/2020 16:19	WOCOM	11/2/2020 15:40	11/2/2020 15:15
11/2/2020 12:46	HIGH	2321 SYCAMORE AVE LOUISVILLE KY 40206-0000	11/2/2020 18:09	CUST	11/2/2020 18:10	11/2/2020 17:12
11/2/2020 13:46	HIGH	1762 DUMESNIL ST 2 LOUISVILLE KY 40210-0000	11/2/2020 17:40		11/2/2020 16:40	11/2/2020 15:55
11/3/2020 13:03	HIGH	655 S 39TH ST LOUISVILLE KY 40211-0000	11/3/2020 13:45	NOMSD	11/3/2020 13:45	11/3/2020 13:15
11/3/2020 13:22	HIGH	1024 BERRY BLVD LOUISVILLE KY 40215-0000	11/4/2020 13:08	NOFRTH	11/4/2020 13:11	11/4/2020 13:12
11/3/2020 21:21	HIGH	3000 EASTERN AVE LOUISVILLE KY 40206-0000	11/3/2020 23:16	WOCOM	11/3/2020 23:16	11/3/2020 22:48
11/5/2020 8:03	HIGH	9801 BUNSEN PKY JEFFERSONTOWN KY 40299-0000	3/4/2021 13:52	WOCOM	11/5/2020 11:53	11/5/2020 9:22
11/5/2020 10:08	HIGH	129 RIDGEWAY AVE ST MATTHEWS KY 40207-0000	11/11/2020 9:23	WOCOM	11/5/2020 17:09	11/5/2020 16:27
11/6/2020 9:47	HIGH	4511 CASPIAN DR LOUISVILLE KY 40219-0000	11/6/2020 11:40	CUST	11/6/2020 11:40	11/6/2020 11:10
11/7/2020 10:40	HIGH	2323 ROCKFORD LN SHIVELY KY 40216-0000	11/7/2020 14:22	CUST	11/7/2020 11:39	11/7/2020 11:22
11/7/2020 11:13	HIGH	2702 TAYLOR BLVD LOUISVILLE KY 40208-0000	11/7/2020 12:34	CUST	11/7/2020 12:34	11/7/2020 12:16
11/7/2020 13:00	HIGH	7107 NATHAN HALE WAY LOUISVILLE KY 40272-0000	11/7/2020 14:15	CUST	11/7/2020 14:15	11/7/2020 13:45
11/8/2020 8:30	HIGH	626 ATWOOD ST LOUISVILLE KY 40217-0000	11/8/2020 9:15	WOCOM	11/8/2020 9:15	11/8/2020 8:59
11/8/2020 11:51	HIGH	1633 TEXAS AVE LOUISVILLE KY 40217-0000	11/8/2020 12:40	NOMSD	11/8/2020 12:40	11/8/2020 12:15
11/10/2020 8:27	HIGH	1012 W ASHLAND AVE LOUISVILLE KY 40215-0000	11/11/2020 13:07	CUST	11/10/2020 9:30	11/10/2020 9:00
11/10/2020 9:01	HIGH	4500 HEDGES RD LOUISVILLE KY 40216-0000	11/10/2020 11:00	CUST	11/10/2020 11:00	11/10/2020 10:20
11/10/2020 9:24	HIGH	7201 RAINBOW DR LOUISVILLE KY 40272-0000	11/10/2020 12:00	NOMSD	11/10/2020 12:00	11/10/2020 11:30
11/10/2020 15:26	HIGH	7799 CAROL AVE LOUISVILLE KY 40219-0000	11/10/2020 17:00	CUST	11/10/2020 17:00	11/10/2020 16:45
11/10/2020 16:35	HIGH	970 BAXTER AVE LOUISVILLE KY 40204-0000	11/10/2020 19:00	CUST	11/10/2020 19:00	11/10/2020 18:30
11/10/2020 16:38	HIGH	1911 S 3RD ST LOUISVILLE KY 40208-0000	11/17/2020 9:30	CUST	11/10/2020 20:00	11/10/2020 19:15
11/10/2020 18:24	HIGH	506 CANNONS LN LOUISVILLE KY 40206-0000	12/4/2020 11:38	WOCOM	11/10/2020 22:00	11/10/2020 21:30
11/11/2020 11:24	HIGH	3506 COLLEGE DR JEFFERSONTOWN KY 40299-0000	11/16/2020 9:45	WOCOM	11/11/2020 12:46	11/11/2020 12:01
11/11/2020 13:39	HIGH	9614 TAYLORSVILLE RD JEFFERSONTOWN KY 40299-0000			11/11/2020 14:19	11/11/2020 13:48
11/12/2020 9:07	HIGH	215 E SOUTHERN HEIGHTS AVE LOUISVILLE KY 40209-0000	11/12/2020 12:46	CUST	11/12/2020 10:00	11/12/2020 9:30
11/12/2020 11:05	HIGH	1433 S 6TH ST LOUISVILLE KY 40208-0000	11/12/2020 13:35	CUST	11/12/2020 12:15	11/12/2020 11:30
11/13/2020 12:10	HIGH	201 MERIDIAN AVE 101 LOUISVILLE KY 40207-0000	11/23/2020 14:35	WOCOM	11/13/2020 14:25	11/13/2020 13:36
11/13/2020 12:11	HIGH	6600 GREEN MANOR DR LOUISVILLE KY 40228-0000	11/13/2020 13:30	CUST	11/13/2020 13:30	11/13/2020 12:50
11/13/2020 16:30	HIGH	208 MCARTHUR DR ST MATTHEWS KY 40207-0000	11/13/2020 18:30	CUST	11/13/2020 18:30	11/13/2020 18:00
11/16/2020 9:38	HIGH	1103 S 2ND ST LOUISVILLE KY 40203-0000	11/16/2020 10:45	REFER	11/16/2020 10:45	11/16/2020 10:20
11/16/2020 15:29	HIGH	3707 W WHEATMORE DR 269 LOUISVILLE KY 40215-0000	11/16/2020 17:57	CUST	11/16/2020 17:57	11/16/2020 17:45
11/16/2020 15:41	HIGH	1100 E OAK ST LOUISVILLE KY 40204-0000	11/16/2020 17:10	NOPRB	11/16/2020 17:10	11/16/2020 16:00

Request Date	Priority	Address	Resolved Date	Resolution Code	Inspection Completed	Inspection Started
11/17/2020 15:34	HIGH	3527 HUGHES RD LOUISVILLE KY 40207-0000	11/17/2020 18:11	CUST	11/17/2020 18:11	11/17/2020 17:42
11/18/2020 12:21	HIGH	10003 CHARLESWOOD RD LOUISVILLE KY 40229-000(	11/18/2020 14:00	WOCOM	11/18/2020 14:00	11/18/2020 13:00
11/18/2020 12:27	HIGH	8900 RAINTREE DR JEFFERSONTOWN KY 40220-000(	11/18/2020 11:18	WOCOM	11/18/2020 13:35	11/18/2020 13:00
11/18/2020 14:29	HIGH	10003 CHARLESWOOD RD LOUISVILLE KY 40229-000(	11/18/2020 15:10	DUPLI	11/18/2020 15:10	11/18/2020 15:00
11/18/2020 16:46	HIGH	9201 WALTER AVE LOUISVILLE KY 40229-0000			11/18/2020 18:30	11/18/2020 18:00
11/19/2020 8:04	HIGH	10638 WATTERSON TRL JEFFERSONTOWN KY 40299-000(	11/19/2020 9:58	NOFRTH	11/19/2020 9:58	11/19/2020 8:20
11/19/2020 9:09	HIGH	8161 NATIONAL TPKE LOUISVILLE KY 40214-0000	11/19/2020 9:55	CUST	11/19/2020 9:55	11/19/2020 9:45
11/19/2020 15:28	HIGH	1300 S FLOYD ST LOUISVILLE KY 40208-0000	11/19/2020 16:00	CUST	11/19/2020 16:00	11/19/2020 15:45
11/22/2020 17:17	HIGH	6804 FORDHAM LN LOUISVILLE KY 40291-0000	11/23/2020 11:54	CUST	11/22/2020 17:45	11/22/2020 17:30
11/23/2020 20:03	HIGH	9510 WOOD HOLLOW RD LOUISVILLE KY 40229-0000	11/24/2020 15:07	WOCOM	11/23/2020 22:18	11/23/2020 22:04
11/25/2020 10:27	HIGH	5403 RED LEAF RD LOUISVILLE KY 40218-0000			11/25/2020 12:15	11/25/2020 11:00
11/25/2020 22:53	HIGH	2400 AMPERE DR JEFFERSONTOWN KY 40299-000(	11/26/2020 13:48	NOFRTH	11/26/2020 12:30	11/26/2020 10:30
11/27/2020 16:30	HIGH	9304 ALEX CT JEFFERSONTOWN KY 40299-000(	11/28/2020 10:42	CUST	11/28/2020 10:42	11/27/2020 22:30
11/27/2020 17:53	HIGH	9818 SEVILLE DR LOUISVILLE KY 40272-0000	12/1/2020 14:25	WOCOM	12/1/2020 14:25	11/27/2020 23:33
11/28/2020 19:54	HIGH	4600 ORLEANS CT LOUISVILLE KY 40272-000(	12/2/2020 10:00	WOCOM	11/28/2020 21:10	11/28/2020 20:20
12/1/2020 13:23	HIGH	2302 PHOENIX HILL DR INDIAN HILLS KY 40207-0000			12/1/2020 15:11	12/1/2020 14:20
12/2/2020 13:50	HIGH	1326 E BRECKINRIDGE ST LOUISVILLE KY 40204-000(	12/2/2020 16:33	CUST	12/2/2020 16:34	12/2/2020 16:26
12/3/2020 9:50	HIGH	7220 BROWNSBORO RD OLD BROWNSBORO PLACE KY 40242-0000	12/4/2020 11:08	CUST	12/3/2020 12:42	12/3/2020 11:41
12/5/2020 13:36	HIGH	106 N 40TH ST LOUISVILLE KY 40212-0000	12/5/2020 14:44	CUST	12/5/2020 14:44	12/5/2020 14:37
12/5/2020 15:14	HIGH	221 RIDGEWAY AVE ST MATTHEWS KY 40207-000(	4/1/2021 10:17	WOCOM	12/5/2020 17:30	12/5/2020 17:00
12/6/2020 14:33	HIGH	4514 S 3RD ST LOUISVILLE KY 40214-0000	12/7/2020 8:29	CUST	12/6/2020 15:15	12/6/2020 14:45
12/7/2020 10:24	HIGH	1005 CAMDEN AVE LOUISVILLE KY 40215-0000	7/15/2021 15:30	WOCOM	12/7/2020 11:15	12/7/2020 10:50
12/7/2020 15:18	HIGH	3700 TYANNE PL 100 LOUISVILLE KY 40220-000(	12/7/2020 21:59	CUST	12/7/2020 17:19	12/7/2020 17:10
12/8/2020 11:31	HIGH	1117 HOMEVIEW DR LOUISVILLE KY 40215-000(	12/8/2020 12:45	CUST	12/8/2020 12:45	12/8/2020 12:15
12/8/2020 14:12	HIGH	1730 W OAK ST LOUISVILLE KY 40210-0000	12/21/2020 15:08	WOCOM	12/8/2020 18:00	12/8/2020 17:15
12/9/2020 12:51	HIGH	201 W TENNY AVE LOUISVILLE KY 40214-0000	12/9/2020 14:15	CUST	12/9/2020 14:15	12/9/2020 13:45
12/9/2020 14:46	HIGH	6614 W STHY 146 NOT IN JEFF CO KY 40014-000(	12/10/2020 12:13	CUST	12/9/2020 15:30	12/9/2020 15:00
12/11/2020 12:16	HIGH	720 W WHITNEY AVE LOUISVILLE KY 40215-000(	12/11/2020 14:10	CUST	12/11/2020 14:10	12/11/2020 13:45
12/12/2020 17:00	HIGH	6902 BETSY ROSS DR LOUISVILLE KY 40272-0000	12/12/2020 18:30	CUST	12/12/2020 18:30	12/12/2020 18:00
12/14/2020 8:59	HIGH	2902 CANNONS LN LOUISVILLE KY 40205-000(	12/14/2020 15:25	WOCOM	12/14/2020 10:15	12/14/2020 9:29
12/14/2020 13:22	HIGH	4214 WINCHESTER RD ST MATTHEWS KY 40207-000(	4/20/2021 15:30	WOCOM	12/14/2020 15:22	12/14/2020 14:39
12/14/2020 14:14	HIGH	1862 MELLWOOD AVE LOUISVILLE KY 40206-0000	12/15/2020 15:00	NOMSD	12/14/2020 15:00	12/14/2020 14:00
12/14/2020 16:19	HIGH	3632 MANSLICK RD 1 LOUISVILLE KY 40215-0000	12/14/2020 18:21	NOMSD	12/14/2020 18:21	12/14/2020 18:09
12/14/2020 16:29	HIGH	9418 SLAYTON CT LOUISVILLE KY 40229-000(	12/15/2020 5:33	DEFER	12/15/2020 5:33	12/15/2020 5:33
12/15/2020 11:27	HIGH	6789 BRITTANY OAK DR LOUISVILLE KY 40229-000(	12/15/2020 14:25	CUST	12/15/2020 14:25	12/15/2020 14:00
12/15/2020 14:25	HIGH	4707 WALNUT HILLS DR LOUISVILLE KY 40299-0000	12/15/2020 15:30	NOFRTH	12/15/2020 16:30	12/15/2020 15:30
12/16/2020 22:11	HIGH	3352 OLD OUTER LOOP 1 LOUISVILLE KY 40219-0000	12/17/2020 9:06	CUST	12/16/2020 22:45	12/16/2020 22:30
12/17/2020 16:02	HIGH	1718 MODEL RD SHIVELY KY 40216-0000	12/17/2020 17:45	CUST	12/17/2020 17:45	12/17/2020 17:30
12/17/2020 18:34	HIGH	5627 RUSTIC WAY LOUISVILLE KY 40218-000(	12/19/2020 6:35	WOCOM	12/17/2020 21:50	12/17/2020 21:35
12/18/2020 12:29	HIGH	1809 CUMMINGS RD LOUISVILLE KY 40272-0000	12/21/2020 13:12	REFER	12/21/2020 13:14	12/21/2020 12:00
12/18/2020 15:54	HIGH	2525 WYCKFORD WAY LOUISVILLE KY 40218-000(	12/18/2020 17:00	CUST	12/18/2020 17:00	12/18/2020 16:45
12/18/2020 19:20	HIGH	10100 MERIONETH DR JEFFERSONTOWN KY 40299-000(	12/18/2020 19:45	CUST	12/18/2020 19:45	12/18/2020 19:30
12/21/2020 15:10	HIGH	12019 RUNNING CREEK RD H DOUGLASS HILLS KY 40243-000(	1/13/2021 15:36	NOFRTH	12/21/2020 17:39	12/21/2020 17:24
12/21/2020 16:13	HIGH	5507 SPRIGWOOD LN LOUISVILLE KY 40291-0000	2/24/2021 14:54	WOCOM	12/21/2020 20:21	12/21/2020 19:59
12/21/2020 16:42	HIGH	4516 SOUTHERN PKY LOUISVILLE KY 40214-000(	12/22/2020 0:03	CUST	12/22/2020 0:03	12/21/2020 23:56
12/21/2020 17:44	HIGH	4312 WESTPORT TER WOODLAWN PARK KY 40207-0000	2/5/2021 14:27	WOCOM	12/21/2020 21:47	12/21/2020 21:30
12/21/2020 21:25	HIGH	5405 MERRIBROOK LN LOUISVILLE KY 40059-0000	12/22/2020 10:24	CUST	12/21/2020 22:48	12/21/2020 22:39
12/22/2020 6:32	HIGH	2615 DIXDALE AVE LOUISVILLE KY 40210-0000	12/22/2020 8:45	REFER	12/22/2020 8:45	12/22/2020 8:10
12/22/2020 8:42	HIGH	190 S DORSEY WAY BLUE RIDGE MANOR KY 40223-000(			12/22/2020 11:32	12/22/2020 9:33
12/22/2020 13:08	HIGH	1324 HELCK AVE LOUISVILLE KY 40213-0000	12/29/2020 16:05	WOCOM	12/22/2020 14:30	12/22/2020 13:45
12/22/2020 13:38	HIGH	101 HERITAGE HILL TRL MIDDLETOWN KY 40223-0000	12/23/2020 10:22	CUST	12/22/2020 15:55	12/22/2020 14:15
12/22/2020 18:44	HIGH	102 FONTAINE LANDING CT LOUISVILLE KY 40212-000(	1/14/2021 14:23	WOCOM	12/22/2020 21:17	12/22/2020 21:04
12/23/2020 9:56	HIGH	1534 S 36TH ST LOUISVILLE KY 40211-000(	12/23/2020 12:00	CUST	12/23/2020 12:00	12/23/2020 11:25
12/23/2020 15:23	HIGH	10005 BENTFORD DR LOUISVILLE KY 40272-0000	12/28/2020 11:51	NOFRTH	12/23/2020 19:26	12/23/2020 18:40
12/23/2020 19:35	HIGH	6704 ASHMEAD DR LOUISVILLE KY 40291-0000	1/19/2021 5:33	WOCOM	12/23/2020 22:49	12/23/2020 22:00
12/26/2020 16:41	HIGH	1725 NOBEL PL SHIVELY KY 40216-0000	12/26/2020 19:05	INFO	12/26/2020 19:05	12/26/2020 18:45
12/28/2020 6:42	HIGH	8608 IVINELL AVE LOUISVILLE KY 40291-0000	12/30/2020 9:34	CLOSED	12/28/2020 12:04	12/28/2020 11:34
12/28/2020 8:20	HIGH	605 CLOVERLEA RD LOUISVILLE KY 40206-0000	1/25/2021 11:22	WOCOM	12/28/2020 12:45	12/28/2020 12:36
12/28/2020 8:26	HIGH	7603 MICHAEL DR LOUISVILLE KY 40228-0000	12/28/2020 9:30	CUST	12/28/2020 9:30	12/28/2020 9:15
12/28/2020 10:00	HIGH	2801 SPRING BUD CT LOUISVILLE KY 40220-0000	12/29/2020 1:17	CUST	12/29/2020 1:17	12/29/2020 1:09
12/28/2020 12:20	HIGH	1739 KENSINGTON PLACE LN LOUISVILLE KY 40205-0000	4/5/2021 15:00	WOCOM	12/28/2020 20:23	12/28/2020 17:07
12/28/2020 15:19	HIGH	3615 REGATTA WAY LOUISVILLE KY 40211-000(	12/29/2020 8:20	CUST	12/28/2020 22:50	12/28/2020 22:40
12/29/2020 13:33	HIGH	201 MERIDIAN AVE 101 LOUISVILLE KY 40207-000(	12/29/2020 17:04		12/29/2020 17:04	12/29/2020 15:56
12/29/2020 17:32	HIGH	1012 S FLOYD ST LOUISVILLE KY 40203-0000	12/30/2020 10:23	CUST	12/29/2020 20:06	12/29/2020 19:59
12/30/2020 11:27	HIGH	2801 SPRING BUD CT LOUISVILLE KY 40220-0000	1/11/2021 18:00	WOCOM	12/30/2020 14:16	12/30/2020 13:33
12/31/2020 10:20	HIGH	7605 CARMIL CT LOUISVILLE KY 40291-0000	12/31/2020 12:19	WOCOM	12/31/2020 12:19	12/31/2020 11:54
1/1/2021 15:48	HIGH	10121 SPRINGHURST GARDENS CIR LOUISVILLE KY 40241-0000	1/1/2021 17:05	CUST	1/1/2021 17:05	1/1/2021 17:00
1/1/2021 17:51	HIGH	3526 NORTHWESTERN PKY LOUISVILLE KY 40212-0000	1/2/2021 15:47	CUST	1/1/2021 19:13	1/1/2021 19:00
1/2/2021 13:43	HIGH	2616 MONTGOMERY ST 1 LOUISVILLE KY 40212-000(	1/12/2021 22:41	WOCOM	1/2/2021 16:49	1/2/2021 16:34
1/2/2021 14:11	HIGH	3713 GLENGYLE AVE WEST BUECHEL KY 40218-000(	1/2/2021 14:57	CUST	1/2/2021 14:57	1/2/2021 14:48
1/2/2021 15:54	HIGH	6001 HARRODS LANDING DR PROSPECT KY 40059-000(	1/4/2021 10:35	INFO	1/4/2021 10:00	1/4/2021 8:30
1/2/2021 16:48	HIGH	3617 W KENTUCKY ST LOUISVILLE KY 40211-000(	1/3/2021 13:56	CUST	1/2/2021 17:30	1/2/2021 17:00
1/2/2021 17:05	HIGH	5902 LAUREL LN NOT IN JEFF CO KY 40059-000(			1/2/2021 18:00	1/2/2021 17:45
1/2/2021 18:40	HIGH	6702 KINGSLOOK CT WINDY HILLS KY 40207-0000	1/2/2021 19:30	WOCOM	1/2/2021 19:30	1/2/2021 19:00
1/5/2021 9:47	HIGH	5103 VALIANT DR LOUISVILLE KY 40216-0000	1/5/2021 11:00	CUST	1/5/2021 11:00	1/5/2021 10:30
1/5/2021 11:37	HIGH	1105 IRELAND DR LOUISVILLE KY 40219-0000	1/5/2021 13:30	CUST	1/5/2021 13:30	1/5/2021 13:00
1/5/2021 14:32	HIGH	2911 YORKSHIRE BLVD LOUISVILLE KY 40220-0000	1/6/2021 16:00	WOCOM	1/5/2021 15:54	1/5/2021 14:58
1/5/2021 16:09	HIGH	1010 ELLISON AVE LOUISVILLE KY 40204-0000	1/6/2021 15:06	CUST	1/5/2021 17:07	1/5/2021 16:58
1/5/2021 17:35	HIGH	4639 STONESTREET AVE SHIVELY KY 40216-000(	2/2/2021 13:45	WOCOM	1/5/2021 22:01	1/5/2021 21:29
1/6/2021 10:05	HIGH	728 S 31ST ST LOUISVILLE KY 40211-0000	1/7/2021 11:43	CUST	1/6/2021 11:06	1/6/2021 10:40
1/6/2021 10:48	HIGH	2409 PLANTSIDE DR JEFFERSONTOWN KY 40299-000(	7/27/2021 15:00	WOCOM	1/6/2021 13:41	1/6/2021 12:02
1/6/2021 11:11	HIGH	3701 HILLCREEK RD LOUISVILLE KY 40220-0000	1/7/2021 8:50	CCASE	1/6/2021 14:00	1/6/2021 12:00
1/7/2021 13:23	HIGH	432 S 26TH ST LOUISVILLE KY 40212-000(			1/7/2021 14:40	1/7/2021 14:10
1/7/2021 17:44	HIGH	3603 EMBER CIR JEFFERSONTOWN KY 40299-000(	1/7/2021 18:30	CUST	1/7/2021 18:30	1/7/2021 18:15
1/8/2021 13:24	HIGH	8929 STONY FALLS WAY JEFFERSONTOWN KY 40299-000(	1/8/2021 14:44	NOPRB	1/8/2021 14:44	1/8/2021 14:39
1/8/2021 13:53	HIGH	7600 VAUGHN MILL RD LOUISVILLE KY 40228-0000			1/8/2021 15:30	1/8/2021 14:30
1/9/2021 8:36	HIGH	4327 KINLOCH RD WOODLAWN PARK KY 40207-0000	1/9/2021 11:04	WOCOM	1/9/2021 11:04	1/9/2021 9:45
1/10/2021 11:33	HIGH	2217 THURMAN DR SHIVELY KY 40216-0000	1/11/2021 9:41	CUST	1/10/2021 13:08	1/10/2021 12:48
1/10/2021 13:58	HIGH	4136 W MARKET ST LOUISVILLE KY 40212-0000	1/10/2021 14:58	CUST	1/10/2021 14:58	1/10/2021 14:46
1/10/2021 14:44	HIGH	4301 HANNAH AVE LOUISVILLE KY 40213-000(	1/10/2021 17:12	WOCOM	1/10/2021 17:12	1/10/2021 16:50
1/10/2021 18:41	HIGH	4301 HANNAH AVE LOUISVILLE KY 40213-000(	2/9/2021 14:02	WOCOM	1/10/2021 19:30	1/10/2021 19:15
1/11/2021 13:34	HIGH	4402 HALE AVE LOUISVILLE KY 40211-000(	1/12/2021 12:06	CUST	1/11/2021 14:35	1/11/2021 14:05
1/11/2021 15:19	HIGH	2305 CARLTON TER LOUISVILLE KY 40205-000(	1/11/2021 18:22	CUST	1/11/2021 18:22	1/11/2021 18:09
1/11/2021 15:25	HIGH	301 SAUNDERS AVE LOUISVILLE KY 40206-0000			1/11/2021 17:00	1/11/2021 16:00
1/11/2021 16:06	HIGH	3702 MUD LN LOUISVILLE KY 40229-0000	1/13/2021 16:46	CCASE	1/13/2021 16:46	1/11/2021 16:00
1/11/2021 16:28	HIGH	200 E BROADWAY LOUISVILLE KY 40202-000(	1/11/2021 17:26	CUST	1/11/2021 17:26	1/11/2021 17:01
1/11/2021 18:31	HIGH	354 N 25TH ST LOUISVILLE KY 40212-0000	1/11/2021 20:19	CUST	1/11/2021 20:19	1/11/2021 20:03

Request Date	Priority	Address	Resolved Date	Resolution Code	Inspection Completed	Inspection Started
1/13/2021 12:32	HIGH	1821 SPRING DR LOUISVILLE KY 40205-0000	3/9/2021 15:41	WOCOM	1/13/2021 14:02	1/13/2021 13:15
1/13/2021 16:52	HIGH	7404 YORKTOWN RD LOUISVILLE KY 40214-0000	1/14/2021 17:35	CUST	1/14/2021 17:35	1/14/2021 17:00
1/13/2021 17:19	HIGH	12315 DOMINION WAY LOUISVILLE KY 40299-0000	1/29/2021 14:28	CUST	1/29/2021 14:28	1/29/2021 14:28
1/13/2021 17:31	HIGH	1340 LILLIAN AVE LOUISVILLE KY 40208-0000			1/29/2021 14:28	1/29/2021 14:28
1/14/2021 8:41	HIGH	13910 PETWOOD BLVD LOUISVILLE KY 40272-0000	1/14/2021 10:05	CUST	1/14/2021 10:05	1/14/2021 9:15
1/14/2021 13:45	HIGH	3606 PENWAY AVE LOUISVILLE KY 40211-0000	1/14/2021 17:35	CUST	1/14/2021 17:35	1/14/2021 17:15
1/14/2021 13:59	HIGH	1745 PAYNE ST LOUISVILLE KY 40206-0000	1/15/2021 11:05	NOFRTH	1/14/2021 15:00	1/14/2021 14:00
1/14/2021 16:12	HIGH	8908 LINN STATION RD HURSTBOURNE KY 40222-000C			1/14/2021 18:23	1/14/2021 18:10
1/15/2021 13:57	HIGH	6800 HILL PEAK CT LOUISVILLE KY 40214-0000	2/15/2021 8:03	WOCOM	1/15/2021 16:40	1/15/2021 16:10
1/18/2021 9:34	HIGH	6215 MERCURY DR LOUISVILLE KY 40291-0000	4/5/2021 11:30	WOCOM	1/18/2021 11:35	1/18/2021 11:21
1/18/2021 16:01	HIGH	4502 MALCOLM RD LOUISVILLE KY 40216-0000	1/21/2021 18:20	WOCOM	1/18/2021 17:10	1/18/2021 17:02
1/18/2021 16:02	HIGH	1678 TRIGG ST LOUISVILLE KY 40213-0000	1/18/2021 18:33	WOCOM	1/18/2021 18:33	1/18/2021 17:54
1/19/2021 11:19	HIGH	1104 CHEROKEE RD 1 LOUISVILLE KY 40204-0000	1/19/2021 12:16	CUST	1/19/2021 12:16	1/19/2021 11:39
1/19/2021 15:06	HIGH	4631 DOHN RD SHIVELY KY 40216-000C	1/19/2021 17:09	CUST	1/19/2021 17:09	1/19/2021 16:56
1/19/2021 16:12	HIGH	1500 OLEANDA AVE 1 LOUISVILLE KY 40215-0000	1/19/2021 18:17	CUST	1/19/2021 18:17	1/19/2021 17:41
1/20/2021 10:29	HIGH	5216 DOYLE DR LOUISVILLE KY 40216-0000	1/23/2021 15:47	WOCOM	1/20/2021 12:20	1/20/2021 12:00
1/20/2021 11:59	HIGH	3851 DARLENE DR SHIVELY KY 40216-0000	1/20/2021 13:00	CUST	1/20/2021 13:00	1/20/2021 12:30
1/20/2021 16:16	HIGH	175 N KEATS AVE 1 LOUISVILLE KY 40206-000C	1/20/2021 17:30	CUST	1/20/2021 17:30	1/20/2021 17:15
1/21/2021 12:55	HIGH	3025 LONG CREEK WAY LOUISVILLE KY 40245-0000	1/21/2021 15:23	REFER	1/21/2021 15:24	1/21/2021 13:59
1/21/2021 15:09	HIGH	4504 BALATON DR LOUISVILLE KY 40219-0000	3/31/2022 0:00	CUST	1/21/2021 16:00	1/21/2021 15:30
1/22/2021 12:10	HIGH	3514 W MARKET ST 100 LOUISVILLE KY 40212-0000	1/22/2021 12:30	CUST	1/22/2021 12:30	1/22/2021 12:15
1/22/2021 16:10	HIGH	3310 W BROADWAY LOUISVILLE KY 40211-0000	1/22/2021 17:00	CUST	1/22/2021 17:00	1/22/2021 16:45
1/23/2021 11:45	HIGH	624 RUBEL AVE LOUISVILLE KY 40204-0000	1/23/2021 12:51	CUST	1/23/2021 12:51	1/23/2021 12:35
1/23/2021 14:09	HIGH	4911 RONWOOD DR LOUISVILLE KY 40219-0000			1/23/2021 16:20	1/23/2021 14:30
1/25/2021 11:03	HIGH	3110 BROWNSBORO RD LOUISVILLE KY 40206-0000	1/25/2021 14:08	NOFRTH	1/25/2021 14:08	1/25/2021 13:00
1/25/2021 12:53	HIGH	9201 MORGAN JAYMES CT JEFFERSONTOWN KY 40299-000C	1/26/2021 11:05	CUST	1/25/2021 18:13	1/25/2021 17:32
1/25/2021 14:48	HIGH	3743 MARVIN AVE WEST BUECHEL KY 40218-000C	1/26/2021 10:53	INSPT	1/25/2021 23:34	1/25/2021 22:12
1/25/2021 20:40	HIGH	7809 MEADOW BREEZE CT LOUISVILLE KY 40291-0000	1/26/2021 1:14	CUST	1/26/2021 1:14	1/26/2021 0:50
1/26/2021 10:13	HIGH	7006 TOP WALNUT CT LOUISVILLE KY 40229-0000	1/26/2021 21:42	CUST	1/26/2021 13:40	1/26/2021 13:10
1/26/2021 11:29	HIGH	1439 S 6TH ST LOUISVILLE KY 40208-0000	1/27/2021 14:04	CUST	1/26/2021 15:15	1/26/2021 14:40
1/26/2021 12:16	HIGH	123 N JANE ST LOUISVILLE KY 40206-0000	1/27/2021 12:50	CUST	1/26/2021 16:29	1/26/2021 16:05
1/26/2021 14:24	HIGH	7061 CULVER LN LOUISVILLE KY 40219-0000	1/26/2021 18:15	WOCOM	1/26/2021 18:15	1/26/2021 17:30
1/26/2021 15:02	HIGH	2815 JOAN AVE LOUISVILLE KY 40205-0000	1/26/2021 19:06	WOCOM	1/26/2021 19:06	1/26/2021 18:47
1/26/2021 15:24	HIGH	1032 S SHELBY ST LOUISVILLE KY 40203-000C	7/21/2021 15:30	WOCOM	1/26/2021 18:05	1/26/2021 17:23
1/27/2021 9:22	HIGH	125 N JANE ST LOUISVILLE KY 40206-0000	1/27/2021 13:12	CUST	1/27/2021 10:49	1/27/2021 10:08
1/27/2021 11:28	HIGH	3695 STANTON BLVD LOUISVILLE KY 40220-0000	1/28/2021 15:00	WOCOM	1/27/2021 14:20	1/27/2021 13:21
1/27/2021 12:02	HIGH	300 HILLCREST AVE LOUISVILLE KY 40206-0000	1/28/2021 9:41	NOFRTH	1/27/2021 16:30	1/27/2021 15:30
1/27/2021 13:15	HIGH	1455 TIN PAN ALY 2 LOUISVILLE KY 40208-0000	2/19/2021 15:17	WOCOM	1/27/2021 15:45	1/27/2021 14:45
1/28/2021 12:18	HIGH	7702 ROSEMARY LN LOUISVILLE KY 40214-0000	1/28/2021 13:30	WOCOM	1/28/2021 13:15	1/28/2021 12:45
1/28/2021 15:20	HIGH	210 N 24TH ST LOUISVILLE KY 40212-0000	1/28/2021 15:45	CUST	1/28/2021 15:45	1/28/2021 15:30
1/30/2021 10:43	HIGH	7706 GAYEWAY DR LOUISVILLE KY 40219-0000	1/30/2021 11:34	WOCOM	1/30/2021 11:34	1/30/2021 11:23
1/30/2021 17:17	HIGH	127 S 38TH ST LOUISVILLE KY 40212-0000	8/2/2021 15:30	WOCOM	1/30/2021 22:08	1/30/2021 21:00
1/30/2021 17:31	HIGH	8400 JAN WAY LOUISVILLE KY 40219-0000	1/31/2021 13:35	CUST	1/30/2021 19:37	1/30/2021 19:08
1/31/2021 10:01	HIGH	2509 TAVISTOCK CT LOUISVILLE KY 40272-0000	2/1/2021 13:24	CUST	1/31/2021 10:33	1/31/2021 10:22
1/31/2021 11:29	HIGH	2307 LONEY LN SHIVELY KY 40216-000C	2/1/2021 13:14	CUST	1/31/2021 17:20	1/31/2021 17:11
1/31/2021 12:04	HIGH	3116 WIDGEON AVE AUDUBON PARK KY 40213-000C	1/31/2021 13:40	CUST	1/31/2021 13:40	1/31/2021 13:24
1/31/2021 14:18	HIGH	6112 RED SPRUCE DR LOUISVILLE KY 40229-0000	3/12/2021 16:00	WOCOM	1/31/2021 16:13	1/31/2021 15:32
2/1/2021 14:53	HIGH	11912 OAK BAY PL LOUISVILLE KY 40245-0000	2/1/2021 18:58	WOCOM	2/1/2021 18:59	2/1/2021 18:15
2/1/2021 16:03	HIGH	1204 WOLFE AVE LOUISVILLE KY 40213-0000	2/2/2021 12:33	CUST	2/1/2021 18:14	2/1/2021 17:52
2/1/2021 16:17	HIGH	520 DOVER RD LOUISVILLE KY 40206-0000	2/1/2021 17:26	WOCOM	2/1/2021 17:26	2/1/2021 17:01
2/2/2021 13:46	HIGH	3526 WINCHESTER RD LOUISVILLE KY 40207-0000			2/2/2021 19:23	2/2/2021 18:04
2/3/2021 8:43	HIGH	13404 SNOWDEN WAY LOUISVILLE KY 40272-000C	2/3/2021 10:00	CUST	2/3/2021 10:00	2/3/2021 9:30
2/3/2021 8:55	HIGH	210 N 24TH ST LOUISVILLE KY 40212-0000	2/3/2021 12:15	WOCOM	2/3/2021 12:15	2/3/2021 11:30
2/3/2021 9:21	HIGH	10713 DESHANE PL LOUISVILLE KY 40272-0000	2/9/2021 8:25	WOCOM	2/3/2021 11:00	2/3/2021 10:15
2/4/2021 9:55	HIGH	1017 ARDMORE DR LOUISVILLE KY 40217-0000	2/5/2021 8:38	CUST	2/4/2021 11:15	2/4/2021 10:45
2/4/2021 11:18	HIGH	11518 MAIN ST MIDDLETOWN KY 40243-000C			2/4/2021 13:11	2/4/2021 11:44
2/4/2021 14:04	HIGH	4711 PROGRESS BLVD LOUISVILLE KY 40218-0000			2/4/2021 15:38	2/4/2021 15:38
2/4/2021 14:58	HIGH	2126 W MAIN ST LOUISVILLE KY 40212-0000	2/4/2021 17:00	CUST	2/4/2021 17:00	2/4/2021 16:15
2/5/2021 9:53	HIGH	2501 AMPERE DR JEFFERSONTOWN KY 40299-000C	2/9/2021 15:00	WOCOM	2/5/2021 13:43	2/5/2021 10:26
2/6/2021 15:43	HIGH	2127 W MARKET ST LOUISVILLE KY 40212-0000	2/7/2021 13:45	CUST	2/6/2021 16:30	2/6/2021 16:00
2/6/2021 17:11	HIGH	4830 WEST SIDE DR LOUISVILLE KY 40219-0000	2/6/2021 17:30	CUST	2/6/2021 17:30	2/6/2021 17:15
2/6/2021 17:31	HIGH	10100 WESTWEGO PL JEFFERSONTOWN KY 40299-000C	2/6/2021 18:00	CUST	2/6/2021 18:00	2/6/2021 17:45
2/6/2021 22:01	HIGH	630 S 40TH ST LOUISVILLE KY 40211-0000	2/6/2021 22:30	CUST	2/6/2021 22:30	2/6/2021 22:15
2/7/2021 19:09	HIGH	4906 BETHUNE CT LOUISVILLE KY 40218-000C	2/7/2021 19:30	CUST	2/7/2021 19:30	2/7/2021 19:15
2/8/2021 7:50	HIGH	7601 JOHNSON SCHOOL RD LOUISVILLE KY 40291-0000	7/26/2021 15:30	WOCOM	2/8/2021 10:01	2/8/2021 9:35
2/8/2021 9:38	HIGH	3116 WIDGEON AVE AUDUBON PARK KY 40213-000C	2/9/2021 10:00	WOCOM	2/8/2021 11:19	2/8/2021 10:20
2/8/2021 13:20	HIGH	4007 IRON HORSE WAY LOUISVILLE KY 40272-0000	2/8/2021 16:17	CUST	2/8/2021 16:17	2/8/2021 15:35
2/8/2021 14:55	HIGH	201 MERIDIAN AVE 101 LOUISVILLE KY 40207-000C	2/8/2021 17:03	WOCOM	2/8/2021 17:03	2/8/2021 16:44
2/8/2021 15:51	HIGH	8905 THIXTON LN LOUISVILLE KY 40229-000C	2/8/2021 18:46	CUST	2/8/2021 18:46	2/8/2021 18:21
2/8/2021 16:34	HIGH	75 VALLEY RD LOUISVILLE KY 40204-0000	2/8/2021 19:44	NOMSD	2/8/2021 19:44	2/8/2021 19:30
2/8/2021 18:01	HIGH	13916 DARWIN BLVD LOUISVILLE KY 40272-0000	2/8/2021 21:26	NOMSD	2/8/2021 21:26	2/8/2021 21:20
2/8/2021 18:04	HIGH	973 BAXTER AVE LOUISVILLE KY 40204-0000	2/8/2021 20:32	CUST	2/8/2021 20:32	2/8/2021 20:14
2/9/2021 10:52	HIGH	4410 KINLOCH RD WOODLAWN PARK KY 40207-0000	2/9/2021 12:08	CUST	2/9/2021 12:08	2/9/2021 11:48
2/9/2021 18:29	HIGH	517 VIRGINIA AVE ST MATTHEWS KY 40222-000C	2/9/2021 23:05		2/9/2021 23:05	2/9/2021 22:44
2/10/2021 9:15	HIGH	1237 COOPER AVE LOUISVILLE KY 40219-0000	2/10/2021 11:20	WOCOM	2/10/2021 11:20	2/10/2021 11:06
2/10/2021 9:20	HIGH	75 VALLEY RD LOUISVILLE KY 40204-0000	2/25/2021 19:15	WOCOM	2/10/2021 11:00	2/10/2021 10:30
2/10/2021 15:21	HIGH	646 MADELON CT LOUISVILLE KY 40211-0000	2/11/2021 9:35	CUST	2/10/2021 17:30	2/10/2021 17:21
2/11/2021 10:25	HIGH	9826 TITAN DR LOUISVILLE KY 40229-0000	2/11/2021 12:20	WOCOM	2/11/2021 12:20	2/11/2021 11:55
2/11/2021 15:40	HIGH	9500 TAYLORSVILLE RD JEFFERSONTOWN KY 40299-0000			2/11/2021 16:30	2/11/2021 16:00
2/11/2021 15:51	HIGH	3506 COLMAR DR LOUISVILLE KY 40211-0000	2/11/2021 17:30	CUST	2/11/2021 17:30	2/11/2021 17:00
2/12/2021 11:36	HIGH	2104 EASTERN PKY LOUISVILLE KY 40204-0000	2/12/2021 21:26	CUST	2/12/2021 12:41	2/12/2021 12:29
2/12/2021 16:32	HIGH	4017 WINCHESTER RD ST MATTHEWS KY 40207-000C	2/12/2021 19:30	CUST	2/12/2021 19:30	2/12/2021 19:00
2/13/2021 16:37	HIGH	1447 CYPRESS ST LOUISVILLE KY 40210-0000	2/14/2021 13:44	CUST	2/13/2021 17:00	2/13/2021 16:45
2/13/2021 17:19	HIGH	13110 CAIN LN LOUISVILLE KY 40245-0000	2/2/2021 14:05	WOCOM	2/13/2021 17:45	2/13/2021 17:30
2/13/2021 17:47	HIGH	925 E WASHINGTON ST 1 LOUISVILLE KY 40206-000C	9/9/2021 9:03	WOCOM	2/13/2021 18:30	2/13/2021 18:00
2/15/2021 16:20	HIGH	1740 MODEL RD SHIVELY KY 40216-0000	2/15/2021 16:52	NOMSD	2/15/2021 16:52	2/15/2021 16:41
2/17/2021 11:28	HIGH	3312 W MAIN ST LOUISVILLE KY 40212-0000	2/17/2021 12:55	WOCOM	2/17/2021 12:55	2/17/2021 12:30
2/17/2021 11:58	HIGH	1801 WESLEY AVE HURSTBOURNE ACRES KY 40220-000C	2/17/2021 12:44	REFER		2/17/2021 12:26
2/18/2021 11:40	HIGH	3 OVERBROOK RD MOCKINGBIRD VALLEY KY 40207-0000	2/18/2021 21:43	CUST	2/18/2021 13:11	2/18/2021 12:18
2/19/2021 12:03	HIGH	8005 AFTERGLOW DR LOUISVILLE KY 40214-0000	2/19/2021 12:55	CUST	2/19/2021 12:55	2/19/2021 12:38
2/19/2021 13:14	HIGH	1514 APPLEWOOD LN GRAYMOOR/DEVONDALE KY 40222-000C			2/19/2021 14:37	2/19/2021 14:10
2/19/2021 15:25	HIGH	208 N 24TH ST LOUISVILLE KY 40212-0000	2/19/2021 16:45	CUST	2/19/2021 16:45	2/19/2021 16:30
2/19/2021 19:02	HIGH	2126 7TH STREET RD LOUISVILLE KY 40208-000C	2/19/2021 19:45	CUST	2/19/2021 19:45	2/19/2021 19:30
2/21/2021 14:38	HIGH	10727 BARDSTOWN WOODS BLVD LOUISVILLE KY 40291-0000	2/22/2021 8:26	CUST	2/21/2021 15:30	2/21/2021 15:20
2/21/2021 15:10	HIGH	3917 JENICA WAY LOUISVILLE KY 40241-000C	2/22/2021 13:38	CUST	2/21/2021 20:00	2/21/2021 15:30
2/22/2021 21:37	HIGH	12529 SHELBYVILLE RD MIDDLETOWN KY 40243-0000			2/22/2021 22:44	2/22/2021 22:10
2/23/2021 16:08	HIGH	1313 ST ANTHONY PL LOUISVILLE KY 40204-000C	2/25/2021 12:29	INFO	2/24/2021 0:00	2/24/2021 0:00

Request Date	Priority	Address	Resolved Date	Resolution Code	Inspection Completed	Inspection Started
2/25/2021 9:37	HIGH	6800 HOLLOW CREEK CT HOLLOW CREEK KY 40228-0000	2/25/2021 11:25	CUST	2/25/2021 11:25	2/25/2021 10:50
2/25/2021 10:37	HIGH	2310 THISTLEDAWN DR SHIVELY KY 40216-0000	2/25/2021 12:20	CUST	2/25/2021 12:20	2/25/2021 11:50
2/25/2021 12:26	HIGH	1150 S 3RD ST 1 LOUISVILLE KY 40203-0000			2/25/2021 13:50	2/25/2021 13:15
2/25/2021 16:07	HIGH	6009 PAULA MARIE PL LOUISVILLE KY 40291-0000			2/25/2021 19:30	2/25/2021 19:15
2/25/2021 17:16	HIGH	6215 MERCURY DR LOUISVILLE KY 40291-0000	2/25/2021 19:45	CUST	2/25/2021 19:45	2/25/2021 19:30
2/26/2021 11:27	HIGH	4320 SHEPHERDSVILLE RD LOUISVILLE KY 40218-0000	2/26/2021 14:01	NOMSD	2/26/2021 14:01	2/26/2021 13:51
2/27/2021 17:46	HIGH	4121 SHELBYVILLE RD 101 ST MATTHEWS KY 40207-0000	2/27/2021 18:30	CUST	2/27/2021 18:30	2/27/2021 18:00
2/27/2021 17:50	HIGH	2130 GRINSTEAD DR LOUISVILLE KY 40204-0000	2/28/2021 9:13	CUST	2/27/2021 19:00	2/27/2021 18:45
2/28/2021 14:28	HIGH	2224 FAIRLAND AVE LOUISVILLE KY 40218-0000		INFO	2/28/2021 15:30	2/28/2021 15:00
3/1/2021 4:04	HIGH	4600 SHELBYVILLE RD 101 ST MATTHEWS KY 40207-0000	3/1/2021 19:27	NOFRTH	3/1/2021 19:11	3/1/2021 19:11
3/1/2021 10:36	HIGH	3631 KELLY WAY LOUISVILLE KY 40220-0000	3/2/2021 3:33	CUST	3/1/2021 17:41	3/1/2021 17:35
3/1/2021 11:21	HIGH	4326 ALICENT RD WOODLAWN PARK KY 40207-0000	3/1/2021 17:36	NOFRTH	3/1/2021 17:36	3/1/2021 16:50
3/1/2021 13:42	HIGH	5910 MANSON WAY LOUISVILLE KY 40258-0000	3/2/2021 14:49	WOCOM	3/1/2021 16:20	3/1/2021 15:45
3/2/2021 7:59	HIGH	2613 GRAND AVE LOUISVILLE KY 40211-0000	3/2/2021 8:55	CUST	3/2/2021 8:55	3/2/2021 8:25
3/2/2021 8:07	HIGH	9003 HUDSON LN LOUISVILLE KY 40291-0000	4/23/2021 15:30	WOCOM	3/2/2021 9:47	3/2/2021 9:00
3/2/2021 11:00	HIGH	352 PLAZA AVE LOUISVILLE KY 40218-0000	6/5/2021 15:00	WOCOM	3/2/2021 17:37	3/2/2021 17:01
3/2/2021 11:39	HIGH	4607 HILLSIDE DR SHIVELY KY 40216-0000	3/6/2021 14:45	WOCOM	3/2/2021 15:00	3/2/2021 14:25
3/2/2021 11:44	HIGH	2007 W BROADWAY LOUISVILLE KY 40203-0000			3/2/2021 16:30	3/2/2021 16:00
3/2/2021 12:34	HIGH	1115 ENGLISH AVE LOUISVILLE KY 40217-0000	3/2/2021 17:30	CUST	3/2/2021 17:30	3/2/2021 16:25
3/2/2021 15:08	HIGH	1585 RAYDALE DR LOUISVILLE KY 40219-0000	3/2/2021 17:27	CUST	3/2/2021 17:27	3/2/2021 16:34
3/2/2021 16:20	HIGH	6600 OUTER LOOP 185 LOUISVILLE KY 40228-0000			3/2/2021 21:17	3/2/2021 20:41
3/2/2021 16:28	HIGH	1926 GOLDSMITH LN 73 LOUISVILLE KY 40218-0000	3/3/2021 11:32	CUST	3/2/2021 22:02	3/2/2021 21:57
3/3/2021 12:35	HIGH	1075 AUTUMN CREST LN LOUISVILLE KY 40245-0000	3/4/2021 8:09	CUST	3/3/2021 13:36	3/3/2021 13:10
3/3/2021 16:20	HIGH	5311 PYRUS LN LOUISVILLE KY 40258-0000	6/28/2021 14:15	WOCOM	3/3/2021 17:15	3/3/2021 17:00
3/3/2021 16:28	HIGH	3103 NORTHLAND DR LOUISVILLE KY 40216-0000	3/3/2021 16:45	CUST	3/3/2021 16:45	3/3/2021 16:30
3/3/2021 17:17	HIGH	2302 WOODLAND AVE LOUISVILLE KY 40210-0000	6/3/2021 14:38	WOCOM	3/3/2021 18:30	3/3/2021 17:45
3/4/2021 8:52	HIGH	11704 KINGS LN MIDDLETOWN KY 40243-0000	3/4/2021 21:42	CUST	3/4/2021 10:54	3/4/2021 9:30
3/4/2021 8:55	HIGH	3450 HEATHERFIELD DR SHIVELY KY 40216-0000	3/5/2021 11:35	CUST	3/4/2021 10:15	3/4/2021 9:45
3/4/2021 12:55	HIGH	817 S JACKSON ST LOUISVILLE KY 40203-0000	3/4/2021 14:20	WOCOM	3/4/2021 14:20	3/4/2021 14:00
3/4/2021 13:50	HIGH	3708 GLENLEA WAY JEFFERSONTOWN KY 40299-0000	3/5/2021 15:00	WOCOM	3/4/2021 15:16	3/4/2021 14:34
3/5/2021 9:30	HIGH	7804 APPLEVIEW LN LOUISVILLE KY 40228-0000	3/5/2021 11:10	CUST	3/5/2021 11:10	3/5/2021 10:25
3/5/2021 11:51	HIGH	1016 HATHAWAY AVE LOUISVILLE KY 40215-0000	7/6/2021 15:30	WOCOM	3/5/2021 13:15	3/5/2021 12:40
3/5/2021 12:16	HIGH	2314 EMBASSY LN SHIVELY KY 40216-0000	6/28/2021 14:18	WOCOM	3/5/2021 13:29	3/5/2021 12:45
3/5/2021 12:32	HIGH	6004 GREEN MANOR DR LOUISVILLE KY 40219-0000	4/21/2021 13:47	WOCOM	3/5/2021 14:26	3/5/2021 14:16
3/5/2021 14:09	HIGH	5811 PRINCE WILLIAM ST ST MATTHEWS KY 40207-0000	3/5/2021 14:30	CUST	3/5/2021 14:30	3/5/2021 14:15
3/5/2021 14:14	HIGH	9113 HI VIEW LN LOUISVILLE KY 40272-0000	3/5/2021 16:17	CUST	3/5/2021 16:17	3/5/2021 16:00
3/5/2021 15:58	HIGH	10517 DIXIE HWY LOUISVILLE KY 40272-0000	3/5/2021 17:15	CUST	3/5/2021 17:15	3/5/2021 17:00
3/5/2021 16:26	HIGH	3934 ELFIN AVE DRUID HILLS KY 40207-0000	3/5/2021 19:00	CUST	3/5/2021 19:00	3/5/2021 18:30
3/5/2021 17:46	HIGH	9816 MARY DELL LN LOUISVILLE KY 40291-0000	3/5/2021 20:30	CUST	3/5/2021 20:30	3/5/2021 20:00
3/6/2021 14:17	HIGH	3631 KELLY WAY LOUISVILLE KY 40220-0000	3/6/2021 16:46	WOCOM	3/6/2021 16:46	3/6/2021 16:35
3/6/2021 14:22	HIGH	904 EXMOOR AVE LOUISVILLE KY 40223-0000	3/6/2021 15:03	CUST	3/6/2021 15:03	3/6/2021 14:50
3/7/2021 10:18	HIGH	2515 HAWTHORNE AVE LOUISVILLE KY 40205-0000	3/7/2021 11:17	WOCOM	3/7/2021 11:17	3/7/2021 10:53
3/7/2021 11:54	HIGH		3/7/2021 15:30	CUST	3/7/2021 15:30	3/7/2021 15:00
3/7/2021 12:38	HIGH	2406 W MARKET ST LOUISVILLE KY 40212-0000	4/5/2021 16:00	WOCOM	3/7/2021 14:03	3/7/2021 13:06
3/7/2021 13:06	HIGH	5502 MINOR LN LOUISVILLE KY 40219-0000	5/6/2021 15:30	WOCOM	3/7/2021 15:02	3/7/2021 14:48
3/7/2021 14:02	HIGH	4302 NAOMI DR 1 LOUISVILLE KY 40219-0000	3/9/2021 15:11	WOCOM	3/7/2021 16:04	3/7/2021 15:28
3/7/2021 17:47	HIGH	4704 RAILROAD AVE LOUISVILLE KY 40258-0000	3/7/2021 18:30	CUST	3/7/2021 18:30	3/7/2021 18:00
3/8/2021 9:46	HIGH	2938 GRINSTEAD DR LOUISVILLE KY 40206-0000	3/8/2021 11:05	CUST	3/8/2021 11:04	3/8/2021 10:21
3/8/2021 9:48	HIGH	719 S 37TH ST LOUISVILLE KY 40211-0000	3/8/2021 12:16	WOCOM	3/8/2021 12:15	3/8/2021 12:15
3/8/2021 10:52	HIGH	7304 ETHAN ALLEN WAY LOUISVILLE KY 40272-0000	4/6/2021 14:46	WOCOM	3/8/2021 19:00	3/8/2021 18:00
3/8/2021 11:49	HIGH	5816 PRESTON HWY LOUISVILLE KY 40219-0000	3/15/2021 9:57	WOCOM	3/8/2021 13:50	3/8/2021 13:25
3/8/2021 12:47	HIGH	1518 SHARON DR LOUISVILLE KY 40216-0000	3/9/2021 10:50	CUST	3/8/2021 14:20	3/8/2021 14:10
3/8/2021 14:05	HIGH	195 CRESCENT AVE LOUISVILLE KY 40206-0000	4/20/2021 16:00	WOCOM	3/8/2021 16:00	3/8/2021 15:15
3/8/2021 15:17	HIGH	4216 HEWITT AVE HOUSTON ACRES KY 40220-0000	3/8/2021 17:32	WOCOM	3/8/2021 17:32	3/8/2021 16:52
3/8/2021 15:34	HIGH	10213 WATTERSON TRL JEFFERSONTOWN KY 40299-0000	3/8/2021 18:29	CUST	3/8/2021 18:29	3/8/2021 18:06
3/8/2021 15:59	HIGH	7709 BEULAH CHURCH RD LOUISVILLE KY 40228-0000	3/8/2021 19:07	NOMSD	3/8/2021 19:07	3/8/2021 19:02
3/8/2021 16:36	HIGH	119 SCOTTSDALE BLVD LOUISVILLE KY 40214-0000	3/8/2021 15:00	WOCOM	3/8/2021 20:00	3/8/2021 19:33
3/9/2021 0:03	HIGH	1460 FRANKFORT AVE LOUISVILLE KY 40206-0000			3/9/2021 0:45	3/9/2021 0:09
3/9/2021 10:10	HIGH	112 E OAK ST 1 LOUISVILLE KY 40203-0000	3/10/2021 8:04	CUST	3/9/2021 11:35	3/9/2021 10:55
3/9/2021 10:15	HIGH	116 E OAK ST 1 LOUISVILLE KY 40203-0000	3/10/2021 8:07	CUST	3/9/2021 11:35	3/9/2021 10:55
3/9/2021 11:24	HIGH	2612 GARLAND AVE LOUISVILLE KY 40211-0000	3/9/2021 13:30	CUST	3/9/2021 13:30	3/9/2021 13:00
3/9/2021 11:53	HIGH	520 S 28TH ST LOUISVILLE KY 40211-0000	3/9/2021 12:55	CUST	3/9/2021 12:55	3/9/2021 12:15
3/9/2021 13:14	HIGH	1354 VIM DR LOUISVILLE KY 40213-0000	3/10/2021 14:39	WOCOM	3/9/2021 16:25	3/9/2021 16:05
3/9/2021 16:35	HIGH	719 S 37TH ST LOUISVILLE KY 40211-0000	3/9/2021 19:56	CUST	3/9/2021 19:56	3/9/2021 19:16
3/9/2021 16:55	HIGH	1115 SPRINGVIEW DR LOUISVILLE KY 40219-0000	3/9/2021 18:34	CUST	3/9/2021 18:34	3/9/2021 18:12
3/10/2021 10:00	HIGH	4926 BLUEBIRD AVE LYNNVIEW KY 40213-0000	8/24/2021 11:03	WOCOM	3/10/2021 12:45	3/10/2021 12:00
3/10/2021 10:38	HIGH	11704 KINGS LN MIDDLETOWN KY 40243-0000	9/22/2021 16:00	WOCOM	3/10/2021 12:21	3/10/2021 11:49
3/10/2021 13:59	HIGH	10304 LARK PARK DR JEFFERSONTOWN KY 40299-0000	3/22/2021 19:30	WOCOM	3/10/2021 16:21	3/10/2021 15:42
3/10/2021 17:36	HIGH	18000 ELLERSLIE DR LOUISVILLE KY 40245-0000	3/10/2021 18:45	CUST	3/10/2021 18:45	3/10/2021 18:15
3/10/2021 18:51	HIGH	3306 HEATHER LN LOUISVILLE KY 40218-0000	3/10/2021 19:30	CUST	3/10/2021 19:30	3/10/2021 19:00
3/11/2021 10:19	HIGH	13404 HINCHBROOK BLVD LOUISVILLE KY 40272-0000	3/11/2021 11:35	CUST	3/11/2021 11:35	3/11/2021 11:00
3/11/2021 14:44	HIGH	539 GARDEN DR LOUISVILLE KY 40206-0000	3/12/2021 9:46	CUST	3/11/2021 19:27	3/11/2021 19:03
3/11/2021 15:29	HIGH	3507 MILDRED DR SHIVELY KY 40216-0000	3/11/2021 15:45	CUST	3/11/2021 15:45	3/11/2021 15:30
3/11/2021 19:45	HIGH	9607 MAPLE RD LOUISVILLE KY 40229-0000	3/12/2021 20:30	CUST	3/11/2021 20:30	3/11/2021 20:00
3/12/2021 14:09	HIGH	6111 RED SPRUCE DR LOUISVILLE KY 40229-0000	4/2/2021 11:40	CLOSED	3/12/2021 16:30	3/12/2021 15:45
3/12/2021 16:56	HIGH	703 S 31ST ST LOUISVILLE KY 40211-0000	8/24/2021 10:11	WOCOM	3/12/2021 18:30	3/12/2021 18:15
3/12/2021 17:39	HIGH	4305 NORTHWOOD DR LOUISVILLE KY 40220-0000	6/23/2021 14:05	NOFRTH	3/12/2021 19:30	3/12/2021 19:00
3/13/2021 14:05	HIGH	2422 NORTHWESTERN PKY LOUISVILLE KY 40212-0000	3/13/2021 16:02	CUST	3/13/2021 16:02	3/13/2021 15:50
3/13/2021 14:12	HIGH	1200 BROOKLINE AVE LOUISVILLE KY 40215-0000	4/15/2021 14:49	NOFRTH	3/13/2021 16:40	3/13/2021 16:30
3/14/2021 11:43	HIGH	8608 IVINELL AVE LOUISVILLE KY 40291-0000	3/14/2021 13:00	CUST	3/14/2021 13:00	3/14/2021 12:15
3/14/2021 13:15	HIGH	3910 OLD BROWNSBORO HILLS RD BROWNSBORO FARM KY 40241-0000	3/15/2021 12:51	CUST	3/14/2021 14:41	3/14/2021 14:20
3/15/2021 10:19	HIGH	6909 BARTLETT RD LOUISVILLE KY 40218-0000	3/15/2021 12:30	WOCOM	3/15/2021 12:30	3/15/2021 12:15
3/15/2021 10:36	HIGH	6911 BARTLETT RD LOUISVILLE KY 40218-0000	3/15/2021 12:15	WOCOM	3/15/2021 12:15	3/15/2021 11:00
3/15/2021 15:20	HIGH	7215 FOX HARBOR RD PROSPECT KY 40059-0000	3/16/2021 15:37	NOFRTH	3/15/2021 19:23	3/15/2021 18:15
3/15/2021 16:07	HIGH	534 N 26TH ST LOUISVILLE KY 40212-0000	3/15/2021 18:03	CUST	3/15/2021 18:03	3/15/2021 17:50
3/15/2021 19:01	HIGH	1324 E BRECKINRIDGE ST LOUISVILLE KY 40204-0000	3/15/2021 19:30	CUST	3/15/2021 19:30	3/15/2021 19:20
3/16/2021 9:52	HIGH	1010 STANLEY AVE LOUISVILLE KY 40215-0000	3/16/2021 21:56	CUST	3/16/2021 11:00	3/16/2021 10:30
3/16/2021 10:54	HIGH	3934 ELFIN AVE DRUID HILLS KY 40207-0000	3/26/2021 0:00	WOCOM	3/16/2021 13:33	3/16/2021 12:48
3/16/2021 11:33	HIGH	3536 GRAHAM RD ST MATTHEWS KY 40207-0000	6/23/2021 8:28	WOCOM	3/16/2021 15:40	3/16/2021 14:03
3/16/2021 12:55	HIGH	1218 PIGEON PASS RD LYNNVIEW KY 40213-0000	3/16/2021 13:45	CUST	3/16/2021 13:45	3/16/2021 13:20
3/16/2021 15:35	HIGH	4500 DEEPWOOD DR GREEN SPRING KY 40241-0000	3/16/2021 17:29	CUST	3/16/2021 17:29	3/16/2021 17:04
3/16/2021 16:35	HIGH	4405 SILVERLEAF DR LOUISVILLE KY 40213-0000	3/16/2021 18:38	CUST	3/16/2021 18:38	3/16/2021 18:08
3/17/2021 12:43	HIGH	1528 CHEROKEE RD LOUISVILLE KY 40205-0000	3/17/2021 14:37	WOCOM	3/17/2021 14:37	3/17/2021 14:22
3/17/2021 14:02	HIGH	8937 ELI DR LOUISVILLE KY 40291-0000	4/19/2021 14:46	WOCOM	3/17/2021 14:12	3/17/2021 14:02
3/17/2021 14:45	HIGH	4717 LIBBY LN LOUISVILLE KY 40272-0000	5/27/2021 15:30	WOCOM	3/17/2021 16:30	3/17/2021 15:20
3/18/2021 8:34	HIGH	112 E OAK ST 1 LOUISVILLE KY 40203-0000	4/23/2021 14:28	WOCOM	3/18/2021 10:15	3/18/2021 9:15
3/18/2021 12:10	HIGH	4612 DOHN RD SHIVELY KY 40216-0000	3/22/2021 15:09	WOCOM	3/18/2021 16:00	3/18/2021 15:30

Request Date	Priority	Address	Resolved Date	Resolution Code	Inspection Completed	Inspection Started
3/19/2021 8:45	HIGH	4886 BRENDA DR LOUISVILLE KY 40219-0000	4/28/2021 8:11	WOCOM	3/19/2021 10:20	3/19/2021 9:30
3/19/2021 12:48	HIGH	1606 WILSON AVE LOUISVILLE KY 40210-0000	3/19/2021 15:20	WOCOM	3/19/2021 15:20	3/19/2021 14:50
3/20/2021 19:39	HIGH	2422 NORTHWESTERN PKY LOUISVILLE KY 40212-0000	3/20/2021 23:45	CUST	3/20/2021 23:45	3/20/2021 23:30
3/21/2021 12:07	HIGH	2403 FARNSLEY RD SHIVELY KY 40216-0000	3/22/2021 14:58	WOCOM	3/21/2021 13:10	3/21/2021 12:29
3/21/2021 19:33	HIGH	2901 LIVINGSTON AVE JEFFERSONTOWN KY 40299-0000			3/21/2021 21:00	3/21/2021 20:00
3/22/2021 11:38	HIGH	2213 DEARING CT LOUISVILLE KY 40204-0000	4/14/2021 13:48	NOFRTH	3/22/2021 13:07	3/22/2021 12:28
3/22/2021 12:10	HIGH	1221 FIRST GETHSEMANE AVE LOUISVILLE KY 40208-0000	4/15/2021 10:52	WOCOM	3/22/2021 17:00	3/22/2021 16:05
3/22/2021 15:26	HIGH	808 EASTERN PKY LOUISVILLE KY 40217-0000	3/22/2021 17:05	CUST	3/22/2021 17:05	3/22/2021 16:37
3/23/2021 12:03	HIGH	6709 FERNBUSH DR LOUISVILLE KY 40228-0000	3/23/2021 15:15	CUST	3/23/2021 15:15	3/23/2021 14:30
3/23/2021 14:23	HIGH	3751 PARTHENIA AVE LOUISVILLE KY 40215-0000	3/23/2021 18:15	CUST	3/23/2021 18:15	3/23/2021 17:40
3/23/2021 17:22	HIGH	10607 GLEN EAGLE PL LOUISVILLE KY 40223-0000	3/25/2021 9:43	CUST	3/24/2021 12:08	3/24/2021 11:21
3/24/2021 13:20	HIGH	3616 TAYLORSVILLE RD LOUISVILLE KY 40220-0000	3/24/2021 14:47	CUST		3/24/2021 14:24
3/24/2021 14:18	HIGH	3118 HARMON CT LOUISVILLE KY 40213-0000	3/26/2021 15:19	WOCOM	3/24/2021 16:00	3/24/2021 15:15
3/24/2021 15:34	HIGH	702 LINDEN DR ANCHORAGE KY 40223-0000	3/31/2021 20:36	WOCOM	3/24/2021 17:00	3/24/2021 16:45
3/24/2021 17:21	HIGH	9320 MOONRIDGE PL LOUISVILLE KY 40229-0000	3/24/2021 19:45	CUST	3/24/2021 19:45	3/24/2021 19:15
3/24/2021 18:31	HIGH	7202 PEPPERMILL CT SPRING MILL KY 40228-0000	3/25/2021 9:57	CUST	3/24/2021 21:45	3/24/2021 21:30
3/25/2021 8:45	HIGH	4303 WINTER GARDEN CT LOUISVILLE KY 40218-0000	7/9/2021 15:30	WOCOM	3/25/2021 10:14	3/25/2021 9:34
3/27/2021 16:10	HIGH	8518 COCO CT LOUISVILLE KY 40219-0000	3/27/2021 17:00	CUST	3/27/2021 17:00	3/27/2021 16:30
3/27/2021 17:31	HIGH	4038 CRAWFORD AVE LOUISVILLE KY 40218-0000			3/27/2021 18:00	3/27/2021 17:35
3/29/2021 9:40	HIGH	1310 OLIVE ST LOUISVILLE KY 40211-0000	4/15/2021 9:37	WOCOM	3/29/2021 12:35	3/29/2021 11:47
3/30/2021 12:27	HIGH	3746 LENTZ AVE LOUISVILLE KY 40215-0000	3/31/2021 10:08	WOCOM	3/30/2021 13:00	3/30/2021 12:45
3/30/2021 14:57	HIGH	7909 SHERRY LYNN CT LOUISVILLE KY 40228-0000	3/30/2021 16:30	NOFRTH	3/30/2021 16:30	3/30/2021 15:45
3/31/2021 10:46	HIGH	4074 ELMWOOD AVE ST MATTHEWS KY 40207-0000	6/1/2021 14:46	WOCOM	3/31/2021 12:25	3/31/2021 11:09
3/31/2021 14:02	HIGH	2811 SMILAX AVE LOUISVILLE KY 40213-0000	3/31/2021 14:50	NOMSD	3/31/2021 14:20	3/31/2021 14:05
3/31/2021 14:47	HIGH	204 DON ALLEN RD RICHLAWN KY 40207-0000	4/4/2021 15:00	WOCOM	3/31/2021 20:04	3/31/2021 19:42
3/31/2021 16:59	HIGH	4205 ST THOMAS AVE LOUISVILLE KY 40218-0000	3/31/2021 18:45	CUST	3/31/2021 18:45	3/31/2021 18:30
4/1/2021 15:40	HIGH	4916 ABSTAIN CT LOUISVILLE KY 40218-0000	4/1/2021 16:30	CUST	4/1/2021 16:30	4/1/2021 16:00
4/2/2021 7:46	HIGH	17901 ELLERSLIE DR LOUISVILLE KY 40245-0000	2/4/2021 11:15		4/2/2021 11:07	4/2/2021 9:03
4/2/2021 12:24	HIGH	1120 HERR LN A ST MATTHEWS KY 40222-0000	4/2/2021 14:00	NOFRTH	4/2/2021 14:58	4/2/2021 13:09
4/2/2021 12:33	HIGH	6000 MANSLICK RD LOUISVILLE KY 40214-0000	4/2/2021 13:59	CUST	4/2/2021 13:59	4/2/2021 13:30
4/3/2021 16:25	HIGH	4008 GINGERWOOD DR LOUISVILLE KY 40220-0000	4/3/2021 16:45	CUST	4/3/2021 16:45	4/3/2021 16:30
4/3/2021 18:34	HIGH	635 N BIRCHWOOD AVE LOUISVILLE KY 40206-0000	7/19/2021 11:41	WOCOM	4/3/2021 19:00	4/4/2021 18:45
4/4/2021 10:59	HIGH	1214 W MUHAMMAD ALI BLVD LOUISVILLE KY 40203-0000	4/5/2021 10:05	CUST	4/4/2021 11:15	4/4/2021 11:00
4/4/2021 14:09	HIGH	1115 SPRINGVIEW DR LOUISVILLE KY 40219-0000	4/4/2021 14:30	CUST	4/4/2021 14:30	4/4/2021 14:15
4/4/2021 15:34	HIGH	13910 PETWOOD BLVD LOUISVILLE KY 40272-0000	4/4/2021 16:30	CUST	4/4/2021 16:30	4/4/2021 16:00
4/4/2021 17:54	HIGH	834 W WHITNEY AVE LOUISVILLE KY 40215-0000	4/4/2021 18:30	CUST	4/4/2021 18:30	4/4/2021 18:00
4/5/2021 10:14	HIGH	5102 ROEDERER DR LOUISVILLE KY 40219-0000	4/6/2021 10:46	CUST	4/5/2021 12:30	4/5/2021 12:00
4/5/2021 12:13	HIGH	2832 ELAM DR LOUISVILLE KY 40213-0000	4/5/2021 18:00	WOCOM	4/5/2021 18:00	4/5/2021 17:10
4/5/2021 12:31	HIGH	230 KENWOOD HILL RD C LOUISVILLE KY 40214-0000	4/5/2021 16:50	CUST	4/5/2021 16:50	4/5/2021 15:50
4/5/2021 12:58	HIGH	2116 LOWELL AVE STRATHMOOR MANOR KY 40205-0000	4/6/2021 12:08	CUST	4/5/2021 13:30	4/5/2021 13:07
4/6/2021 14:19	HIGH	4925 OUTER LOOP LOUISVILLE KY 40219-0000	4/6/2021 15:35	NOMSD	4/6/2021 15:35	4/6/2021 15:15
4/6/2021 15:26	HIGH	7400 NEW LA GRANGE RD ST MATTHEWS KY 40222-0000	4/11/2021 15:04	WOCOM	4/6/2021 17:41	4/6/2021 16:41
4/6/2021 16:48	HIGH	1008 ALTA CIR LOUISVILLE KY 40205-0000	4/6/2021 19:44	NOMSD	4/6/2021 18:00	4/6/2021 17:00
4/7/2021 8:25	HIGH	6600 KEN CARLA DR LOUISVILLE KY 40059-0000	7/13/2021 15:30	WOCOM	4/7/2021 10:26	4/7/2021 10:26
4/7/2021 12:36	HIGH	4001 ST FRANCIS LN LOUISVILLE KY 40218-0000			4/7/2021 16:12	4/7/2021 14:28
4/7/2021 13:28	HIGH	4303 WINTER GARDEN CT LOUISVILLE KY 40218-0000	4/7/2021 17:15	CUST		4/7/2021 16:37
4/7/2021 13:43	HIGH	3529 HUGHES RD ST MATTHEWS KY 40207-0000	6/3/2021 15:30	WOCOM	4/7/2021 19:30	4/7/2021 19:02
4/7/2021 15:16	HIGH	3826 ALGONQUIN PKY LOUISVILLE KY 40211-0000	4/16/2021 23:25	WOCOM	4/7/2021 16:00	4/7/2021 15:30
4/9/2021 9:37	HIGH	4106 RIEDLEY CT LOUISVILLE KY 40216-0000	4/9/2021 10:35	WOCOM	4/9/2021 10:35	4/9/2021 9:55
4/9/2021 13:37	HIGH	7600 CARMIL CT LOUISVILLE KY 40291-0000			4/9/2021 14:50	4/9/2021 14:25
4/9/2021 14:37	HIGH	3514 BROCKTON LN 1 LOUISVILLE KY 40220-0000	4/12/2021 15:15	NOFRTH	4/12/2021 15:15	4/12/2021 11:30
4/9/2021 15:54	HIGH	6101 TERRY RD LOUISVILLE KY 40258-0000	4/9/2021 17:00	CUST	4/9/2021 17:00	4/9/2021 16:30
4/9/2021 16:21	HIGH	7506 3RD STREET RD LOUISVILLE KY 40214-0000	4/9/2021 17:45	CUST	4/9/2021 17:45	4/9/2021 17:15
4/11/2021 9:19	HIGH	1712 EDENSIDE AVE LOUISVILLE KY 40204-0000	4/11/2021 10:03	CUST	4/11/2021 10:03	4/11/2021 9:47
4/11/2021 9:52	HIGH	5309 RED OAK LN LOUISVILLE KY 40218-0000	4/11/2021 10:41	CUST	4/11/2021 10:41	4/11/2021 10:28
4/11/2021 14:16	HIGH	5927 SIX MILE LN LOUISVILLE KY 40218-0000	4/12/2021 9:11	CUST	4/11/2021 15:23	4/11/2021 15:15
4/11/2021 17:33	HIGH	3627 HILLCROSS DR LOUISVILLE KY 40229-0000	4/11/2021 19:00	CUST	4/11/2021 19:00	4/11/2021 17:45
4/12/2021 11:08	HIGH	1243 S 16TH ST LOUISVILLE KY 40210-0000	4/12/2021 12:40	CUST	4/12/2021 12:40	4/12/2021 11:50
4/12/2021 12:03	HIGH	10904 MEETING ST LOUISVILLE KY 40059-0000	4/16/2021 15:00	WOCOM	4/12/2021 14:40	4/12/2021 13:27
4/12/2021 15:20	HIGH	223 CAREY AVE LOUISVILLE KY 40218-0000	4/12/2021 16:49	CUST	4/12/2021 16:49	4/12/2021 16:32
4/13/2021 9:45	HIGH	906 W RIVERSIDE DR LOUISVILLE KY 40207-0000	4/14/2021 7:49	CUST	4/13/2021 11:21	4/13/2021 10:12
4/13/2021 12:06	HIGH	1621 EDGELAND AVE LOUISVILLE KY 40204-0000	4/13/2021 22:06	CUST	4/13/2021 14:50	4/13/2021 14:30
4/13/2021 12:12	HIGH	1118 HERR LN A ST MATTHEWS KY 40222-0000			4/13/2021 15:50	4/13/2021 13:44
4/13/2021 13:32	HIGH	3311 JANELL RD SHIVELY KY 40216-0000	4/13/2021 16:30	WOCOM	4/13/2021 16:30	4/13/2021 15:55
4/13/2021 13:59	HIGH	3903 LEES LN LOUISVILLE KY 40216-0000	4/13/2021 13:00	NOMSD	4/13/2021 12:40	4/13/2021 12:00
4/13/2021 18:32	HIGH	6703 LEVERETT LN LOUISVILLE KY 40258-0000	4/19/2021 15:00	WOCOM	4/13/2021 19:35	4/13/2021 19:20
4/15/2021 11:31	HIGH	2333 CEDAR ST LOUISVILLE KY 40212-0000	4/15/2021 14:15	CUST	4/15/2021 14:15	4/15/2021 13:50
4/15/2021 15:30	HIGH	4101 CAMP GROUND RD LOUISVILLE KY 40211-0000	4/15/2021 17:47	CCASE	4/15/2021 17:00	4/15/2021 15:36
4/16/2021 9:59	HIGH	901 MCKINLEY AVE LOUISVILLE KY 40217-0000	4/23/2021 6:09	WOCOM	4/16/2021 12:30	4/16/2021 11:15
4/16/2021 14:39	HIGH	1250 E BROADWAY LOUISVILLE KY 40204-0000	4/17/2021 10:38	CUST	4/16/2021 15:22	4/16/2021 15:10
4/17/2021 14:33	HIGH	4120 BARDSTOWN RD LOUISVILLE KY 40218-0000	4/17/2021 15:24	CUST	4/17/2021 15:24	4/17/2021 15:06
4/18/2021 17:58	HIGH	8604 SARDIS WAY LOUISVILLE KY 40228-0000	4/18/2021 18:45	CUST	4/18/2021 18:45	4/18/2021 18:15
4/19/2021 8:57	HIGH	309 MEADOWOOD CT 1 LOUISVILLE KY 40214-0000			4/19/2021 10:45	4/19/2021 10:04
4/19/2021 11:14	HIGH	9909 SILVERWOOD LN LOUISVILLE KY 40272-0000	4/19/2021 13:00	NOFRTH	4/19/2021 14:00	4/19/2021 12:00
4/19/2021 11:46	HIGH	2713 ROCKFORD LN LOUISVILLE KY 40216-0000	4/19/2021 13:30	WOCOM	4/19/2021 13:30	4/19/2021 13:10
4/19/2021 11:55	HIGH	2305 CARLTON TER LOUISVILLE KY 40205-0000	4/19/2021 15:47	WOCOM		4/19/2021 14:30
4/19/2021 13:27	HIGH	817 S JACKSON ST LOUISVILLE KY 40203-0000	4/27/2021 14:47	WOCOM	4/19/2021 15:10	4/19/2021 13:45
4/19/2021 15:13	HIGH	1411 LILLIAN AVE LOUISVILLE KY 40208-0000	4/19/2021 16:43	CUST	4/19/2021 16:43	4/19/2021 16:25
4/19/2021 16:43	HIGH	7102 ETHAN ALLEN WAY LOUISVILLE KY 40272-0000			4/19/2021 17:55	4/19/2021 17:31
4/19/2021 18:22	HIGH	9969 VIEUX CARRE DR LOUISVILLE KY 40223-0000	4/19/2021 20:28	CUST	4/19/2021 20:28	4/19/2021 20:19
4/19/2021 19:59	HIGH	1023 BERRY BLVD LOUISVILLE KY 40215-0000	4/19/2021 22:27	CUST	4/19/2021 22:27	4/19/2021 22:09
4/20/2021 10:24	HIGH	2018 DUNCAN ST LOUISVILLE KY 40203-0000	4/20/2021 19:19	CUST	4/20/2021 11:15	4/20/2021 11:00
4/21/2021 12:22	HIGH	1916 YALE DR LOUISVILLE KY 40205-0000	4/22/2021 10:00	WOCOM	4/21/2021 14:02	4/21/2021 12:46
4/21/2021 15:11	HIGH	937 W WHITNEY AVE LOUISVILLE KY 40215-0000	4/21/2021 16:00	WOCOM	4/21/2021 16:00	4/21/2021 15:30
4/22/2021 10:55	HIGH	438 AMY AVE LOUISVILLE KY 40212-0000	4/22/2021 21:01	CUST	4/22/2021 12:15	4/22/2021 11:50
4/22/2021 14:29	HIGH	253 CECIL AVE 1 LOUISVILLE KY 40212-0000	4/25/2021 12:00	WOCOM	4/22/2021 16:45	4/22/2021 16:25
4/22/2021 14:47	HIGH	3008 LYNNWOOD WAY JEFFERSONTOWN KY 40299-0000	4/28/2021 15:00	WOCOM	4/22/2021 16:02	4/22/2021 15:08
4/22/2021 15:13	HIGH	6503 KEELING PARK DR LOUISVILLE KY 40291-0000	4/23/2021 8:50	CUST	4/22/2021 16:00	4/22/2021 15:30
4/23/2021 12:16	HIGH	4623 PRESTON HWY LOUISVILLE KY 40213-0000	4/23/2021 14:20	WOCOM	4/23/2021 14:20	4/23/2021 13:00
4/23/2021 14:10	HIGH	808 EASTERN PKY LOUISVILLE KY 40217-0000	4/23/2021 15:00	CUST	4/23/2021 15:00	4/23/2021 14:30
4/25/2021 20:03	HIGH	603 WOODLAKE DR LOUISVILLE KY 40245-0000	4/25/2021 22:00	CUST	4/25/2021 22:00	4/25/2021 20:55
4/25/2021 21:04	HIGH	1214 W MUHAMMAD ALI BLVD LOUISVILLE KY 40203-0000	4/25/2021 22:00	CUST	4/25/2021 22:00	4/25/2021 23:49
4/26/2021 13:45	HIGH	14501 DIXIE HWY LOUISVILLE KY 40272-0000	4/26/2021 15:20	CCASE	4/26/2021 14:30	4/26/2021 13:45
4/26/2021 14:55	HIGH	6306 OAK VALLEY DR LOUISVILLE KY 40214-0000	4/26/2021 16:30	CUST	4/26/2021 16:30	4/26/2021 15:50
4/26/2021 16:01	HIGH	4410 ESTATE DR LOUISVILLE KY 40216-0000	4/27/2021 10:20	NOFRTH	4/27/2021 10:20	4/27/2021 10:20
4/27/2021 15:22	HIGH	1834 W MUHAMMAD ALI BLVD LOUISVILLE KY 40203-0000	4/28/2021 13:53	CUST	4/27/2021 16:48	4/27/2021 16:43
4/27/2021 16:24	HIGH	6536 W STHY 22 NOT IN JEFF CO KY 40014-0000	7/12/2021 14:50	NOFRTH	4/27/2021 18:15	4/27/2021 17:34

Request Date	Priority	Address	Resolved Date	Resolution Code	Inspection Completed	Inspection Started
4/28/2021 8:59	HIGH	3034 CURRAN RD LOUISVILLE KY 40205-0000			4/28/2021 11:17	4/28/2021 9:38
4/28/2021 13:07	HIGH	6901 CABOT CT PROSPECT KY 40059-000(			4/28/2021 15:15	4/28/2021 15:00
4/28/2021 14:49	HIGH	9419 NORTON COMMONS BLVD LOUISVILLE KY 40059-000(	4/28/2021 19:54	WOCOM		4/28/2021 19:00
4/28/2021 17:12	HIGH	2000 SPRING DR 101 LOUISVILLE KY 40205-0000	4/28/2021 19:45	CUST	4/28/2021 19:45	4/28/2021 19:30
4/29/2021 20:56	HIGH	5804 PRINCE WILLIAM ST ST MATTHEWS KY 40207-000(			4/29/2021 22:00	4/29/2021 21:30
5/2/2021 15:18	HIGH	2311 SENECA VALLEY RD LOUISVILLE KY 40205-000(	5/2/2021 16:00	CUST	5/2/2021 16:00	5/2/2021 15:30
5/3/2021 8:53	HIGH	1458 OLIVE ST LOUISVILLE KY 40210-0000	5/3/2021 10:00	CUST	5/3/2021 10:00	5/3/2021 9:30
5/3/2021 10:04	HIGH	4407 BREITENSTEIN AVE LOUISVILLE KY 40213-000(	5/3/2021 11:50	CUST	5/3/2021 11:50	5/3/2021 11:15
5/3/2021 10:04	HIGH	300 MACON AVE LOUISVILLE KY 40207-0000	5/3/2021 13:24	CUST	5/3/2021 11:45	5/3/2021 10:22
5/3/2021 11:08	HIGH	5303 ALPINE WAY LOUISVILLE KY 40214-0000	5/4/2021 9:15	NOPRB	5/4/2021 9:15	5/4/2021 9:15
5/3/2021 11:27	HIGH	2200 DEVERON DR SHIVELY KY 40216-000(	5/3/2021 21:15	WOCOM	5/3/2021 13:35	5/3/2021 13:05
5/3/2021 11:37	HIGH	3604 MANSLICK RD 3A LOUISVILLE KY 40215-0000	5/3/2021 14:15	CUST	5/3/2021 14:15	5/3/2021 13:45
5/3/2021 15:36	HIGH	7110 BIRNAMWOOD DR LOUISVILLE KY 40258-0000	5/3/2021 16:42	NOPRB	5/3/2021 16:42	5/3/2021 16:30
5/3/2021 16:56	HIGH	306 MEADOWOOD CT 4 LOUISVILLE KY 40214-0000	5/4/2021 13:15	NOFRTH	5/3/2021 17:30	5/3/2021 16:30
5/3/2021 18:24	HIGH	14003 DARWIN BLVD LOUISVILLE KY 40272-0000	5/5/2021 10:29	WOCOM	5/4/2021 2:00	5/3/2021 20:15
5/4/2021 11:47	HIGH	2602 W JEFFERSON ST LOUISVILLE KY 40212-000(			5/4/2021 13:45	5/4/2021 13:15
5/4/2021 13:17	HIGH	7420 JUSTAN AVE LOUISVILLE KY 40214-000(	5/4/2021 23:09	CUST	5/4/2021 16:45	5/4/2021 15:45
5/4/2021 13:32	HIGH	10305 JUDITH CT LOUISVILLE KY 40223-000(	5/4/2021 14:42	WOCOM	5/4/2021 14:41	5/4/2021 14:23
5/4/2021 14:24	HIGH	4112 STONEVIEW DR 1 LOUISVILLE KY 40207-000(	5/4/2021 17:29	CUST	5/4/2021 17:23	5/4/2021 15:10
5/4/2021 17:38	HIGH	2612 PORTLAND AVE LOUISVILLE KY 40212-0000	5/5/2021 8:35	INSPT	5/4/2021 18:01	5/4/2021 17:53
5/4/2021 19:09	HIGH	9803 STANALOUISE DR LOUISVILLE KY 40291-000(	7/14/2021 15:16	WOCOM	5/4/2021 20:10	5/4/2021 19:49
5/5/2021 12:10	HIGH	1 COLONIAL OAKS CT 3 LOUISVILLE KY 40214-0000	5/5/2021 13:45	CUST	5/5/2021 13:45	5/5/2021 13:10
5/5/2021 14:20	HIGH	6801 YVONNE CT LOUISVILLE KY 40228-000(			5/5/2021 18:30	5/5/2021 18:00
5/5/2021 16:10	HIGH	215 OTTAWA AVE LOUISVILLE KY 40209-000(			5/5/2021 17:00	5/5/2021 16:45
5/5/2021 16:12	HIGH	8308 GLASER LN LOUISVILLE KY 40291-0000	5/6/2021 11:42	WOCOM	5/5/2021 17:30	5/5/2021 17:15
5/6/2021 17:05	HIGH	4803 VALLEY STATION RD LOUISVILLE KY 40272-0000	5/7/2021 13:33	CUST	5/6/2021 18:00	5/6/2021 17:45
5/7/2021 8:17	HIGH	3205 TAYLOR BLVD LOUISVILLE KY 40215-0000	5/8/2021 21:46	CUST	5/7/2021 9:25	5/7/2021 9:00
5/7/2021 9:50	HIGH	4316 MILLDAUN RD WATTERSON PARK KY 40213-0000	5/8/2021 22:39	CUST	5/7/2021 12:15	5/7/2021 11:45
5/7/2021 17:26	HIGH	529 S 27TH ST LOUISVILLE KY 40211-000(	5/8/2021 21:58	CUST	5/7/2021 18:25	5/7/2021 18:00
5/7/2021 18:56	HIGH	2538 SENECA DR SENECA GARDENS KY 40205-000(	5/7/2021 19:15	CUST	5/7/2021 19:15	5/7/2021 19:00
5/8/2021 12:52	HIGH	1112 HERR LN ST MATTHEWS KY 40222-000(	5/8/2021 20:34	CUST	5/8/2021 15:30	5/8/2021 14:58
5/8/2021 14:37	HIGH	10490 WESTPORT RD LOUISVILLE KY 40241-0000	5/8/2021 21:22	CUST	5/8/2021 17:35	5/8/2021 17:05
5/9/2021 19:55	HIGH	4803 VALLEY STATION RD LOUISVILLE KY 40272-0000	5/9/2021 20:30	CUST	5/9/2021 20:30	5/9/2021 20:00
5/10/2021 11:09	HIGH	6001 SIX MILE LN LOUISVILLE KY 40218-0000	5/10/2021 13:38	CUST	5/10/2021 13:38	5/10/2021 12:30
5/10/2021 14:16	HIGH	1206 ABBEYWOOD RD ST MATTHEWS KY 40222-000(	6/15/2021 15:28	WOCOM	5/10/2021 19:44	5/10/2021 18:57
5/10/2021 17:40	HIGH	324 N 27TH ST LOUISVILLE KY 40212-0000	5/11/2021 9:30	CUST	5/10/2021 21:04	5/10/2021 20:54
5/11/2021 11:31	HIGH	9114 NEW MAPLE RD LOUISVILLE KY 40229-0000	7/30/2021 5:34	WOCOM	5/11/2021 14:45	5/11/2021 13:30
5/11/2021 11:38	HIGH	1245 ROYAL AVE LOUISVILLE KY 40204-0000	6/9/2021 10:15	WOCOM	5/11/2021 13:24	5/11/2021 12:26
5/11/2021 11:41	HIGH	2209 STEPHAN LN LOUISVILLE KY 40214-0000	5/12/2021 7:34	CUST	5/12/2021 7:34	5/11/2021 14:00
5/12/2021 10:57	HIGH	3115 HEWITT AVE HOUSTON ACRES KY 40220-000(	5/13/2021 9:44	CUST	5/12/2021 12:09	5/12/2021 11:21
5/12/2021 12:57	HIGH	2901 ARLINGTON RD LOUISVILLE KY 40220-0000	5/13/2021 9:19	CUST	5/12/2021 14:05	5/12/2021 13:15
5/12/2021 13:13	HIGH	727 LOUIS COLEMAN JR DR LOUISVILLE KY 40211-0000	5/13/2021 12:35	CUST	5/12/2021 14:00	5/12/2021 13:40
5/12/2021 14:42	HIGH	2538 SENECA DR SENECA GARDENS KY 40205-000(	8/2/2021 15:00	WOCOM	5/12/2021 18:04	5/12/2021 16:56
5/12/2021 15:13	HIGH	1219 DAHL RD LOUISVILLE KY 40213-0000	5/25/2021 11:30	WOCOM	5/12/2021 16:51	5/12/2021 16:31
5/12/2021 15:50	HIGH	6212 MARAVIAN DR LOUISVILLE KY 40258-0000	5/13/2021 7:21	NOFRTH	5/12/2021 17:30	5/12/2021 17:00
5/13/2021 8:02	HIGH	5707 SPICEWOOD LN LOUISVILLE KY 40219-000(	5/14/2021 10:00	CUST	5/13/2021 9:15	5/13/2021 8:45
5/13/2021 10:41	HIGH	112 N EWING AVE LOUISVILLE KY 40206-0000	6/19/2021 19:35	WOCOM	5/13/2021 13:06	5/13/2021 12:14
5/13/2021 17:17	HIGH	14114 GLENDOWER DR LOUISVILLE KY 40245-0000	5/14/2021 11:22	NOFRTH	5/13/2021 19:45	5/13/2021 17:14
5/14/2021 7:48	HIGH	4808 CLIFF AVE LOUISVILLE KY 40215-0000	5/14/2021 13:52	CUST	5/14/2021 9:15	5/14/2021 8:45
5/14/2021 9:29	HIGH	1744 CASSELBERRY RD LOUISVILLE KY 40205-0000	5/14/2021 10:14	NOFRTH	5/14/2021 10:14	5/14/2021 10:07
5/14/2021 11:49	HIGH	13160 MAGISTERIAL DR LOUISVILLE KY 40223-000(	5/14/2021 14:30	NOFRTH	5/14/2021 14:30	5/14/2021 12:00
5/14/2021 13:25	HIGH	713 CANNONS LN LOUISVILLE KY 40207-000(	5/14/2021 14:41	NOFRTH	5/14/2021 14:41	5/14/2021 14:35
5/14/2021 16:12	HIGH	7702 ROSEMARY LN LOUISVILLE KY 40214-0000	5/14/2021 17:02	NOMSD	5/14/2021 17:02	5/14/2021 16:49
5/16/2021 19:47	HIGH	407 WESTWOOD DR WOODLAND HILLS KY 40243-000(	7/9/2021 10:44	WOCOM	5/16/2021 22:54	5/16/2021 22:00
5/17/2021 10:26	HIGH	1850 DUMESNIL ST LOUISVILLE KY 40210-0000			5/17/2021 11:15	5/17/2021 10:50
5/17/2021 10:55	HIGH	11440 BLANKENBAKER ACCESS DR JEFFERSONTOWN KY 40299-000(	8/17/2021 8:37	WOCOM	5/17/2021 13:21	5/17/2021 11:23
5/17/2021 20:24	HIGH	1923 WESSEL AVE SHIVELY KY 40216-000(	5/17/2021 21:21	NOMSD	5/17/2021 21:21	5/17/2021 21:00
5/18/2021 7:29	HIGH	2621 NEBLETT AVE SHIVELY KY 40216-000(	5/19/2021 15:11	WOCOM	5/18/2021 8:35	5/18/2021 7:50
5/18/2021 10:47	HIGH	3458 GLENDALE AVE LOUISVILLE KY 40215-0000	6/29/2021 6:54	WOCOM	5/18/2021 11:50	5/18/2021 11:20
5/18/2021 12:08	HIGH	2726 BROWNSBORO RD LOUISVILLE KY 40206-0000			5/18/2021 14:12	5/18/2021 13:28
5/19/2021 9:35	HIGH	7619 OLD SALEM RD BANCROFT KY 40242-000(	5/19/2021 21:56	CUST	5/19/2021 11:30	5/19/2021 10:39
5/19/2021 12:24	HIGH	6822 CENTRAL AVE NOT IN JEFF CO KY 40014-000(	5/20/2021 9:45	CUST	5/19/2021 16:28	5/19/2021 13:47
5/20/2021 11:01	HIGH	5902 FAIRINGTON DR 102 LOUISVILLE KY 40218-0000	5/20/2021 12:45	NOMSD		5/20/2021 12:09
5/20/2021 12:13	HIGH	1849 HEATON RD SHIVELY KY 40216-000(	6/2/2021 16:12	WOCOM	5/20/2021 14:10	5/20/2021 13:40
5/20/2021 13:31	HIGH	4906 MUD LN LOUISVILLE KY 40229-0000	5/21/2021 11:39	CUST	5/20/2021 15:40	5/20/2021 15:00
5/20/2021 17:33	HIGH	4608 DOHN RD SHIVELY KY 40216-000(	5/20/2021 18:45	CUST	5/20/2021 18:45	5/20/2021 18:30
5/21/2021 9:00	HIGH	4876 CHARLOTTE DR LOUISVILLE KY 40219-0000	5/22/2021 11:36	CUST	5/21/2021 10:15	5/21/2021 9:30
5/21/2021 13:54	HIGH	13321 FORGE CIR LOUISVILLE KY 40272-0000	5/21/2021 14:45	CUST	5/21/2021 14:45	5/21/2021 14:20
5/21/2021 16:49	HIGH	2114 PALATKA RD LOUISVILLE KY 40214-0000	5/21/2021 17:15	CUST	5/21/2021 17:15	5/21/2021 17:00
5/23/2021 10:40	HIGH	3118 KINGSWOOD WAY SHIVELY KY 40216-000(	5/23/2021 11:50	CUST	5/23/2021 11:50	5/23/2021 11:05
5/23/2021 19:01	HIGH	3028 DARTMOUTH AVE LOUISVILLE KY 40205-0000	6/15/2021 15:49	WOCOM	5/23/2021 19:41	5/23/2021 19:23
5/24/2021 8:41	HIGH	830 S 38TH ST LOUISVILLE KY 40211-0000	5/24/2021 10:18	WOCOM	5/24/2021 10:18	5/24/2021 10:00
5/24/2021 8:44	HIGH	1006 LAKE FOREST PKY LOUISVILLE KY 40245-000(	5/25/2021 8:58	CUST	5/24/2021 11:16	5/24/2021 10:43
5/24/2021 9:41	HIGH	12317 OLD LA GRANGE RD LOUISVILLE KY 40245-0000			5/24/2021 13:05	5/24/2021 11:50
5/24/2021 10:19	HIGH	405 SPRINGWOOD LN ST MATTHEWS KY 40207-000(	5/24/2021 15:30	NOPRB	5/24/2021 15:30	5/24/2021 13:30
5/24/2021 15:34	HIGH	200 HEMINGWAY RD ST MATTHEWS KY 40207-000(	5/28/2021 15:00	WOCOM	5/24/2021 18:03	5/24/2021 17:53
5/24/2021 16:53	HIGH	9823 TURNPIKE VIEW DR LOUISVILLE KY 40229-0000	5/24/2021 18:04	NOFRTH	5/24/2021 18:04	5/24/2021 17:57
5/24/2021 17:06	HIGH	7209 LAWNSIDE DR LOUISVILLE KY 40214-000(	5/25/2021 0:00	NOMSD	5/25/2021 0:00	5/25/2021 0:00
5/24/2021 17:11	HIGH	1401 ELM RD ANCHORAGE KY 40223-000(	5/26/2021 0:00	WOCOM	5/24/2021 19:00	5/24/2021 18:49
5/24/2021 18:05	HIGH	4400 PROGRESS BLVD LOUISVILLE KY 40218-0000	5/25/2021 0:00	CCASE	5/25/2021 0:00	5/24/2021 0:00
5/25/2021 12:37	HIGH	7918 NOTTOWAY CIR LOUISVILLE KY 40214-000(	5/25/2021 14:45	CUST	5/25/2021 15:15	5/25/2021 14:55
5/26/2021 9:03	HIGH	653 PHILLIPS LN LOUISVILLE KY 40209-0000	5/26/2021 11:45	WOCOM	5/26/2021 11:45	5/26/2021 10:15
5/26/2021 9:50	HIGH	1601 PARKRIDGE PKY LOUISVILLE KY 40214-0000	5/27/2021 13:29	NOFRTH	5/26/2021 13:00	5/26/2021 11:00
5/26/2021 14:09	HIGH	1252 E BURNETT AVE LOUISVILLE KY 40217-000(	5/26/2021 14:30	WOCOM	5/26/2021 15:00	5/26/2021 14:40
5/26/2021 14:15	HIGH	801 EASTERN PKY LOUISVILLE KY 40217-0000	5/27/2021 14:15	NOFRTH	5/27/2021 10:30	5/27/2021 10:00
5/27/2021 11:09	HIGH	7608 TEXLYN CT LOUISVILLE KY 40258-0000	5/27/2021 14:10	CUST	5/27/2021 14:10	5/27/2021 13:50
5/27/2021 11:46	HIGH	7209 LAWNSIDE DR LOUISVILLE KY 40214-0000	5/28/2021 10:37	NOMSD	5/27/2021 14:00	5/27/2021 12:30
5/27/2021 18:39	HIGH	2039 PAYNE ST LOUISVILLE KY 40206-0000			5/27/2021 19:15	5/27/2021 19:00
5/30/2021 8:45	HIGH	2512 W MAIN ST LOUISVILLE KY 40212-0000	5/31/2021 12:00	NOFRTH	5/31/2021 12:00	5/31/2021 11:00
5/31/2021 20:12	HIGH	6419 CLOVER TRACE CIR LOUISVILLE KY 40216-000(	5/31/2021 21:47	CLOSED	5/31/2021 21:47	5/31/2021 21:00
6/1/2021 9:47	HIGH	6007 TABLE MOUNTAIN AVE LOUISVILLE KY 40214-000(	6/4/2021 14:34	WOCOM	6/1/2021 11:25	6/1/2021 11:10
6/1/2021 11:17	HIGH	6701 CRESTON DR LOUISVILLE KY 40258-0000	6/2/2021 8:00	CUST	6/1/2021 19:57	6/1/2021 19:48
6/1/2021 20:12	HIGH	9823 TURNPIKE VIEW DR LOUISVILLE KY 40229-0000	6/1/2021 21:53	NOFRTH	6/1/2021 21:53	6/1/2021 21:42
6/2/2021 8:18	HIGH	13110 CAIN LN LOUISVILLE KY 40245-0000	6/3/2021 9:45	CUST	6/2/2021 10:54	6/2/2021 10:00
6/2/2021 9:57	HIGH	376 WINTON AVE LOUISVILLE KY 40206-0000	6/2/2021 18:30	WOCOM	6/2/2021 18:30	6/2/2021 18:10
6/2/2021 9:59	HIGH	1841 TAYLOR AVE LOUISVILLE KY 40213-000(	6/2/2021 11:20	CUST		6/2/2021 10:40
6/3/2021 10:20	HIGH	2018 KENDALL LN SHIVELY KY 40216-000(	6/3/2021 12:11	CUST	6/3/2021 12:07	6/3/2021 11:27

Request Date	Priority	Address	Resolved Date	Resolution Code	Inspection Completed	Inspection Started
6/3/2021 10:28	HIGH	1325 S BROOK ST 1 LOUISVILLE KY 40208-0000	6/4/2021 8:30	CUST	6/3/2021 14:15	6/3/2021 14:00
6/3/2021 12:35	HIGH	4200 RIVER RD INDIAN HILLS KY 40207-0000	6/4/2021 10:00	WOCOM	6/4/2021 10:00	6/3/2021 14:00
6/3/2021 13:42	HIGH	1429 S SHELBY ST LOUISVILLE KY 40217-0000	6/3/2021 18:59	CUST	6/3/2021 18:57	6/3/2021 18:40
6/3/2021 16:27	HIGH	9611 TAYLORSVILLE RD JEFFERSONTOWN KY 40299-0000			6/3/2021 18:45	6/3/2021 18:30
6/3/2021 17:19	HIGH	14013 BEESTON BLVD LOUISVILLE KY 40272-0000	6/6/2021 14:01	WOCOM	6/3/2021 18:15	6/3/2021 18:00
6/3/2021 19:24	HIGH	15301 DIXIE HWY LOUISVILLE KY 40272-0000	6/3/2021 19:40	NOFRTH	6/3/2021 19:00	6/3/2021 17:38
6/4/2021 10:48	HIGH	2255 FRANKFORT AVE LOUISVILLE KY 40206-0000			6/4/2021 12:40	6/4/2021 11:05
6/4/2021 12:33	HIGH	650 EDITH RD LOUISVILLE KY 40206-0000	6/5/2021 12:07	CUST	6/4/2021 13:20	6/4/2021 13:00
6/7/2021 11:59	HIGH	5519 RIDGECREST RD LOUISVILLE KY 40218-0000	6/9/2021 15:14	WOCOM	6/7/2021 19:10	6/7/2021 18:50
6/8/2021 8:45	HIGH	1805 TYLER PKY LOUISVILLE KY 40204-0000	6/9/2021 8:58	CUST	6/8/2021 12:30	6/8/2021 12:20
6/8/2021 10:28	HIGH	5012 ROMAN DR LOUISVILLE KY 40291-0000	6/8/2021 13:30	WOCOM		6/8/2021 13:00
6/9/2021 8:32	HIGH	6419 CLOVER TRACE CIR LOUISVILLE KY 40216-0000	6/9/2021 10:11	CUST	6/9/2021 10:11	6/9/2021 9:45
6/9/2021 9:55	HIGH	8005 AFTERGLOW DR LOUISVILLE KY 40214-0000	6/9/2021 11:01	CUST	6/9/2021 11:01	6/9/2021 10:45
6/9/2021 11:06	HIGH	101 E WASHINGTON ST LOUISVILLE KY 40202-0000	6/11/2021 13:09	CCASE	6/9/2021 13:00	6/9/2021 11:00
6/10/2021 9:57	HIGH	443 E BRANDEIS AVE LOUISVILLE KY 40217-0000	9/7/2021 5:56	WOCOM	6/10/2021 10:30	6/10/2021 10:15
6/10/2021 12:06	HIGH	1517 BEECH ST LOUISVILLE KY 40211-0000	6/10/2021 12:30	CUST	6/10/2021 12:30	6/10/2021 12:15
6/10/2021 12:24	HIGH	4603 ORLEANS CT LOUISVILLE KY 40272-0000	6/10/2021 10:30	WOCOM	6/10/2021 13:00	6/10/2021 16:35
6/11/2021 11:02	HIGH	1515 BEECH ST LOUISVILLE KY 40211-0000	6/11/2021 11:42	CUST	6/11/2021 11:42	6/11/2021 11:14
6/11/2021 12:33	HIGH	1514 SCHUFF LN LOUISVILLE KY 40205-0000	7/20/2021 0:00	WOCOM	6/11/2021 13:30	6/11/2021 13:00
6/12/2021 13:15	HIGH	937 W WHITNEY AVE LOUISVILLE KY 40215-0000	7/21/2021 16:00	WOCOM	6/12/2021 14:39	6/12/2021 14:03
6/14/2021 8:29	HIGH	339 IDLEWYLDE DR 1 LOUISVILLE KY 40206-0000	6/14/2021 10:30	WOCOM		6/14/2021 10:00
6/15/2021 17:48	HIGH	4090 SHELBYVILLE RD ST MATTHEWS KY 40207-0000			6/15/2021 18:56	6/15/2021 18:34
6/15/2021 20:37	HIGH	10605 PARK AVE JEFFERSONTOWN KY 40299-0000	6/15/2021 21:52	CUST	6/15/2021 21:52	6/15/2021 21:20
6/16/2021 13:30	HIGH	140 WESTWIND RD INDIAN HILLS KY 40207-0000	6/16/2021 22:02	CUST	6/16/2021 14:25	6/16/2021 14:00
6/16/2021 15:35	HIGH	208 STILLWOOD CT LOUISVILLE KY 40223-0000	6/17/2021 14:15	NSF	6/17/2021 11:30	6/17/2021 10:30
6/16/2021 19:28	HIGH	4400 WOLFSPRING DR LOUISVILLE KY 40241-0000	6/17/2021 14:04	NOFRTH	6/17/2021 10:00	6/17/2021 9:00
6/17/2021 10:47	HIGH	6101 SANTA FE TRL LOUISVILLE KY 40258-0000	6/17/2021 19:45	CUST	6/17/2021 19:45	6/17/2021 18:15
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6/21/2021 16:19	HIGH	3711 VERMONT AVE LOUISVILLE KY 40211-0000	6/21/2021 16:39	NOPRB	6/21/2021 16:39	6/21/2021 16:31
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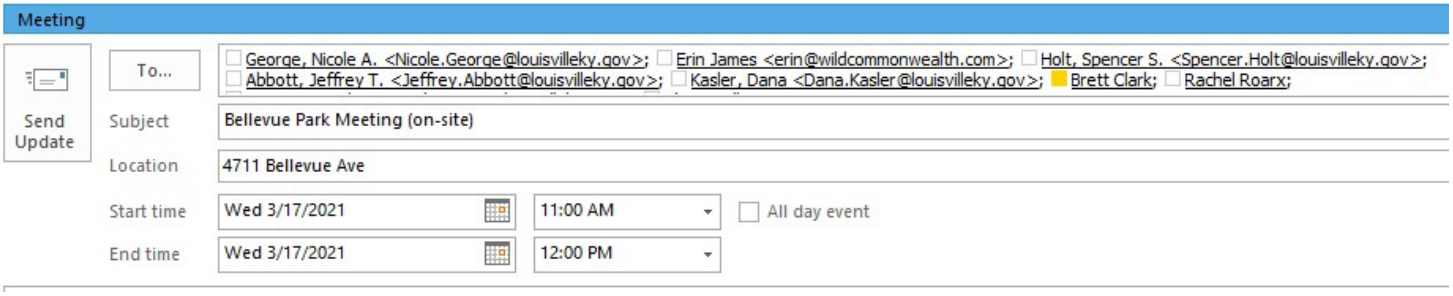
6/23/2021 14:42	HIGH	6211 YELLOW PINE DR LOUISVILLE KY 40229-0000	10/4/2021 15:30	WOCOM	6/23/2021 16:15	6/23/2021 15:15
6/23/2021 17:39	HIGH	13837 ENGLISH VILLA DR LOUISVILLE KY 40245-0000			6/23/2021 18:00	6/23/2021 17:45
6/24/2021 14:19	HIGH	7725 UPTON OXMOOR LN 111 LOUISVILLE KY 40222-0000	6/24/2021 17:45	CUST	6/24/2021 17:45	6/24/2021 17:30
6/24/2021 16:32	HIGH	342 E SOUTHSIDE CT LOUISVILLE KY 40214-0000	6/24/2021 17:52	NOPRB	6/24/2021 17:52	6/24/2021 17:30
6/24/2021 16:36	HIGH	128 PENNSYLVANIA AVE LOUISVILLE KY 40206-0000	6/25/2021 9:58	CUST	6/24/2021 17:15	6/24/2021 17:00
6/25/2021 10:12	HIGH	7107 WINDHAM PKY PROSPECT KY 40059-0000	6/26/2021 11:16	CUST	6/25/2021 11:51	6/25/2021 10:52
6/25/2021 11:35	HIGH	7709 3RD STREET RD LOUISVILLE KY 40214-0000	6/25/2021 22:04	CUST	6/25/2021 13:30	6/25/2021 12:45
6/25/2021 13:03	HIGH	3700 DUTCHMANS LN LOUISVILLE KY 40205-0000			6/25/2021 14:47	6/25/2021 13:27
6/25/2021 16:22	HIGH	8601 CITADEL WAY JEFFERSONTOWN KY 40220-0000	6/25/2021 19:00	CCASE	6/25/2021 19:00	6/25/2021 16:30
6/25/2021 20:23	HIGH	2501 CATAWBA LN LOUISVILLE KY 40217-0000	6/26/2021 12:02	CUST	6/25/2021 21:00	6/25/2021 20:45
6/26/2021 13:05	HIGH	9511 CHADBOURN CT LOUISVILLE KY 40223-0000	6/26/2021 14:14	CUST	6/26/2021 14:14	6/26/2021 13:58
6/29/2021 9:10	HIGH	4730 ALLMOND AVE LOUISVILLE KY 40209-0000	6/29/2021 12:09	CLOSED	6/29/2021 12:09	1/1/2021 9:52
6/29/2021 9:23	HIGH	426 HARRIS PL ST MATTHEWS KY 40222-0000			6/29/2021 10:53	6/29/2021 9:59
6/30/2021 11:30	HIGH	3000 FORDHAVEN RD 1 LOUISVILLE KY 40214-0000	6/30/2021 15:20	WOCOM	6/30/2021 13:20	6/30/2021 14:05

APPENDIX 2.1.6 ELECTED OFFICIALS

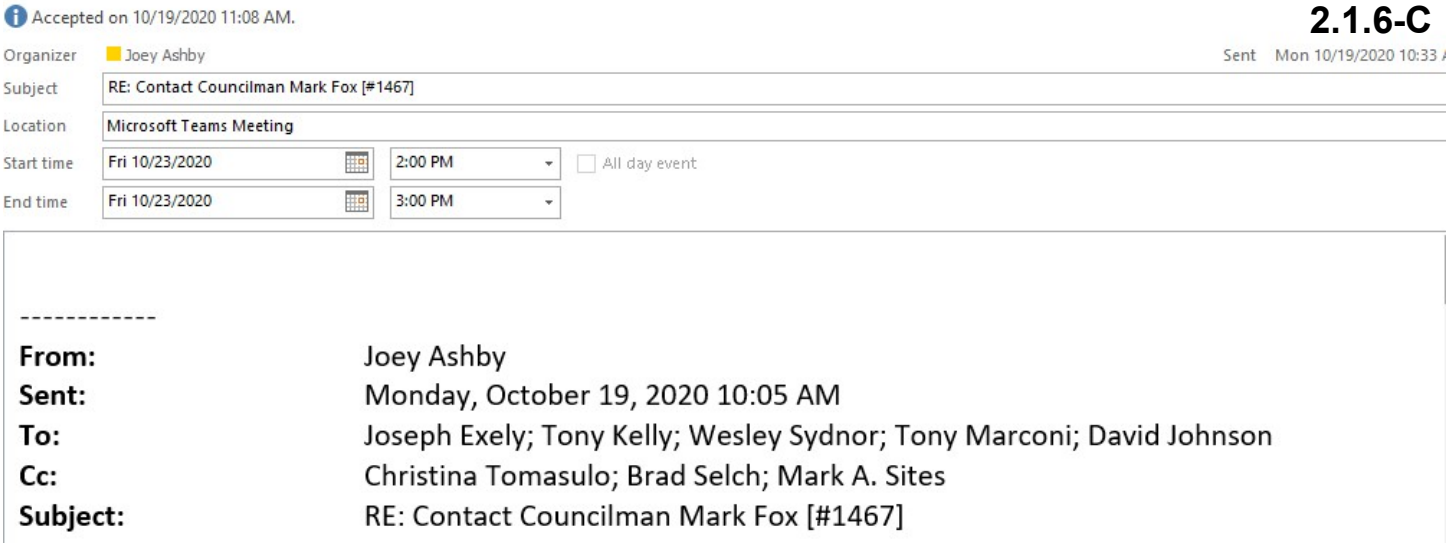
Metro Council District 21 Bellevue Park Meeting (March 17, 2021) 2.1.6-A



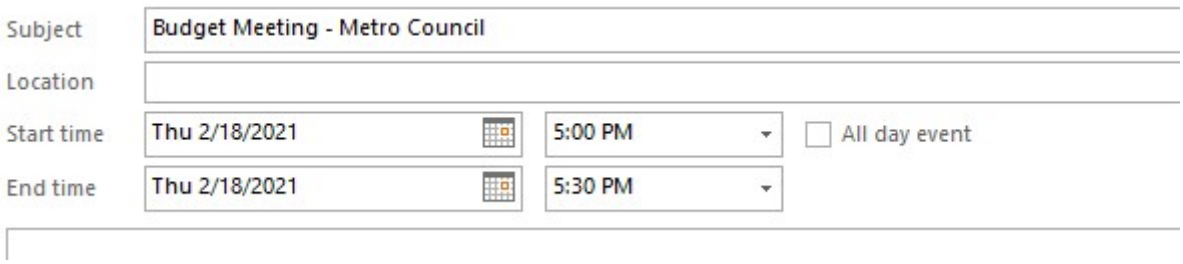
Maple Street Flood Mitigation Buyout Area Plan Update to Councilman James (July 8, 2020) 2.1.6-B



2.1.6-C



2.1.6-D



LOUISVILLE METRO COUNCIL
LOUISVILLE, KENTUCKY

BRANDON COAN
DISTRICT 8 COUNCILMAN

JASMINE WEATHERBY
LEGISLATIVE AIDE

July 20, 2020

Dear Neighbor,

As an adjacent property owner, you are invited to meet with MSD, our planner Gresham Smith and me to discuss the future of the vacant FEMA lots located on Sutherland Drive and Calder Court. Please review the enclosed packet for more information and email or call me if you have any questions. You may also visit our website at: https://tinyurl.com/Hay-DunPP

The meeting will be held (rain or shine) on Friday, July 31 at 3:30pm, on-site at 1620 Sutherland Drive. If you are unable to attend, we will make other arrangements to hear from you directly.

As I have written about and discussed repeatedly at Upper Highlands Neighborhood Association meetings and in conversations with many of you, the purpose of this project is **to empower you to choose** what this publicly (MSD) owned green space will become and how it will be maintained in perpetuity. Whether it remains as is or is gets improved to become a pocket park, community garden or something else (as permitted by FEMA) is up to you.

We look forward to listening and learning your vision, ideas, questions and concerns.

Best Regards,

District 8 Councilman Brandon Coan

APPENDIX 2.1.7 PUBLIC SPEAKERS

Kentucky Association of Mitigations Managers (KAMM) Annual Conference Presentation (September 23, 2020) 2.1.7-A

2020 KAMM Conference

Mitigation in a Virtual World - Can't Stop KAMM!

Wednesday, September 23, 2020	
Which Grant is Best for My Project? Lori Rafferty, Louisville MSD	1:00 – 1:30 pm

Kentucky Society of Professional Engineers Presentation (KSPE) (May 26, 2021) 2.1.7-B

May Webinar Meeting

Wednesday, May 26

Due to the ongoing pandemic and social distancing recommendations, KSPE/ASCE/SAME Louisville meetings are now being hosted via webinar.

When: ~~Friday, May 21, 11:30am - 12:30pm~~ **Wednesday, May 26, 11:30am - 12:30pm**
Where: Microsoft Teams Meeting
Speakers: Colette Easter & Paul Maron
Topic: 2021 Infrastructure Report Card for America
Cost: Free
RSVP: Not Required
Meeting Info: Below

Hope you can join!
KSPE Louisville Chapter

MSD Field Day (April 14, 2021)

2.1.7-C

This annual event is an educational day for professionals in the construction and engineering industries. MSD welcomes all contractors, developers, engineers, homebuilders, inspectors, regulators and vendors, as well as floodplain, industrial, real estate and stormwater professionals.

The event was held vitally from 9 a.m.-12 p.m. on April 14. Topics covered included:

- Emergency and Operations update
- Waterway Protection Tunnel update
- Beargrass Creek Stream restoration project
- Engineering and Development team updates



2021 MSD Virtual Field Day Agenda
April 14th, 9 AM – Noon

- **9:00– 9:05: Introduction and Welcome**
- **9:05 – 9:25: MSD Overview and Highlights**
  - **Speakers: Tony Parrott**
- **9:25 – 10:00: Emergency and Operations Update**
  - **Speakers: Brian Bingham**
- **10:00 – 10:30: Waterway Protection Tunnel Update**
  - **Speakers: Jacob Mathis**
- **10:30-10:40: Break**
- **10:40 – 11:10: Beargrass Creek Stream Restoration Project**
  - **Speakers: Erin Wagoner**
- **11:10 – 11:25: Engineering Update**
  - **Speakers: David Johnson**
- **11:25 – 12:00 Development Team Update**
  - **Speaker: Lori Rafferty, Brad Selch, Mark Sites**

LouisvilleMSD @louisvillemsd · Mar 25

Because of COVID restrictions, this year's Field Day will be a virtual event and is scheduled for 9 a.m.-12 p.m. on April 14. Learn about topics and registrations at louisvillemsd.org/news/msd-field....



LouisvilleMSD @louisvillemsd · Apr 14

The opening of today's Field Day is giving Louisville MSD Executive Director Tony Parrott the chance to discuss MSD's drive to be an engine to build economic diversity while also giving back to the community.



2 5

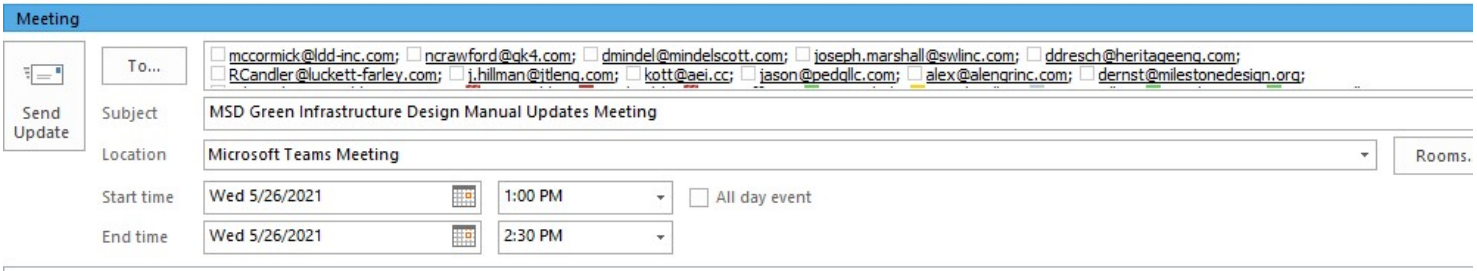
LouisvilleMSD @louisvillemsd · Apr 14

MSD's Field Day 2021 is a virtual event that acts as an educational day for professionals in the construction and engineering industries. MSD staff will offer updates on MSD work, such as the Waterway Protection Tunnel and the Beargrass Creek Restoration Project.

1 3

MSD Green Infrastructure Design Manual Updates Meeting (May 26, 2021)

2.1.7-D



You are invited to a presentation and discussion of proposed changes to the MSD Green Infrastructure Design Manual (MSD Design Manual Chapter 18). **Proposed text changes and exhibits are now available online** through May 28, 2021 for comment. You are welcome to bring comments for discussion to this meeting or submit directly to msdms4@louisvillemsd.org by May 28, 2021.

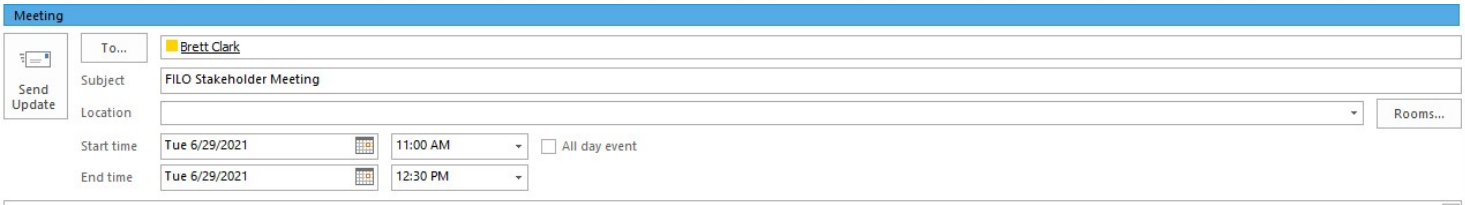
The goal of these revisions is to:

- Create more consistent standards where current standards are duplicative or unclear;
- Simplify and clarify the content of the standards for easier interpretation;
- Update requirements to address issues that have been found with existing green infrastructure practices;
- Ensure the standards are encouraging design outcomes that align with MSD policies; and
- Create a more accessible and user-friendly document.

We hope you can join us. Please send me email addresses for any additional colleagues who wish to attend or will be attending in your place so they can be added to the invitation.

Fee-In-Lieu (FILO) Program Stakeholder Meeting (June 29, 2021)

2.1.7-E



Dear Engineers, Landscape Architects, Surveyors, and other Land Development Specialists,

MSD has been working to create an alternative option for constructing post-construction water quality best management practices (BMPs) that meet the requirements of Louisville's MS4 permit and the Wastewater Discharge Regulations. MSD has created a proposed Fee-In-Lieu (FILO) Program to offer a fee based option for sites where the design restraints are impractical for the placement of an onsite BMP.

This policy would apply to eligible construction projects that are required to meet Article 6 of the Wastewater/Stormwater Discharge Regulations, Post-Construction Best Management Practices. The policy would allow a developer to pay a proportionate share of the cost of regional water quality treatment facilities which have been or are proposed to be constructed. MSD would determine whether payment of the fee is allowed or if onsite BMPs are required for each development. The FILO funds will be used to construct alternative BMPs offsite, including but not limited to, regional green infrastructure, small local green infrastructure, and other water quality projects as approved, to meet the water quality requirements.

We are looking for stakeholders to participate in a discussion of the proposed program, and your input and questions are an important part to ensure the program's success.

If you have any questions prior to the meeting, please feel free to contact Lori Rafferty at lori.rafferty@louisvillemsd.org.

Please register for the MSD Stakeholder Meeting for Post-Construction Fee-In-Lieu Program on June 29, 2021 11 AM to 12 PM EDT at:

https://attendee.gotowebinar.com/register/1637012700906029328

Kentucky Stormwater Association

KSA Mini Conference
AGENDA

October 16, 2020
10:00 AM – 4:00 PM ET
Historic Boone Tavern, Berea, KY and
Virtual Option through Zoom

Time	Presentation Title and Speaker
10:00	Welcome and KSA Board Updates
10:30	State of the Commonwealth - KY Division of Water
11:00	Beyond Facebook - Next Steps for Social Media, Jennifer Myatt, LFUCG
11:30	No More Dirty Words: Changing Public Perception about Water - Christopher Dent, SynTerra Corporation
12:00	Lunch
1:00	MS4 Legal Update - Skipp Kropp, Steptoe & Johnson PLLC
1:30	Activating Neighborhood Greenspaces for Better Stormwater Management and Accessibility through Stakeholder Engagement and Landscape Design - Kristan Wieland Curry, LFUCG
2:00	Lessons Learned for Long Term Success of Green Infrastructure - Lori Rafferty & Brett Clark, Louisville MSD
2:30	Break
3:00	MS4 Compliance Expectations During COVID-19 - Luke Hanks, KY Division of Water
3:30	A City's Approach to Environmental Compliance During a Pandemic – Matt Powell, City of Bowling Green
4:00	Adjourn

Water Environment Federation Technical Exhibition and Conference Presentation (10/6/2020)

2.1.7-G

Tue, 10/6

Presentation: *1862 - Lessons Learned as the Louisville and Jefferson County Metropolitan Sewer District Looks for Long Term Success of Public and Private Green Infrastructure*
Type: Traditional Technical Session
Time: 1:30 PM - 1:50 PM
Presented During: *Stormwater Utility Manager Hot Topics*
Presented During Time: 1:30 PM - 2:10 PM
Venue on Event: New Orleans Convention Center, Room 345
Role: Author

APPENDIX 2.1.8 PRESS RELEASES

700 West Liberty Street | Louisville, KY 40203-1911
Phone: 502.540.6000 | LouisvilleMSD.org

MEDIA RELEASE

October 29, 2020

CONTACT:
Sheryl Lauder
Sheryl.Lauder@LouisvilleMSD.org
502.540.6552
502.919.0325

Volunteers needed to clean the banks of the Middle Fork of Beargrass Creek

COVID-19 cautious event planned for November 7

LOUISVILLE, KY— Picking up trash along our waterways is a little thing that can make a big difference for our streams. Louisville MSD, Louisville Metro Parks and Kentucky Watershed Alliance (KWA) are hosting a "COVID-19 cautious" volunteer effort to improve water quality in the Middle Fork of Beargrass Creek.

This free event is Saturday, November 7, from 8:30 AM to noon. Volunteers must wear a mask and practice social distancing during the event. MSD, Metro Parks and KWA will provide trash bags, gloves, a free t-shirt, a sanitizing station and trash pickup.

To keep our groups to 10 or less, please register one of five locations at https://bit.ly/31olNbh.

- Cherokee Park at Lexington Road
- Cherokee Park near Big Rock
- Arthur K. Draught Park
- AB Sawyer Park
- Forest Green Trail

About one-third of all water that falls in the Beargrass Creek watershed lands on impervious surfaces, such as roofs and pavement—collecting toxins, pollutants, and sediments as it makes its way to the creek. Picking up trash in and around the area helps reduce pollution in our waterways.

This event is part of the 319 Grant Watershed Planning effort.

About MSD
The Louisville/Jefferson County Metropolitan Sewer District (MSD) works to achieve and maintain clean, environmentally safe waterways for a healthy and vibrant community. The organization's more than 670 employees provide wastewater management, drainage and flood protection services across the 376 square miles of Louisville Metro. In addition to operating and maintaining Louisville Metro's sewer system, floodwall system, water quality treatment centers and flood pumping stations, MSD invests in hundreds of infrastructure improvement projects each year, plants more than 1,000 trees and other vegetation annually to enhance water filtration and reduce runoff, and provides numerous outreach programs to inform and educate the community about protecting our waterways.

msd
Safe, clean waterways

700 West Liberty Street | Louisville, KY 40203-1911
Phone: 502.540.6000 | LouisvilleMSD.org

MEDIA RELEASE
November 24, 2020

CONTACT:
Sheryl Lauder
Sheryl.Lauder@LouisvilleMSD.org

Properly dispose of cooking fats and protect your home from sewer backups

Never pour fats, oils or grease down a drain

Keeping your home sewer line in working order is essential. When greasy wastes wash into the plumbing system through your sink or garbage disposal, they can stick to the pipes. Using your garbage disposal or a grease-cutting detergent does not keep fats, oils and grease out of the plumbing system.

"Garbage disposals shred solid material into smaller pieces but do not prevent fats, oils and grease from flowing down the drain. Grease dissolving detergents can pass fats, oils and grease through your household plumbing, but the grease may still cause problems in the sewer lines as they leave your home," states MSD Operations Director Wastewater and Drainage Mike Griffith. "The grease and food debris builds up over time, making the pipe's interior smaller and smaller, which can cause a messy sewer backup into your home."

Can the grease!

- Never pour fats, oils and grease down a sink, drain or toilet. Pour used grease into an empty, heat-safe container, such as a soup can, and store it in the freezer. Toss the can into the garbage after the grease becomes solid.
- Scrape your food waste into the trash. Wipe all pots, pans, dishes and cooking utensils with a paper towel to soak up grease before washing them.
- Catch the scraps in your sink with a basket or strainer, instead of using the garbage disposal, and throw them away in the trash can.
- Do not pour deep-fryer oil on the ground or in a storm drain. This can pollute our waterways and clog the storm pipe.
- Recycle your deep-fryer oil by taking it to Louisville Metro's grease drop-off locations.
  To find a full-service recycling center near you, go to https://louisvilleky.gov/government/public-works/used-cooking-oil-recycling

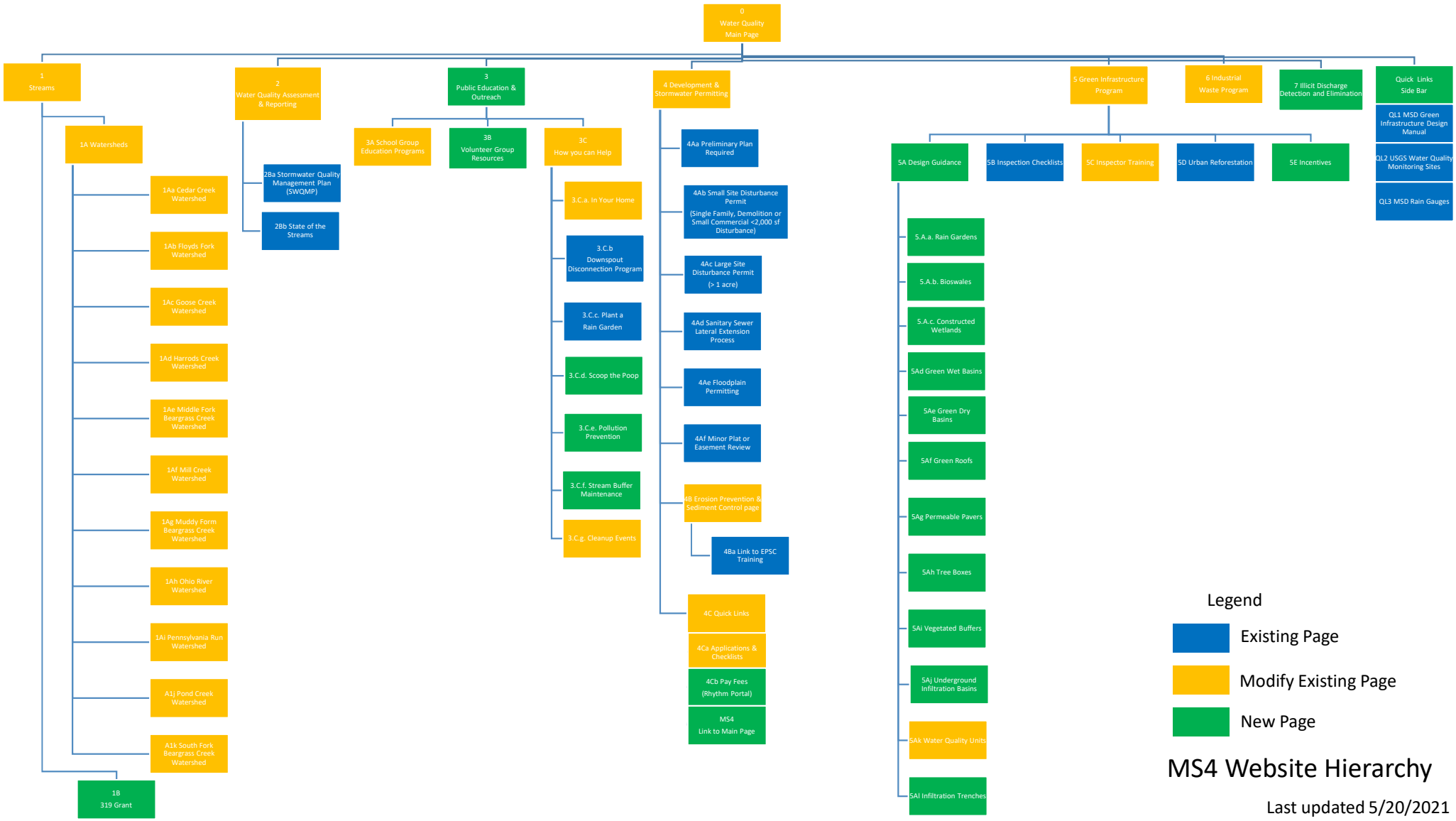
If you do have a problem with a sewer backup, call MSD Customer Relations at **502.540.6000** or send us an email at CustomerRelations@LouisvilleMSD.org. **Make us your first call.** Determining if the problem is located on the public side of the system will help to avoid unnecessary plumber expense.

For more information about disposing of fats, oil, and grease go to www.LouisvilleMSD.org/athome.

#####

About MSD
The Louisville/Jefferson County Metropolitan Sewer District (MSD) works to achieve and maintain clean, environmentally safe waterways for a healthy and vibrant community. The organization's more than 650 employees provide wastewater management, drainage and flood protection services across the 376 square miles of Louisville Metro and portions of Oldham County. In addition to operating and maintaining Louisville Metro's sewer system, floodwall system, water quality treatment centers and flood pumping stations, MSD invests in hundreds of infrastructure improvement projects each year, plants more than 1,000 trees and other vegetation annually to enhance water filtration and reduce runoff, and provides numerous outreach programs to inform and educate the community about protecting our waterways.

APPENDIX 2.1.9 WEBSITE UPDATES

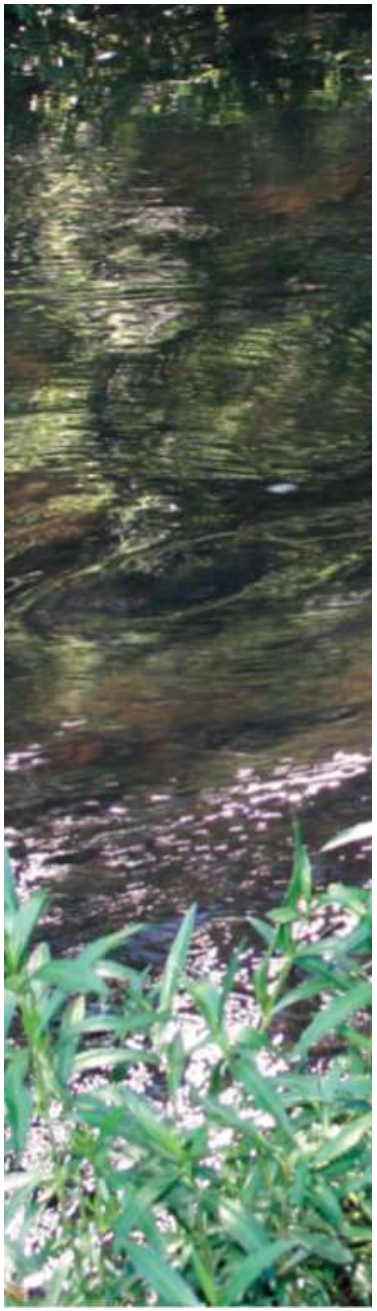


MS4 Website Hierarchy

Last updated 5/20/2021

APPENDIX 2.1.10 MSD ONLINE SURVEY SUMMARY

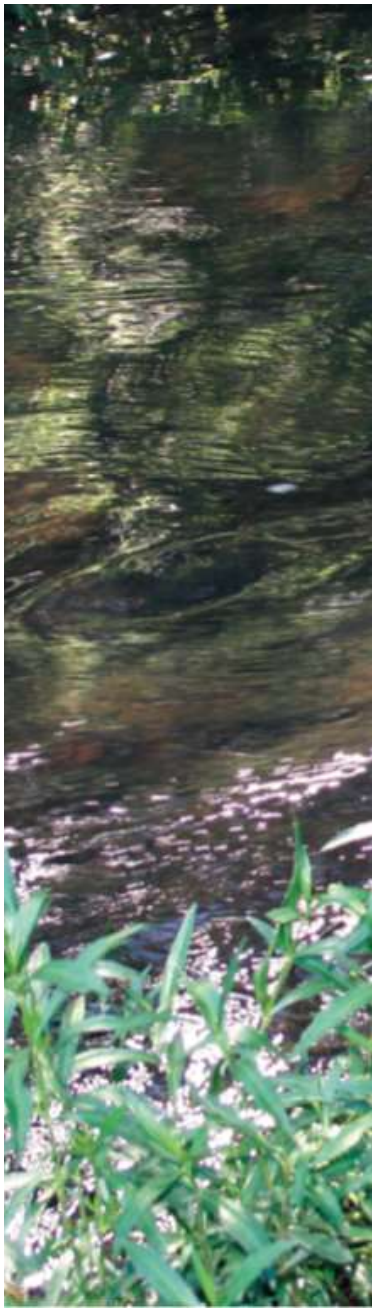
msd
Safe, clean waterways



2021 Project WIN / MS4 Public Behavior Change Assessment Survey Summary

September 27, 2021

DATAMAX



REPORT CONTENTS

- Survey Objectives
- Survey Overview
- Key Findings
- Detailed Findings
- Appendix A: Online Survey
- Appendix B: Zip Code Segmentation Maps



Survey Objectives

- The purpose of the survey was to understand the following prior to developing a Project WIN public outreach communications strategy:
  - Public attitudes toward clean waterways as an environmental issue.
  - Awareness and knowledge of key water pollution issues.
  - Public willingness to change behaviors to improve and protect the community's waterways.
  - Updated elements of an effective strategic public outreach communications plan.



SURVEY OVERVIEW



OVERVIEW – Online Survey

- The survey used was the same version as in 2013, 2015, 2017, and 2019. Due to survey length, respondents were given a $5 e-gift card after the survey was completed.
- The survey invitations were sent out over 31 days from June 7 to July 7. The survey was kept open through August 13. An email 'cleaning' service was used to remove invalid/expired addresses.

	2021 (#)	2021 (%)	2019	2017	2015	2013
Invitations sent (#)	49,990	NA	110,000	50,800	25,000	20,000
Emails bounced back	366	0.7%	4.2%	13.7%	3.2%	6.5%
Respondents opted out	216	0.4%	0.6%	0.8%	0.8%	0.4%
Respondents failed screener	123	0.3%	0.2%	0.3%	0.9%	1.0%
Partially completed survey	774	1.6%	0.6%	0.8%	1.3%	3.1%
Completed the survey	1026*	2.1%	0.9%	1.4%	4.2%	5.4%
Entered the prize drawing	NA	N/A	81.9%	87.8%	94.5%	94.5%
Survey margin of error (+/-)		3.2%	3.1%	3.7%	3.1%	3.1%

*Includes 77 responses from the open link survey (not email-solicited).



Survey Methodology

- Respondents were required to be Jefferson County residents and not employed in any of the following industries: Advertising or Marketing, Market Research, TV or Radio Station, Public Utility.
- No quotas were placed on age, gender or zip code. However, the collected sample was an excellent demographic and geographic cross-section of Jefferson County residents.
- The e-mail list used for survey solicitations was provided by Louisville Water in 2021.
- The survey was 10-15 minutes in length.
- The data was weighted using age, gender, rent/own residence and ZIP code area to match the current demographics of the MSD customer base. This is the same procedure used for the 2013, 2015, 2017, and 2019 surveys.



ZIP Code Segmentation

- ZIP codes were mapped as close as possible to the sewer and watersheds (see Appendix B).
- The segmentation resulted in 6 areas:
  - Downtown & West City [40202, 40203, 40208, 40210, 40211, 40212, 40215]
  - East City [40204, 40205, 40206, 40207, 40217, 40218, 40220]
  - Southwest [40216, 40258]
  - South County [40209, 40213, 40214, 40219, 40225, 40228, 40229, 40272, 40047, 40109, 40118, 40177]
  - East County [40018, 40023, 40243, 40245, 40291, 40299]
  - Northeast County [40025, 40059, 40222, 40223, 40241, 40242]



Demographics by ZIP Code

	Total	Downtown / West City	Southwest	East City	South Co.	North East Co.	East Co.
Age (Mean)	46.5	43.2	54.2	45.0	44.4	51.9	48.6
% Male/Female	47/53	33/67	39/61	49/51	49/51	56/44	50/50
% HH with Kids <18	42.4	47.3	51.8	37.0	38.4	40.1	50.7
% College graduate +	68.1	39.1	65.6	78.0	58.0	85.8	73.5
Income (Mean)	$74,426	$45,110	$59,989	$77,371	$66,573	$100,001	$89,869
% Own Residence	63.3	30.3	62.1	58.3	64.3	80.1	84.8
% Dog Ownership	48.1	35.9	48.3	52.1	50.7	46.3	48.2
% Use Fertilizer	26.0	10.2	29.6	22.1	12.7	48.9	44.6



KEY FINDINGS



KEY FINDINGS

Notable significant shifts since 2019

Favorable shifts in awareness or attitude

- Since 2015, residents who rate the overall water quality or health of the waterways in Jefferson County as Good or better has steadily increased:
  - 2021 – 60%
  - 2019 – 56%
  - 2017 – 54%
  - 2015 – 46%
- Among respondents who rated the overall water quality as Excellent or Very good, 44% (+12%) say the water is 'clean' and 22% (+10%) say the 'drinking water is good'.
- More residents think runoff and flooding cause the river to become polluted after a rain (32% vs 21% in 2019). Further, more residents agree that rainwater runoff is a leading cause of pollution (41% vs 36% in 2019, Top 2).
- The number of residents who currently take action to reduce water pollution has trended upward over the last nine years, 51% vs 46% in 2013.



KEY FINDINGS

Notable significant shifts since 2019

Favorable shifts in awareness or attitude

- Since 2017, residents feel more personally responsible for reducing rainwater runoff pollution and sewer system overflow (66% vs 62% in 2017).
- Respondents disagree more that human activities have no significant impact on the water quality in our waterways (88% vs 83% in 2019).
- Messages relating to cause and effect, consequences and environmental impact are most likely to motivate residents to action (24% vs 16% in 2019).
- Social media is becoming a more preferred way for residents to receive emergency information (36% vs 30% in 2019).
- There is an increase in knowledge of the positive things MSD does in the community:

	2021	2019	Change
Installs / maintain sewers	30.0	24.6	+5.4
Cleans the water	12.5	5.7	+6.8
Cleans sewers and ditches	9.2	4.8	+4.4
Repairs pipes / infrastructure	10.8	6.5	+4.3



KEY FINDINGS

Notable significant shifts since 2019

Favorable shifts in awareness or attitude

- There is a decrease in negative perceptions of MSD's role in the community:

	2021	2019	Change
Corrupt / inadequate	4.1	13.1	-9.0
Continues to raise prices	5.3	5.5	-0.2



KEY FINDINGS

Notable significant shifts since 2019 *(continued)*

Unfavorable shifts in awareness or attitude

- Residents consider environmental issues less important than in 2019.

	2021	2019	Variance
Protecting waterways from pollution	65	67	-2
Conserving energy resources	45	52	-7
Reducing climate change	53	56	-3
Preserving open spaces	39	40	-1
Increasing tree canopy	33	42	-9

- More residents are unsure how rain affects the water quality or health of our waterways (35% vs 27% in 2019). They are also unsure if waterways become unsafe after it rains (43% vs 39% in 2019).
- Fewer residents know that rain adds pollutants to our waterways (29% vs 31% in 2019) or that they should not use local waterways after it rains because they have become unsafe (36% vs 38% in 2019).



KEY FINDINGS

Notable significant shifts since 2019 *(continued)*

Unfavorable shifts in awareness or attitude

- Residents feel less informed about the causes of rainwater runoff pollution (12% vs 13% in 2019). They are also less informed about the causes of sewer system overflow (11% vs 14% in 2019).
- More residents strongly agree that MSD should incent customers to reduce water pollution (31% vs 27% in 2019).
- Fewer residents recall hearing about the impact of rainwater runoff pollution and sewer system overflow and ways they can prevent it (14% vs 17% in 2019).
- There is an increase in the number of residents who don't know what MSD does in the community (19% vs 9% in 2019).
- A positive opinion of MSD has slipped in recent years (36% vs 40% in 2019 and 2017).



KEY FINDINGS

Public attitudes toward clean waterways

- Louisville residents continue to consider protecting our waterways from pollution one of the community's most important environmental issues, though this opinion is steadily declining. Reducing climate change is the second most important issue.
  - Southwest residents (80%) and older adults over 60 (71%) consider protecting our waterways the most important environmental issue.
- It remains important to residents that they have have clean waterways, and 60% rate the overall quality of Louisville's waterways as Good or better, an increase from 55% in 2019. Like previous studies, many residents (47%) perceive the waterways are polluted.
  - Women (43%), residents 40-49 (44%) and Northeast County residents (44%) more strongly perceive the waterways are polluted.



KEY FINDINGS

Public attitudes toward clean waterways *(continued)*

- Residents (64%) remain frightened by the pollution of the river, creeks and ponds (63% in 2019).
- Most residents (88%) believe human activities have a significant impact on the quality of Louisville's waterways (83% in 2019).
  - East City residents (93%) and residents <30 (94%) agree the most that humans have an impact on the quality of waterways.



KEY FINDINGS

Knowledge of the issues

- As was found in the 2015, 2017 and 2019 surveys, residents generally are not very informed about the causes or impact of rainwater runoff pollution and sewer system overflow.
  - 35% don't know how rain affects water quality (+8% vs 2019)
  - 43% aren't sure if it is safe to use area waterways after it rains (+4% vs 2019)
    - 21% think it is safe to use waterways after it rains (-3% vs 2019)
  - 55% don't feel informed about the causes of rainwater runoff pollution (+3% vs 2019)
  - 61% don't feel informed about the causes of sewer system overflow (+3% vs 2019)
  - Men are more informed than women on both issues
    - Rainwater runoff pollution (informed/very informed): Men 14%, Women 10%
    - Sewer system overflow (informed/very informed): Men 12%, Women 11%
  - Seniors 60+ are more informed about both rainwater runoff pollution (16%) and sewer system overflow (19%).



KEY FINDINGS

Knowledge of the issues *(continued)*

- As in 2015 and 2017, residents still do not fully understand the role of the sewer system in the rain management process.
  - 70% aren't sure or agree that storm water is treated before being released back to our waterways (67% in 2019 and 58% in 2017).
  - 59% aren't sure or disagree that rainwater runoff is a leading cause of water pollution (65% in 2019).
  - 74% aren't sure or disagree that sewer system overflow occurs frequently (72% in 2019).
  - 62% say the evidence they have seen about water pollution is reliable (60% in 2019). About one-third is not sure if the information is reliable.



KEY FINDINGS

Knowledge of the issues *(continued)*

- Agreement that rainwater runoff is a leading cause of pollution has increased since 2019 (+4.6%) while agreement around other key issues has declined.
  - Younger adults are most likely to understand and agree with key issues.

Agreement with Key Issues

Issue	Top 2 vs 2019	Gender Top 2	Age Top 2	Geography Top 2
Storm water is treated before returning to waterways	-0.8%	M: 40% F: 41%	Highest: 30-39, 45% Lowest: 60+, 36%	Highest: Southwest, 51% Lowest: NE County, 39%
Rainwater runoff is a leading cause of pollution	+4.6%	M: 41% F: 39%	Highest: <30, 53% Lowest: 30-39, 35%	Highest: East City 45% Lowest: NE County, 36%
Sewer system overflow occurs frequently	-2.2%	M: 27% F: 26%	Highest: 40-49, 37% Lowest: 50-59, 21%	Highest: Downtown, 37% Lowest: Southwest, 17%



KEY FINDINGS

Knowledge of the issues *(continued)*

Key insights:

- *Louisville residents consider it very important to protect the city's waterways from pollution, especially young adults.*
- *Most residents, however, remain under-informed about how rainwater runoff pollution and sewer system overflow can impact waterways. They are also under-informed or mis-informed about the role the sewer system plays in rain management.*
- *Residents are very receptive to being educated about the causes of water pollution. Messages should be factual and rational and show the environmental impact of protecting and not protecting Louisville's waterways.*
- *A large majority of residents knows there are actions they can take to reduce water pollution, but only one-half act. Educational programs and prescriptive messaging may help residents improve their knowledge of the issues and understand how they can modify behaviors to protect the waterways they value.*



KEY FINDINGS

Willingness to take action

- More than half of residents (51%) say they **currently take actions** to reduce water pollution, a 2% increase over 2019.
- A large majority (81%) believe there are things they **could be doing** to reduce water pollution, unchanged since 2019.
- Among those who currently take action to reduce water pollution:
  - More residents pick up trash (+4%)
  - More residents clean up sewers and street drains (+4%)
  - Fewer residents don't litter (27% vs 41% in 2019)
  - Since 2013, there is a steady decline in the number of residents who are careful about what they pour down the drain (5% in 2021 vs 28% in 2013).



KEY FINDINGS

Willingness to take action *(continued)*

- The top 5 actions residents **would be willing to take** to reduce pollution in our waterways include:
  - Putting FOGs in the trash rather than the drain (89%, -0.5% since 2019)
  - Putting wipes in the trash rather than the toilet (87%, -0.4% since 2019)
  - Picking up trash in the gutter where they live (85%, -1.6% since 2019)
  - Taking hazardous wastes to a collection center (84%, -3.8% since 2019)
  - Using environmentally friendly lawn products (80%, -2.0% since 2019)
- The 3 actions residents **are least willing to take** to reduce pollution in our waterways include:
  - Creating a rain garden (36%)
  - Installing a rain barrel to catch rainwater (44%)
  - Picking up pet waste in public areas (45%)



KEY FINDINGS

Willingness to take action *(continued)*

- Residents think the following actions increase rainwater runoff pollution the most:
  - Improperly disposing of hazardous waste (97%, -0.3% vs 2019)
  - Putting trash in the gutter (91%, -0.7% vs 2019)
  - Leaking fluids from vehicles (90%, -3.7% vs 2019)
  - Using non-environmentally friendly chemicals (89%, -0.1% vs 2019)
- Since 2019, fewer residents consider washing their car in the driveway, a contributing factor to rainwater runoff pollution (53% vs 56% in 2019).



KEY FINDINGS

Willingness to take action *(continued)*

- Similar to 2017 and 2019, 93% of residents think flushing wipes is a primary cause of sewer system overflow. Other actions they think contribute to system overflow include:
  - Putting lawn clippings and leaves in the gutter (81%)
  - Pouring FOGs down the drain (81%)
  - Flushing hair down the toilet (68%)
- Several segments associate flushing wipes with sewer system overflow:
  - Gender: Women (94%)
  - Age: 50-59 (96%)
  - Area: Downtown (94%) and East City (94%)
- Renters (90%) and Southwest residents (88%) are less likely to make the association.



KEY FINDINGS

Willingness to take action *(continued)*

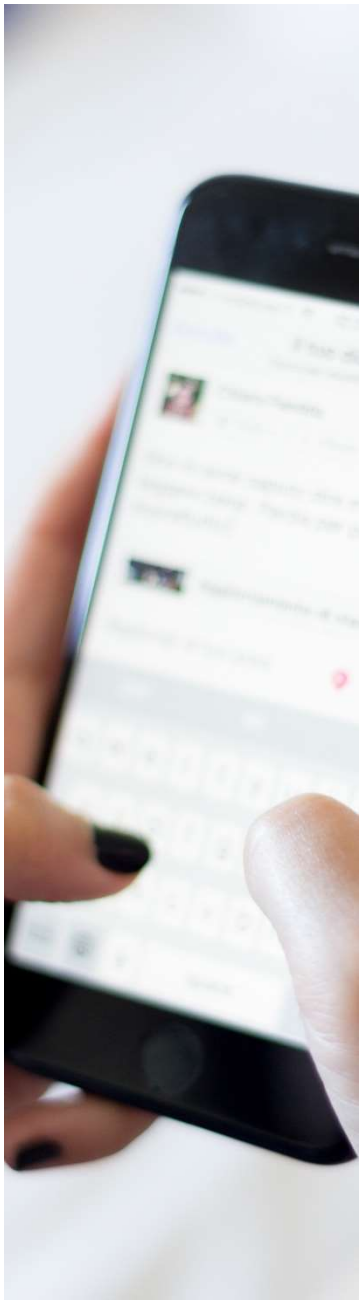
- Most residents (92%) agree that "everyone can do their part" to reduce the effects of water pollution.
  - Women (61%) more than men (48%) strongly agreed we can all do our part
  - Downtown (69%) and East City residents (58%) more than other geographies also strongly agree everyone can do their part
- Since 2019, there has been a 3% increase in those who feel personally accountable for reducing waterway pollution (66% vs 63% in 2019). Those who would do their part regardless of the actions of others remained unchanged (71%).
  - Women (72%) and East City (82%) are most likely to do their part independent of others
  - A large majority (83%) continue to hold government, business and industry responsible for reducing rainwater runoff and sewer system overflow
  - Two-thirds (67% vs 63% in 2019) agree the utility company should provide incentives for people to reduce water pollution.



KEY FINDINGS

Key insights:

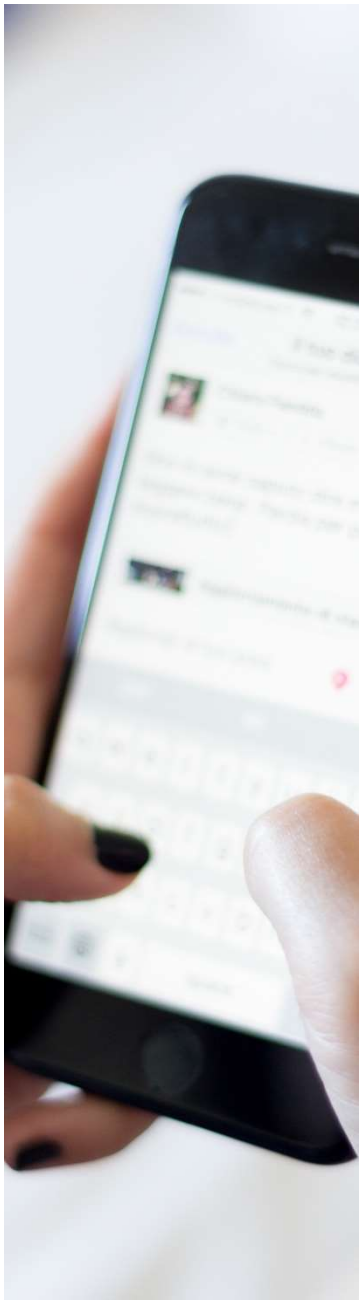
- *A large majority of Louisville residents know there are actions they can take to reduce water pollution. However, there are gaps between what actions residents are currently taking and what actions they are willing to take.*
- *A gap analysis would help MSD identify areas of opportunity and prioritize educational programs and outreach campaigns. For example:*
  - *Almost all adults are willing to not put fats, oils and grease down the drain, but only a small percentage currently do this.*
  - *Almost all adults also say they are willing to not flush wipes down the toilet, however wipes were not mentioned as an action residents currently take.*
  - *A large majority of residents are willing to take hazardous waste to a collection site, but this was not offered as something residents do.*



KEY FINDINGS

Communications/How to Engage

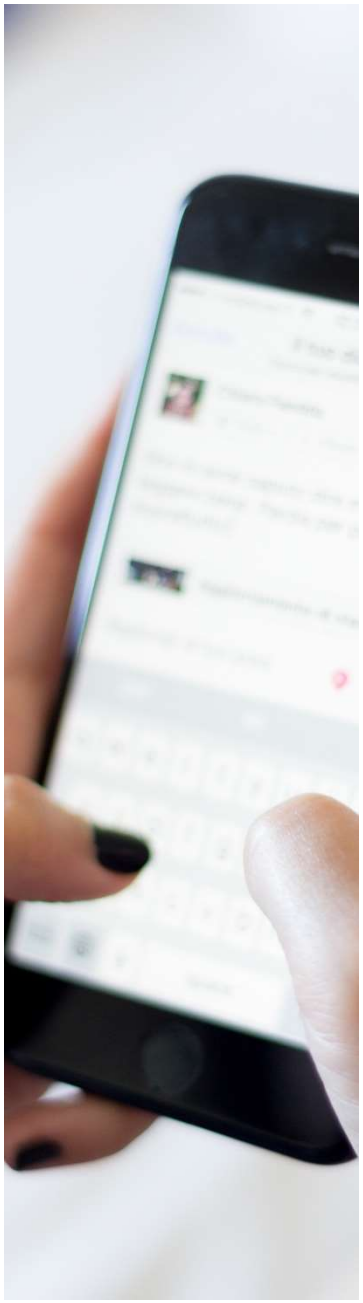
- Fewer residents have heard something in the last year about the impact of rainwater runoff pollution or sewer system overflow and ways they can prevent it (14% vs 17% in 2019). More residents have no awareness or are unsure (86% vs 83% in 2019).
  - Those who have heard something recall information about avoiding creeks, ponds and rivers right after rainfall, general tips to prevent water pollution, and not washing clothes while it's raining. They heard these messages through TV, signs posted near waterways, newspaper and email.
  - In 2021, residents recalled different information than they did in 2019: being careful about what to put in the drain, not littering, and not washing clothes while it's raining.



KEY FINDINGS

Communications/How to Engage *(continued)*

- Residents continue to want to be educated with facts about water pollution issues.
- Specifically, they would like to receive general education, statistical data and an environmental report.
  - Residents preferring general education include:
    - Under 30 (82%)
    - Southwest (83%)
  - Statistical information appealed to those 40-49 (55%).
  - East City residents (65%) prefer an environmental report.



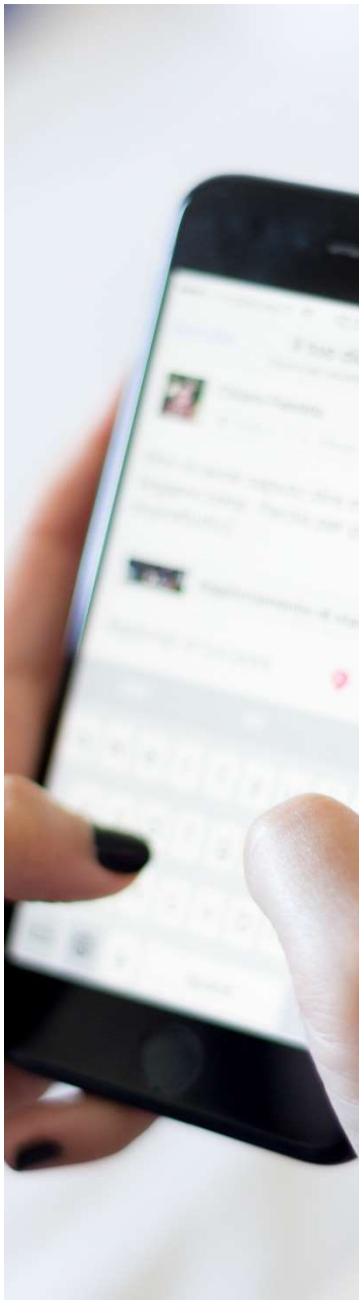
KEY FINDINGS

Communications/How to Engage *(continued)*

- Residents are varied in their media channel preferences, depending on age and type of communication. The top channel for each information type by age group appear in the chart below.
- Consistent since 2013, almost two-thirds of residents (62%) read the newsletters included with their monthly bill.

Communications Preferences by Age and Type, % Ranked 1st

Age	Emergency	%	Community News	%	How-to Info	%	General Notices	%
<30	Email	30	Email	35	Email	32	Email	39
30-39	Email	20	Social Media	28	Email	26	Email	27
40-49	TV	26	TV	23	Direct Mail	21	Email	26
50-59	TV	29	TV	29	Internet	21	Email	23
60+	TV	45	TV	36	Email	26	Email	28

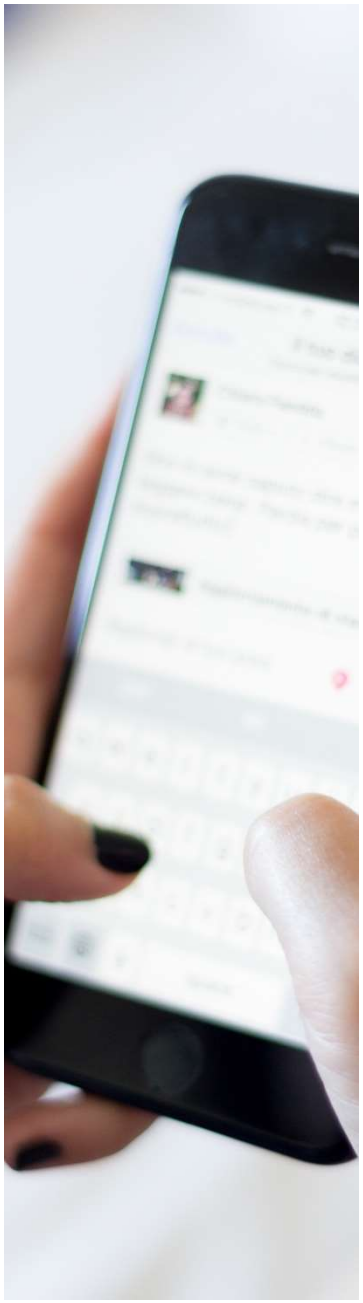


KEY FINDINGS

Communications/How to Engage *(continued)*

- Social media, the internet and email continue to gain as preferred channels for how-to information and general notices. (Ranked Top 4)

	Social Media			Internet			Email		
	2021	2019	Change	2021	2019	Change	2021	2019	Change
Emergency information	58%	58%	0%	53%	54%	-1%	51%	59%	-8%
Community News	59%	61%	-2%	42%	39%	+3%	57%	59%	-2%
How-to information	59%	49%	+10%	66%	56%	+10%	62%	56%	+6%
General notices	54%	47%	+7%	48%	39%	+9%	66%	65%	+1%



KEY FINDINGS

Key insights:

- *Awareness of rainwater runoff pollution and sewer system overflow as causes of water pollution remains low among Louisville residents. Further, recall of key messages varied from 2019 to 2021.*
- *MSD has an opportunity to focus outreach efforts on key topics that will build awareness, modify behaviors and have the most impact on protecting waterways. To be effective, the team should consider a cost/impact analysis to identify topical priorities and optimize the budget.*
- *Media preferences are more splintered than previous years. These preferences indicate the need for outreach campaigns that are highly integrated across a variety of channels and touchpoints. The newsletters included in the bill continue to be an effective touchpoint for most residents in every age group and should be considered as part of any campaign.*



KEY FINDINGS

Perceptions about MSD

- The positive opinion of MSD decreased slightly since 2019 (36% vs 40% in 2019).
- The knowledge of what MSD does has decreased since 2019. When asked what MSD does in an open-ended question, residents said:

	2021	2019	Change
Install and maintain sewers	30%	25%	+5%
Cleans the water	13%	6%	+7%
Repair pipes & infrastructure	11%	7%	+4%
Cleans sewers & ditches	9%	5%	+4%
Provide drainage control	8%	9%	-1%
Prevent flooding	5%	4%	+1%
Treat wastewater	5%	9%	-4%

- 19% of residents don't know what MSD does vs 9% in 2019.



KEY FINDINGS

Perceptions about MSD *(continued)*

- Residents want MSD to continue to educate and provide more information and awareness to protect the health of the community's waterways. In open-ended responses about MSD's role:

	2021	2019	Change
Education	30%	21%	+9%
Provide more information	26%	15%	+11%
Inform public of ways to help	12%	7%	+5%
Provide incentives	10%	8%	+2%

- *Key insight: Residents continue to want MSD to educate them about protecting the community's waterways.*

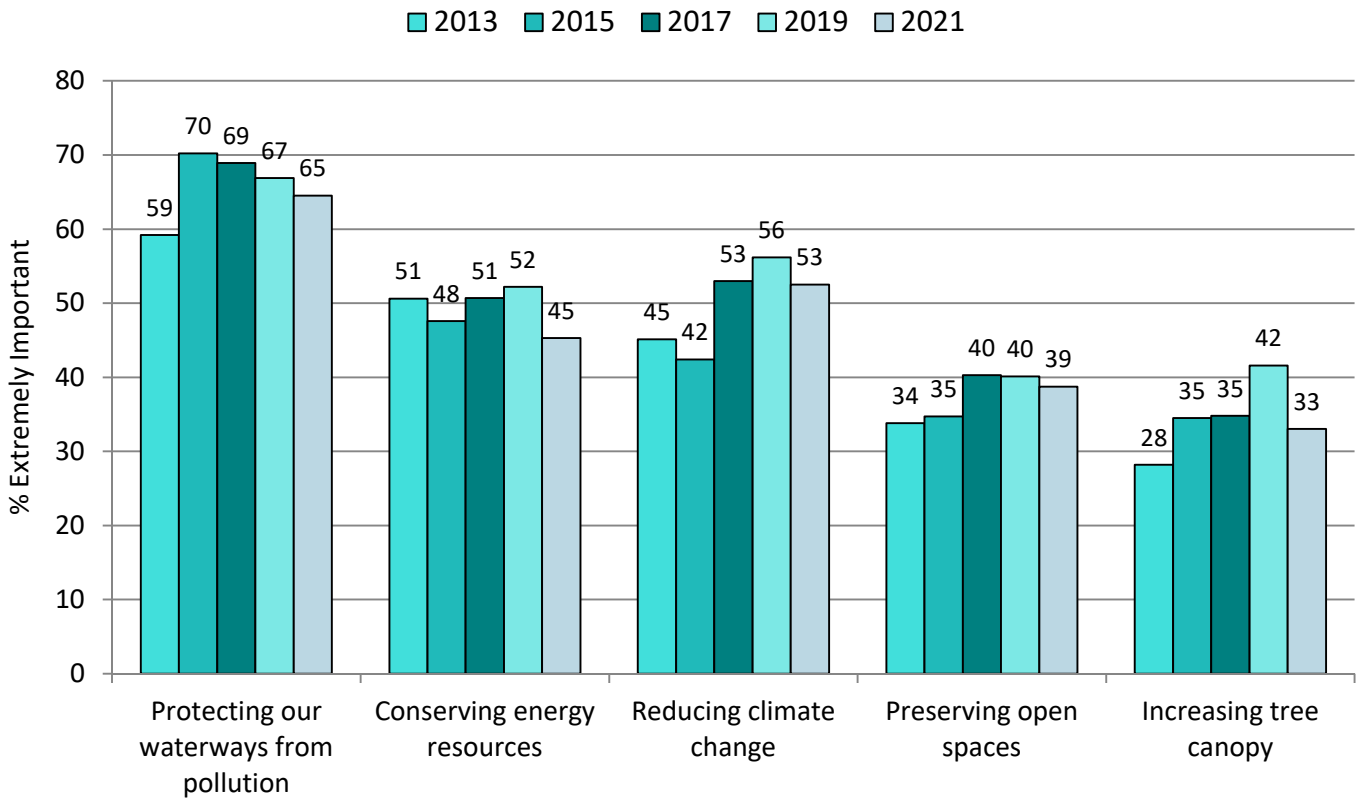


DETAILED FINDINGS



Q3 RESULTS – Importance of Environmental Issues

For each of the following environmental issues, indicate how important you feel the issue is to you.

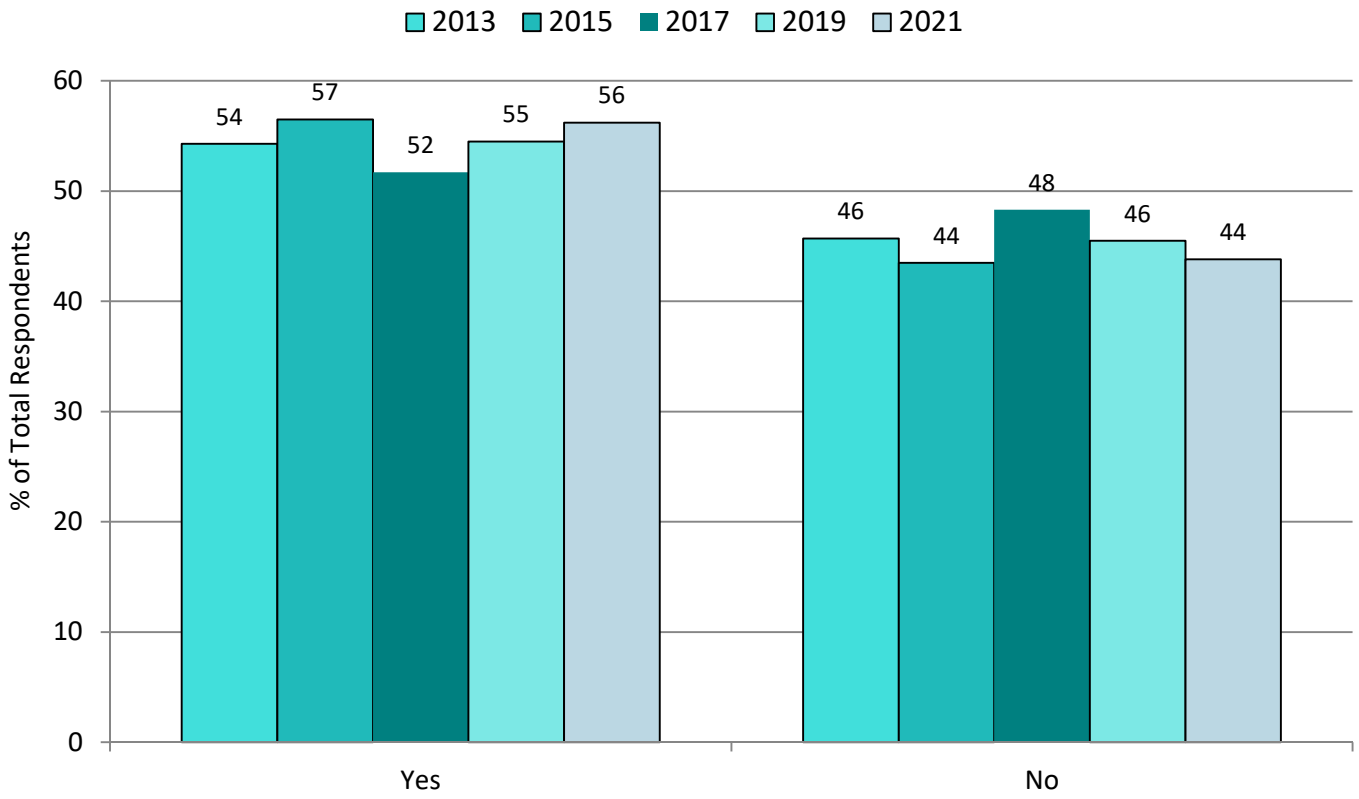


- Protecting Waterways continues to be the most important issue, although it continues to decline over time. The decrease is driven by East County (67.6% to 50.0%) and Males (70.5% to 63.7%). Climate Change importance maintained the increase in 2017. This comes from Downtown (67.3%) and East City (62.4%).



Q4 RESULTS – Waterway Use

Do you use the river, creeks and ponds for recreational purposes in Jefferson County, Kentucky?



- Waterway usage remains at a constant level. Residents under 30 (73.7%) continue to be the biggest recreational users, while those who are age 60+ (55.3%) use waterways the least. Also, usage is spread evenly across the county.



Q5 RESULTS – Waterway Use

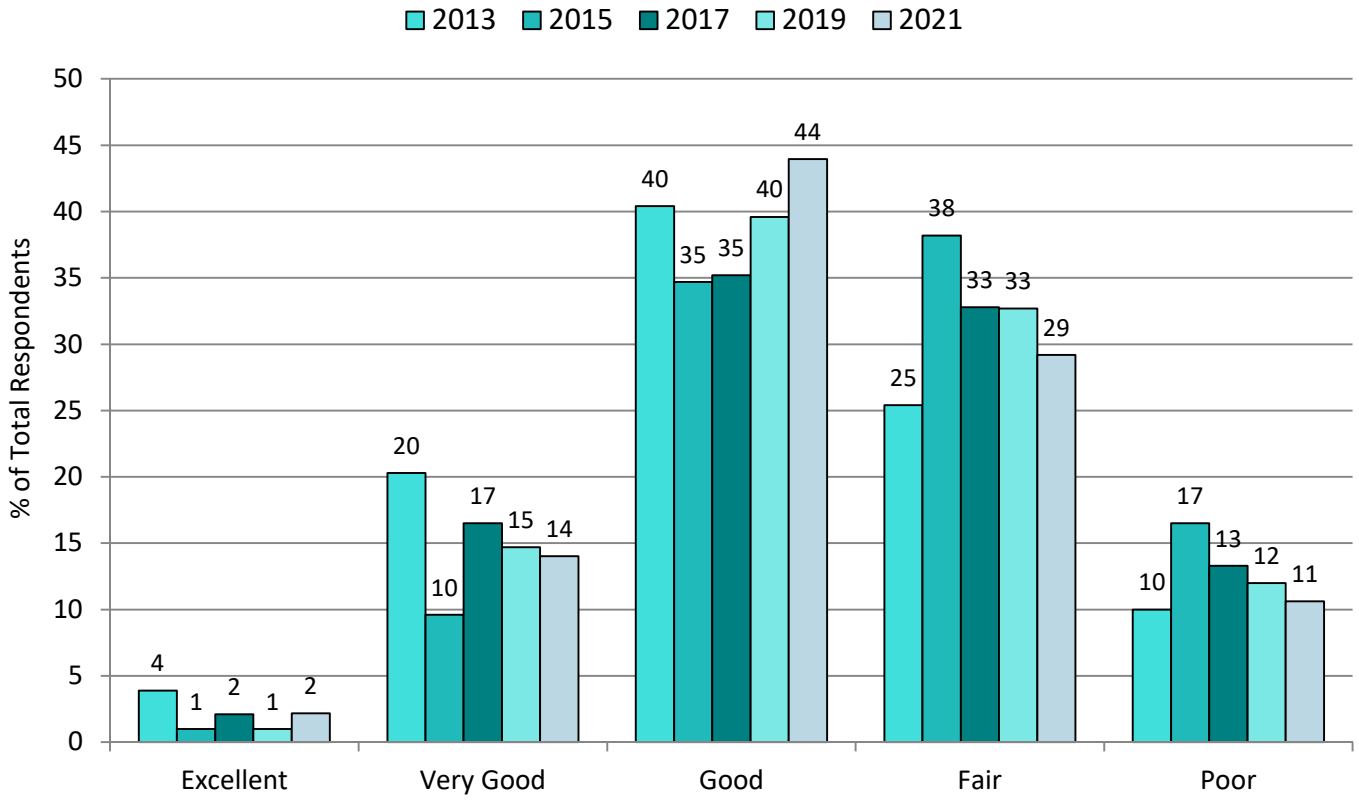
Why don't you use the river, creeks and ponds for recreational purposes? (Total Respondents, open-end)	2013 (%)	2015 (%)	2017 (%)	2019 (%)	2021 (%)
Don't want to / no interest	21.6	8.2	10.3	14.4	15.1
Don't own a boat	15.0	12.4	22.3	10.5	13.9
Not an outdoor / water person	14.8	14.9	16.4	13.3	15.7
Pollution / contamination / unclean water	12.9	19.9	32.2	25.2	23.6
Don't fish	10.5	10.2	13.7	7.1	8.5
Go outside of Louisville / Jefferson County for this	8.1	6.1	2.7	5.8	4.9
Age / too old	6.8	8.9	6.6	4.6	8.0
Busy lifestyle / work too much	6.2	9.8	9.0	11.9	16.6
Not sure what's available	5.3	1.5	0.4	1.8	1.8
Don't swim	4.1	5.1	6.4	3.4	3.6
Disabled	3.6	8.1	6.0	8.2	3.4
Do not live by any	3.5	5.4	4.5	4.8	2.4

- Use of waterways for recreational purposes due to pollution/contamination remains the prohibiting factor. This continues to be driven by those age 25-34 (45.5%).



Q6 RESULTS – Overall Quality/Health of River, Creeks and Ponds

How would you rate the overall water quality or health of the river, creeks, and ponds in Jefferson County, Kentucky?



- There is a slight downward trend of the Fair/Poor overall water quality/health ratings over the past 6 years. These declines are driven by South County, Northeast County and East County. Those under 30 have the lowest Fair/Poor ratings (34.9%) and Downtown residents have the highest Fair/Poor ratings (56.4%).



Q7 RESULTS – Overall Quality/Health of River, Creeks and Ponds

Why do you give that rating? (Total Respondents, open-end)	2013 (%)	2015 (%)	2017 (%)	2019 (%)	2021 (%)
Lots of pollution / trash / debris / dirty	29.4	44.2	45.8	44.3	46.5
Visual observation / look of it	17.9	5.0	8.1	14.5	9.3
Lakes are ok – river is bad	7.8	0.7	2.7	3.9	4.7
Sewage / storm runoff	7.6	9.9	11.0	7.7	6.8
From what I read / hear	5.5	6.0	8.8	5.2	5.8
Clean	4.2	4.8	11.9	7.9	10.5
Well maintained	4.0	1.2	4.0	1.7	5.1
Always room for improvement	3.9	10.9	6.0	5.4	6.5
Haven't had any issues / problems	2.9	2.1	3.0	2.4	2.3
Conditions are improving	2.2	2.6	3.7	2.9	2.5
My perception / impression	2.0	2.4	2.8	2.9	1.8
All others	4.7	1.7	1.5	5.9	0.5
Don't know	13.7	0.8	2.2	4.4	4.2

- Those under 30 (58.9%) and South County (54.2%) were most likely to mention pollution as a reason for their rating.
- Those age 60+ (33.1%) and Northeast County residents (34.0%) mentioned pollution/trash the least



Q7 RESULTS – Overall Quality/Health of River, Creeks and Ponds

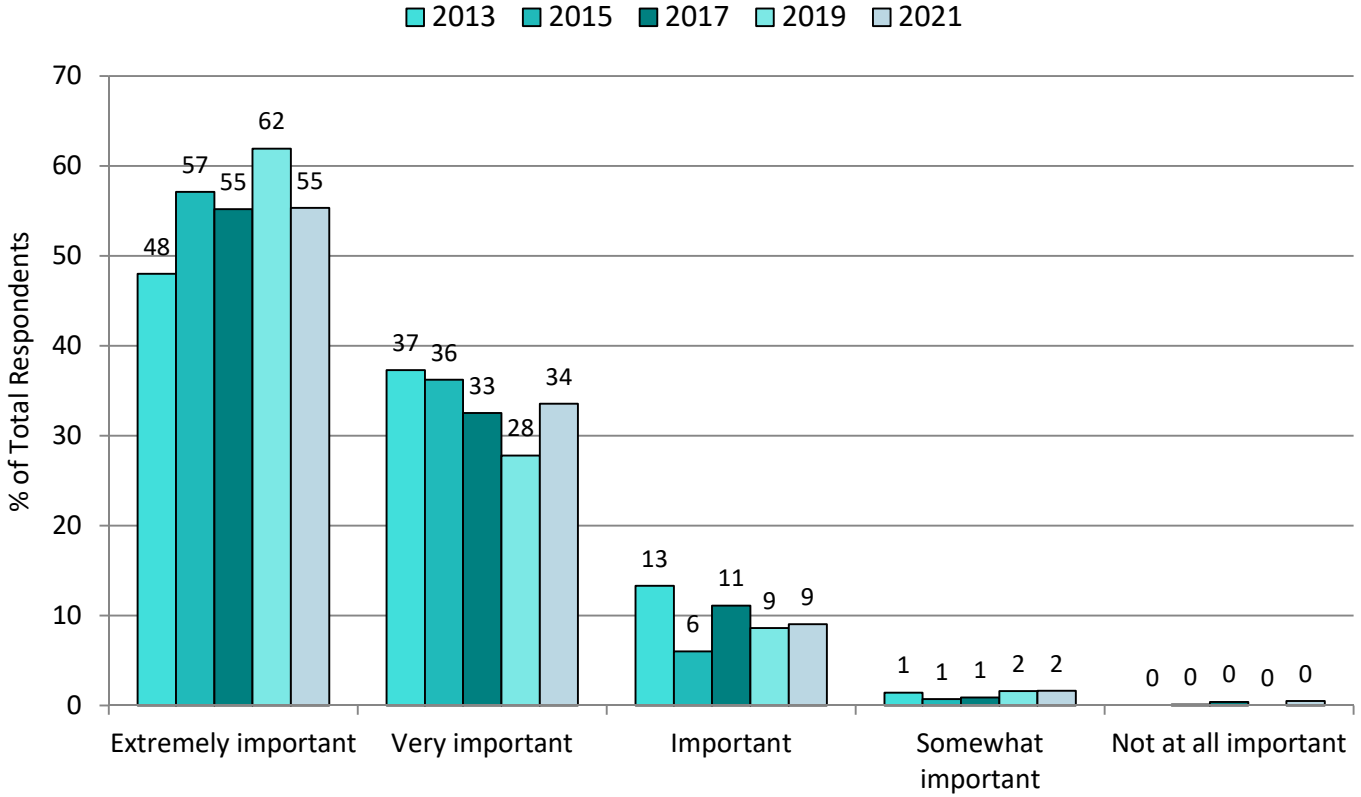
Why do you give that rating? [Those who rated Excellent or Very Good]	2013 (%)	2015 (%)	2017 (%)	2019 (%)	2021 (%)
Clean	11.7	26.3	47.6	32.1	44.1
Always room for improvement	4.0	15.7	3.1	1.2	6.9
Conditions are improving	3.6	14.9	8.5	4.0	5.3
Our drinking water is good	4.0	7.0	18.1	11.8	21.6
Good quality	3.3	9.3	10.5	11.4	5.3

Why do you give that rating? [Those who rated Fair or Poor]	2013 (%)	2015 (%)	2017 (%)	2019 (%)	2021 (%)
Lots of pollution / trash / debris / dirty	54.6	58.4	51.3	62.5	72.6
Sewer system overflow / rainwater runoff	13.5	15.1	17.8	10.1	13.4
Odors / smelly	3.4	11.6	13.6	1.7	3.4
Visual observation/look of it	19.0	6.6	11.3	13.3	12.6
Lack of upkeep	1.9	8.9	7.9	4.0	0.0



Q8 RESULTS – Importance of Clean River, Creeks and Ponds

How important is it to you that your community has clean rivers, creeks and ponds?

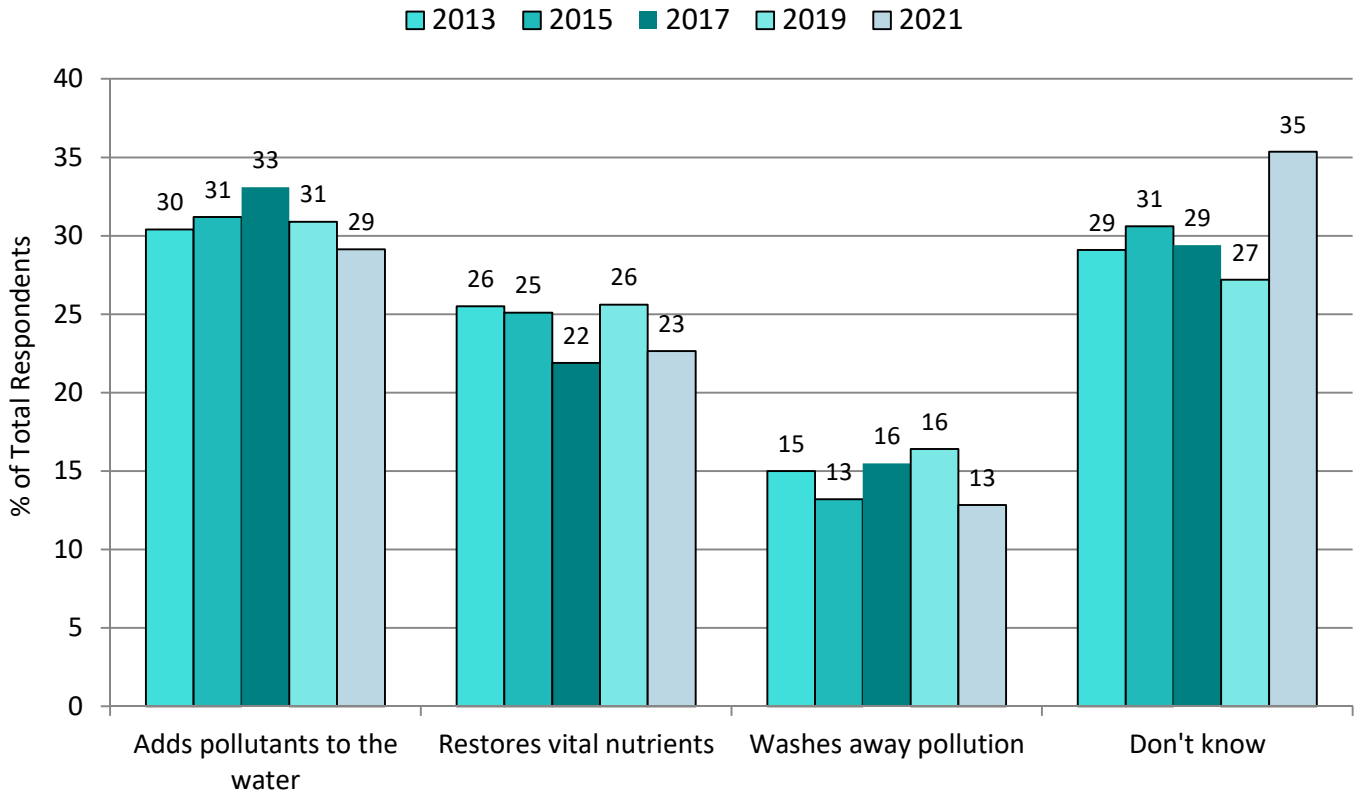


- Residents saying that it is extremely important that the community having clean rivers, creeks and ponds is generally increasing over time.
- It is extremely important to Southwest (66.6%) and Downtown/West City residents (64.1%) to have clean rivers, creeks and ponds.



Q9 RESULTS – Effect of Rain on Quality of River, Creeks and Ponds

How does rain affect the water quality or health of our river, creeks and ponds? Please select one.

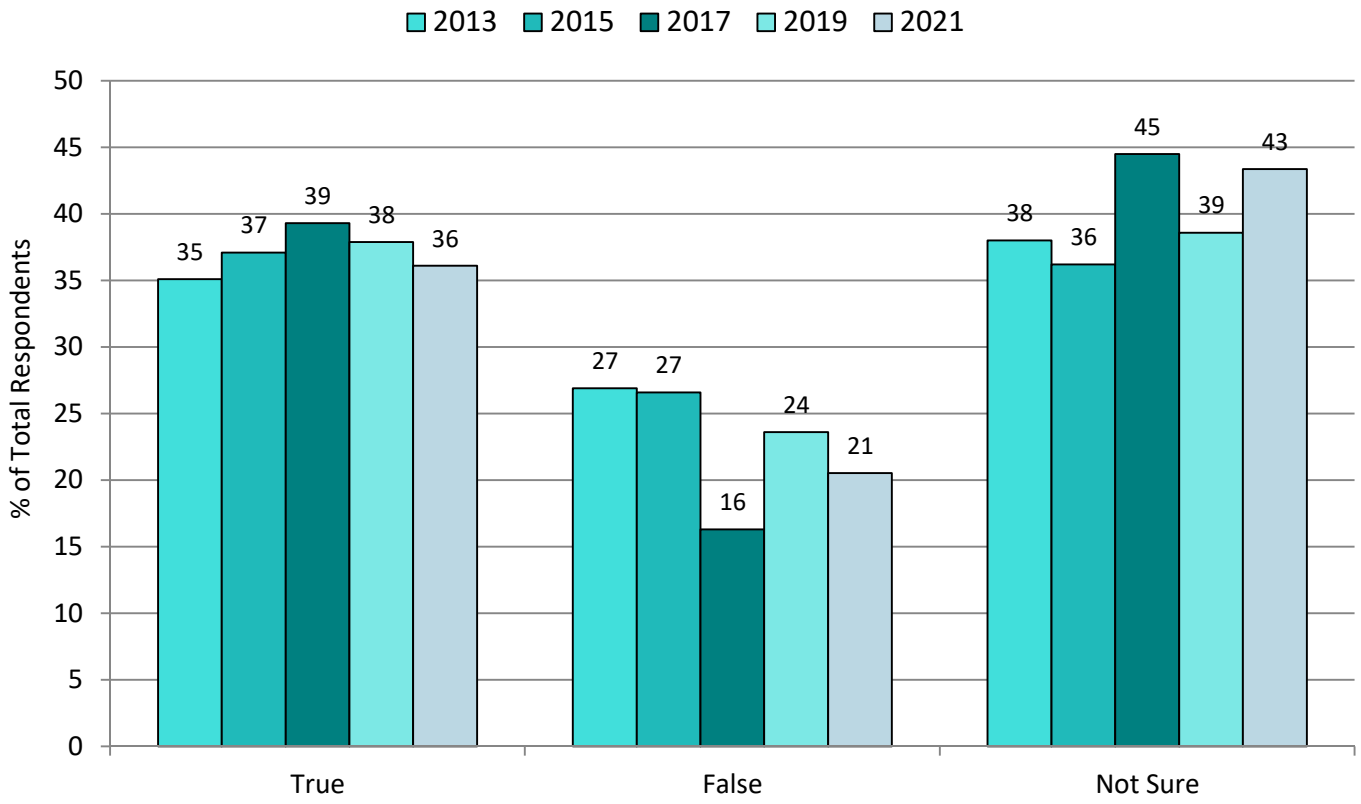


- Perceptions on how the rain impacts water quality show some variation, but remain within fairly narrow ranges.
- The increase in the proportion that don't know how rain affects water quality is driven by those under 30 (45.7%).



Q10 RESULTS – Post-Rain Pollution

After it rains, you should not use the local area river, creeks and ponds because they have become unsafe with increased levels of pollution and bacteria.



- Those in the East City (44.8%) and Males (42.7%) continue to exhibit the strongest agreement.
- Those in the East County showed the strongest disagreement (31.2%).

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Safe, clean waterways



Q11 RESULTS – Post-Rain Pollution

What do you think would cause the river, creeks and ponds to become polluted after a rain? (open-end)	2013 (%)	2015 (%)	2017 (%)	2019 (%)	2021 (%)
Runoff / flooding	10.8	36.6	27.8	21.1	32.1
Trash / litter / debris getting washed into it	17.1	20.6	11.6	13.3	21.7
Fertilizers / pesticides / lawn sprays/chemical runoff	14.0	20.6	16.6	14.8	20.1
Ground pollution	12.5	17.2	2.7	8.7	4.9
Sewage overflow	10.5	12.6	14.6	10.6	10.5
Run-off from streets / roads / parking lots / cars	11.4	11.3	12.3	11.1	13.8
Air pollution	7.6	7.4	11.9	13.5	14.6
Don't know	12.0	4.6	5.5	7.2	7.3
Industrial waste	3.0	2.9	6.6	4.0	4.3
Acid rain / rain carries pollutants	10.9	1.6	9.0	5.8	7.1
Run-off from farms / fields / agriculture	4.2	0.7	8.7	5.2	3.8
All others	7.8	0.2	1.0	3.3	0.9

- Runoff/flooding continues to be the most likely to cause of waterway pollution.

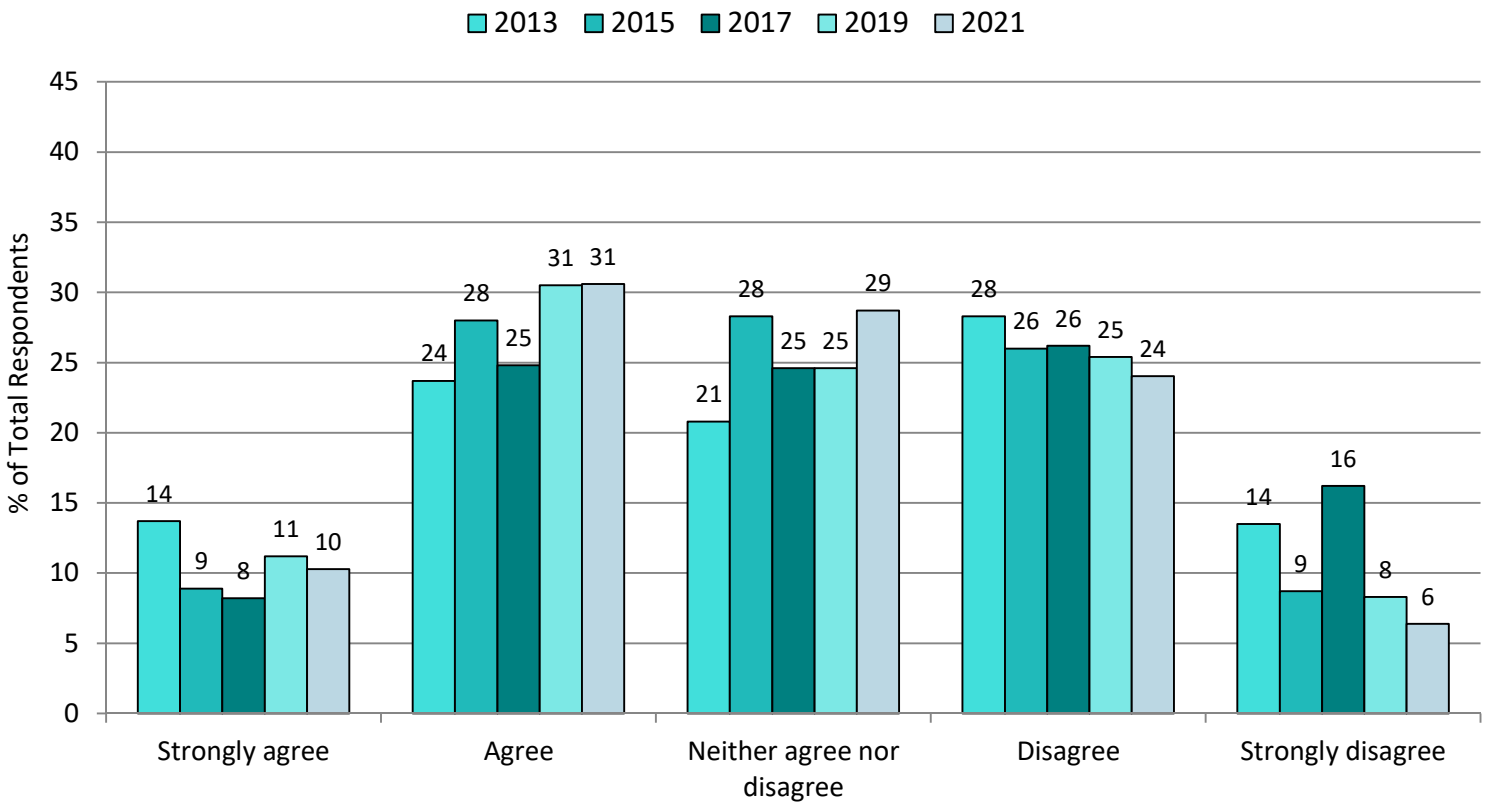
DATAMAX

KNOWLEDGE OF THE ISSUES



Q12a RESULTS – Pollution, Runoff, & Sewer Overflow

Water that flows through the street gutters/storm drains goes through a treatment facility before being released into our waterways.

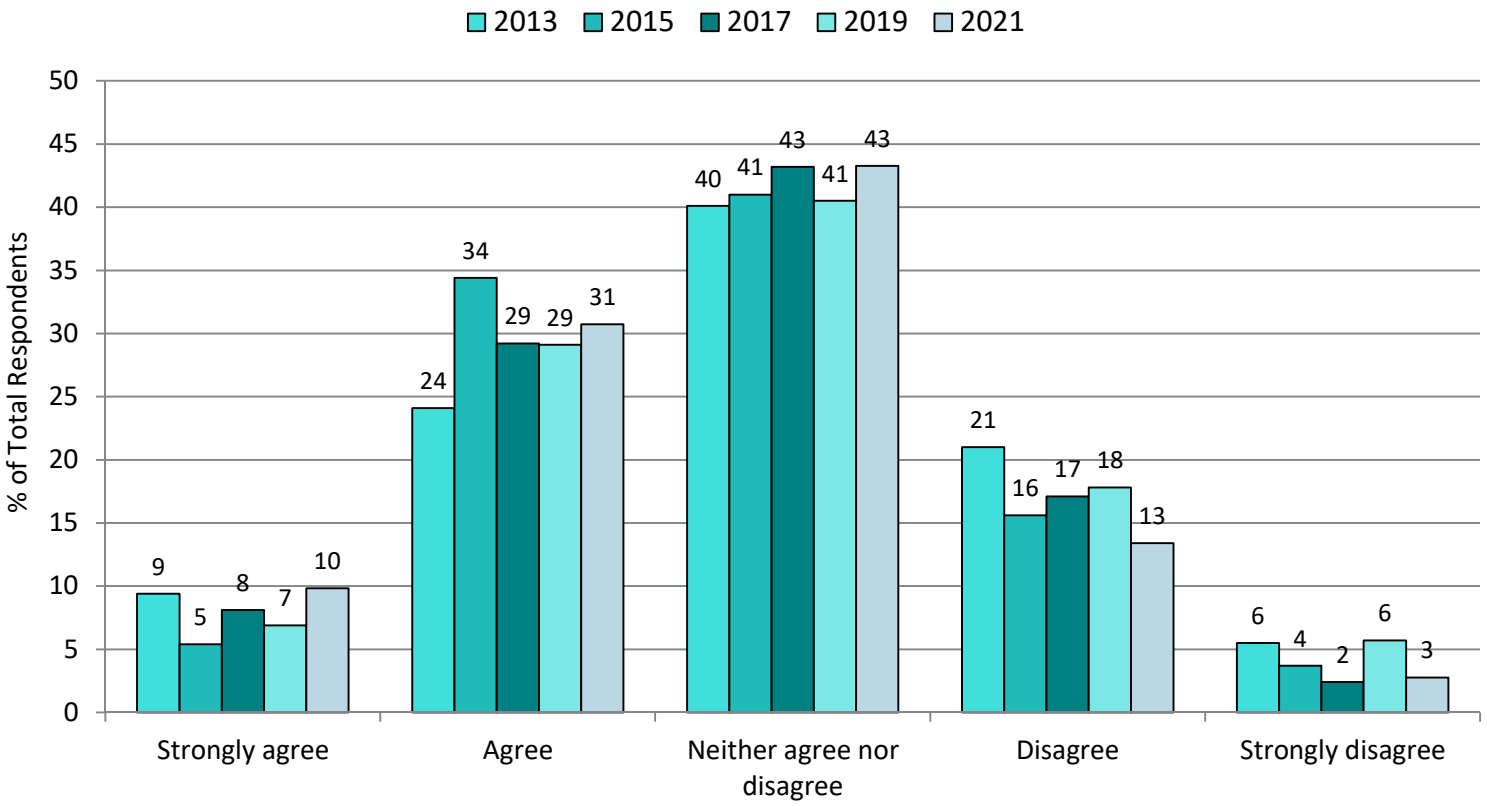


- Those who Agree/Strongly Agree that storm water is treated maintained the increase from 2017 and were essentially unchanged from 2019.



Q12b RESULTS – Pollution, Runoff, & Sewer Overflow

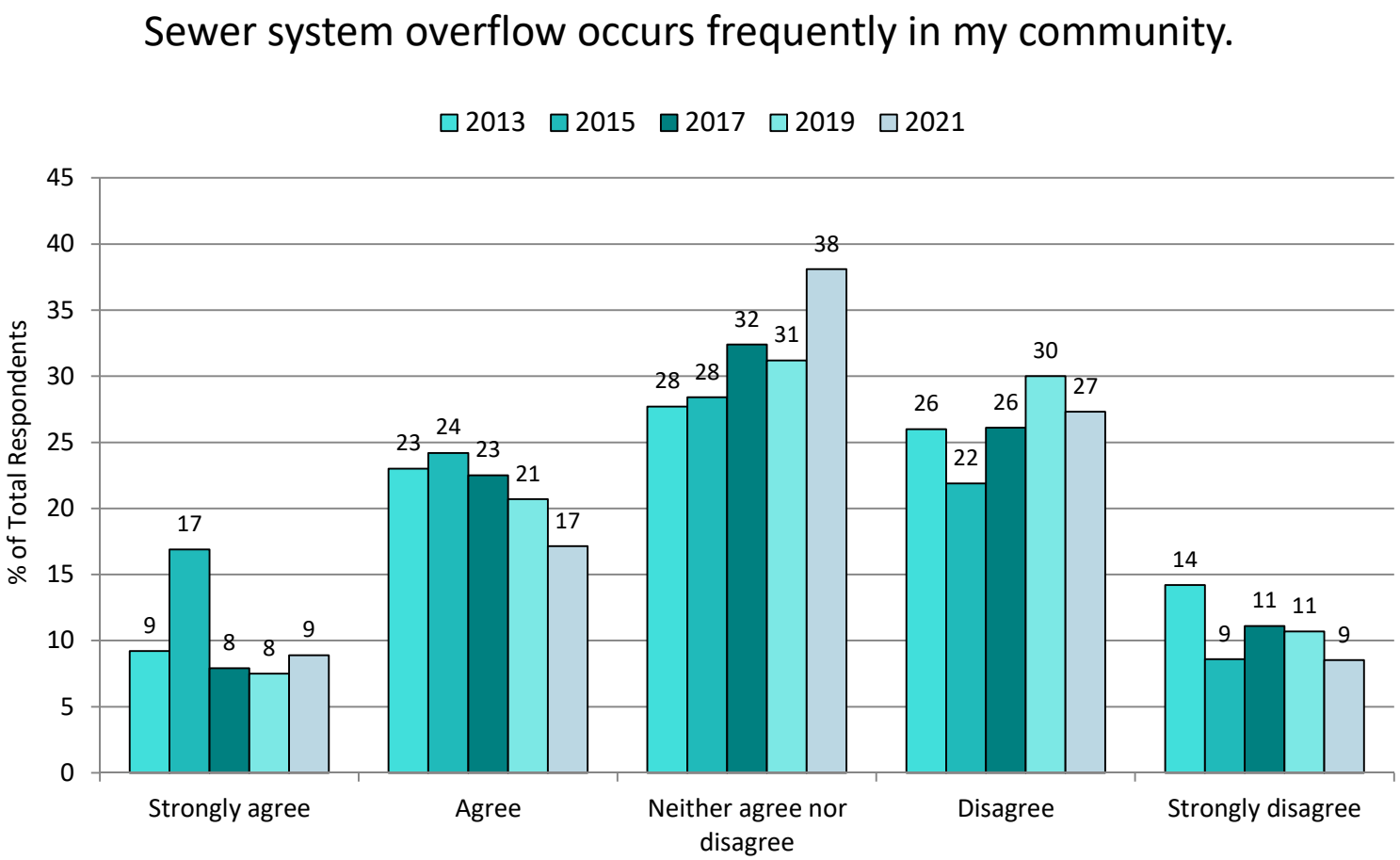
Rainwater runoff is a leading cause of water pollution in my area.



- Those under 30 remain strongest in overall agreement (53.0% Agree/Strongly Agree) that rainwater runoff causes pollution, followed by Downtown/West City (43.8%).
- Residents in the Southwest (24.9%) and those over 60 (21.8%) are highest in overall disagreement (Disagree/Strongly Disagree) with this statement.



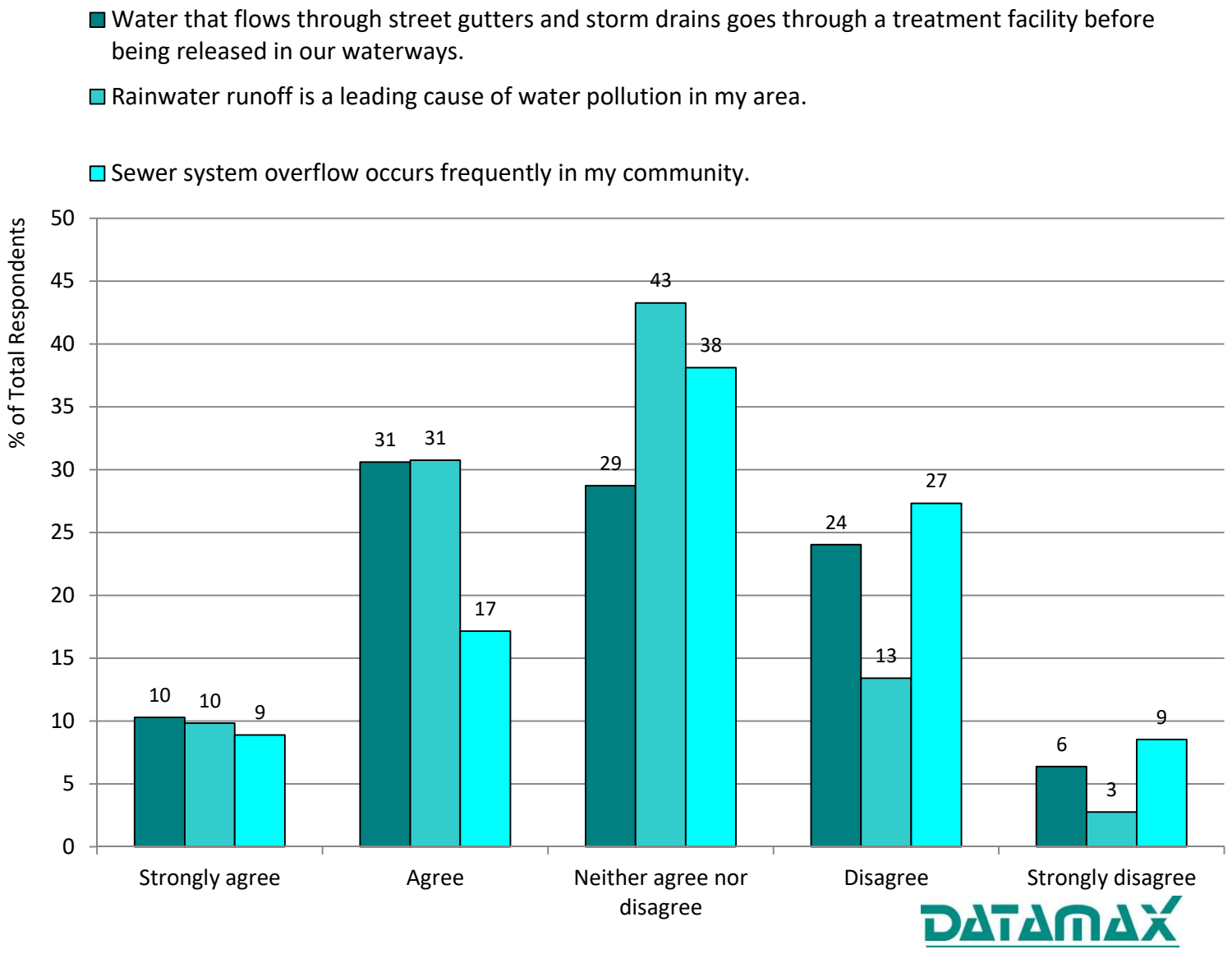
Q12c RESULTS – Pollution, Runoff, & Sewer Overflow



- Those who Strongly Agree that sewer system overflow occurs frequently continues to remain low in 2021. However, those who Agree/Strongly Agree about frequent overflows are located in Downtown/West City (37.1%) and age 40-49 (36.5%).
- East County residents (50.3%) Disagree/Strongly Disagree the most.



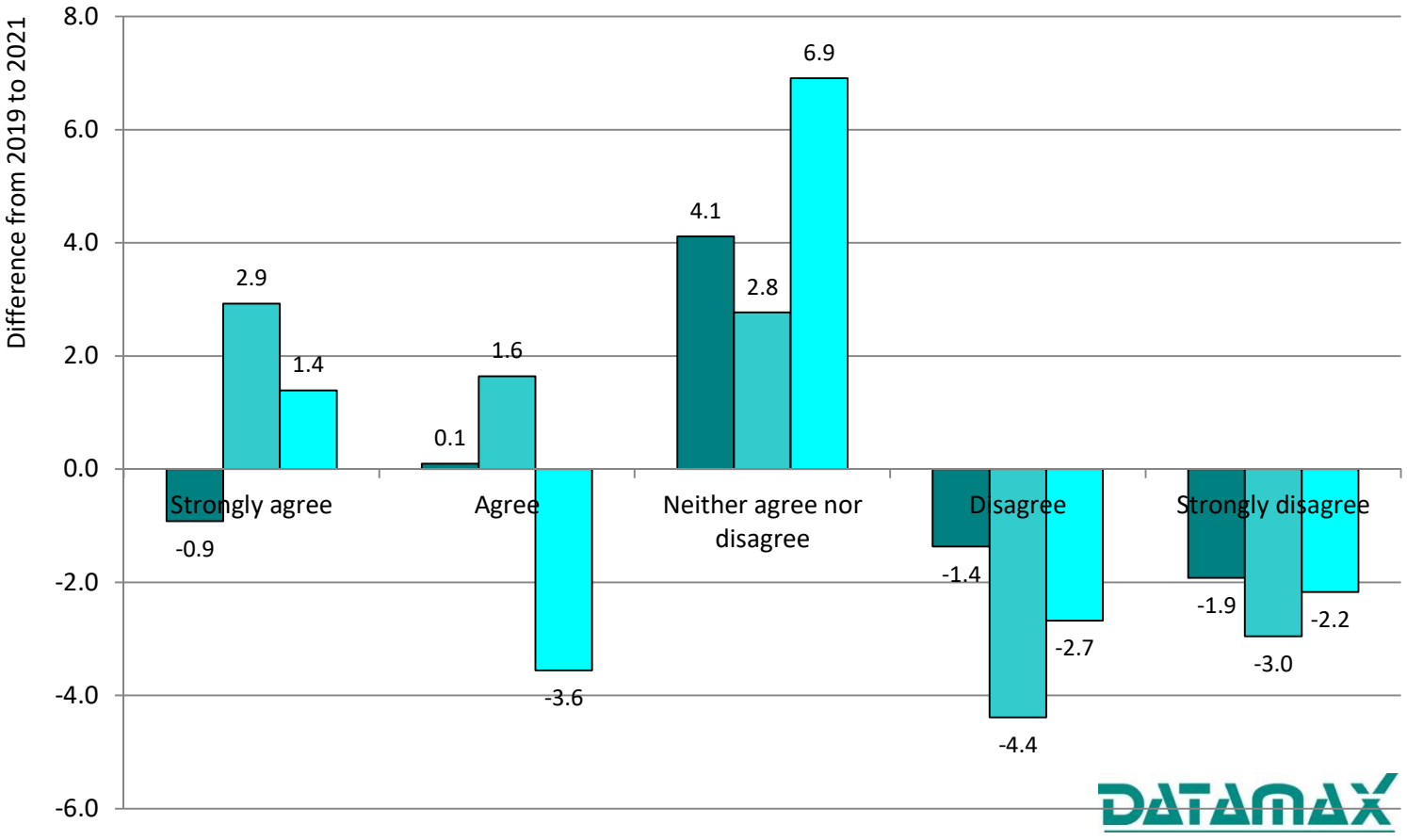
Q12 TOTAL RESULTS BY ISSUE – Pollution, Runoff, & Sewer Overflow





Q12 TOTAL RESULTS BY ISSUE – Pollution, Runoff, & Sewer Overflow

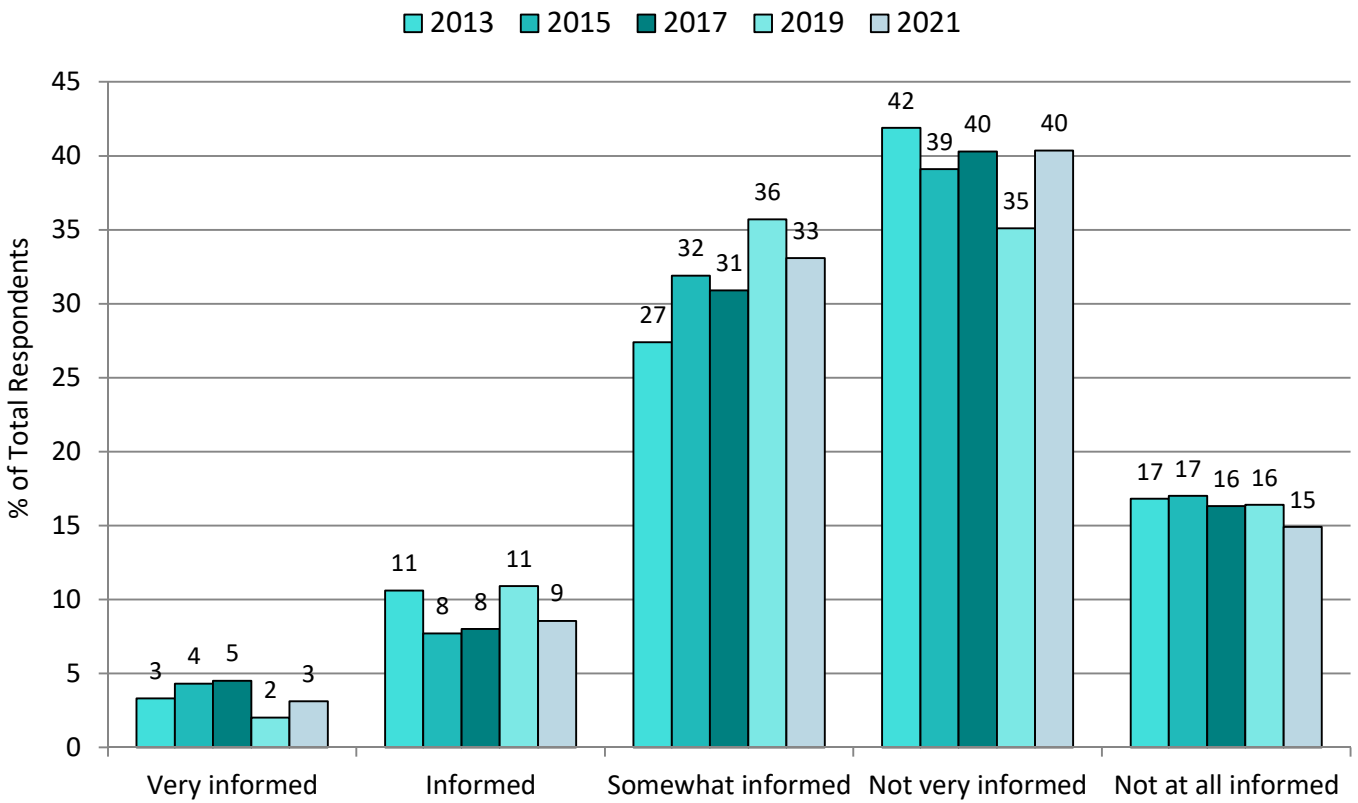
- Water that flows through street gutters and storm drains goes through a treatment facility before being released in our waterways.
- Rainwater runoff is a leading cause of water pollution in my area.
- Sewer system overflow occurs frequently in my community.





Q13 RESULTS – Causes of Rainwater Runoff Pollution

How informed do you feel about the causes of rainwater runoff pollution in your area?

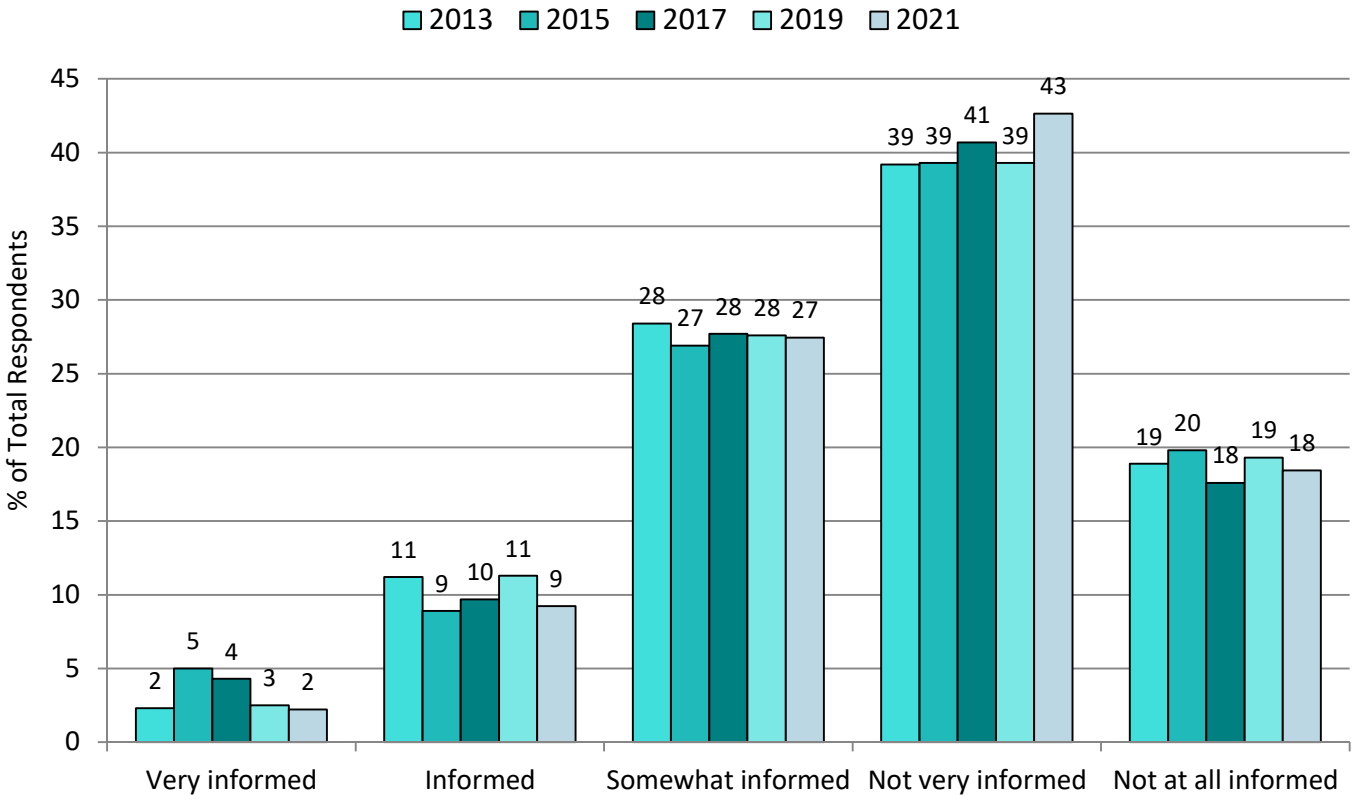


- Those over 60 continue to feel most informed (16.4% very informed/informed).
- Conversely, Downtown residents feel least informed (67.7% not very informed/not at all informed).



Q14 RESULTS – Causes of Sewer System Overflow

How informed do you feel about the causes of sewer system overflow in your area?

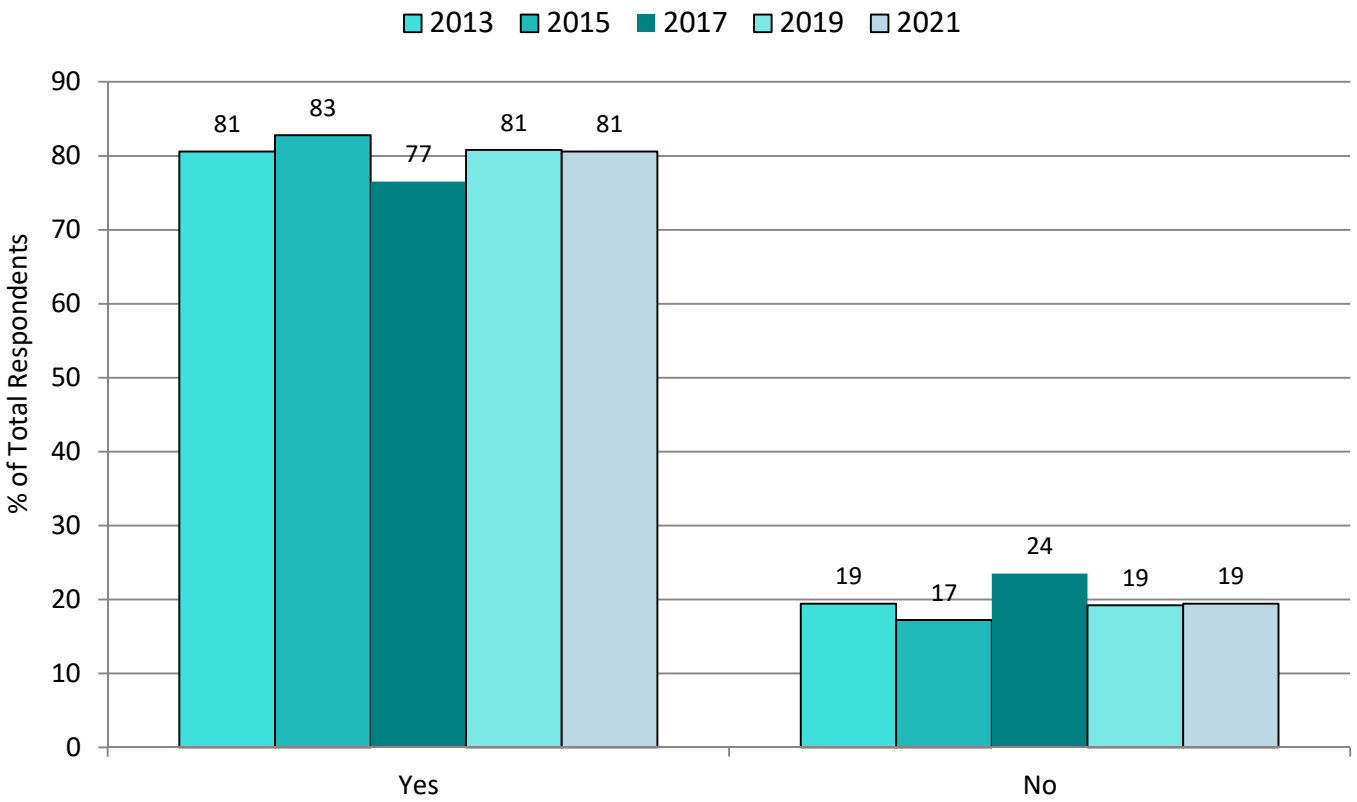


- As with rainwater runoff pollution, Downtown/West City residents feel not very informed/not at all informed (68.3%).
- Age 60+ feel informed/very informed (18.9%).



Q15 RESULTS – Actions for Pollution Reduction

Do you think there are actions you can take to reduce water pollution in the river, creeks and ponds?

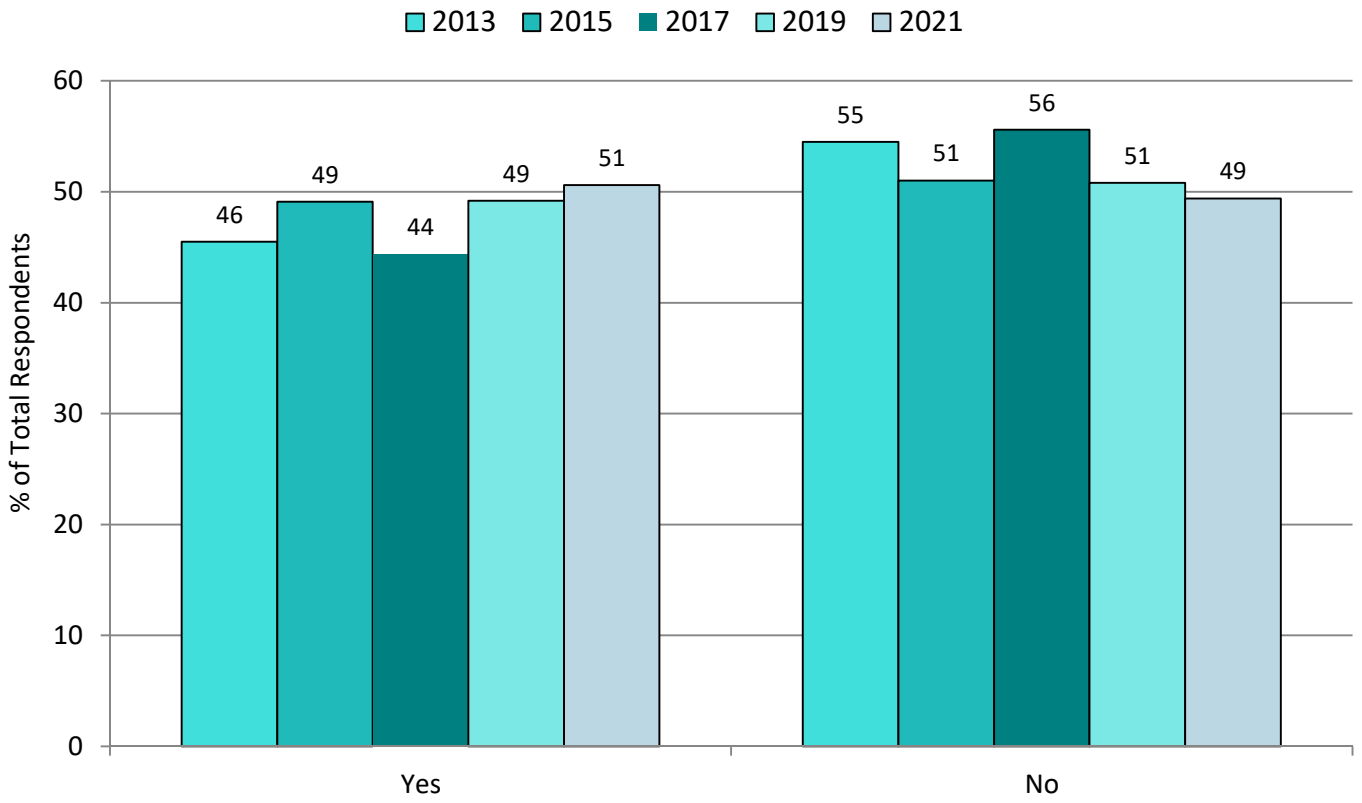


- Most favorable stance on taking action: Females (84.4%) and those under 30 (86.8%).
- Seniors 60+ (25.6%) believe strongest that no actions can be taken.



Q16 RESULTS – Actions for Pollution Reduction

Rainwater runoff and sewer system overflow contribute to water pollution. Do you currently take actions to reduce water pollution?



- Those not currently taking action are Downtown/West City residents (64.3%) and those under 30 (59.9%).



Q17 RESULTS – Actions for Pollution Reduction (Total)

What actions do you currently take to reduce water pollution? (open-end, asked if "yes" to #16)	2013 (%)	2015 (%)	2017 (%)	2019 (%)	2021 (%)
Pickup trash / litter	2.9	24.1	4.9	7.4	11.8
Careful about what I pour into ground/down drain/dispose	28.0	17.9	10.6	10.9	5.2
Don't use chemicals on lawn	16.4	16.9	29.7	20.8	22.2
By not littering/polluting/using trash cans	27.2	13.5	26.2	40.6	26.5
Clean up sewer/street drains	7.4	12.5	10.0	5.0	8.5
Recycling	8.6	10.2	4.7	5.7	4.8
Don't wash clothes/use dishwasher during rain	6.4	9.9	3.0	2.7	4.5
Conserve water	5.2	5.8	6.5	4.6	5.9
Not flushing medicines	3.2	4.7	4.9	6.6	2.6
Redirecting rain water/gutters to yard	4.3	3.3	4.0	2.6	4.1
Rain barrels	4.7	2.9	5.4	1.5	4.0
Use green products	3.7	2.4	2.2	8.9	5.2
Maintain car/vehicle	3.3	2.1	3.2	3.6	1.3
Disconnected downspouts	3.2	2.1	4.1	4.2	0.7



Q17 RESULTS – Actions for Pollution Reduction by Age

What actions do you currently take to reduce water pollution? (open-end, asked if "yes" to #16)	< 30	30-39	40-49	50-59	60+
Pick up trash/litter	-	22.6	18.9	11.0	9.0
Careful about what I pour into ground/down drain/dispose	7.5	3.3	3.1	2.8	7.3
Don't use chemicals on lawn	7.5	24.4	26.4	24.0	24.1
By not littering/polluting/using trash cans	47.9	24.3	33.6	21.5	17.2
Clean up sewer/street drains	-	14.2	5.2	12.6	10.1
Recycling	-	6.3	4.7	10.1	2.4
Don't wash clothes/use dishwasher during rain	7.2	2.5	1.1	3.4	5.6
Clean up pet waste	7.5	3.8	1.7	5.4	4.3
Conserve water	14.8	3.8	2.8	5.3	4.5
Not flushing medicines	-	2.2	4.3	1.7	2.1
Don't put grease down drain	-	1.1	1.1	-	0.9
Don't dump anything into sewers	15.1	10.9	6.1	12.5	19.6



Q17 RESULTS – Actions for Pollution Reduction by ZIP Area

What actions do you currently take to reduce water pollution? (open-end, asked if "yes" to #16)	Downtown / West City	South West	East City	South Co.	North-east Co.	East Co.
Pick up trash/litter	24.6	21.8	10.2	11.1	4.1	11.9
Careful about what I pour into ground/down drain/dispose	7.0	2.1	4.7	9.4	5.4	0.8
Don't use chemicals on lawn	14.3	39.6	20.4	17.8	25.6	26.7
By not littering/polluting/using trash cans	27.2	19.8	26.8	41.1	25.4	13.8
Clean up sewer/street drains	16.3	7.2	7.1	15.1	3.3	5.9
Recycling	11.2	4.3	3.7	1.4	9.0	3.9
Don't wash clothes/use dishwasher during rain	3.2	2.1	9.6	-	2.6	0.4
Clean up pet waste	-	4.4	5.0	2.5	3.0	8.5
Conserve water	6.2	4.6	5.7	8.2	5.5	3.7
Not flushing medicines	8.5	7.0	1.1	0.6	0.7	1.7
Don't put grease down drain	-	1.3	0.3	1.0	1.9	0.4
Don't dump anything into sewers	18.1	18.5	12.0	8.2	18.0	16.4



Q18 RESULTS – Actions for Pollution Reduction

Do you think any of these actions would increase the amount of pollution from rainwater runoff? (Select all that apply)	2013 (%)	2015 (%)	2017 (%)	2019 (%)	2021 (%)
Improperly disposing hazardous waste, such as paint and motor oil	94.3	97.7	99.3	97.1	96.8
Putting trash in the street gutter	93.1	87.0	93.0	92.1	91.4
Allowing fluids to leak from cars and trucks	91.3	63.3	69.0	93.8	90.1
Using non environmentally friendly lawn chemicals	87.3	92.3	93.2	89.3	89.4
Leaving pet waste on the ground	71.1	69.3	76.9	75.4	68.3
Washing your car in the driveway or street	55.4	56.2	50.2	56.3	53.2

- Respondents' perception that allowing fluids to leak from cars and trucks would increase rainwater runoff pollution remains significantly higher than 2015-2017.
- The rise in leaking car/truck fluids is driven by all demographic/geographic groups.



Q19 RESULTS – Actions for Pollution Reduction

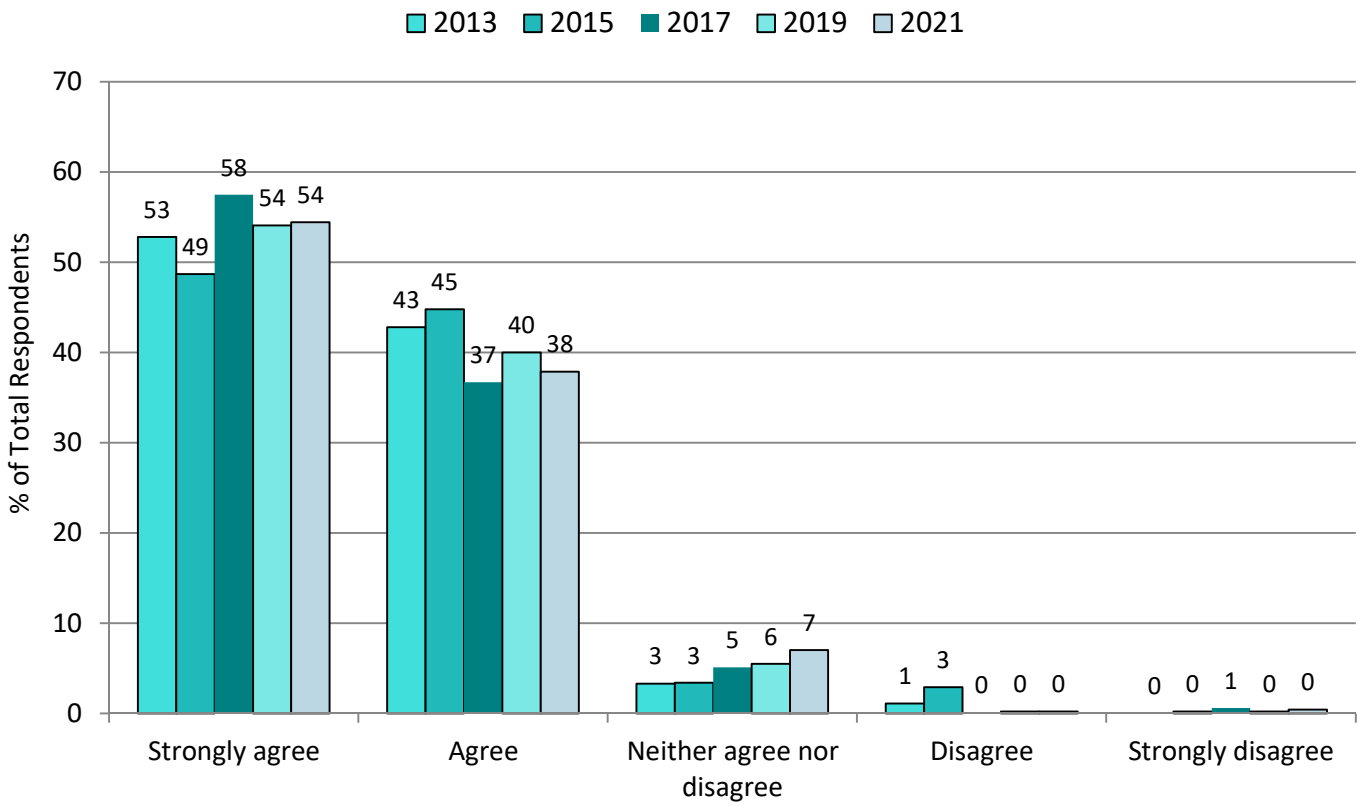
Do you think any of these actions cause sewer system overflow? (Select all that apply)	2013 (%)	2015 (%)	2017 (%)	2019 (%)	2021 (%)
Pouring fats, oils, greases and food particles down the sink (FOG)	84.8	78.1	83.3	85.8	81.1
Flushing diaper wipes and other wet wipes down the toilet	84.6	83.4	92.9	93.0	92.8
Putting lawn grass clippings and leaves in the street gutter	82.2	80.1	82.5	83.3	81.2
Flushing hair down the toilet	64.4	61.5	69.7	67.5	68.0
Connecting the groundwater sump pump to the basement sewer connection	56.1	51.6	49.9	53.5	48.4
Flushing dental floss down the toilet	54.3	52.6	70.1	65.3	63.2
Using water-using appliances, such as a dishwasher or clothes washer, when it is raining	36.4	36.4	38.4	39.8	31.9

- Increases in flushing wipes, dental floss, and hair down the toilet are maintained in 2021.
- South County (89.9%) residents are most likely to associate pouring FOGs down the drain with sewer system overflow. Those less educated (High School or less) are less likely (53.9%) to make that association.



Q20(a) RESULTS – Water Quality & Health of River, Creeks and Ponds

We can all do our part to reduce the effects of water pollution.

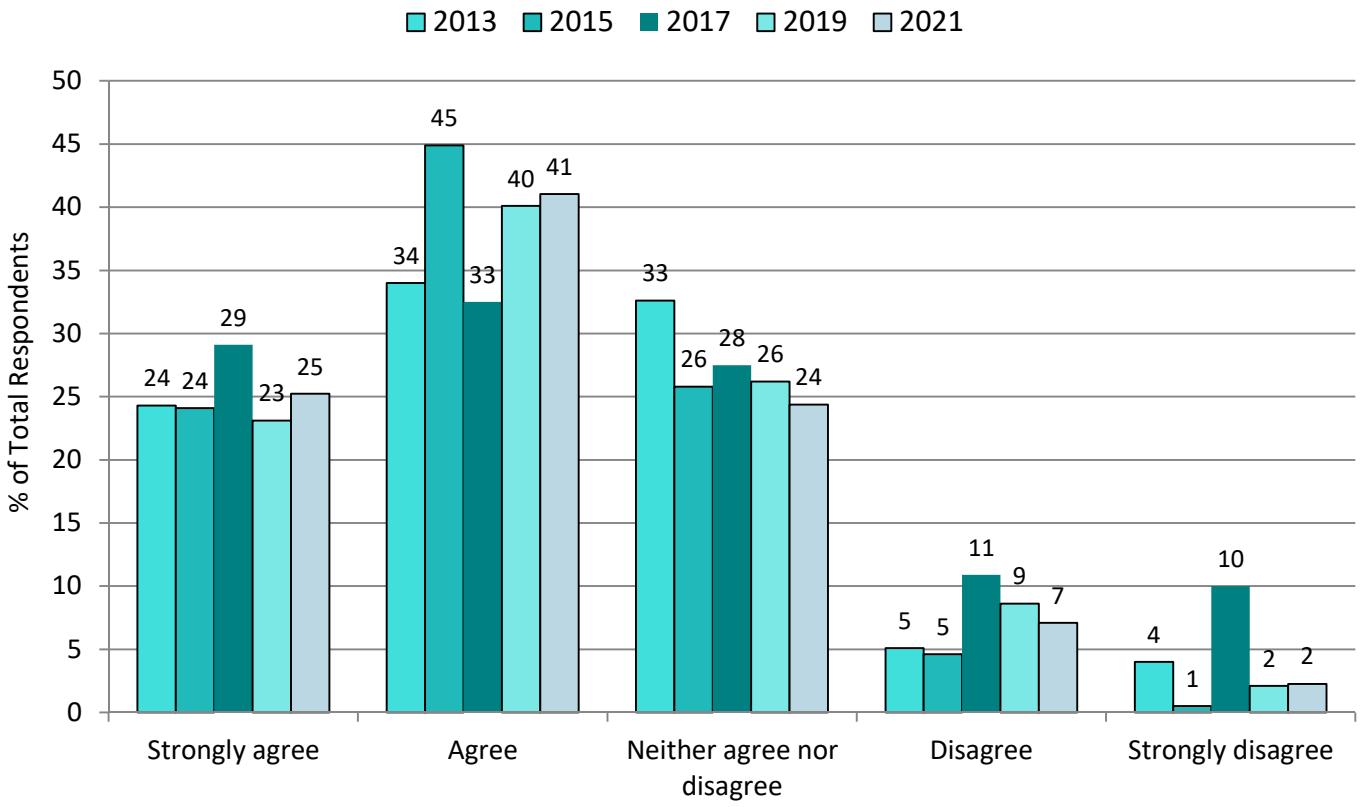


- Females continue to have stronger agreement (60.8%) than males (47.7%) about doing their part to reduce pollution.
- Those under 30 (58.8%) and Downtown/West City residents (69.3%) also account for stronger agreement.



Q20(b) RESULTS – Water Quality & Health of River, Creeks and Ponds

I am personally responsible for reducing rainwater runoff pollution and sewer system overflow.

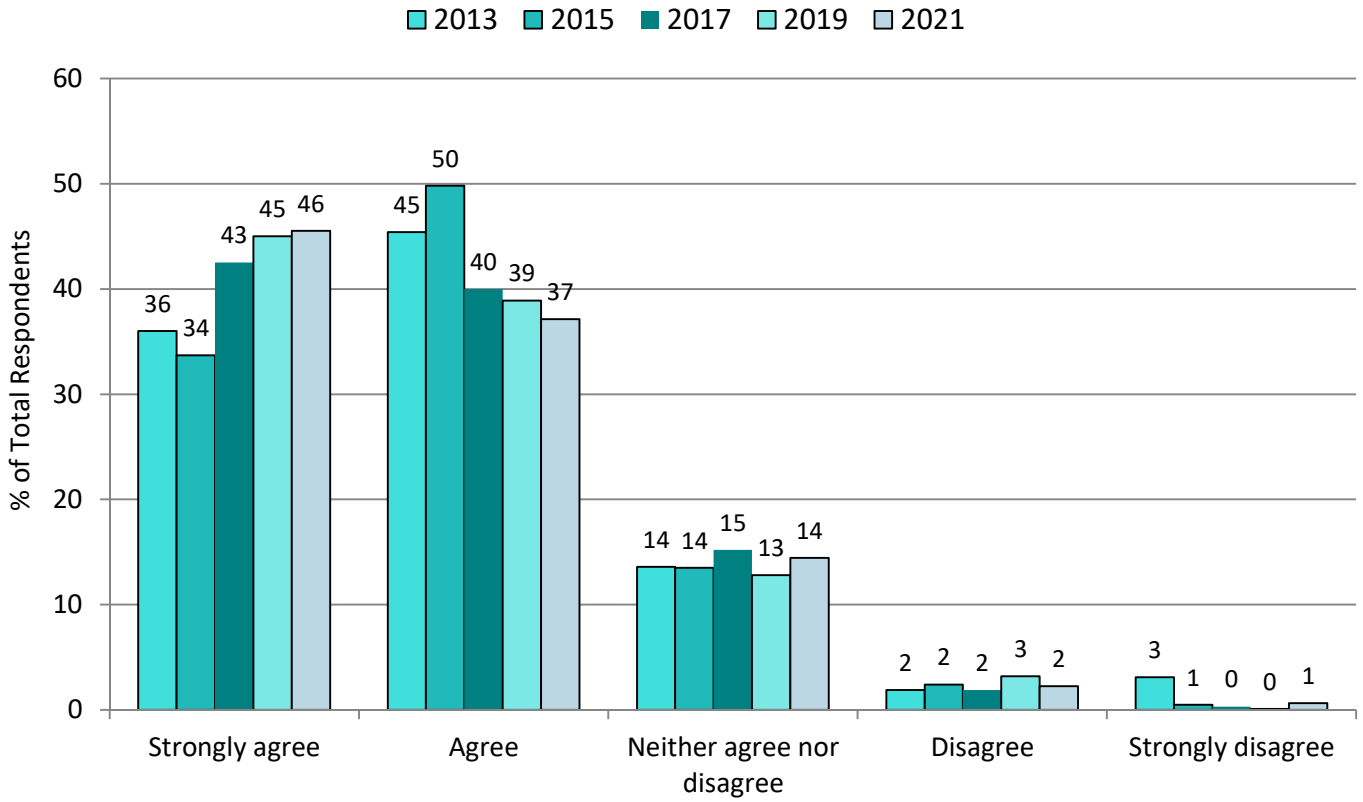


- East City residents have the strongest agreement (76.4% Strongly Agree/Agree).
- Those under 30 (16.8%) and Southwest County residents (19.6%) have the strongest disagreement (% Disagree/Strongly Disagree).



Q20(c) RESULTS – Water Quality & Health of River, Creeks and Ponds

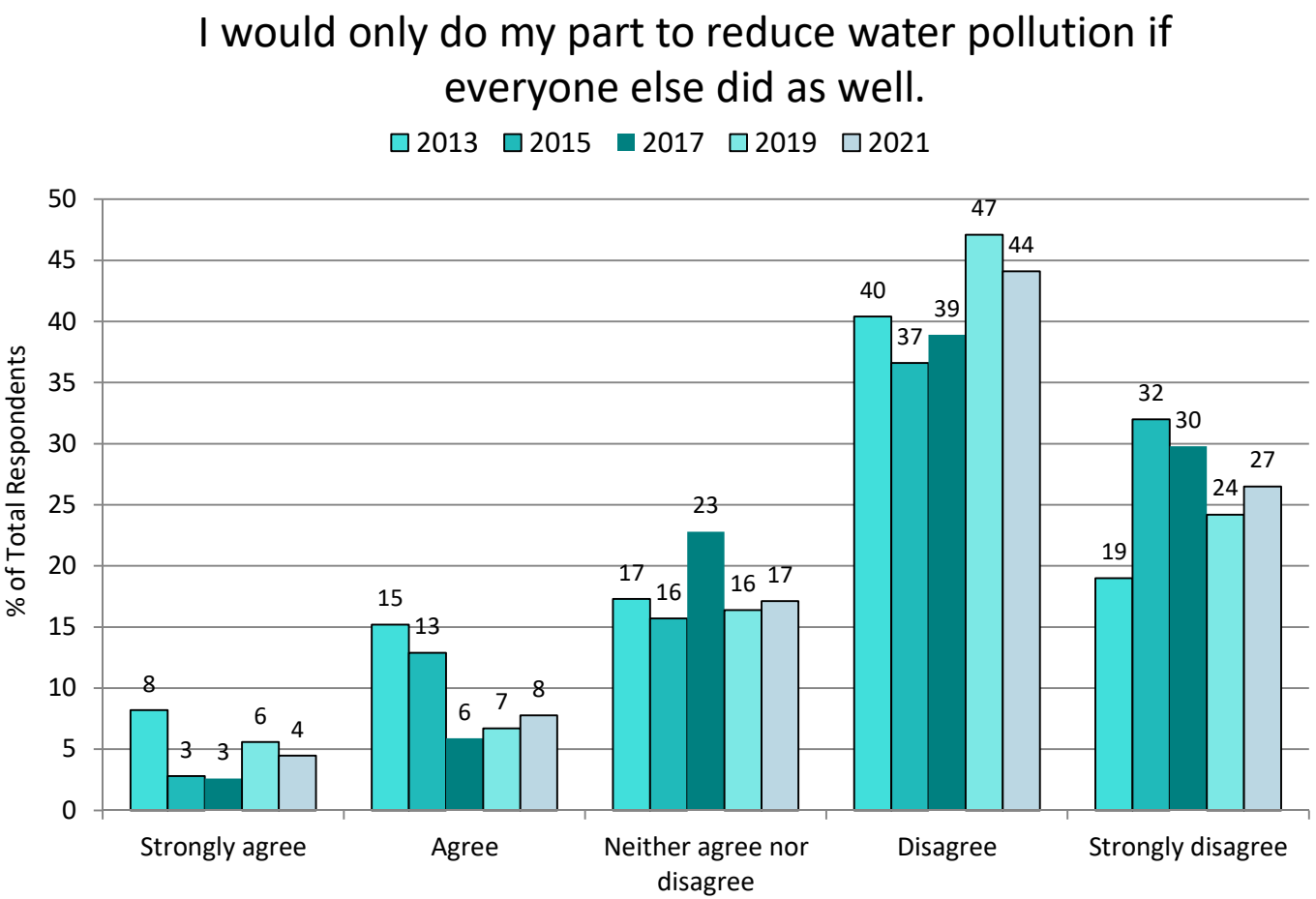
Local governments, businesses and industries are responsible for reducing rainwater runoff and sewer system overflow.



- Strongly agree perception regarding commercial entities being responsible for reducing overflow continues to increase from 2015 to 2021. This increase was maintained within all demographic and geographic groups.



Q20(d) RESULTS – Water Quality & Health of River, Creeks and Ponds

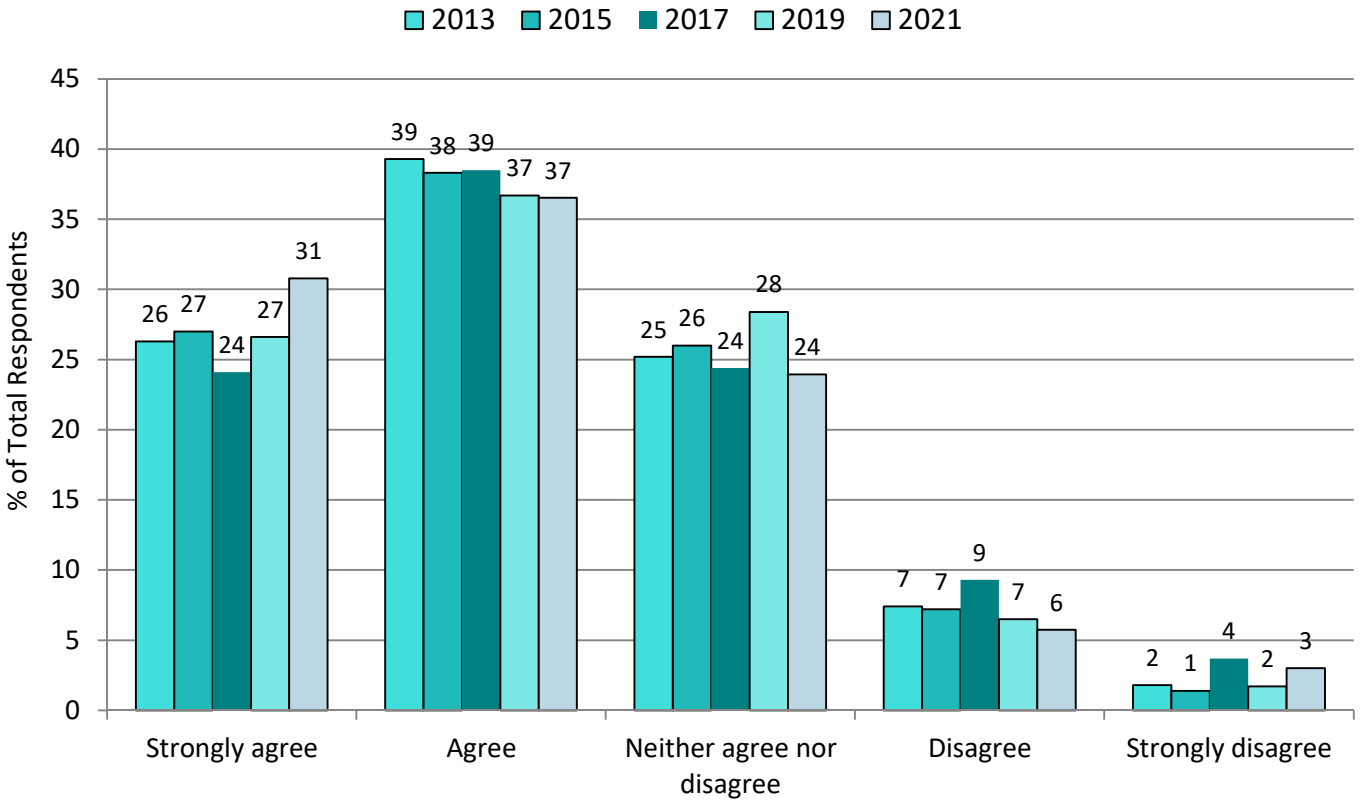


- Sentiment remained constant about respondents doing their part to reduce pollution. Most are willing to make the effort regardless of others.
- Those under 30 (84.3%) and East City residents (81.5%) are most likely to do their part independently of other people (% Disagree/Strongly Disagree).



Q20(e) RESULTS – Water Quality & Health of River, Creeks and Ponds

The utility company should provide incentives for people to reduce water pollution.

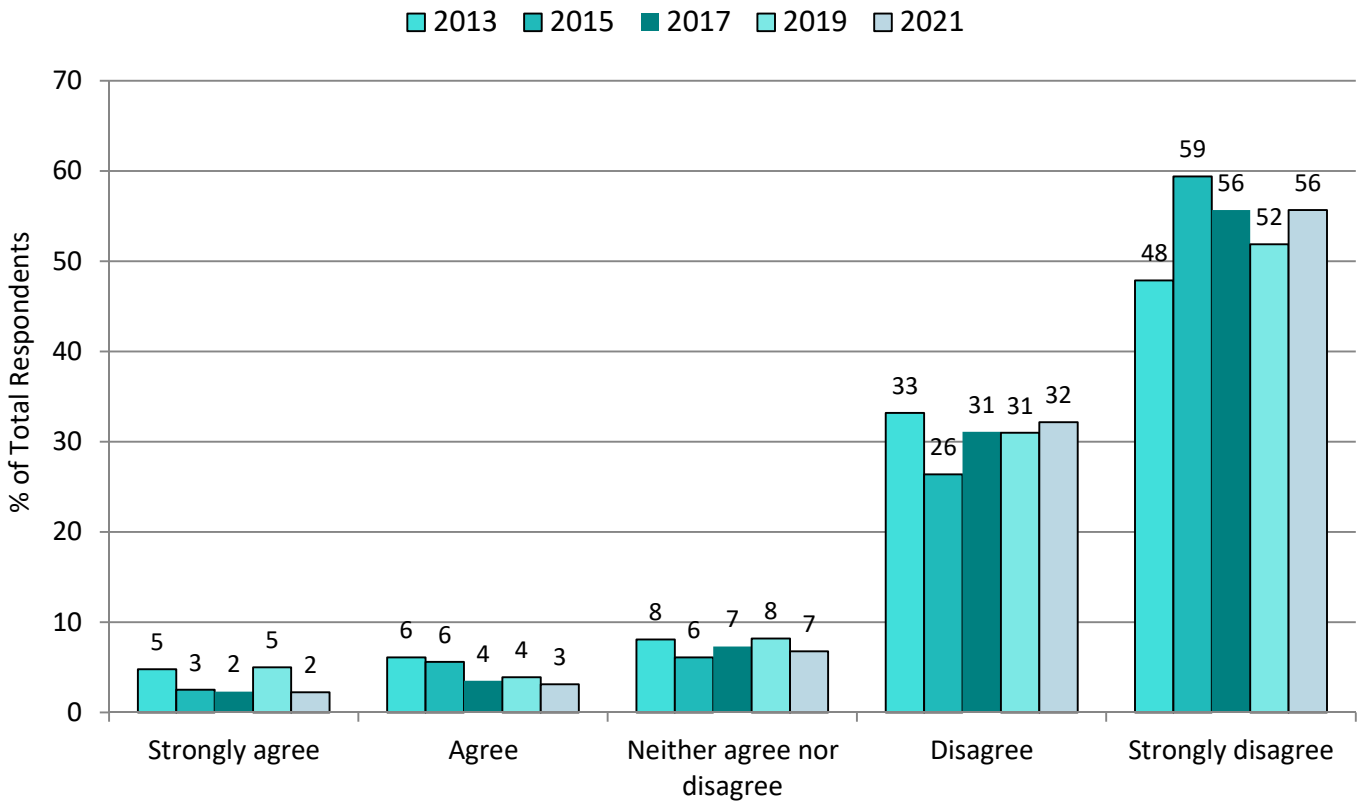


- Incentives appeal most strongly (% Strongly Agree) to Downtown/West City residents (46.9%) and those under 30 (43.3%).
- Seniors over 60 Disagreed/Strongly Disagreed the most (11.4%) of any age group.



Q20(f) RESULTS – Water Quality & Health of River, Creeks and Ponds

Human activities have no significant impact on the water quality of river, creeks and ponds.

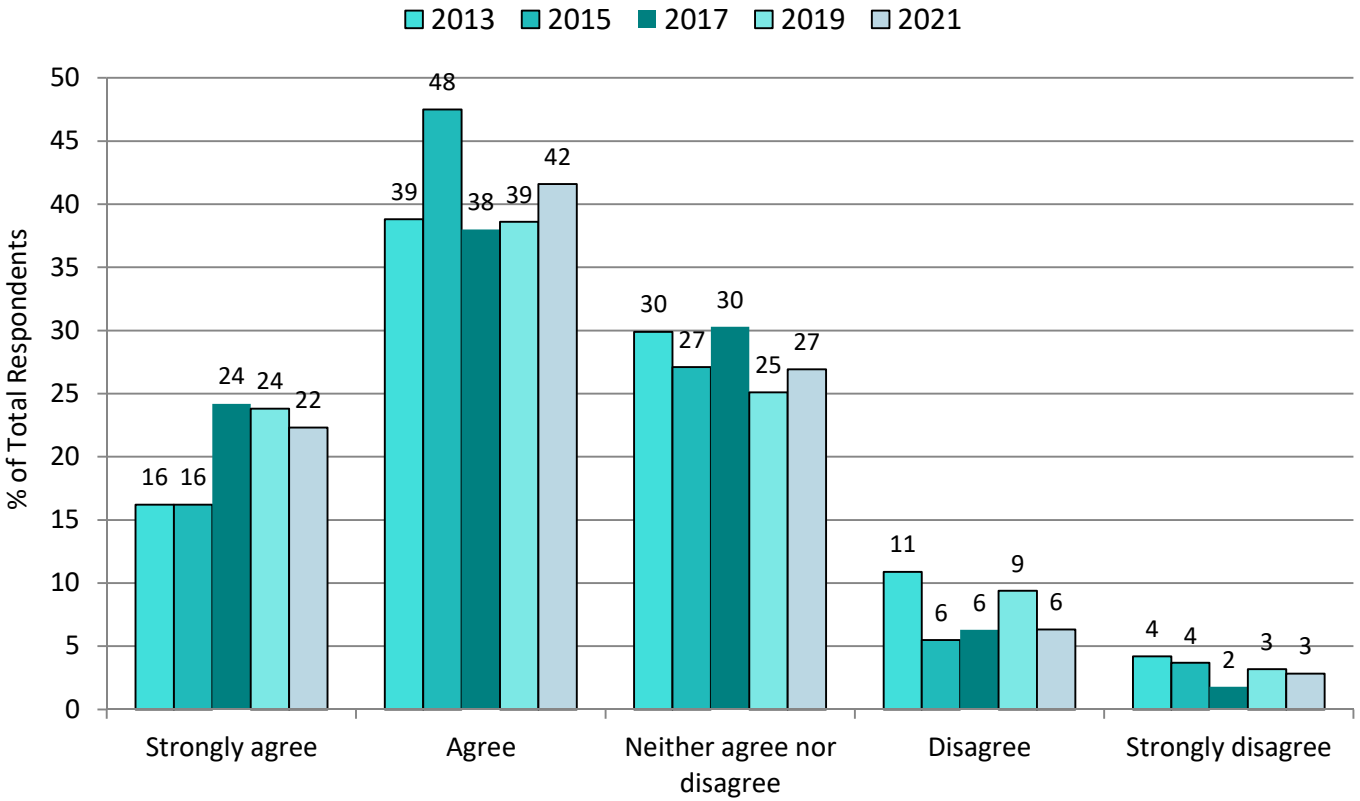


- Those agreeing that human activities impact water quality (% Disagree/Strongly Disagree) are those under 30 (94.0%), residents of the East City (93.3%) and Post Grads (91.8%).



Q20(g) RESULTS – Water Quality & Health of River, Creeks and Ponds

Water pollution of river, creeks and ponds frightens me.

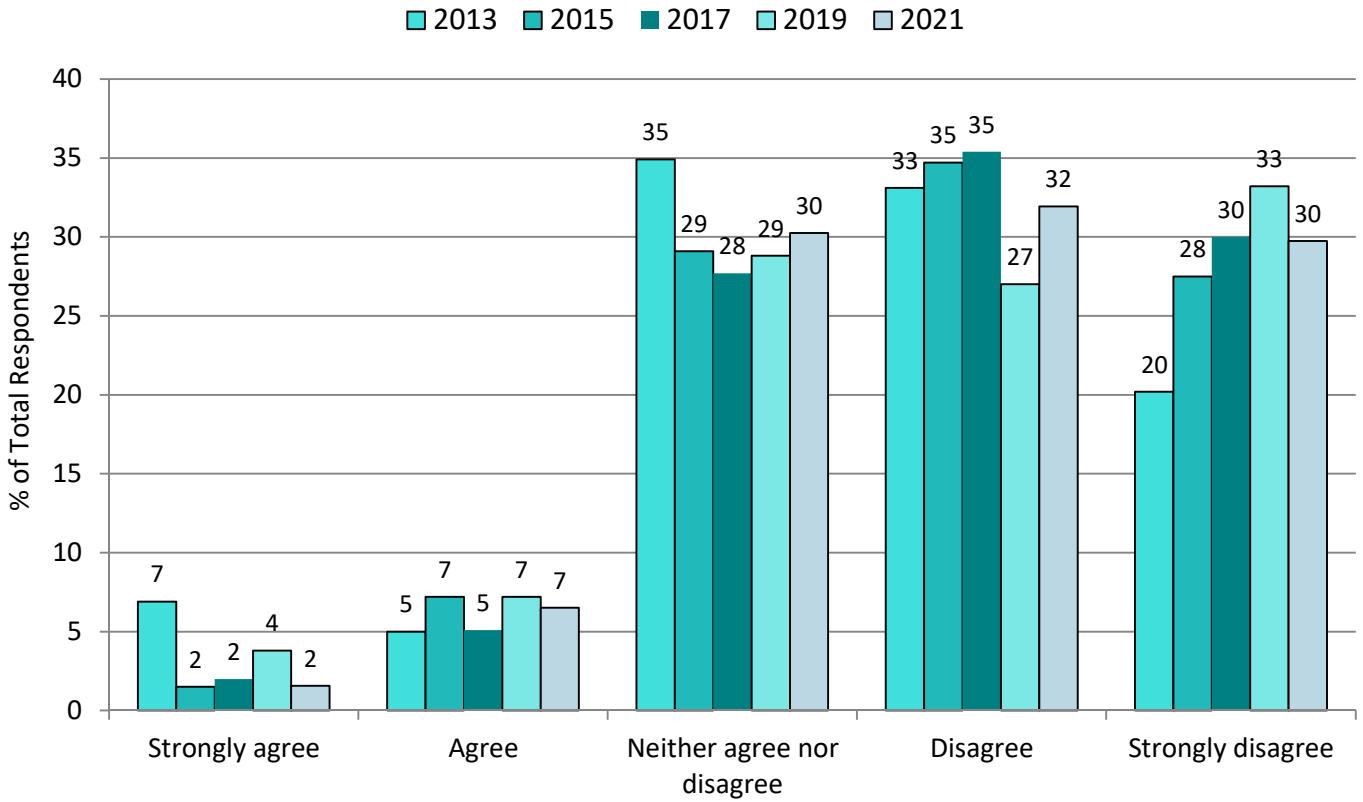


- The percentage of those agreeing/strongly agreeing that water pollution frightens them remains high in 2021.
- Those under 30 (35.1% Strongly Agree) have the most fear of pollution.



Q20(h) RESULTS – Water Quality & Health of River, Creeks and Ponds

The evidence for water pollution of river, creeks and ponds is unreliable or insufficient.



- Respondents believing that reliable evidence exists (% Disagree/Strongly Disagree) remains high.
- Those under 30 (42.3%) disagree strongest that the evidence is unreliable.



Q21 RESULTS – Willingness of Action

I personally would be willing to take the following actions to reduce the amount of water pollution in river, creeks and streams. (Select all that apply)	2013 (%)	2015 (%)	2017 (%)	2019 (%)	2021 (%)
Putting fats, oils, grease and food particles in the trash can rather than down the sink drain.	87.0	85.6	86.8	89.4	88.9
Putting baby wipes, personal wipes and other wet wipes in the trash can rather than down the toilet.	82.6	85.4	86.6	87.5	87.1
Disposing of household hazardous wastes by taking them to a collection center.	81.1	88.2	84.2	88.0	84.2
Picking up trash that is in the gutter on and/or around where I live.	80.9	84.9	83.3	86.5	84.9
Recycling my used motor oil.	77.6	84.6	82.2	75.8	74.4
Using environmentally friendly lawn products.	76.3	84.5	77.8	81.8	79.8
Washing my car at the carwash or on a lawn.	72.5	74.4	70.0	76.4	69.7
Picking up pet waste in my yard.	60.2	63.7	64.0	67.9	63.6
Waiting to run the dishwasher or washing machine 24-48 hours after the rain subsides and the sewers aren't full.	60.0	52.9	59.0	60.8	55.7
Picking up pet waste in public spaces.	39.7	42.7	40.3	46.0	44.7
Installing a rain barrel to catch rainwater from my downspouts.	35.9	47.8	42.3	43.7	43.7
Creating a rain garden on my property or in my neighborhood	33.9	30.1	33.5	35.4	36.2



Q21 RESULTS – Willingness of Action

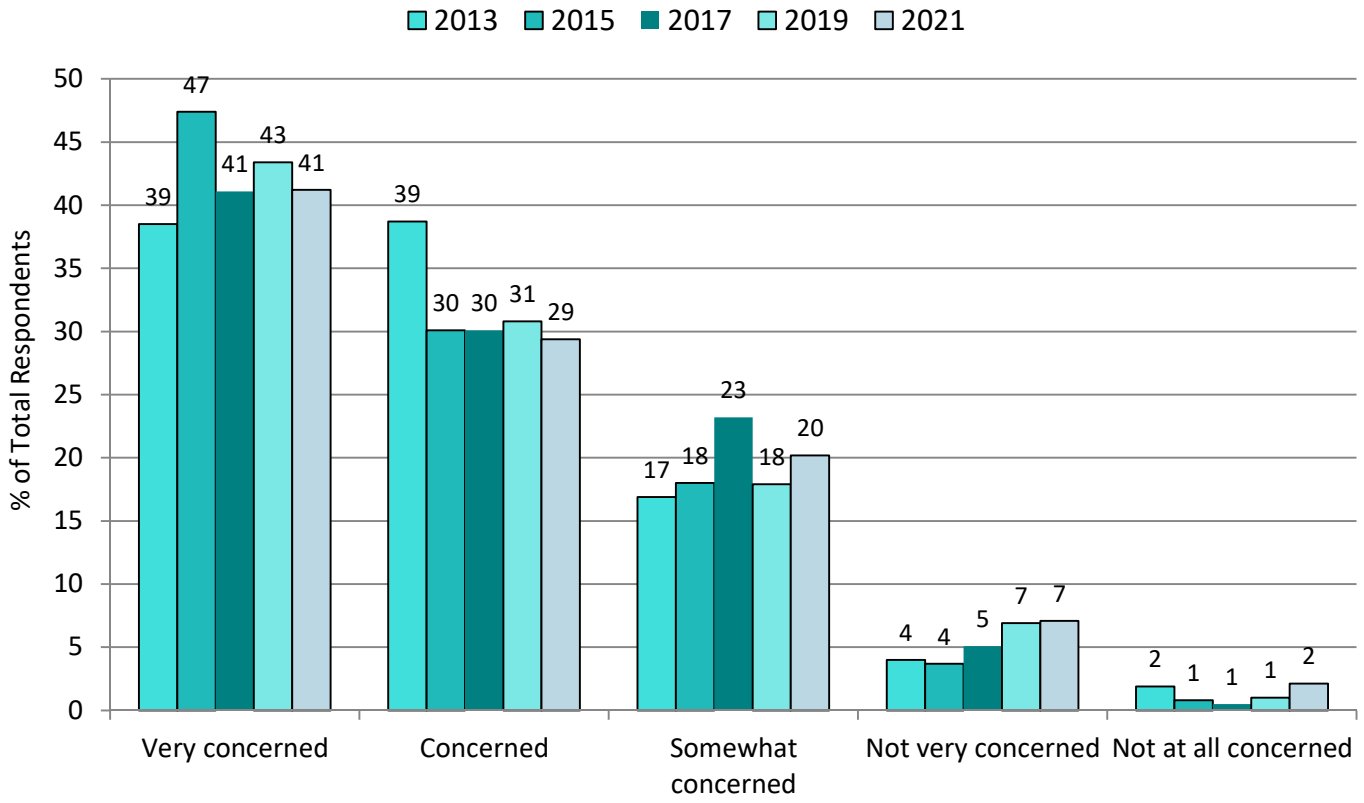
I personally would be willing to take the following actions to reduce the amount of water pollution in river, creeks and streams. (Select all that apply)	Percent who are age 21-39	Percent Female	Geographic area(s)
Install a rain barrel	43.9	57.1	Downtown / East City
Create a rain garden	50.1	54.9	Downtown / South County
Pick up pet waste	43.6	57.1	South County / East City
Wait to run the dishwasher/washing machine after rain subsides	38.8	58.2	Southwest / Downtown

- This residential cross-section indicates many demographic segments have a strong willingness to take action.
- More than one-third of young adult residents 21-39 are willing to do more to reduce water pollution. Women and men said they would take all these actions. Downtown/West City weighed in with a strong willingness to take these specific actions.



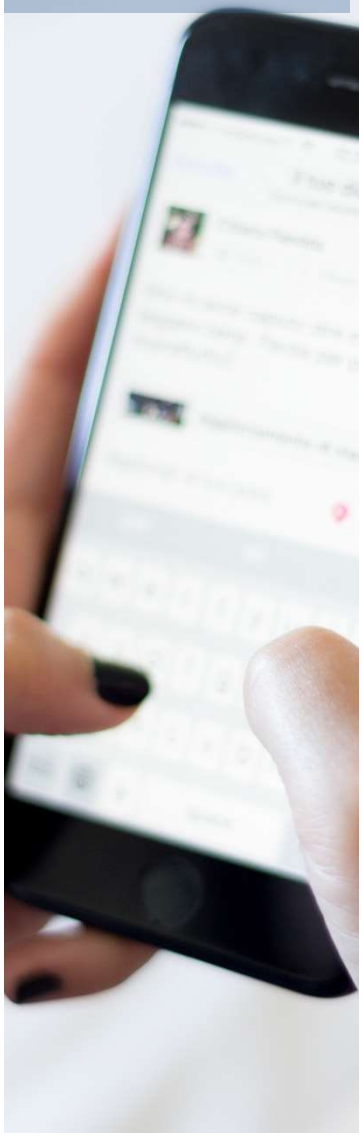
Q22 RESULTS – Pollution Concern

How concerned are you that water pollution will cause the river, creeks and ponds to become un-fishable and un-swimmable for the next generation if actions are not taken now?



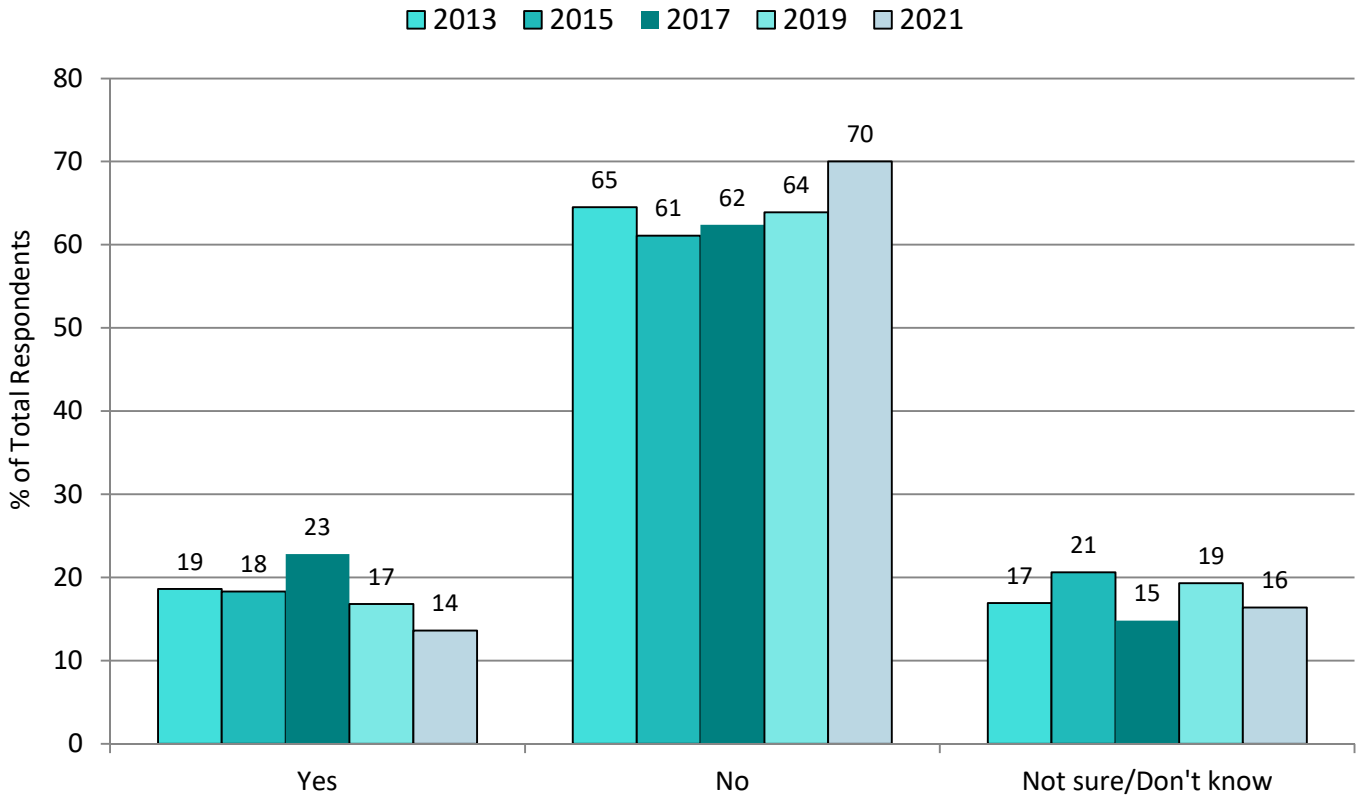
- The proportion of people who are not very concerned continues to increase over time.
- East City residents (51.9%) are very concerned if actions are not taken now.

COMMUNICATIONS & HOW TO ENGAGE



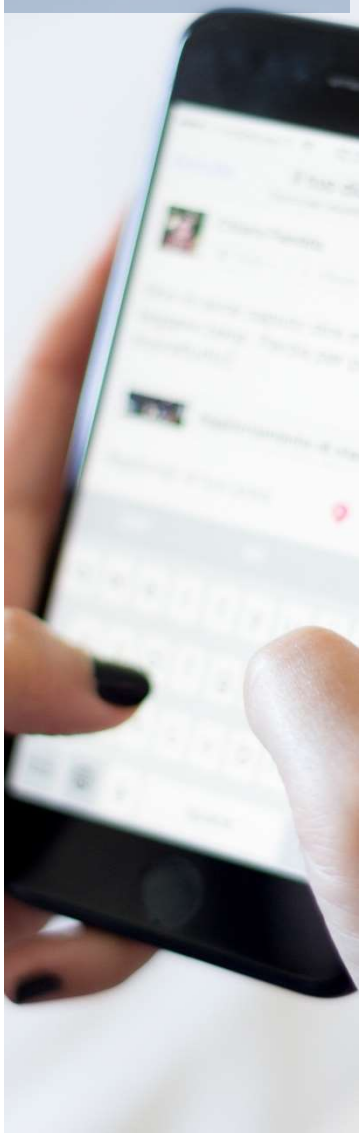
Q23 RESULTS – Awareness of Pollution Impact & Prevention

In the past 12 months have you heard anything about the impact of rainwater runoff pollution and sewer system overflow and ways that residents can prevent it?



- Those over 60 (18.1%) are more likely to have heard about the impact. Residents in Downtown/West City are unlikely (5.7%) to hear about the impact.

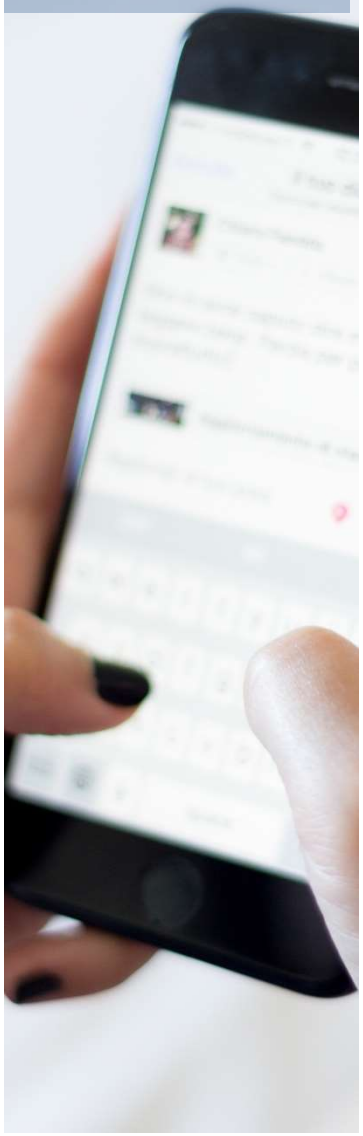
COMMUNICATIONS & HOW TO ENGAGE



Q24 RESULTS – Source of Pollution Information

Where did you see or hear about rainwater runoff pollution and sewer system overflow? (Select all that apply; only asked if "yes" to Q23)	% who heard something in the past 12 months				
	2013	2015	2017	2019	2021
Television	52.8	58.0	52.4	47.4	51.1
Newspaper	40.0	43.1	28.0	29.1	26.7
Brochure	26.6	15.6	12.5	16.2	8.8
Radio	20.2	22.9	34.8	24.9	16.2
Website	19.2	5.0	8.3	6.0	7.4
Facebook	18.8	10.1	10.2	14.7	8.5
Other source	15.0	14.6	20.5	20.4	16.8
Posting near river, creek or pond	12.2	13.8	28.7	23.2	30.1
Not sure	6.3	17.0	3.1	4.9	1.1
Neighborhood meeting	5.8	4.6	15.1	13.1	6.0
Sign/billboard	4.6	10.6	3.7	4.4	4.7
Email	4.3	4.3	2.6	14.4	20.2
Twitter	1.7	1.3	0.4	4.5	0.8
Poster	0.7	0.1	1.6	4.3	8.4

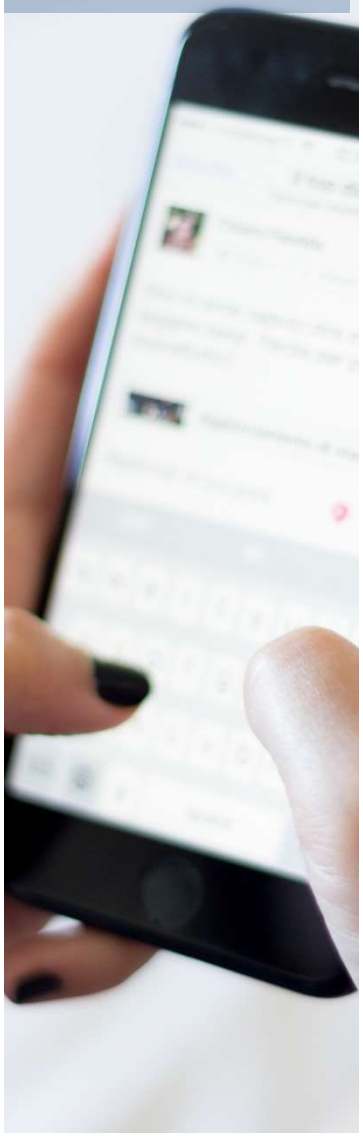
COMMUNICATIONS & HOW TO ENGAGE



Q25 RESULTS – Source of Pollution Information

What do you remember about the information that you saw or heard? Be as detailed as possible. (Open-response; only asked if "yes" to Q23)	Percent of those who heard something in the past 12 months				
	2013	2015	2017	2019	2021
Avoiding creeks, ponds, rivers right after rainfall	2.9	0.0	16.6	2.5	13.3
Redirecting rain water/gutters to yard	3.3	10.3	1.7	0.3	1.9
Don't add to the problem	1.3	10.2	0.7	0.3	7.1
Sewer overflow issues	14.5	9.9	0.8	2.1	3.7
Tips/info to help water pollution	9.6	9.2	8.7	3.2	9.8
Don't use chemicals on the lawn	0.9	1.3	15.9	1.9	0.9
Not to flush wipes / diapers	2.6	7.3	0.5	1.0	6.5
Don't wash clothes/use dishwasher during rain	4.2	6.3	3.7	4.4	9.4
Careful about what I pour into ground/down drain/dispose	11.4	6.0	4.8	8.9	4.9
Rain barrels	0.2	6.0	3.2	0.8	3.5
Rain garden	0.9	5.7	0.0	1.0	3.7
By not littering/polluting/using trash cans	3.5	5.4	28.4	5.1	6.3
Clean up sewer/street drains	4.5	3.5	17.2	0.3	0.8

COMMUNICATIONS & HOW TO ENGAGE

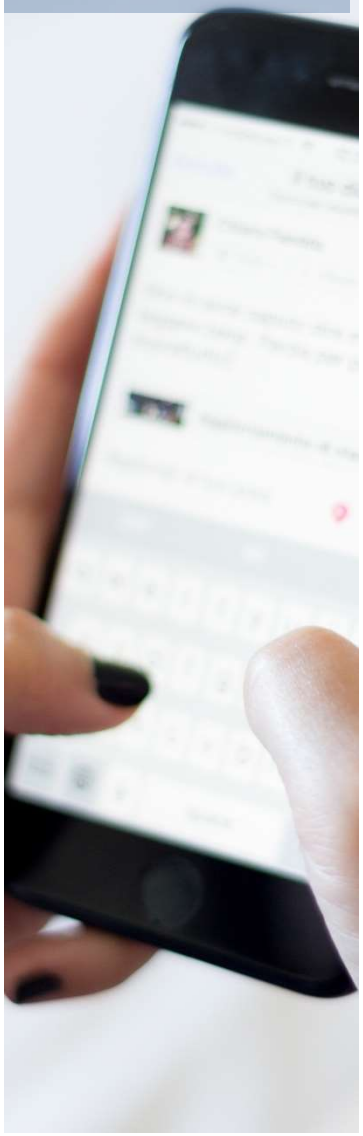


Q26 RESULTS – Methods of Information

Which of the following kinds of information would get you personally to pay attention to rainwater runoff pollution and sewer system overflow to help improve the water quality or health of river, creeks, and ponds after a storm? (Select all that apply)	2013 (%)	2015 (%)	2017 (%)	2019 (%)	2021 (%)
General Education	75.5	80.3	78.2	75.6	79.6
Financial reward	50.8	63.1	58.5	53.1	54.0
Environmental report	50.0	60.8	51.7	59.1	57.4
Statistical data	50.6	49.5	49.4	55.2	51.3
Campaign with emotional/dramatic impact	31.4	41.6	38.2	32.3	31.2
Financial consequences	36.6	35.5	34.0	29.6	31.1

- Attention to information on financial consequences remains low. Respondents would be most likely to pay attention to General Education information.
- Respondents under 50 (65.7%) are more likely to respond to a campaign with a financial reward. Those age 30-39 (41.8%) most frequently indicated that they would prefer a campaign with emotional/dramatic impact.
- Statistical data appealed most to East City residents (58.5%).

COMMUNICATIONS & HOW TO ENGAGE

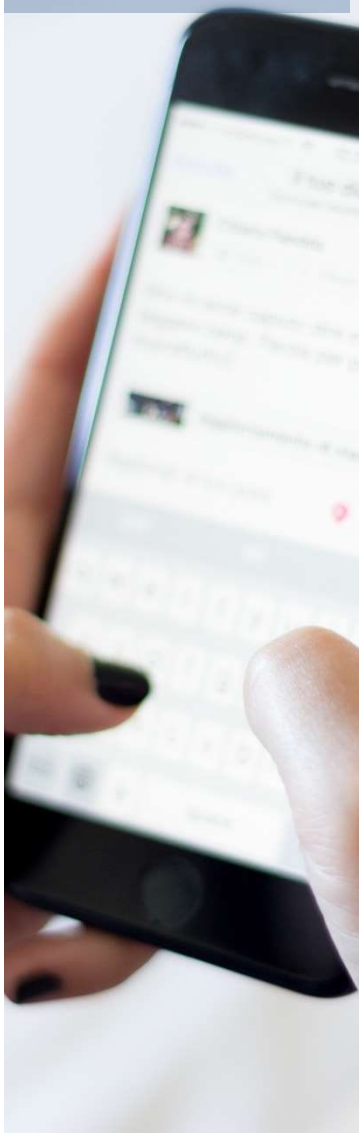


Q27 RESULTS – Methods of Information

What types of messages would you need to hear that would make you want to take action to reduce rainwater pollution and sewage system overflow? (Open-response)	2013 (%)	2015 (%)	2017 (%)	2019 (%)	2021 (%)
Cause & effect/consequences/impact	21.1	29.3	28.1	15.5	23.9
Prevention methods/ways to help	22.1	16.6	17.0	16.2	17.1
Education in schools	1.3	13.4	2.4	1.2	1.0
I already do this/already take action	5.2	9.8	3.9	7.8	8.5
TV/News coverage	6.9	9.3	5.2	4.5	5.1
Rewards/incentives	4.6	9.0	5.9	5.8	9.5
Fact/truth/what's really happening	8.7	8.1	23.3	28.3	10.7
How it effects my kids / future generations	2.7	4.8	6.0	6.8	3.5
General information	17.1	4.7	26.0	5.9	16.7
Don't know	11.4	4.5	3.7	4.1	4.5

- Respondents tend to need messages relating to cause and effect, consequences and environmental impact to make them want to take action.

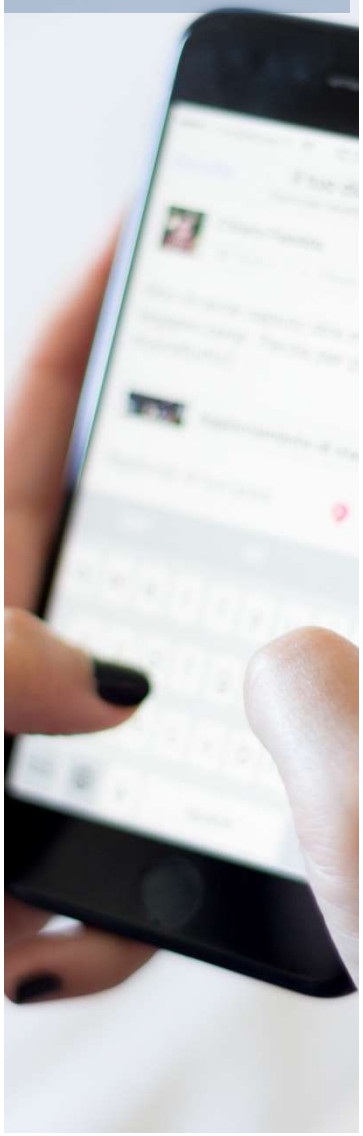
COMMUNICATIONS & HOW TO ENGAGE



Q27 RESULTS – Methods of Information

What types of messages would you need to hear that would make you want to take action to reduce rainwater pollution and sewage system overflow? (Open-response)	Age	Education	Gender	Geography	Income	Rent /Own
Cause & effect/consequences/impact	30-39 21.7%	Coll Grad 35.0%	Female 52.3%	East City 36.0%	< $40K 33.3%	Own 56.8%
Prevention methods/ways to help	60 + 28.7%	Coll Grad 41.2%	Male 51.0%	South County 32.3%	$90K + 37.0%	Own 53.1%
Fact/truth/what's really happening	60 + 35.0%	Coll Grad 39.3%	Female 59.0%	South County 42.6%	$90K + 40.4%	Own 68.9%
General information	< 30 34.4%	Coll Grad 31.5%	Male 53.81%	South County 34.4%	< $40K 37.2%	Own 65.6%

COMMUNICATIONS & HOW TO ENGAGE

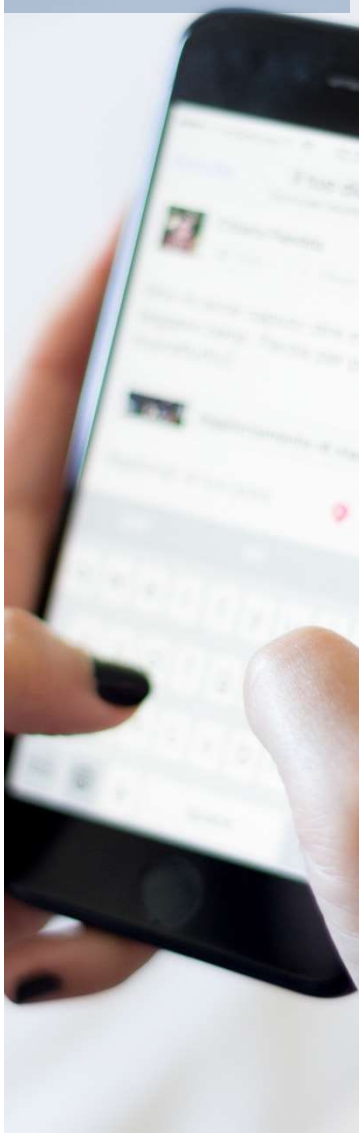


Q28 RESULTS – Source Rankings: Emergency Situation

People get their information from many different sources. Rank the sources that you would most prefer to hear from in an emergency situation (such as a weather alert). Please select at most 4 answers.	% ranked 1st	% ranked 2nd	% ranked 3rd	% ranked 4th	% ranked top 4
Television	26.4	21.5	12.0	10.0	64.6
Radio	15.5	16.8	17.6	13.6	56.7
Email	19.3	13.4	10.5	13.3	51.1
Social Media	15.2	20.8	17.5	10.5	57.8
Internet	10.2	15.1	20.7	13.9	52.7
Direct Mail	5.7	3.9	5.4	11.8	23.2
Postings at river, creek, or pond	3.0	2.2	3.6	11.9	17.3
Signs/billboards	4.2	5.0	9.8	10.6	25.4
Neighborhood meeting	0.5	1.3	2.9	4.4	7.6

- Residents continue to prefer receiving alerts via traditional broadcast channels, although social media continues to grow steadily.
- Those age 60+ ranked TV first 45.0% of the time.

COMMUNICATIONS & HOW TO ENGAGE

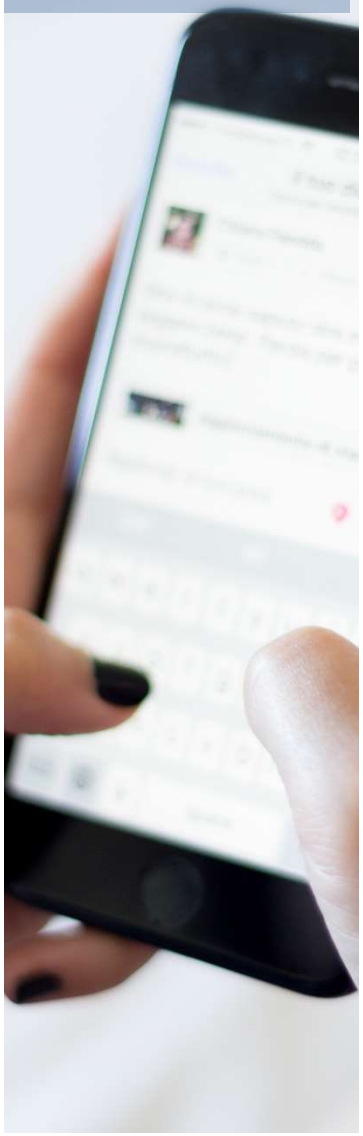


Q29 RESULTS – Source Rankings: Community News

People get their information from many different sources. Rank the sources that you would most prefer to hear from for community news (such as a river walk clean-up). Please select at most 4 answers.	% ranked 1st	% ranked 2nd	% ranked 3rd	% ranked 4th	% ranked top 4
Television	22.0	15.8	10.6	13.3	57.3
Email	23.9	15.8	12.0	9.2	56.9
Radio	17.3	13.2	12.1	12.0	50.3
Social Media	16.8	20.0	15.1	12.6	59.4
Internet	6.2	11.5	15.8	13.4	42.0
Direct Mail	7.2	11.0	10.5	8.6	33.9
Signs/billboards	2.5	6.1	13.3	15.6	32.9
Neighborhood meeting	3.4	2.8	3.9	7.1	15.4
Postings at river, creek, or pond	0.7	3.8	6.7	8.1	17.0

- Electronic methods (Email, Social Media) are the preferred methods for receiving community news.
- Of respondents age 60+, 35.5% ranked TV first.

COMMUNICATIONS & HOW TO ENGAGE

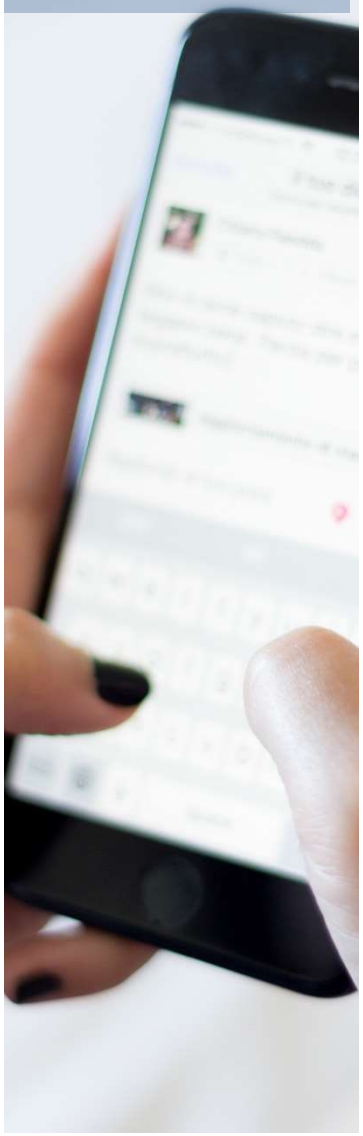


Q30 RESULTS – Source Rankings: "How To" Information

People get their information from many different sources. Rank the sources that you would most prefer to hear from for "How To" information (such as how to install a rain barrel). Please select at most 4 answers.	% ranked 1st	% ranked 2nd	% ranked 3rd	% ranked 4th	% ranked top 4
Television	12.8	12.2	12.3	14.4	47.3
Email	23.6	16.7	14.6	11.2	61.6
Social Media	17.7	16.9	15.0	13.9	58.5
Direct Mail	15.6	15.3	14.5	13.7	54.4
Internet	18.0	21.0	18.7	13.5	65.6
Radio	6.5	6.2	4.6	12.3	26.8
Neighborhood meeting	2.5	3.8	5.9	6.2	16.5
Signs/billboards	2.0	4.2	7.9	6.5	18.4
Postings at river, creek, or pond	1.3	3.7	6.5	8.3	17.5

- Email and the Internet remain the top preferences for receiving "How To" information.
- Most under 30 (79.8) rated Intenet in the top 4.

COMMUNICATIONS & HOW TO ENGAGE

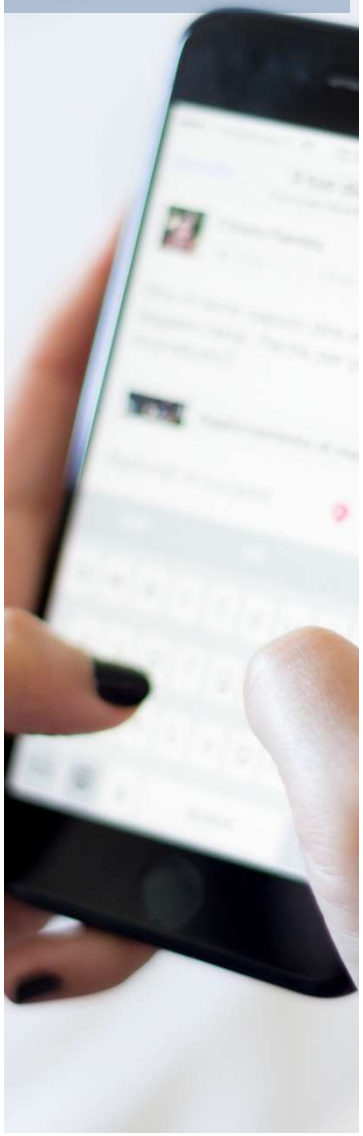


Q31 RESULTS – Source Rankings: Notices/Upcoming Dates

People get their information from many different sources. Rank the sources that you would most prefer to hear from for notices (such as upcoming dates for recycling hazardous chemicals). Please select at most 4 answers.	% ranked 1st	% ranked 2nd	% ranked 3rd	% ranked 4th	% ranked top 4
Television	15.2	11.9	11.6	14.1	48.8
Email	28.6	18.4	10.8	12.0	65.8
Direct mail	20.4	15.3	12.5	15.4	59.0
Radio	11.8	9.2	11.9	14.9	43.7
Social media	13.6	17.4	15.4	11.9	53.9
Signs/billboards	2.5	8.7	7.6	13.7	29.1
Internet	5.0	15.1	20.9	11.3	47.5
Neighborhood meeting	1.1	1.5	4.9	3.0	9.4
Postings at river, creek, or pond	1.8	2.5	4.3	3.5	11.0

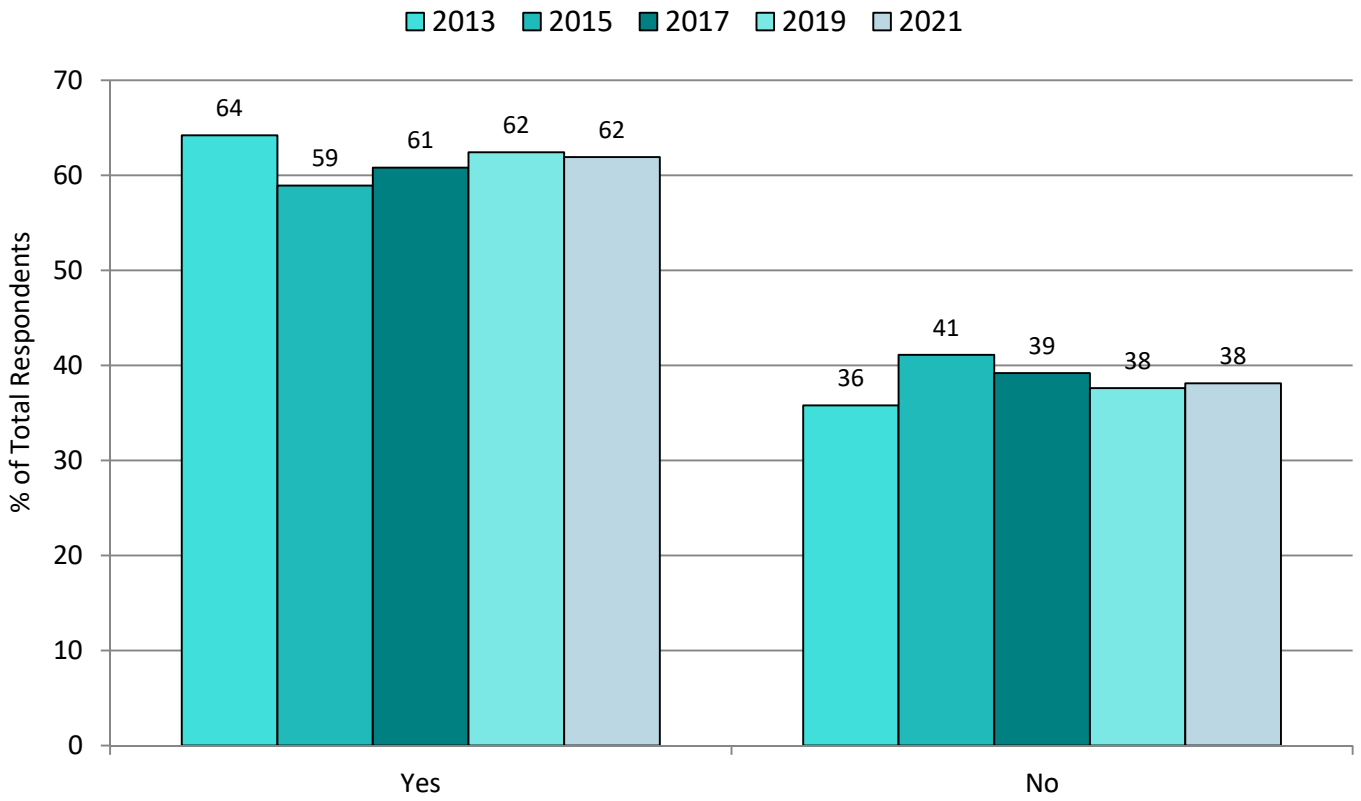
- Email remains the preferred channel for important but non-urgent information.
- Those under 30 rated Email most often (38.5%) as their first choice.
- Those over 60 rated TV most often (25.6%) as their first choice.

COMMUNICATIONS & HOW TO ENGAGE



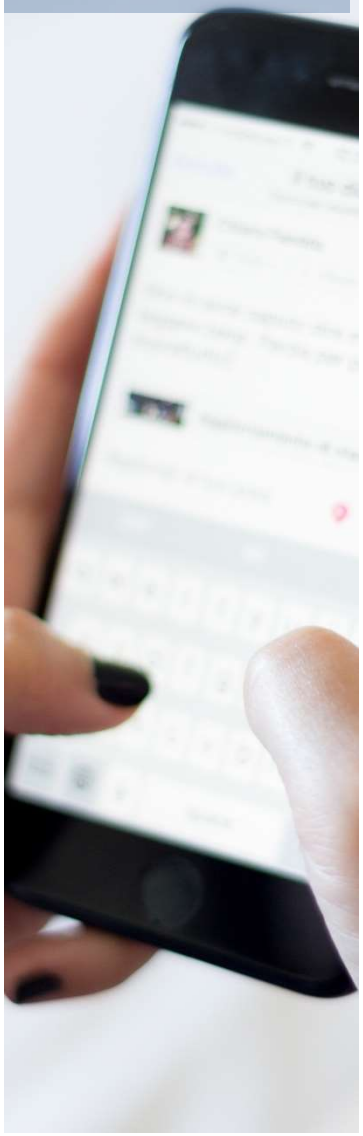
Q32 RESULTS – Newsletter

Do you read newsletters that are included in your monthly bills?



- Residents under 30 (52.8%) are least likely to read the newsletter inserts.
- Residents over 60 (73.5%) are most likely to read the newsletter inserts.

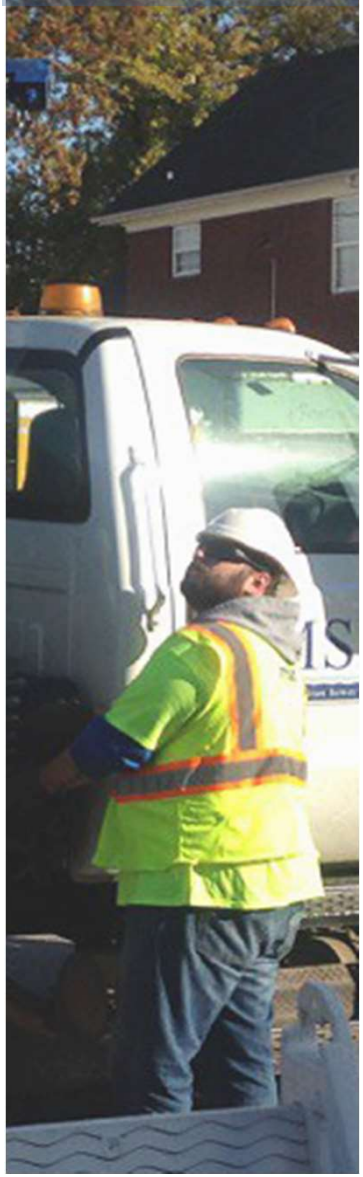
COMMUNICATIONS & HOW TO ENGAGE



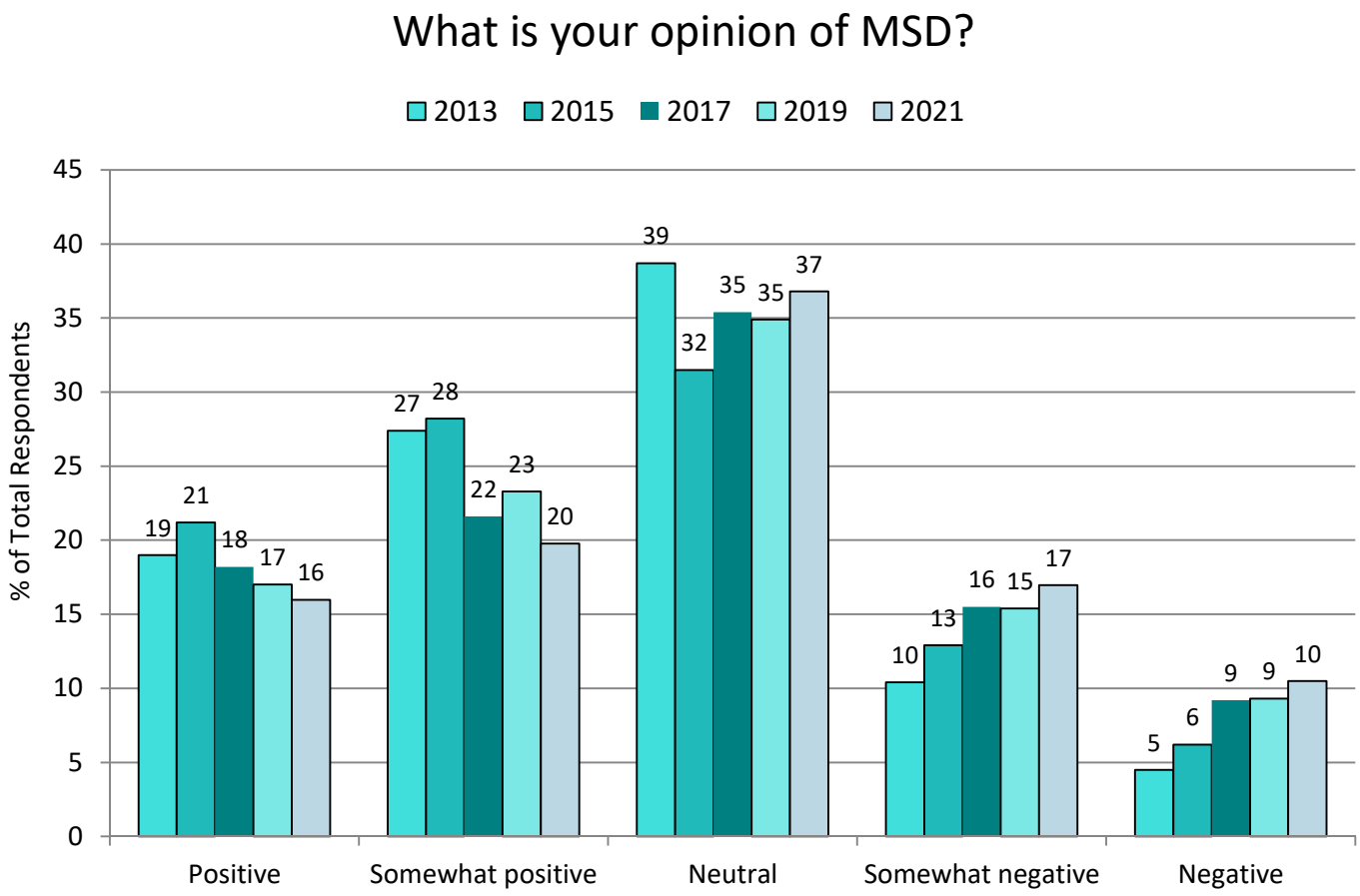
Q33 RESULTS – MSD & Your Community

What does the Metropolitan Sewer District (MSD) do for your community? (Open-response)	2013 (%)	2015 (%)	2017 (%)	2019 (%)	2021 (%)
Install/handle/maintain sewers/waste water	25.7	23.5	33.6	24.6	30.0
Cleans the water/purifies/filters	6.3	15.9	8.6	5.7	12.5
Clean sewers/ditches	6.3	15.7	6.0	4.8	9.2
Provide drainage/runoff control	8.7	14.4	14.2	8.5	8.0
Prevent flooding	5.5	11.4	N/A	4.2	5.1
Treat waste water	3.9	7.1	11.8	8.8	4.7
Corrupt / inadequate	0.3	6.6	1.4	13.8	4.1
Charge too much	5.3	6.4	4.0	13.1	13.1
Repair pipes/infrastructure	4.0	6.0	15.4	6.5	10.8
Continue to raise prices	2.9	4.4	8.1	5.5	5.3
Prevents pollution	0.5	4.3	0.2	1.6	2.1
Nothing	3.7	4.3	7.0	3.1	4.5
Don’t know	16.2	12.7	12.8	9.4	18.9

MSD PERCEPTION



Q34 RESULTS – Opinion of MSD



- Respondents over 60 (43.6%), those under 30 (41.0%) and homeowners (41.0%) have the highest Positive/Somewhat Positive perceptions of MSD.
- Downtown residents (16.8%) and age 40-49 (16.6%) have the highest Negative perceptions.

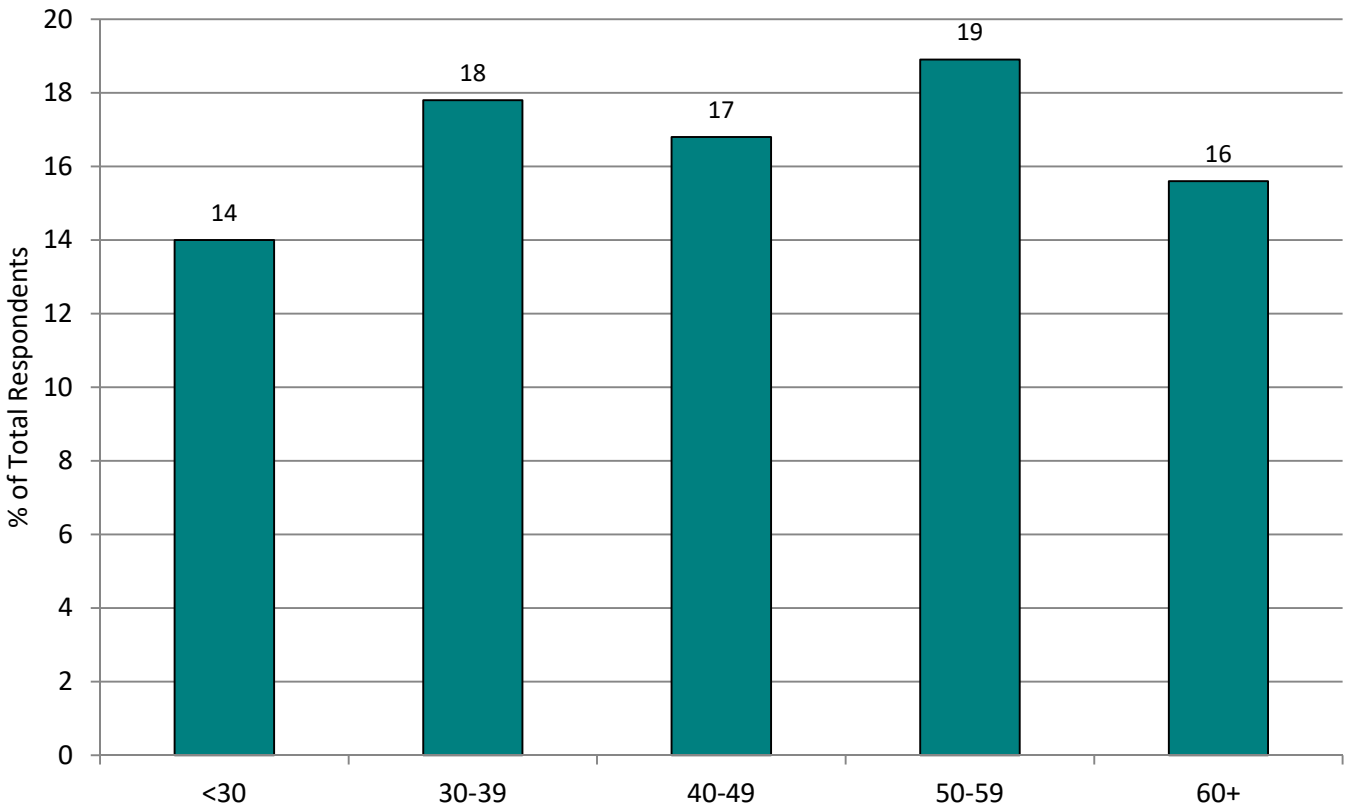


Q35 RESULTS – MSD & Your Community

MSD helps your community manage its sewer system and protect the health of the river, creeks and ponds. What role do you think MSD should take in helping residents reduce the household causes of waterway pollution? (Open response)	2013 (%)	2015 (%)	2017 (%)	2019 (%)	2021 (%)
Educate	28.8	30.4	42.2	21.1	29.6
Provide more information / awareness	24.3	25.1	19.9	14.7	25.8
Provide incentives / rewards	6.3	9.5	8.4	7.9	9.9
Inform public of ways to help	10.0	8.5	18.5	7.0	12.1
Manage their resources better	0.4	6.5	0.6	2.8	0.4
Major role / a big role	3.1	5.8	7.9	8.9	6.7
Newsletters / inserts	3.2	3.8	1.3	1.6	2.5
Clean out drains / sewers	2.2	3.7	2.0	1.1	2.2
Financial incentives on water bill	2.7	3.4	N/A	2.7	0.0
Don’t know	8.3	8.8	0.9	5.0	5.3

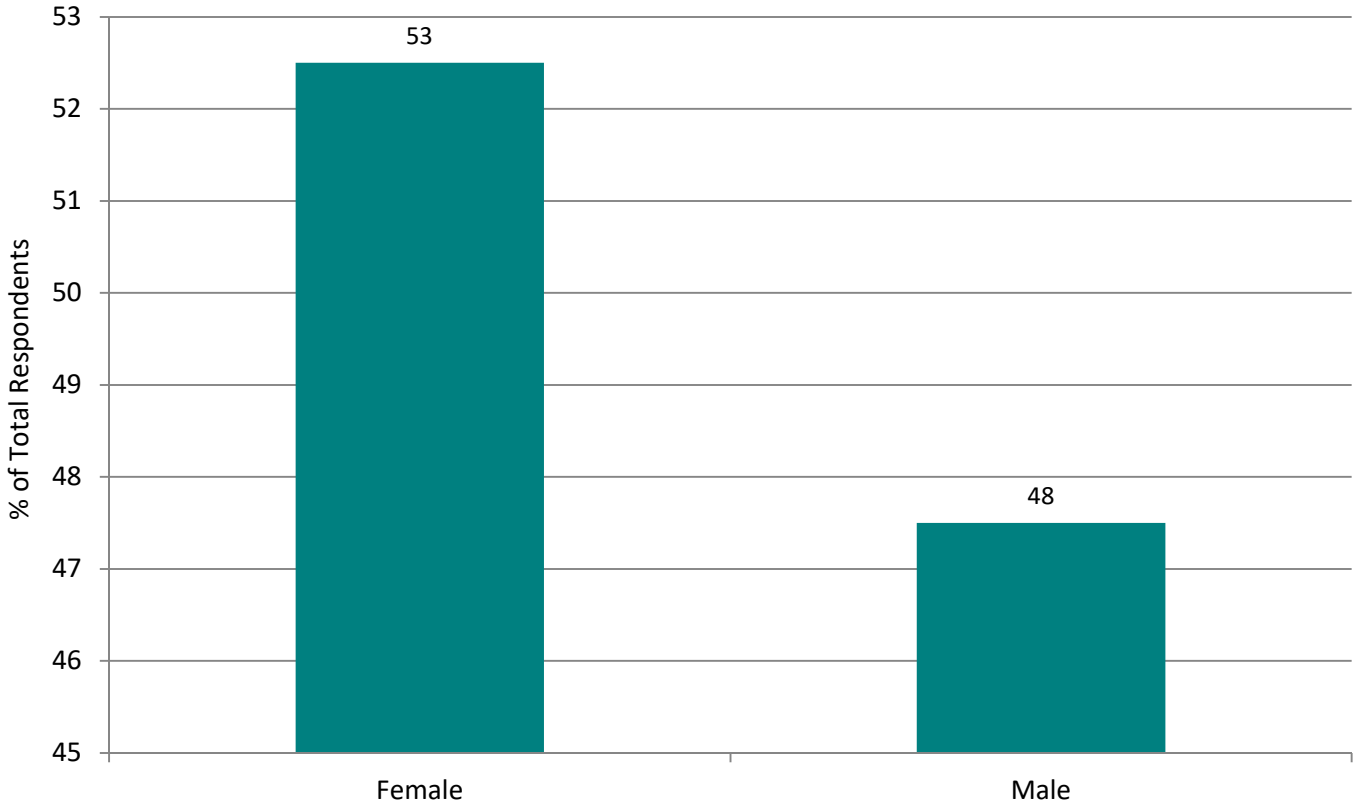


Q36 RESULTS – Age





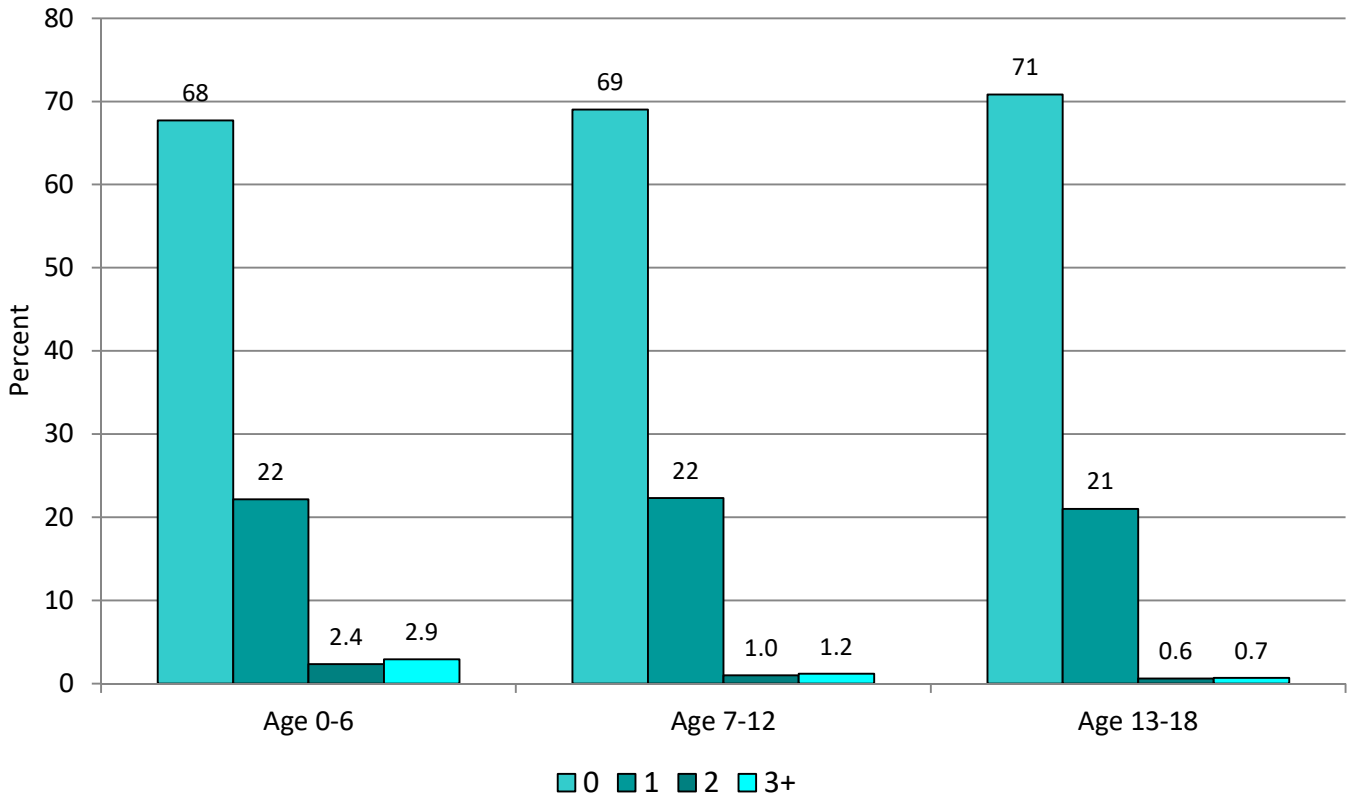
Q37 RESULTS – Gender



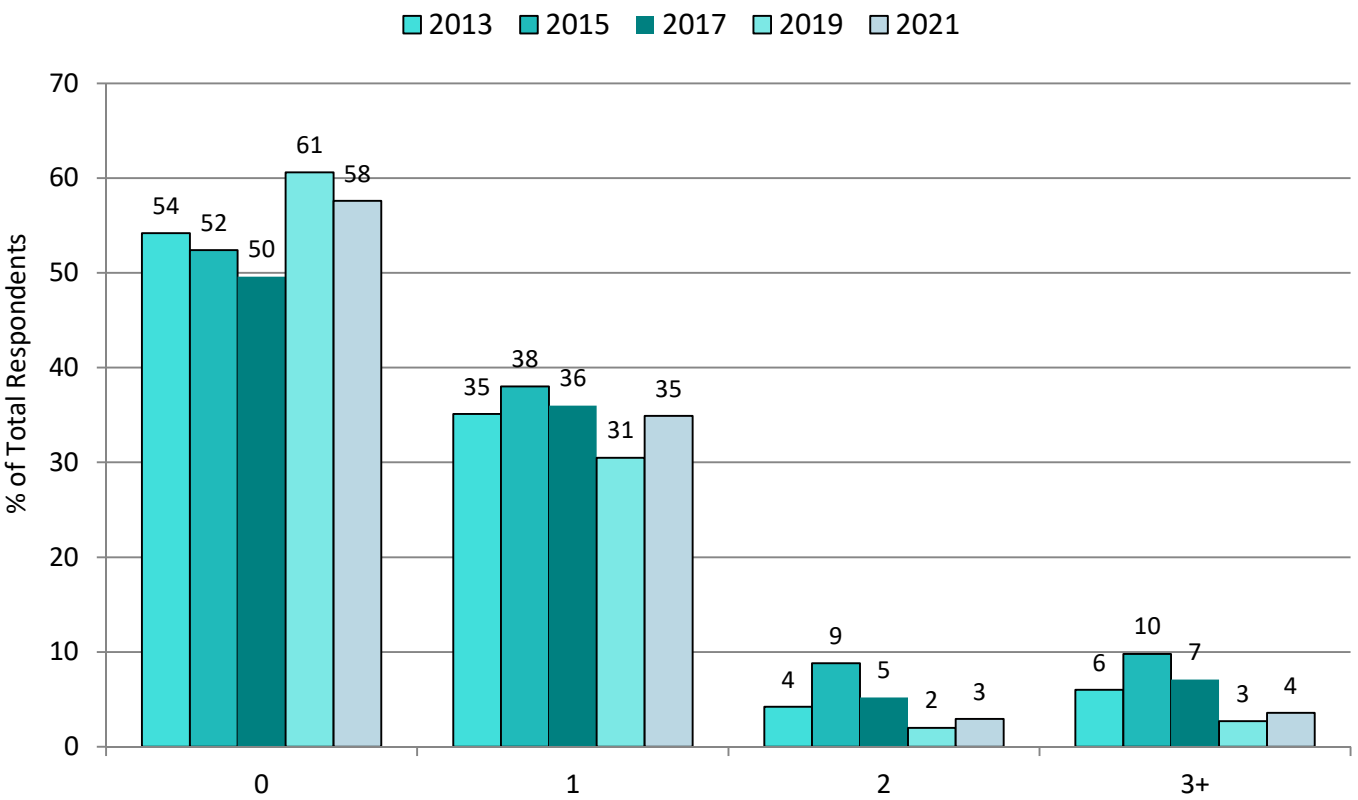
- Females tend to reside in Downtown/West City (66.8%) and Southwest (60.9%), versus males who are more likely to live in the Northeast County (56.5%).



Q38 RESULTS – Presence of Children in Household, by Age

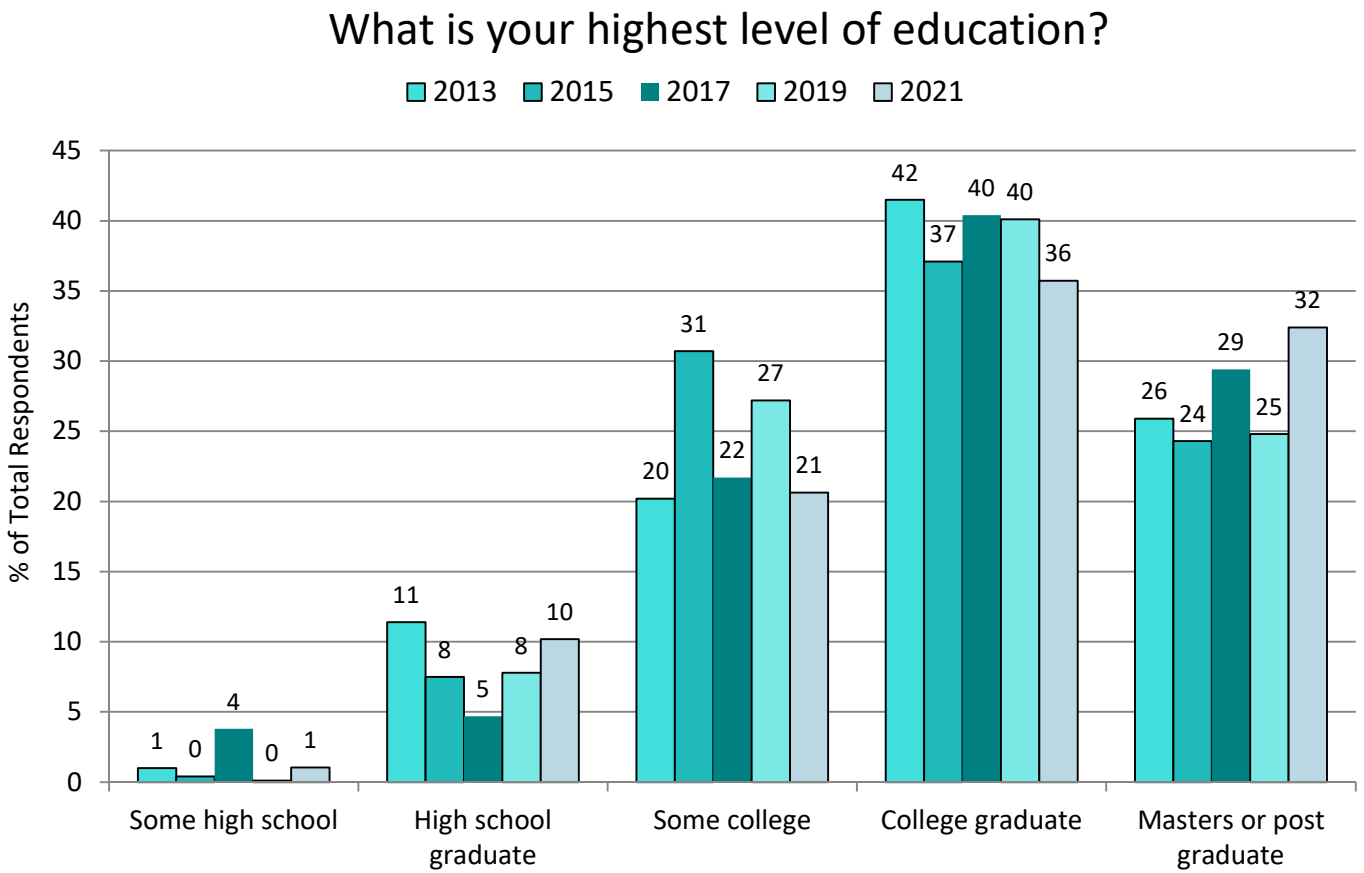


Q38 RESULTS – Total Number of Children in Household





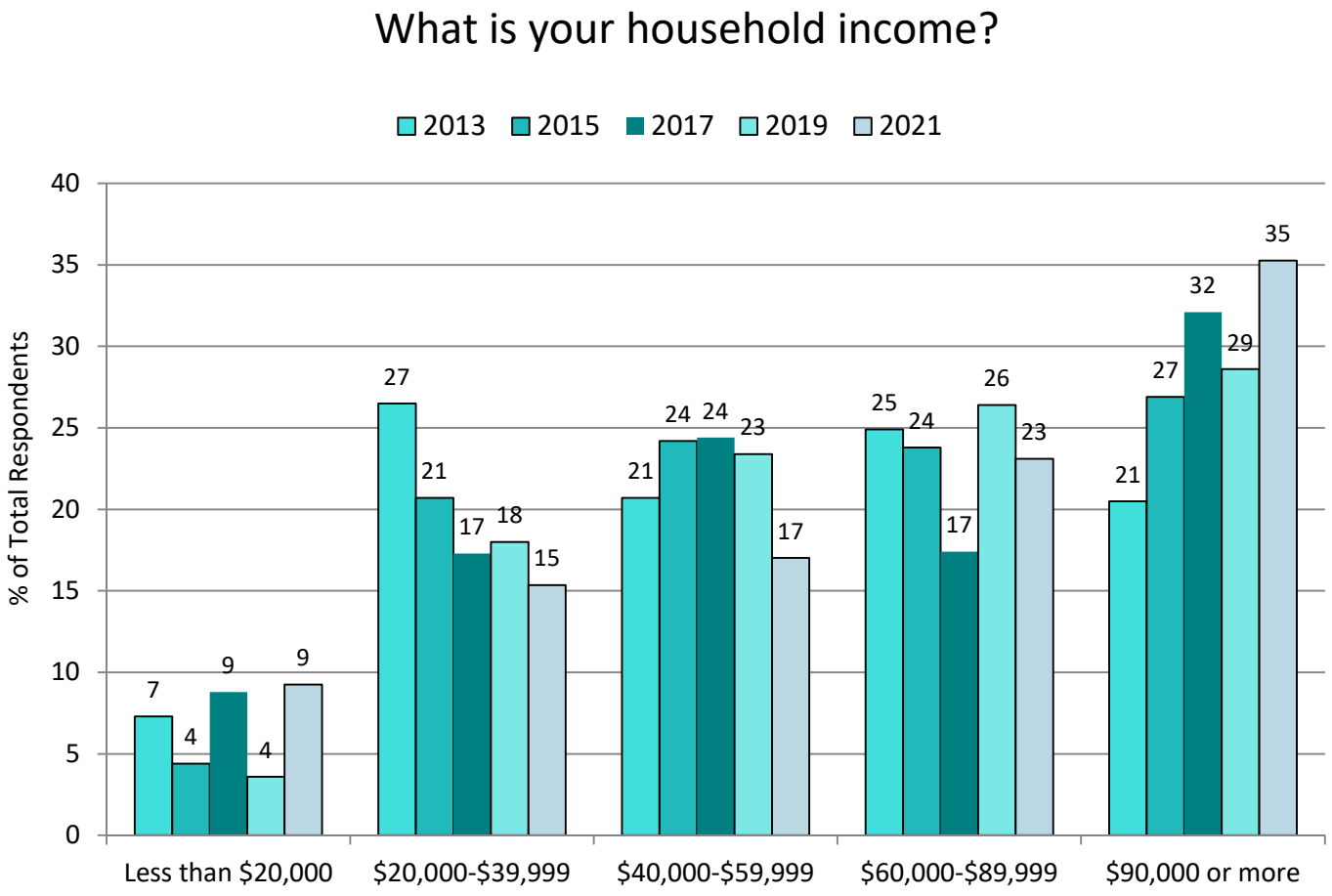
Q39 RESULTS – Education



- The Northeast County has the highest proportion of Masters/Post Grads (45.3%).



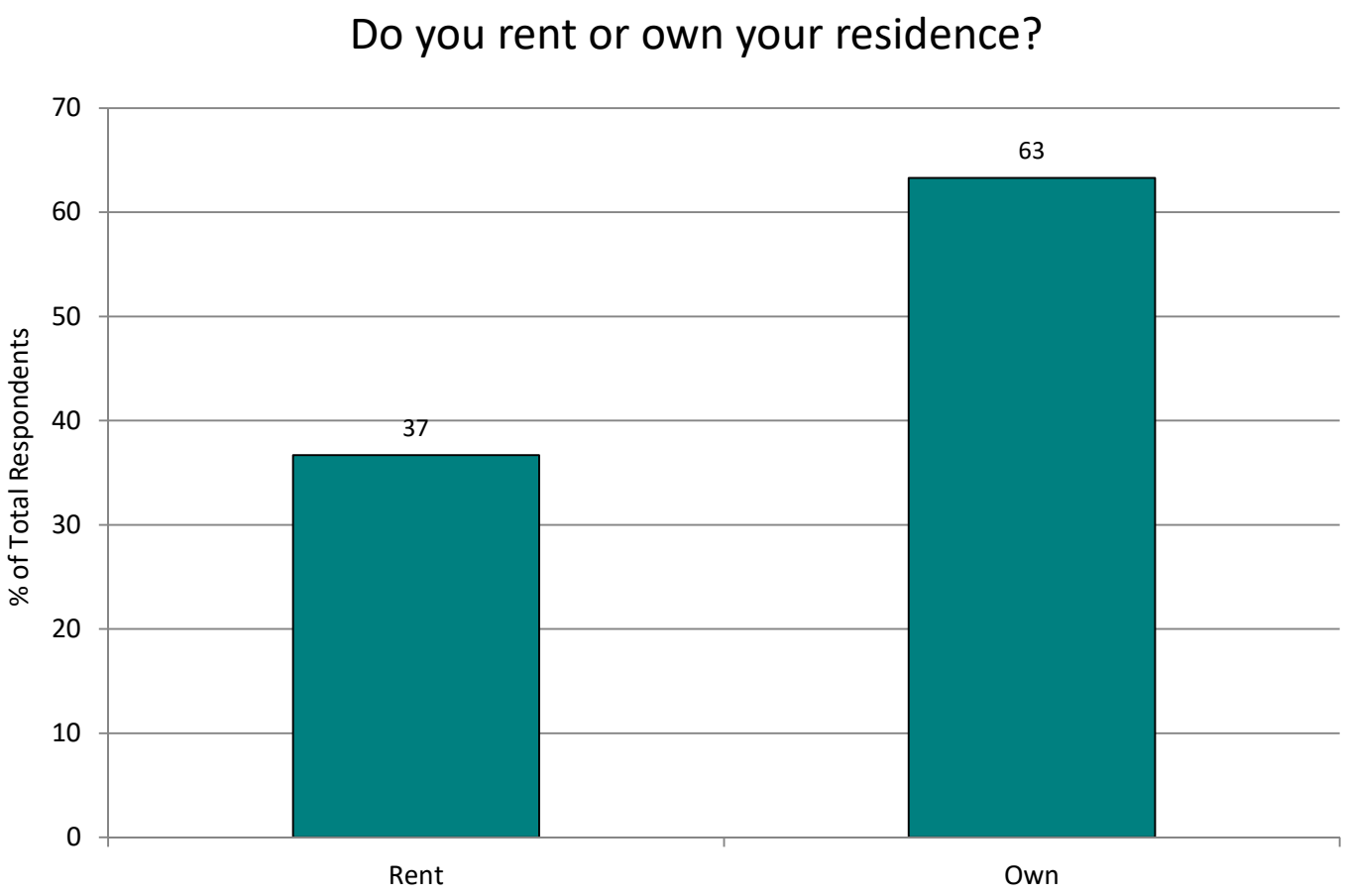
Q40 RESULTS – Annual Household Income



- In general, income levels did vary as expected with ZIP code geography.



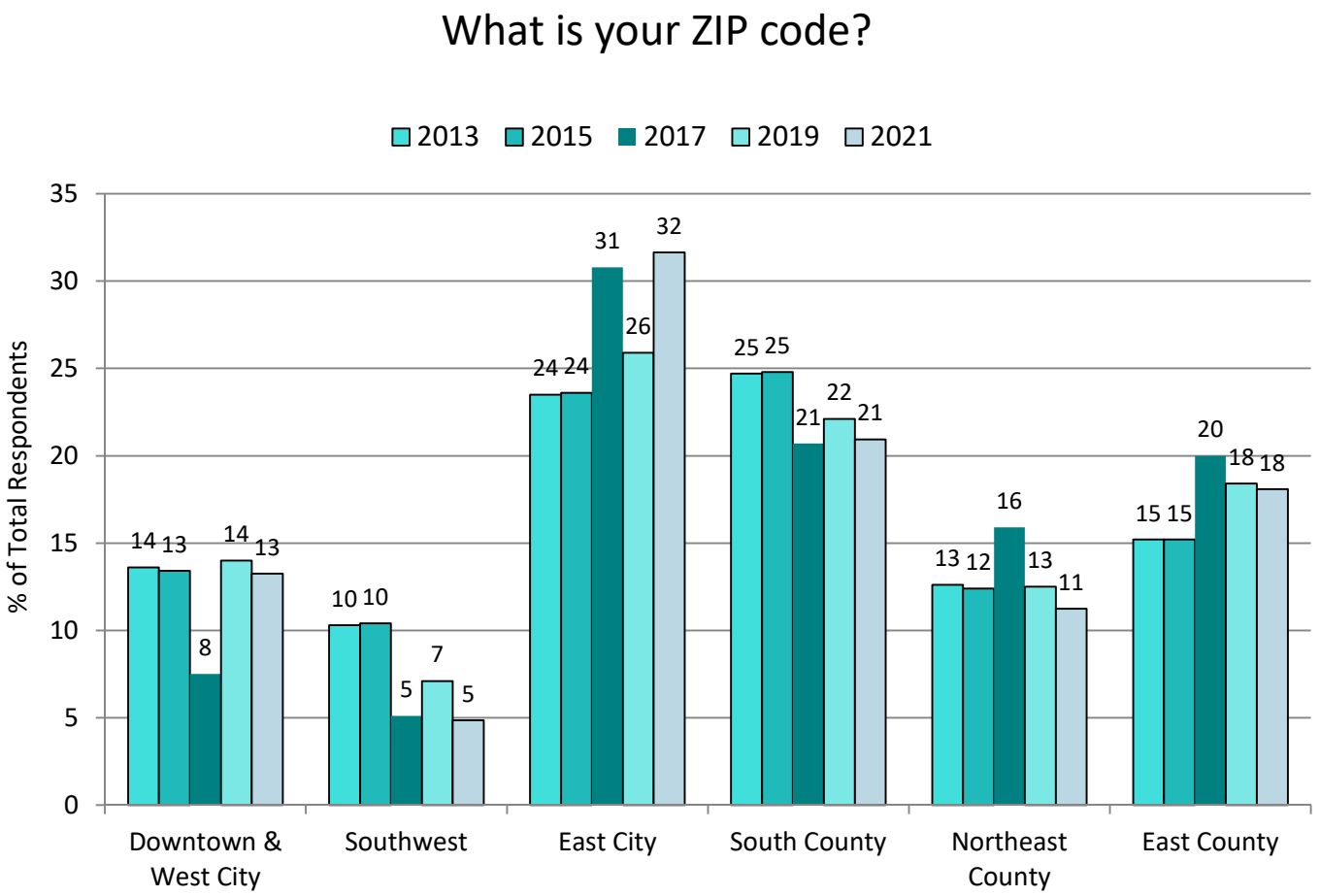
Q41 RESULTS – Rent vs. Own



- Renters are most prevalent Downtown/West City (69.7%), as where owners are more likely to reside in East County (84.8%) and Northeast County (80.1%).

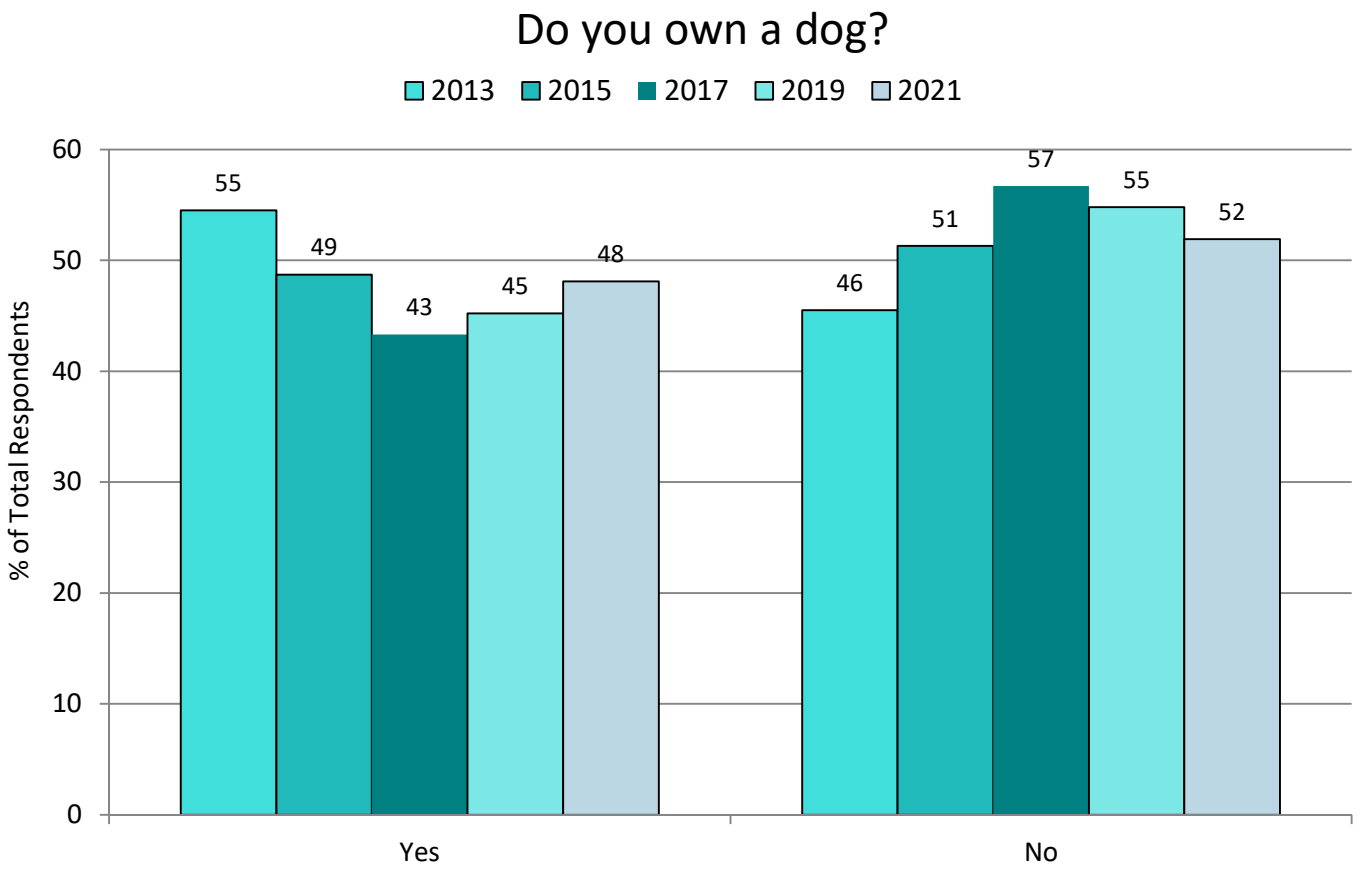


Q42 RESULTS – ZIP Code





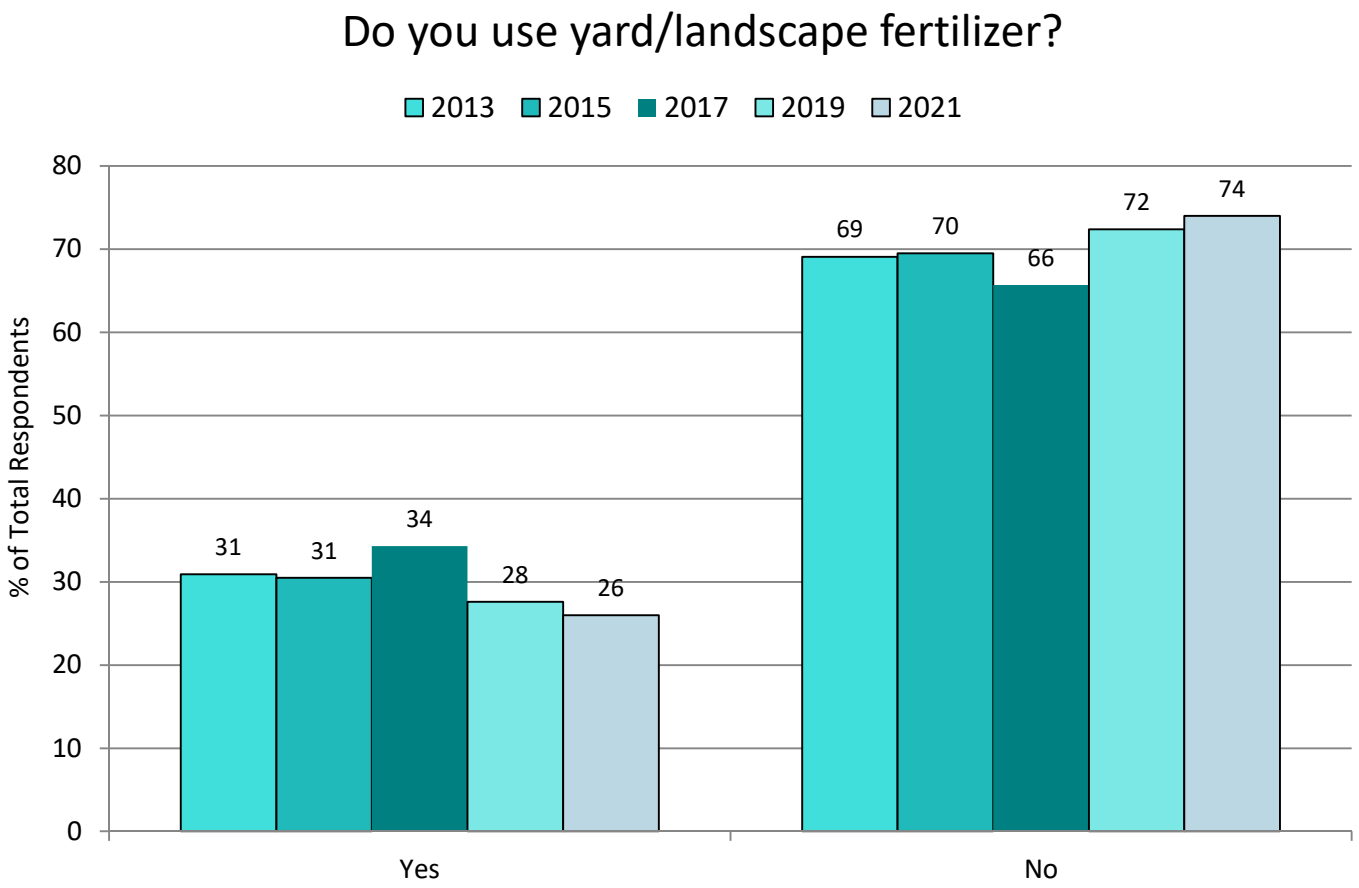
Q43 RESULTS – Dog Owner



- Owners tend to reside in East City (52.1%), and least likely to live Downtown/West City (35.9%).



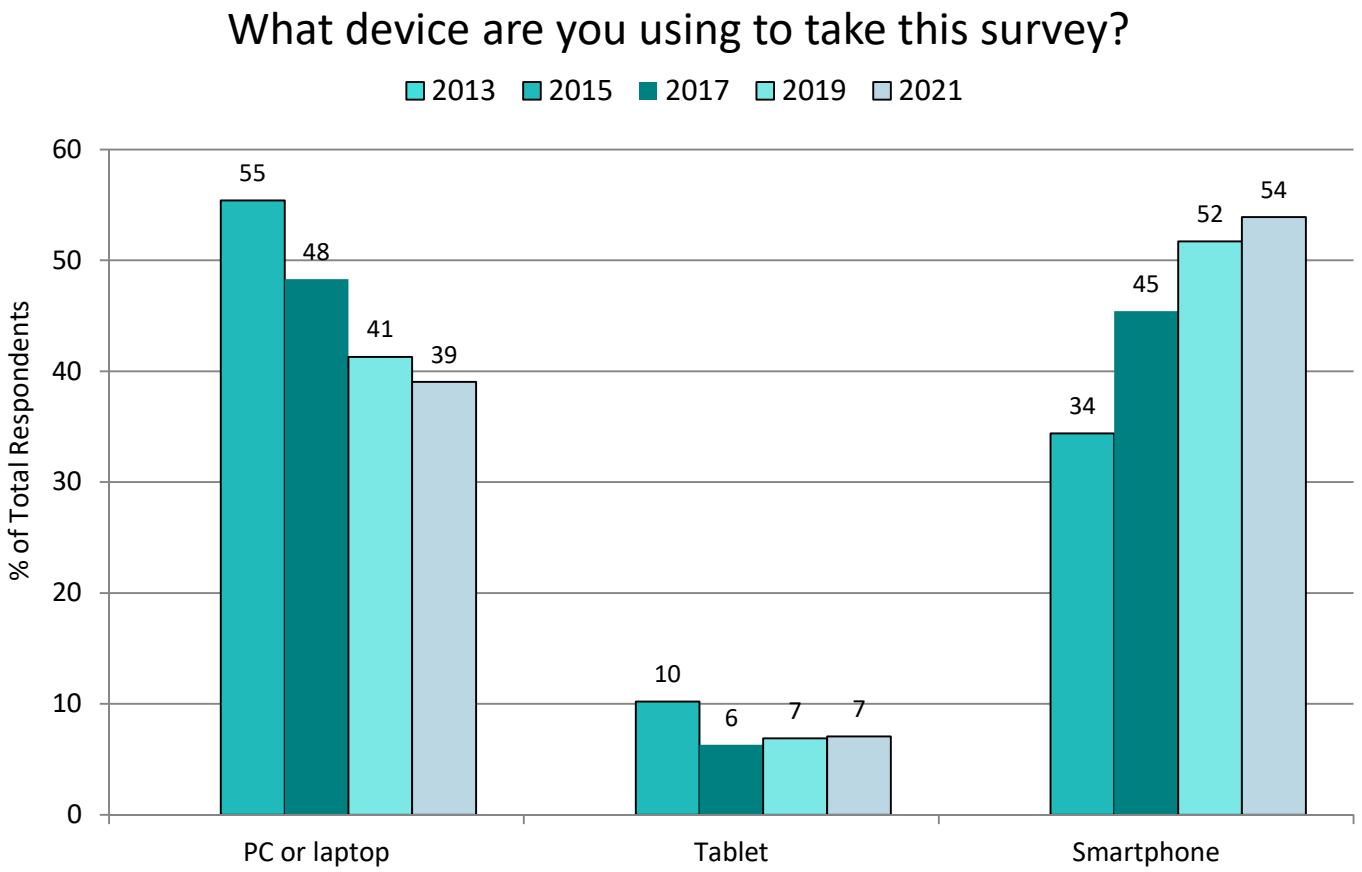
Q44 RESULTS – Use of Yard/Landscape Fertilizer



- Northeast County residents (48.9%), East County (44.6%) Homeowners (38.7%) tend to use fertilizer the most.
- Renters (4.2%) and Downtown/West City residents (10.2%) use it the least.



Q45 RESULTS – Survey Usage Device



- Most PC or laptop users are those over 60 (53.7%).
- Families with children under 6 use smartphones most often (75.6%) to complete the survey.

APPENDIX A

Online Survey

2021 Jefferson County Environmental Impact Survey

1. Do you live in Jefferson County, Kentucky?
   - o Yes
   - o No

   If no, the participant is not allowed to proceed.

2. Please indicate if you or anyone in your household work in any of the following industries:
   - o Advertising or Marketing
   - o Marketing Research
   - o TV or Radio Station
   - o Public Utility
   - o Nobody in my household works in these industries

   If any of the first 4 are selected, the participant is not allowed to proceed.

3. For each of the following environmental issues, indicate how important you feel the issue is to you.
   a) Increasing tree canopy
   b) Protecting our waterways (river, creeks and ponds) from pollution
   c) Preserving open spaces
   d) Reducing climate change
   e) Conserving energy resources
      - o Extremely important
      - o Very important
      - o Somewhat important
      - o Not very important
      - o Not at all important

4. Do you use the river, creeks and ponds for recreational purposes in Jefferson County, Kentucky?
   - o Yes
   - o No

   If no, ask #5

5. Why don't you use river, creeks and ponds for recreational purposes? Be as specific as possible.
   (Open response)

6. How would you rate the overall water quality or health of the river, creeks, and ponds in Jefferson County, Kentucky?
   - o Excellent
   - o Very Good
   - o Good
   - o Fair
   - o Poor

7. Why do you give that rating? (Open response)

8. How important is it to you that your community has clean rivers, creeks and ponds?
   - o Extremely important
   - o Very important
   - o Important
   - o Somewhat important
   - o Not at all important

9. How does rain affect the water quality or health of our river, creeks and ponds? Please select one.
   - o Restores vital nutrients
   - o Washes away pollution
   - o Adds pollutants to the water
   - o Don’t know
   - o Other [Please specify]:

10. After it rains, you should not use the local area river, creeks and ponds because they have become unsafe with increased levels of pollution and bacteria.
    - o True
    - o False
    - o Not sure

11. What do you think would cause the river, creeks and ponds to become polluted after a rain?
(Open response)

12. Please indicate how much you agree with the following statements.
    a) Water that flows through street gutters and storm drains goes through a treatment facility before being released in our waterways.
    b) Rainwater runoff is a leading cause of water pollution in my area.
    c) Sewer system overflow occurs frequently in my community.
        - Strongly agree
        - Agree
        - Neither agree nor disagree
        - Disagree
        - Strongly disagree

13. How informed do you feel about the causes of rainwater runoff pollution in your area?
    - Very informed
    - Informed
    - Somewhat informed
    - Not very informed
    - Not at all informed

14. How informed do you feel about the causes of sewer system overflow in your area?
    - Very informed
    - Informed
    - Somewhat informed
    - Not very informed
    - Not at all informed

15. Do you think there are actions you can take to reduce water pollution in the river, creeks and ponds?
    - Yes
    - No

16. Rainwater runoff and sewer system overflow contribute to water pollution. Do you currently take actions to reduce water pollution?
    - o Yes
    - o No

    If yes, ask #17

17. What actions do you currently take to reduce water pollution? (Open response)

18. Do you think any of these actions would increase the amount of pollution from rainwater runoff?
    (Select all that apply)
    - o Putting trash in the street gutter
    - o Improperly disposing hazardous waste, such as paint and motor oil
    - o Using non environmentally friendly lawn chemicals
    - o Leaving pet waste on the ground
    - o Allowing fluids to leak from cars and trucks
    - o Washing your car in the driveway or street
    - o Other [Please specify]:

19. Do you think any of these actions cause sewer system overflow? (Select all that apply)
    - o Pouring fats, oils, greases and food particles down the sink
    - o Flushing diaper wipes and other wet wipes down the toilet
    - o Flushing dental floss down the toilet
    - o Flushing hair down the toilet
    - o Using water-using appliances, such as a dishwasher or clothes washer, when it is raining
    - o Connecting the groundwater sump pump to the basement sewer connection
    - o Putting lawn grass clippings and leaves in the street gutter
    - o Other [Please specify]:

20. Please indicate how much you agree or disagree with the following statements about the water quality or health of the river, creeks, and ponds in Jefferson County, KY.
    a) We can all do our part to reduce the effects of water pollution.
    b) I am personally responsible for reducing rainwater runoff pollution and sewer system overflow.
    c) Local governments, businesses and industries are responsible for reducing rainwater runoff and sewer system overflow.
    d) I would only do my part to reduce water pollution if everyone else did as well.
    e) The utility company should provide incentives for people to reduce water pollution.
    f) Human activities have no significant impact on the water quality of river, creeks and ponds.
    g) Water pollution of river, creeks and ponds frightens me.
    h) The evidence for water pollution of river, creeks and ponds is unreliable or insufficient.
        - Strongly agree
        - Agree
        - Neither agree nor disagree
        - Disagree
        - Strongly disagree

21. I personally would be willing to take the following actions to reduce the amount of water pollution in river, creeks and streams. (Select all that apply)
    - Picking up trash that is in the gutter on and/or around where I live.
    - Disposing of household hazardous wastes by taking them to a collection center.
    - Installing a rain barrel to catch rainwater from my downspouts.
    - Creating a rain garden on my property or in my neighborhood.
    - Using environmentally friendly lawn products.
    - Picking up pet waste in public spaces.
    - Picking up pet waste in my yard.
    - Recycling my used motor oil.
    - Washing my car at the carwash or on a lawn.
    - Putting fats, oils, grease and food particles in the trash can rather than down the sink drain.
    - Putting baby wipes, personal wipes and other wet wipes in the trash can rather than down the toilet.
    - Waiting to run the dishwasher or washing machine 24-48 hours after the rain subsides and the sewers aren't full.

DATAMAX

22. How concerned are you that water pollution will cause the river, creeks and ponds to become un-fishable and un-swimmable for the next generation if actions are not taken now?
    - Very concerned
    - Concerned
    - Somewhat concerned
    - Not very concerned
    - Not at all concerned

23. In the past 12 months have you heard anything about the impact of rainwater runoff pollution and sewer system overflow and ways that residents can prevent it?
    - Yes
    - No
    - Not sure/don't know

    If yes, ask #24 & #25

24. Where did you see or hear about rainwater runoff pollution and sewer system overflow? (Select all that apply)
    - Television
    - Radio
    - Newspaper
    - Email
    - Website [Please specify]:
    - Brochure
    - Neighborhood meeting
    - Poster
    - Facebook
    - Twitter
    - Sign/billboard
    - Posting near river, creek, or pond
    - Other source [Please specify]:
    - Not sure

25. What do you remember about the information that you saw or heard? Be as detailed as possible.

(Open response)

26. Which of the following kinds of information would get you personally to pay attention to rainwater runoff pollution and sewer system overflow to help improve the water quality or health of river, creeks, and ponds after a storm? (Select all that apply)

- General education
- Campaign with emotional/dramatic impact
- Financial reward
- Financial consequences
- Statistical data
- Environmental report

27. What types of messages would you need to hear that would make you want to take action to reduce rainwater pollution and sewage system overflow? (Open response)

28. People get information from many different sources. Rank the sources that you would most prefer to hear from in an emergency (such as a weather alert). Please select at most 4 answers.

- Radio
- Television
- Email
- Social Media
- Direct Mail
- Internet
- Neighborhood Meeting
- Signs/Billboards
- Postings at river, creek or pond

29. People get information from many different sources. Rank the sources that you would most prefer to hear from for community news (such as a river walk clean-up). Please select at most 4 answers.
    - o Radio
    - o Television
    - o Email
    - o Social Media
    - o Direct Mail
    - o Internet
    - o Neighborhood Meeting
    - o Signs/Billboards
    - o Postings at river, creek or pond

30. People get information from many different sources. Rank the sources that you would most prefer to hear from for "How To" information (such as how to install a rain barrel). Please select at most 4 answers.
    - o Radio
    - o Television
    - o Email
    - o Social Media
    - o Direct Mail
    - o Internet
    - o Neighborhood Meeting
    - o Signs/Billboards
    - o Postings at river, creek or pond

31. People get information from many different sources. Rank the sources that you would most prefer to hear from for notices (such as upcoming dates for recycling hazardous chemicals). Please select at most 4 answers.
    - o Radio
    - o Television
    - o Email
    - o Social Media
    - o Direct Mail
    - o Internet
    - o Neighborhood Meeting
    - o Signs/Billboards
    - o Postings at river, creek or pond

32. Do you read newsletters that are included in your monthly bills?
    - Yes
    - No

33. What does the Metropolitan Sewer District (MSD) do for your community? (Open response)

34. What is your opinion of MSD?
    - Positive
    - Somewhat positive
    - Neutral
    - Somewhat negative
    - Negative

35. MSD helps your community manage its sewer system and protect the health of the river, creeks and ponds. What role do you think MSD should take in helping residents reduce the household causes of waterway pollution? (Open response)

36. What was your age on your last birthday?

37. Are you:
    - Female
    - Male

38. How many children do you have in your household:
    a) Age 0-6:
    b) Age 7-12:
    c) Age 13-18:

39. What is your highest level of education?
    - Some high school
    - High school graduate
    - Some college
    - College graduate
    - Masters or post graduate

40. What is your household income?
    - Less than $20,000 per year
    - $20,000 to $39,999 per year
    - $40,000 to $59,999 per year
    - $60,000 to $89,999 per year
    - $90,000 or more per year

41. Do you rent or own your residence?
    - Rent
    - Own

42. What is your ZIP code?

43. Do you own a dog?
    - Yes
    - No

44. Do you use yard/landscape fertilizer?
    - Yes
    - No

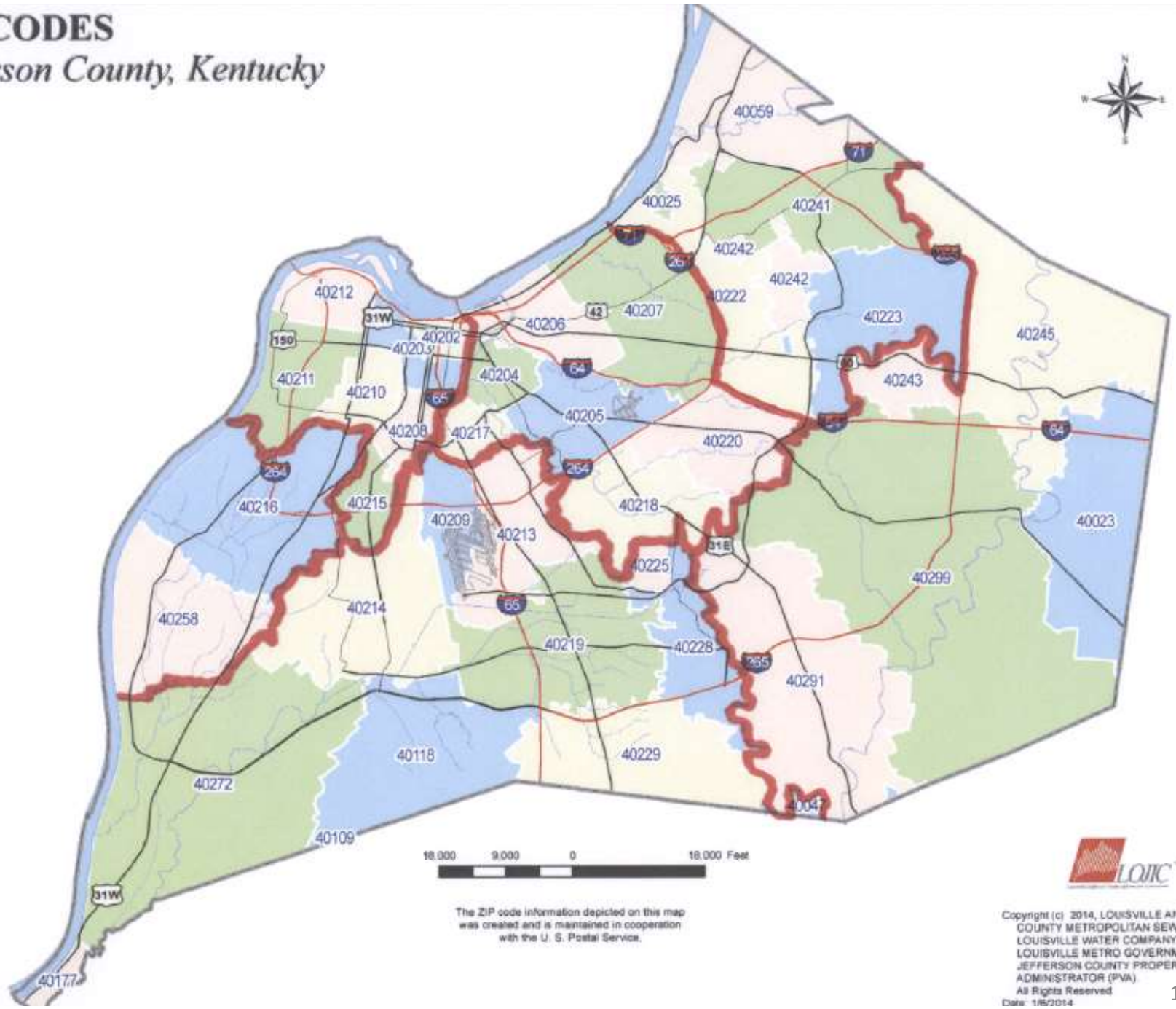
45. If you would like to be entered into a drawing for a prize, please provide your name, email address, and phone number so that we may contact the winners.
    a) Name:
    b) Email:
    c) Phone Number:

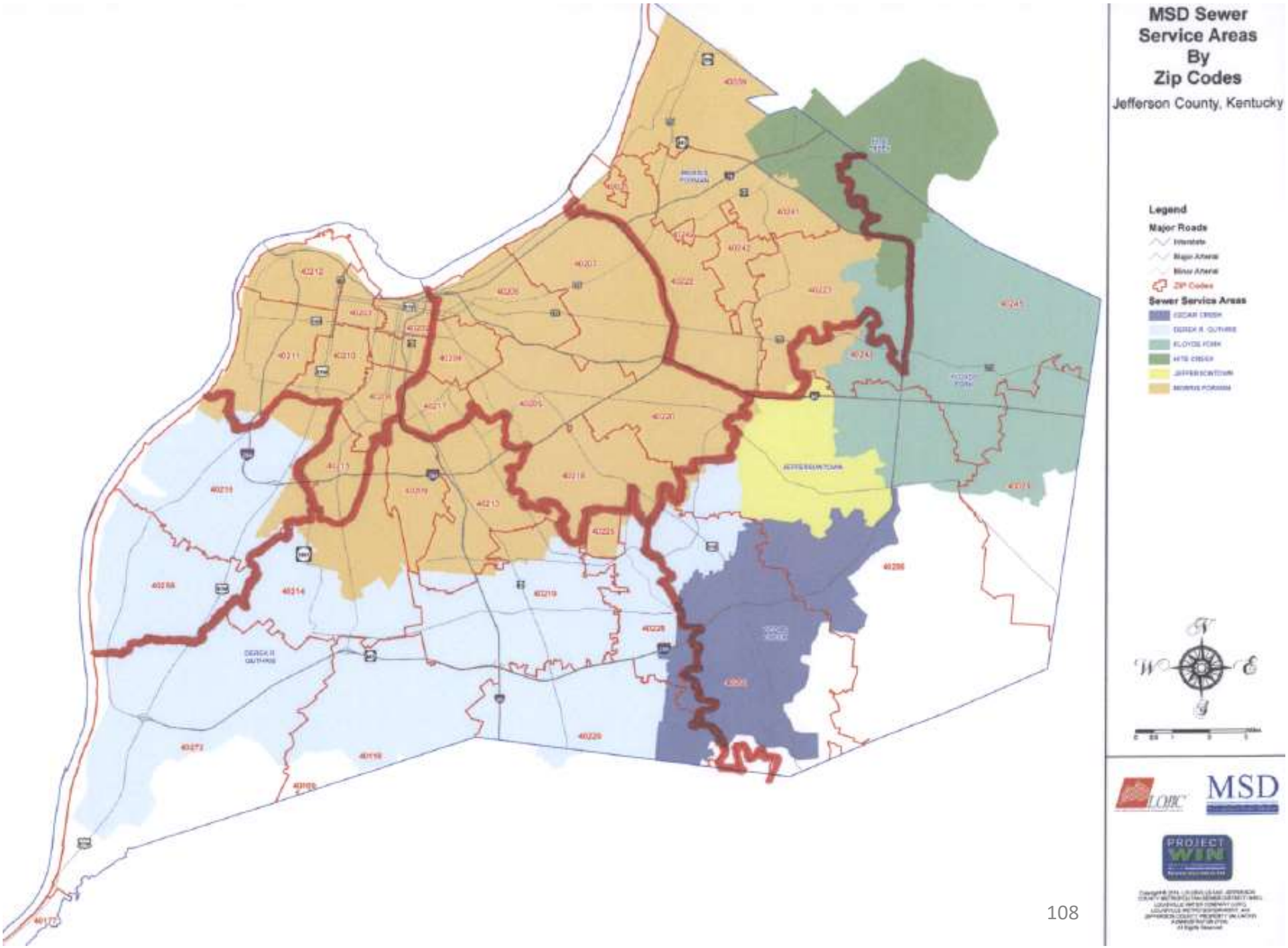
46. What device are you using to take this survey?
    - PC or laptop
    - Tablet
    - Smartphone

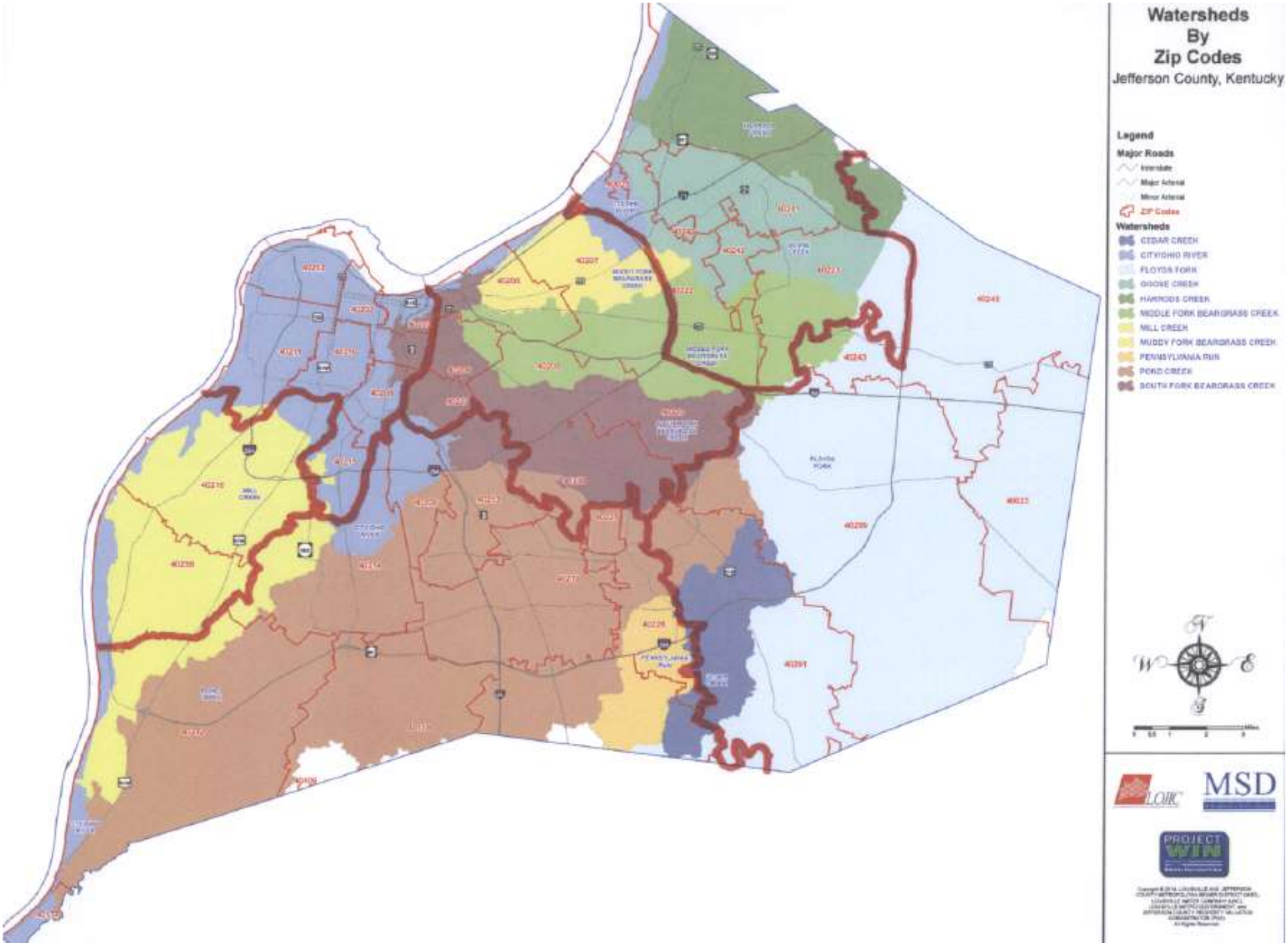
Appendix B – Zip Code Segmentation Maps

ZIP CODES

Jefferson County, Kentucky




MSD Sewer
Service Areas
By
Zip Codes
Jefferson County, Kentucky
Legend
Major Roads
Sewer Service Areas
MSD
PROJECT
WIN


Watersheds
By
Zip Codes
Jefferson County, Kentucky
Legend
Major Roads
Interstate
Major Arterial
Minor Arterial
ZIP Codes
Watersheds
CEDAR CREEK
CITYIOHIO RIVER
FLOYDS FORK
GOOSE CREEK
HARRODS CREEK
MIDDLE FORK BEARGRASS CREEK
MILL CREEK
MUDDY FORK BEARGRASS CREEK
PENNSYLVANIA RUN
POND CREEK
SOUTH FORK BEARGRASS CREEK
MSD
PROJECT WIN

APPENDIX 2.1.11 BIA LAND DEVELOPMENT MEETINGS

Organizer	Joey Ashby
Subject	BIA - Land Development Committee
Location	1000 N. Hurstbourne Parkway
Start time	Wed 8/5/2020 10:00 AM All day event
End time	Wed 8/5/2020 12:00 PM

LAND DEVELOPMENT COMMITTEE MEETING VIA ZOOM
AUGUST 5, 2020
MINUTES

The meeting was called to order by Chairman Billy Doelker at 10:00 am. Those members present were: Cliff Ashburner, Joey Ashby, Vincent Birk, Christopher Brown, Rich Heareth, Dan Hempel, Anthony Hewitt, Larry Hobson, David Johnson, Mike Jones, Don Karem, Hank Mangeot, David Marchal, Tony Marconi, Bob Marrett, Brian Matherly, George Miller, David Mindel, Jeff O'Brien, Vic Peek, Rocco Pigneri, Nick Pregliasco, Rocky Pusateri, Lori Rafferty, Tom Raver, Joe Reverman, Matt Ricketts, David Sedlar, Eric Senn, Kenney Shives, Jim Silliman, Mark Sites, Dan Smith, Scott Spears, Bob Stauble, John Talbott, Tonya Taylor, Antoine Terry, Bob Thieneman, Jr., Ron Thomas, Jim Urban, Paul Whitty and Amy Williams.

Kenney Shives, District Growth Coordinator of USPS, introduced himself and said his jurisdiction covered Kentucky and all the way to Evansville. He said there was no permanent Postmaster at the Middletown Branch and he was covering that at the moment. He encouraged them to contact him with any concerns at (502) 454-1626 or email him at kenney.o.shives@usps.gov.

Vincent Birk, Shelbyville Postmaster, reported they had had some delays due to COVID and were taking extra days for processing. He said they were bringing plats to them and they were signing off on them.

Ron Thomas gave an update on (WOTUS) Waters of the U.S. and said their new rule went into effect on June 22nd. He said it didn't regulate what the Corps didn't. He said the Corps had been accommodating.

Jeff O'Brien of Develop Louisville reported the Floyd Forks plan was voted on by Metro Council this week. He said they made a few changes from the Advisory Committee, buffer tree went back to the original language, changed the buffer language suggested by the County Attorney's Office. He said Councilman Peden had several resolutions: steep slopes, drainage easement in rear yards and private roads. He discussed the Build Back Better Together plan to boost the economy due to the movement for racial justice and COVID-19. He encouraged anyone interested to sign up on the website. He said cases with controversary was a problem now with having virtual neighborhood meetings.

For neighborhood meetings several people had suggestions of having them meet in person like the Convention Center, etc.

Jeff O'Brien said they would go back and revisit.

In the absence of Tom Doyle Shelbyville Water & Sewer, Eric Senn reported they were proposing raising fees for their new treatment plant and would take that to their Council next Tuesday.

Tony Marconi of MSD reported he took David Johnson's old position about 8 weeks ago. He said they would get a work group together to discuss issues like easement language in minor plats, underground detention and access to record drawings and he would get with Juva on that.

David Johnson of MSD reported he attended Shelby County Judge Ison's workshop to discuss future growth and development in West Shelby County. He said Tony Parrot did a great job talking about sewers and they felt it was positive. He said they had a map to show them and felt it scared a few people that liked the look of their rural county. He said fees with recording now had tripled and they did not budget for that increase and had to put that on developments.

Antoine Terry of LG&E reported they could ask electricians for stickers to put on temporary meter poles after installation. He said if they had no sticker they would remove the temp.

Brian Matherly of the Louisville Water Company said they had meter location install timeline concerns and had met with both Juva and Billy Doelker. He said on average it was taking 13 days.

Tonya Taylor of the Louisville Water Company reported they were working on an online portal and their goal to roll that out would be the end of 2020. She said it would give developers access to see where their developments stood. She said they were struggling with the payment process and hoped to work it out by the first quarter of 2021.

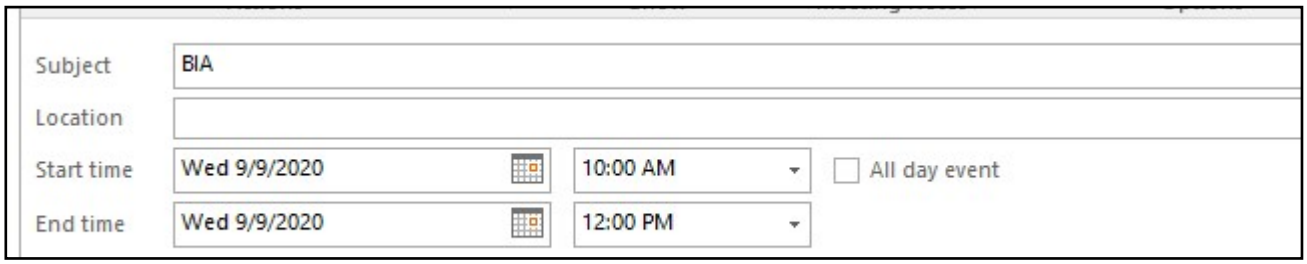
Jim Urban of Oldham County Planning & Development reported they had hired a new administrative assistant, were looking for a new Code Enforcement Director and was getting ready to offer someone an Electrical Inspector a job. He said MSD had taken over their sewer district.

Jim Silliman reported plans for stormwater permits had been down. He said they had been busy.

Amy Williams of Spectrum said they were meeting to discuss logistics of implementing a process to include a sleeve for communications as their electricians lay the service line from the joint trench to each individual home. She said she was open to ideas and could set up a meeting for 6-8 developers to participate and would coordinate with Juva.

Chairman Doelker said their next meeting would be held on September 9th at 10:00 am.

There being no further business to come before the committee, the meeting was adjourned at 11:20 a.m.



LAND DEVELOPMENT COMMITTEE MEETING VIA ZOOM
WEDNESDAY, SEPTEMBER 9, 2020
MINUTES

The meeting was called to order at 10:05 a.m., by Juva Barber, due to Chairman Doelker wasn't on the call right away due to a mix up with the zoom meeting. Those members that participated in the zoom meeting were: Amy Alvey, Jim Grunow, Roger Harbison, Rich Heareth, Deanna Karem, Don Karem, David Marchal, Tony Marconi, Bob Marrett, David Mindel, Rocky Pusateri, Jeremy Raney, Joe Reverman, Brad Selch, Eric Senn, John Talbott, Antoine Terry, Bob Thieneman, Jr., Joseph Waldman and Amy Williams.

Dave Marchal reported the tree density on the development side was smaller lot sizes. He said that was what R-4 looked like.

Joe Reverman said they were looking for zoning districts to be more flexible in housing and close to the same page.

Juva Barber said it was important to not to have to go through a rezoning.

Joe Reverman said they wanted to allow for more choices for development and zoning was a small part of it.

Dave Marchal said they were encouraging equitable housing across the City.

Juva Barber asked what education they provided to Metro Council, like what was in a comp plan, affordable housing, etc.

Dave Marchal said a combination of small group discussions and presentations to the Planning & Zoning Committee and the opportunity to speak to them.

Joe Reverman said with a new Councilperson they offered to meet with them one on one to give them an overview on zoning.

Dave Marchal said they kept continuing to work with Metro Council and staying committed to that vision and intent of the code and comp plan. He said the public meetings should wrap up this Friday and felt they were close.

Joe Reverman said they had two controversial cases going to LD&T tomorrow and hoped to have an update for them at the next committee meeting in October. He said they were working on standards that constitutes a controversial case and to set guidelines.

Amy Alvey of Oldham County Planning & Zoning reported they were working with KIPDA on regulations for a traffic study. She said they didn't have that many controversial cases and they would have to address those at that time.

Antoine Terry of LG&E had nothing new to report.

Chairman Doelker asked him how LG&E were handling their workload and keeping up.

Antoine Terry said he would check and let him know.

Juva Barber said they got an email from Bob Marrett about a Metro Louisville Tree Protection Program that they had had for some time but it hadn't been active or enforced.

Joe Reverman asked if it was relative to a private development or public right of way.

Bob Marrett said for the standard Tree Protection it was a requirement before they started clearing trees to make sure their silt fences were up and signage was installed correctly and have an inspection made.

It was suggested tree preservation signs be installed every 50'.

Brad Selch of MSD said they put a stamp on the plan and signed it.

Joe Reverman said they did not have the staff to enforce that. He said that had been around for a while.

Roger Harbison said inspectors would work with them to clear and get fencing up.

Jim Gronow of the Louisville Water Company said he would retire August 1, 2021. He said Jeremy Raney was their new Director of Engineering and was familiar with the BIA and with new development projects. His phone number was (502) 528-5509.

Amy Alvey of Oldham County said they were at full staff right now. She said they just hired John Duke, Bree Heightchew in Administration and Chris Clark in Code Enforcement. She said single-family continued to grow 30% higher than last year.

Tony Marconi of MSD said they didn't have much to report except they had 3 inspection staff out on quarantine, but they were keeping up.

Juva Barber said they had not heard back from Tom Doyle of Shelbyville and asked Eric Senn if he had.

Eric Senn said there were no updates at this time.

With no representative from AT&T there was no report given.

Chairman Doelker said their next meeting would be held the second Wednesday of October due to a conflict in meetings and that would be on October 14th.

There being no further business, the meeting was adjourned at 11:10 a.m.

Organizer	Joey Ashby
Subject	BIA - Land Development Committee
Location	1000 N. Hurstbourne Parkway
Start time	Wed 10/14/2020 10:00 AM All day event
End time	Wed 10/14/2020 12:00 PM

LAND DEVELOPMENT COMMITTEE MEETING
OCTOBER 14, 2020
MINUTES

The meeting was called to order by Chairman Billy Doelker at 10:05 a.m., at the U of L Shelby Campus Founder's Union Building and via Zoom.

Those members present: Joey Ashby, Jim Grunow, Bill Harper, Rich Heareth, Dan Hempel, Larry Hobson, David Johnson, David Marchal, Bob Marrett, Joe Marshall, Brian Matherly, Richard Miles, Jim Mims, Tanner Nichols, Matt Ricketts, Jeff O'Brien, Vic Peek, Rocky Pusateri, Jeremy Raney, Tom Raver, Jim Silliman, Bob Stauble, Daniel Tegene, Antoine Terry, Bob Thieneman, Jr., Jim Urban and Amy Williams. Others present: Juva Barber, Robin Durham and Lily Mathews.

Jeff O'Brien of Develop Louisville reported they had a resolution to look at the Land Development Code from an equity standpoint with their first meeting scheduled for October 24th. He said they were looking at things that restricted the code. He said they were reducing parking minimums across the board for residential developments and looking at neighborhood plan ordinances.

Juva Barber said she would like for some members of the BIA to meet with them as well.

David Johnson of MSD did a presentation on implementing a plan review and inspection fee to be effective March 15, 2021. He said they had failing infrastructure and needed a rate increase for repairs. He said they had flatlined their operating budget for 5 years. He said they had over 60 staff vacancies at MSD and they would have to work with what they had. He said they hired a third-party consultant and they wouldn't get out of paying fees but they would work with the costs and were open to suggestions. He showed a proposed fee schedule and said the $250 wouldn't cover all the inspections. He said there was a small cost with the redline revisions. He said if they didn't need that stage then they could take that off. He said Juva had a lot of concerns and she went to bat for the association. He said pump stations were money losers and they had 300 in Louisville.

Jim Urban of Oldham County Planning & Development said that impacted construction costs for them as well.

It was discussed with lumber prices 180% more than what it was they felt it was the wrong time to introduce additional costs and they hoped that could be pushed back for a while.

Jim Urban of Oldham County Planning & Development said they had a temporary policy for Neighborhood Meetings to have them in public with social distancing and also gave them the opportunity to participate on zoom as well. He said they could provide numbers through KIPDA for their traffic analysis.

Jim Silliman of Oldham County Planning & Development said they had a cluster mailbox unit installed in a development that he was uncomfortable with the location and with accessibility and no wheelchair access. He said the unit was approved by USPS. He said they needed to go in the right of way and said they would work out those issues with both being in agreement.

It was discussed they could write a hardship letter to USPS for handicapped people and they could still get their mail delivered to their home.

Chairman Doelker said he would reach out to other cities to see how they did theirs.

Bill Harper of LG&E reported they submitted a proposed development for residential or commercial to build in their model. He said Southwest Jefferson County had some big questions. He said their model told them the pressure points across the system. He said they had a lot of growth in that area and they were looking at that. He said the models were revised annually and looked at weekly. He said they would continue to look at Southwest Jefferson County and hoped the developments kept coming.

Jeremy Raney of the Louisville Water Company reported when Jim Grunow retired next August 2021 he would be taking over for him. He said Daniel Tegene took Antony Hewitt's position when he retired this past September.

Joey Ashby of MSD had nothing new to report.

David Marchal of Develop Louisville had nothing new to report.

Amy Williams of Spectrum had nothing new to report.

Chairman Doelker reported their next meeting would be held on November 4th.

There being no further business to come before the committee, the meeting was adjourned at 11:30 a.m.

Organizer	Joey Ashby
Subject	BIA - Land Development Committee
Location	1000 N. Hurstbourne Parkway
Recurrence	Occurs the first Wednesday of every 1 month(s) effective 2/5/2020 until 12/2/2020 from 10:00 AM to 12:00 PM

LAND DEVELOPMENT COMMITTEE MEETING VIA ZOOM
NOVEMBER 4, 2020
MINUTES

The meeting was called to order by Chairman Billy Doelker at 10:05 a.m. Those members present included: Scott Adams, Cliff Ashburner, Joey Ashby, Jacob Bellwood, Jim Grunow, Scott Hannah, Roger Harbison, Rich Heareth, Larry Hobson, Don Karem, Tim Kraus, Perry Lyons, Hank Mangeot, III, David Marchal, Bob Marrett, Richard Miles, Jim Mims, David Mindel, Jeff O'Brien, Rocco Pigneri, Rocky Pusateri, Jeremy Raney, Tom Raver, Joe Reverman, David Sedlar, Eric Senn, Jim Sillliman, Dan Smith, Jay Smith, Bob Stauble, Benjamin Taylor, Daniel Tegene, Antoine Terry, Bob Thieneman, Jr., Ron Thomas, David Tomes, Grace Villier, Paul Whitty and Amy Williams. Others present included Juva Barber and Robin Durham.

Chairman Doelker reminded them at their meeting last month David Johnson of MSD presented a proposal on fee structures coming into play soon. He said there were a lot of questions raised and concerns of the time of the implementation and going into effect March 15, 2021. He said they asked them to consider delaying that until the 3rd quarter of 2021 or reduce the fees. He said that would impact the cost of a home.

Juva Barber said she asked Eric to run numbers on both commercial and multi-family to see what impact that would have. She encouraged them to send her their fee numbers to show them the impact that would have on them.

Chairman Doelker said any input they could give them would be helpful.

Tim Kraus of the Louisville Water Company presented changes in the new service installation fees that they always presented to the BIA in November. He said they had hired someone to help with the new service application turnaround to get them done more quickly.

Jim Grunow of the Louisville Water Company said they were data driven and they based their costs on a three-year average not including the current year. He said they were proposing for 2021 a $75.00 increase for a ¾" service installation fee going from $950 to $1,025.

Tim Kraus said they tried to hold costs down on their end.

Jim Grunow went over other fees that were going up.

It was suggested they needed to have the LWC forms online and be able to pay online. Tim Kraus said they were working on that and he would take that message back to the office with him.

Jeff O'Brien of Develop Louisville reported they were working on the land development code and just finished their first round and had identified key areas to look at. He said with the rise in COVID cases they were unable to hold in person night meetings and they were trying to figure out a solution for that.

Juva Barber told him if the BIA could help to let her know.

Antoine Terry of LG&E had nothing new to report.

Jim Grunow of LWC had nothing more to report.

Hank Mangeot, III of AT&T had nothing new to report.

Chairman Doelker said their next meeting would be held on December 2nd.

There being no further business to come before the committee, the meeting was adjourned at 10:50 a.m.

Hank Mangeot, III of AT&T had nothing new to report.

Chairman Doelker said their next meeting would be held on December 2nd.

There being no further business to come before the committee, the meeting was adjourned at 10:50 a.m.

Organizer	Joey Ashby
Subject	BIA - Land Development Committee
Location	1000 N. Hurstbourne Parkway
Recurrence	Occurs the first Wednesday of every 1 month(s) effective 2/5/2020 until 12/2/2020 from 10:00 AM to 12:00 PM

LAND DEVELOPMENT COMMITTEE MEETING VIA ZOOM
DECEMBER 2, 2020
MINUTES

The meeting was called to order by Chairman Billy Doelker at 10:00 a.m. Those members present included: Scott Adams, Cliff Ashburner, Joey Ashby, Chris Brown, Mickey Corcoran, Jim Grunow, Scott Hannah, Roger Harbison, Rich Heareth, Dan Hempel, David Hobbs, Larry Hobson, David Johnson, Don Karem, Robert Kirchdorfer, Perry Lyons, Hank Mangeot, David Marchal, Tony Marconi, Bob Marrett, Joe Marshall, Jeff O'Brien, Vic Peek, Rocco Pigneri, Nick Pregliasco, Jeremy Raney, Tom Raver, Joe Reverman, Matt Ricketts, Eric Senn, Jim Silliman, Chelsey Sparks, Scott Spears, Bob Stauble, Daniel Tegene, Antoine Terry, Bob Thieneman, Jr., Ron Thomas, Jim Urban, Lee Weyland, Paul Whitty and Amy Williams.

Bob Stauble of MSD said they needed to reduce the footprint on inspections to make sure they were in compliance. He suggested they schedule a meeting of the big 4 developers, the person or representative that could make decisions and implement policy: Ball Homes, Elite Homes, Fischer Homes and Pulte Group the week of December 21st.

Juva Barber suggested meeting Tuesday, December 22nd at 1:00 pm at the BIA since it was just a small amount of them, they could distance easily.

David Johnson of MSD said they had recently taken over the sewer system in Oldham County and he asked them to work with them until they could work out the kinks. He said if anyone had any problems to contact him, Tony Marconi or Joey Ashby.

Jeff O'Brien of Develop Louisville said they had met with some BIA members on the Land Development Reform process. He said they had several meetings set to discuss housing, environmental justice and code meeting solutions for night meetings. He also shared the link during the meeting https://louisvilleky.gov/ldcreform.

Juva Barber said she couldn't stress enough how important it is to get those night meetings going. She said some projects had waited since March and still hadn't been approved.

Jeff O'Brien said their ability to advocate with Metro Council now was pretty limited. He said they were trying to be proactive on those issues. He also reported Mary Ellen Wiederwohl's last day with the Mayor's office would be December 23rd.

Chairman Doelker asked for Agency Reports.

Antoine Terry of LG&E reported their meter installation tracker updates were done and they would be training soon and could do a demo at the next Land Development Meeting. He said they would roll that out in the Spring.

Chairman Doelker said that would be great and their next meeting would be held on January 6th.

Robert Kirchdorfer of Codes & Regulations reported they were having problems with staffing in customer support and were training some new people now. He said they had hired Gary Mueller as Executive Administrator of Construction Review. He said it had been a very challenging year but they were committed to help and they were still working the bugs out of the Accella Program.

Jeremy Raney of Louisville Water Company said regarding the service rule where they staked the proposed meter, it was critical to keep lids free of dirt, etc. He said it was also important to communicate and keep real time on their meter. He encouraged them to provide their phone numbers to receive information, like billing reminders or opt out, etc. He said they had no other impact to the

development community. He said his replacement within LWC was Jordan Basham who would be Coordinator of Developments and Design especially around Floyds Fork. He said they had hired another person, Chelsey Sparks who would work with service applications and she would give an overview in January.

Jim Urban, Director Oldham County Planning & Zoning reported they had posted a job for an Electrical Inspector. He said the Planning Commission had approved the Comp Plan updates and should be done by April. He reported their single-family building permits for the year were at 296. He said their office was open but with a reduced staff time in the office. He said if they were needing a permit they could get that online. He stressed they needed to make sure their applications were filled out they couldn't hold a partial application. He said they had added a drop box outside in the foyer to reduce contact. He said both Planning Commission and Board of Adjustment meetings would be held on zoom. He said the Planning Commission had approved doing Neighborhood meetings via zoom.

Jim Silliman Chief Engineer Oldham County Planning & Zoning said they were also encouraging meetings via zoom. He asked Chairman Doelker if he could attend the Big 4 Meeting on December 22nd.

Chairman Doelker said he would talk with Bob Stauble of MSD and let him know.

Hank Mangeot, II of AT&T had nothing new to report.

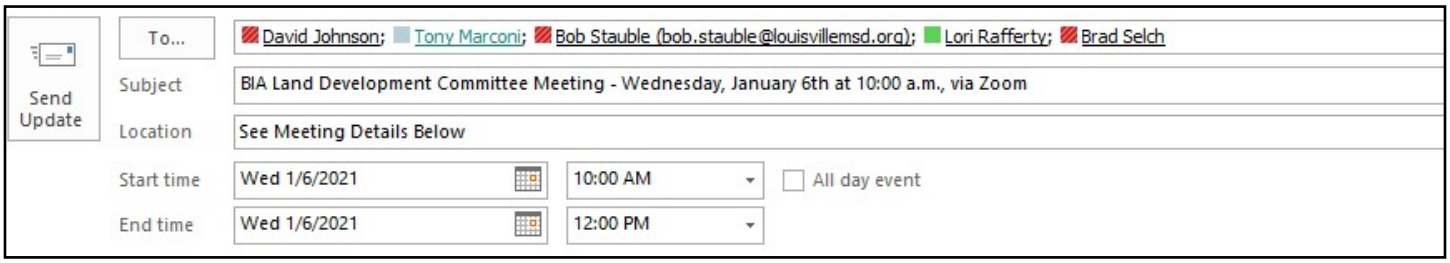
Amy Williams of Spectrum had nothing new to report.

Juva Barber said with the new President Administration coming in they needed to watch the WOTUS.

Ron Thomas said the Corp would stand by for 5 years and would lock them in. He encouraged them to look ahead and to get their projects nailed down soon.

Chairman Doelker reminded them their next meeting would be held January 6th and they would email them the meeting dates for 2021.

There being no further business to come before the committee, the meeting was adjourned at 11:00 a.m.



LAND DEVELOPMENT COMMITTEE VIA ZOOM
JANUARY 6, 2021
MINUTES

The meeting was called to order at 10:00 a.m., by Chairman Billy Doelker. Those present included: Scott Adams, Seth Anderson, Joey Ashby, Tina Bridgewater, Christopher French, Roger Harbison, Rich Heareth, Deana Karem, Don Karem, Tim Kraus, Hank Mangeot, III, David Marchal, Bob Marrett, Joe Marshall, Richard Miles, Jim Mims, Jeff O'Brien, Rocco Pigneri, Jeremy Raney, Matt Ricketts, Jim Silliman, Jay Smith, Chelsey Sparks, Daniel Tegene, Jim Urban and Amy Williams.

Juva Barber introduced Christopher French with Metro Louisville and asked him to give an update on the Land Development Code.

Chris French said they had passed a resolution to encourage Planning & Design to look at the Land Development Code for equity and inclusion. He said they would present the list of amendments next week. He said the first draft would be coming out in about two weeks for review by the public and agencies to provide comments. He said they were looking at adjusting setbacks for backyards, eliminating floor area ratio for residential developments, accessing dwelling units (ADU), notice requirements, allowing duplexes in single family zoning, allowing duplexes in multi-family zoning and inclusionary zoning.

Chairman Doelker congratulated Jeff O'Brien on his new position as Co-Chief of Louisville Forward and asked him for an update. He will Co-Chief with Rebecca Fleischaker. He is also Director of Develop Louisville.

Jeff O'Brien thanked Chairman Doelker and said he would still be the BIA point of contact. He said two-night hearings were imminent now. He said they were monitoring COVID-19 numbers following the holidays. He said they were still facing Council opposition.

Jim Mims said he served on the Policies and Procedures Committee and felt Planning & Design had adapted well with carrying on normal business. He said they would have to work with PDS with the more controversial cases.

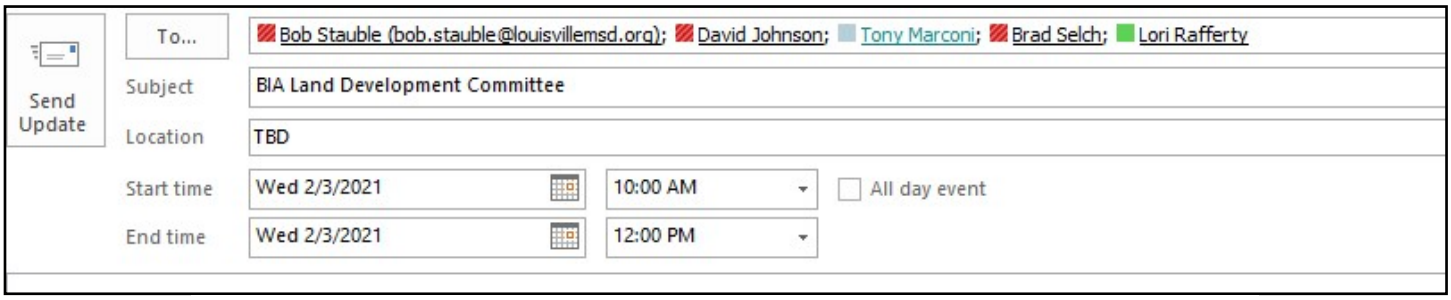
Jeff O'Brien said they did a night meeting in November and now had chosen to do them online. He said it would likely be February before those meetings could take place.

Chelsey Sparks, Supervisor of Service Applications for the Louisville Water Company, introduced herself and said they were working on building an app to help with questions about submitting electronically. She said that should be ready in about 3 months. She reminded them to make sure their applications were complete before turning them in or it would delay them.

In the absence of Antoine Terry of LG&E, Tina Bridgewater said she had no updates to report.

David Marchal of Develop Louisville said he was looking forward to working with the BIA in 2021.

Tim Kraus of the Louisville Water Company said on January 14th they were hosting virtual contractors to relay concerns they had and to get feedback from them.



LAND DEVELOPMENT COMMITTEE MEETING VIA ZOOM
FEBRUARY 3, 2021
MINUTES

In the absence of Chairman Billy Doelker, Rich Heareth called the meeting to order at 10:00 a.m. Those members present included: Seth Anderson, Joey Ashby, Mickey Corcoran, Roger Harbison, Dan Hempel, Larry Hobson, Don Karem, Perry Lyons, Hank Mangeot, II, David Marchal, Bob Marrett, Jim Mims, Tanner Nichols, Robert Ogburn, Vic Peek, Rocco Pigneri, Rocky Pusateri, Lori Rafferty, Jeremy Raney, Joe Reverman, Jason Richardson, Matt Ricketts, Dave Sedlar, Eric Senn, Jim Silliman, Amanda Smith, Dan Smith, Jay Smith, Chelsey Sparks, Scott Spears, Bob Stauble, Daniel Tegene, Bob Thieneman, Jr., Andy Watson, Paul Whitty and Amy Williams. Others present: Juva Barber, J. D. Carey and Robin Durham.

J. D. Carey of the Louisville Apartment Association discussed the new Fair Housing Ordinance that Metro Council passed with the committee. He said the ordinance required landlords to accept the Louisville Metro Housing Authority's Housing Choice Vouchers as a form of income. It also prohibited discrimination in renting based on a person's arrest history, conviction history, homeless or prior military service. He said the rental property had to be inspected and they were told they would be inspected within 72 hours of receiving the application. He said everyone had to do it and would have to accept Section 8 if they qualified. He said they were not asking them to lower the rent or the deposit. He said they would have to accept the housing voucher as a form of income.

Joe Reverman gave an update on the Land Development Code. He said Opticos Design did a diagnosis of the current LDC and revealed several components that restrict inclusive development. They included parking requirements, minimum lot sizes, floor area ratios, excessive single-family zoning, and deficient density allotments. He said they would be meeting tomorrow and would introduce Phase 1 Draft Language. They adopted a resolution to look at outdoor amenity areas geared toward children, like recreational playgrounds. He said on February 8th the Planning Committee would have their first public discussion for Phase 1.

It was discussed there needed to be serious thoughts about deed restrictions. Developers couldn't afford to do away with minimums on square footage. That would be a huge problem and tough to swallow. Also it would be hard giving renters not just homeowners information on a new development.

Joe Reverman said that needed to be researched further and discussed from an equity standpoint. He said all residents had a stake and a right in what happened in the city. He said all needed to be notified of a development that would be next to them whether they rented or owned.

It was discussed about concerns with adding recreational playgrounds and the liability involved. They asked Metro to please consider that.

Joey Ashby of MSD had nothing new to report.

Juva Barber said they needed to meet with a smaller group to go over the floodplain maps.

Bob Stauble said there was an online course for home builders to get certified and they needed to contact JCPS to register.

With no representative present from LG&E there was no report given.

Jeremy Raney of the Louisville Water Company said Jordan Basham took his position and Jacob Clark took Jordan's position. He said they consolidated distribution and relocations under Daniel Tegene.

Chelsey Sparks of the Louisville Water Company in New Service said there was a large back log of applications that they could not process until the main was in service.

David Marchal reported in Advanced Planning, Gretchen Millikin had left and Mike King was their new Director.

Joe Reverman said they had two virtual night meetings scheduled for February 22 and March 1st. He said the virtual meetings had gone smoothly.

Jim Silliman Chief Engineer of Oldham County Fiscal Court had nothing new to report.

With no representative present from Public Works there was no report given.

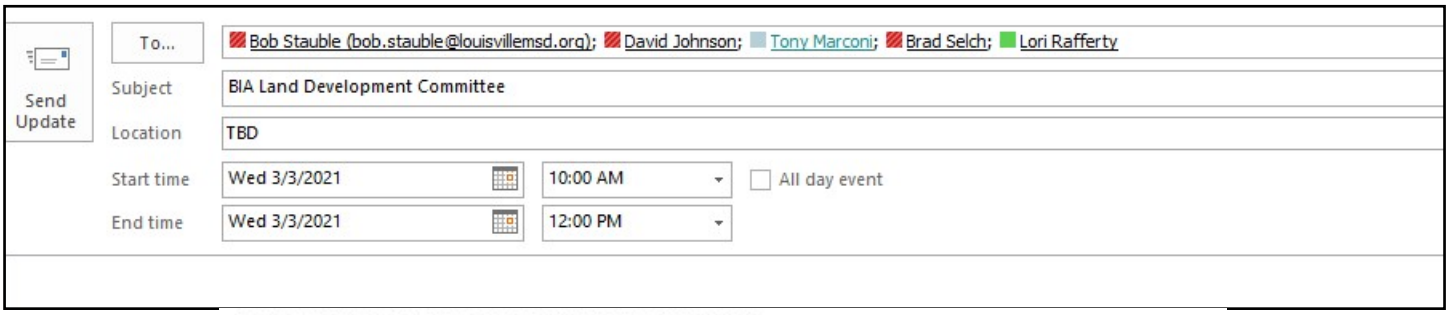
With no representative present from Bullitt County there was no report given.

With no representative present from Shelby County there was no report given.

Hank Mangeot, II of AT&T had to leave early, but had nothing new to report.

Amy Williams of Spectrum also had to leave and there was no report given.

There being no further business to come before the committee, the meeting was adjourned at 11:20 a.m.



LAND DEVELOPMENT COMMITTEE MEETING VIA ZOOM
MARCH 3, 2021
MINUTES

The meeting was called to order by Chairman Billy Doelker at 10:05 a.m. Those members present: Scott Adams, Cliff Ashburner, Joey Ashby, Stacy Conley, Mickey Corcoran, Brian Dillard, Tracee Dore, Rob Eberenz, Jr., Adam Gallagher, Jason Hancock, Scott Hannah, Thomas Hart, Roger Harbison, Rich Heareth, Dan Hempel, Larry Hobson, Kristy Inmon, Deana Karem, Don Karem, Terry Lloyd, Perry Lyons, David Marchal, Tony Marconi, Bob Marrett, Joe Marshall, Richard Miles, Jim Mims, Jeff O'Brien, Vic Peek, Rocco Pigneri, Lori Rafferty, Jeremy Raney, Joe Reverman, Matt Ricketts, Nick Rodgers, Anetha Sanford, Brad Selch, Eric Senn, Jim Silliman, Amanda Smith, Dan Smith, Chelsey Sparks, John Talbott, Nichols Tanner, Jeff Taylor, Antoine Terry, Bob Thieneman, Jr., Ashley Tinius, Jim Urban, Andy Watson, Lee Weyland and Amy Williams and Colleen Younger. Others present: Juva Barber and Robin Durham.

Jason Hancock of PVA said they were reassessing over 100,000 properties in areas 2, 3, 5 and 7. He said if anyone had an issue with the assessment, they had an online tool that was very simple.

Ashley Tinius of PVA said they had put out flyers in several papers and in many languages.

Jason Hancock said there were maps available on their website showing what was reassessed. He said the appeal process would be open from April 23-May 17 and the best way to appeal would be online.

Bob Thieneman, Jr., discussed requirements on binding elements regarding blasting. He said at a public meeting they asked if they would agree to binding elements. He said he said he gave a thumbs up but now was concerned it would be a regular thing. He said to give a 30-day notice before blasting and then to have to offer a pre and post survey was a problem. He said that was brought up by Chief Carlson.

Nick Rodgers of the KY Crushed Stone Association introduced himself and with him were Jeff Taylor of Sauls Seismic and Brian Dillard, of Rogers Group who were well versed on binding elements. He then read the language from KRS Chapter 351.335 and said the language was not compliant with the law.

Jeff Taylor said a 30-day notification could slow projects down and it was well over and above the KY State Blasting Regulation.

Brian Dillard said he had worked in quarries for years and had been exposed to blasting. He said the challenge was to look at cracks in their own homes and most had nothing to do with blasting. He said they didn't need any other government agencies to get into blasting.

There were discussions over concerns with the 30-day notification and the pre-and post-blast surveys. It was also discussed the State law was clear not to be regulated by local government, but it was, and it was suggested they consult with the County Attorney's Office.

Joe Reverman said that was not new and they had discussed that 10 years ago and he was not certain what the regulations were on blasting. He said there was a concern with the residence and the Planning Commission was looking into that. He said they needed to educate the Planning Commission on those and needed to discuss that with the County Attorney's Office as well.

Chairman Doelker said he would ask HBAK to investigate that also.

Anetha Sanford, Chief Executive Officer of HBAK, said she just sent that to their attorney, Jon Woodall. She said they were happy to help anyway they could.

Nick Rodgers said they needed to make sure everyone was compliant with the law. He said they needed to be engaged with Marty Brashear, in the explosives branch and with Brian Dillard and Jeff Taylor.

Jeff O'Brien said binding elements was not an ordinance but an education piece for the Planning Commission and staff not a legislative thing.

Chairman Doelker said they would continue to work on that and to keep that on their agenda.

Lori Rafferty of MSD went over the FEMA updated mapping that went into effect last Friday. She said it had been a long process since 2009 and they were now on the LOJIC website. She said it was adopted by FEMA on February 26, 2021. She said there were new streams that had never been mapped in the floodplain before. She advised them to talk with their insurance company to get that insurance. She said flood insurance was transferrable in case a homeowner moved. She gave out several websites for them to look at and said to contact them with any questions: https://apps.lojic.org/msdflooddetermination/ or www.louisvillemsd.org and msc@fema.gov.

It was discussed the parking lot rule was taking value from a development and that was unreasonable. They felt that went against improving density and policies restrict development.

Jim Urban of Oldham County Planning & Development reported they had redone their floodplain maps as well and they would go in effect March 23, 2021. He said most of the flooding was on the Ohio River.

Tony Marconi of MSD said they had spent a lot of money on the new maps and they were willing to look at them and make that correction if needed.

Chairman Doelker asked for Agency Reports.

Joey Ashby of MSD had nothing else to report.

Antoine Terry of LG&E reported they would be able to do the meter installation tracker updates at the April meeting. He said they had to push it back due to bad weather the past few weeks.

Chelsey Sparks, of the Louisville Water Company in New Service Applications gave an update on the program they were building. She said the pay piece was final and would move to the next stage. She said home builders needed their own boards.

Jeremy Raney of the Louisville Water Company said they were looking at proposed developments. He said if a subcommittee was needed to discuss conversations to stay above the curb, they were willing to participate.

Chairman Doelker asked the committee to let him know if they were interested in sitting on that subcommittee. He thanked both Chesley and Jeremy for their updates.

Jeff O'Brien of Develop Louisville said they had no other major issues to discuss.

Jim Urban said they had hired another Electrical Inspector, Matt Dunaway who would get dual certified.

Jim Silliman, County Engineer with Oldham County Fiscal Court, said they had been busy the past month with stormwater. He said if anyone had any problems, to give him a call.

Hank Mangeot of AT&T couldn't attend the meeting but said he had nothing new to report.

Chairman Doelker reported they would move their April 7th Land Development Committee Meeting to the following Wednesday, April 14th due to Spring Break in surrounding counties.

There being no further business to come before the committee, the meeting was adjourned at 11:30 a.m.

Organizer	Joey Ashby
Subject	BIA Land Development Committee
Location	TBD
Start time	Wed 4/14/2021 10:00 AM All day event
End time	Wed 4/14/2021 12:00 PM

LAND DEVELOPMENT COMMITTEE MEETING VIA ZOOM
APRIL 14, 2021
MINUTES

The meeting was called to order at 10:00 a.m., by Chairman Billy Doelker. Those members present included: Seth Anderson, Cliff Ashburner, Joey Ashby, Christopher Brown, Stacy Conley, Rob Eberenz, Jr., Henry Ford, Michael Gross, Mark Hammel, Scott Hannah, Roger Harbison, Larry Hobson, Harrison Huelsman, Don Karem, Terry Lloyd, Bob Marrett, Jim Mims, David Mindel, Tanner Nichols, Vic Peek, Nick Pregliasco, Rocky Pusateri, Jeremy Raney, Tom Raver, Eric Senn, Jim Silliman, Dan Smith, Chelsey Sparks, Scott Spears, Bob Stauble, John Talbott, Daniel Tegene, Ron Thomas, Jim Urban, Andy Watson and Paul Whitty. Others present included: Juva Barber, Robin Durham and Emily Liu.

Chairman Doelker said they would meet next month in person at the BIA. He also reminded everyone the BIA was having an Open House on Wednesday, April 21st from 4:30-5:30 with a social time and to show everyone their basement remodel. He then introduced Emily Liu of Planning & Design.

Emily Liu reported on notices and ADU's. She said there were six recommendations for the Land Development Code reform with one being a public notice following the letter of state law, notifying property owners adjacent to the property. She said notifying renters was a problem and a technology issue as well. She said they working on a spreadsheet with public data, LOJIC and project numbers. She said that spreadsheet could turn into a label to send out. She said it was 3-4 steps and very easy. She said an accessory dwelling unit was an accessory to the main house. She said there was a requirement that the owner must occupy one of the dwellings. She said they would have virtual public meetings and would have 3 in person meetings at the following: Shawnee Park, Iroquois Park and Norton Commons. She said it would then go to the Planning Commission on April 20th at 6:00 pm. She said they were trying to be inclusive and needed diversity in every community.

Juva Barber asked if it passed would it be effective August 1st and would developments be allowed to move forward if not ADU's and were they going to have to allow ADU's in their CCR's.

Emily Liu said there was no requirement yet and they couldn't prohibit them from doing that. She said there was nothing to regulate at this time. She said ADU's were not allowed for short term rental. She said 70% of ADU's were used by family members and for ADU's they could use the same address as the main dwelling or a separate one.

It was discussed there were a lot of hurdles with ADU's and HOA's were very restrictive.

Emily Liu said they hoped ADU's would benefit the development community.

Chairman Doelker said Joe Reverman couldn't be on the call today to discuss binding elements regarding blasting. He said they would be removing the requirement for post blast surveys and that was positive progress.

Juva Barber said they would keep the 500' and still require a pre blast survey but if the owner didn't want to do it they just needed a letter on that.

Chairman Doelker said there were questions and concerns on bond release procedures and their goal was to minimize the coordination.

It was discussed they would need to do a punch list, and the Health Department was the biggest issue, they couldn't get there to do final inspections. They needed to streamline the process.

Bob Stauble said they were looking for a way to make the process more efficient. He said it was premature to blame the utilities and there was room for improvement all the way around and they were open for discussion.

It was discussed the Planning Commission saw a lot of plans and detailed plans. The detailed process required more information. It was reported they were asking for more and developments were not getting timely reviews. It was discussed they used the general process more often and members of the community, Planning Commission and Metro Council appreciated the certainty of a detailed plan.

Chairman Doelker asked for Agency Reports.

Bob Stauble of MSD reported EPSC courses thru JCPS were online to take at their leisure.

Joey Ashby of MSD said the cost recovery started July 1st and they were working on the internal process to make sure it was efficient.

Henry Ford of LG&E had nothing new to report.

Jeremy Raney of the Louisville Water Company said metering was causing issues and they were having problems locating meters. He said they would be reaching out to the repeat offenders.

Jim Urban of Oldham County Planning & Development reported their single-family permits were up as well as their total permits. He said inspections had increased also. He said they had hired a second inspector, Matt Dunaway.

Jim Silliman, County Engineer Oldham County Fiscal Court reported their doors were open. He said detailed plans push for TRC was approved at the Planning Commission.

With no representative from Bullitt County present, there was no report given.

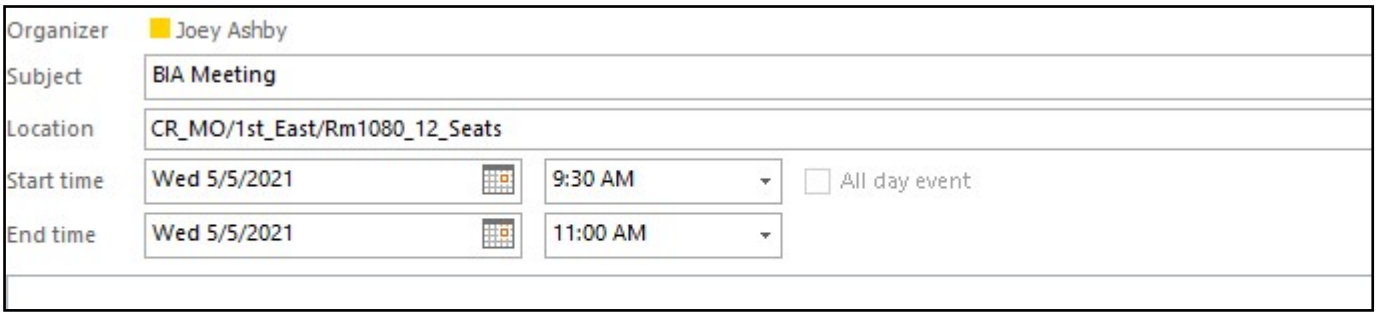
With no representative from Shelby County present, there was no report given.

With no representative from AT&T present, there was no report given.

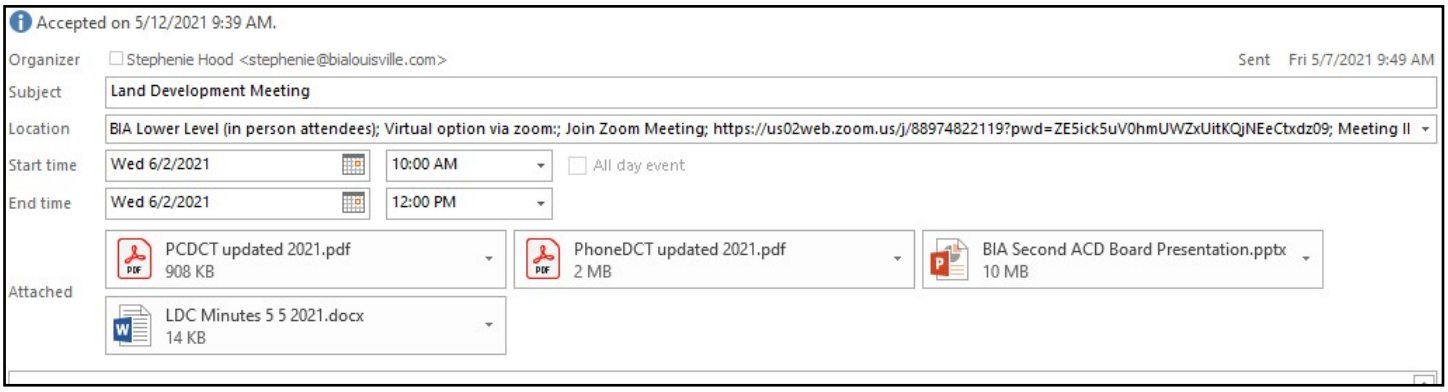
With no representative from Spectrum present, there was no report given.

Chairman Doelker reminded them their next meeting would be held on May 5th at 10:00 am, in person and there would be a zoom as well.

There being no further business to come before the committee, the meeting was adjourned at 11:35 am.

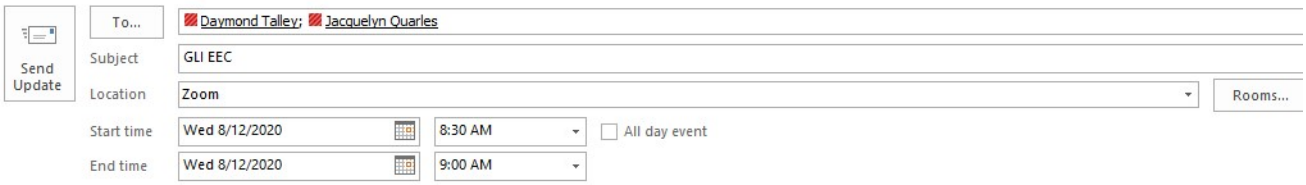

Organizer
Joey Ashby
Subject
BIA Meeting
Location
CR_MO/1st_East/Rm1080_12_Seats
Start time
Wed 5/5/2021
9:30 AM
All day event
End time
Wed 5/5/2021
11:00 AM

BIA Meetings
(June 2, 2021)



APPENDIX 2.1.12 GREATER LOUISVILLE EEC COMMITTEE MEETINGS

A

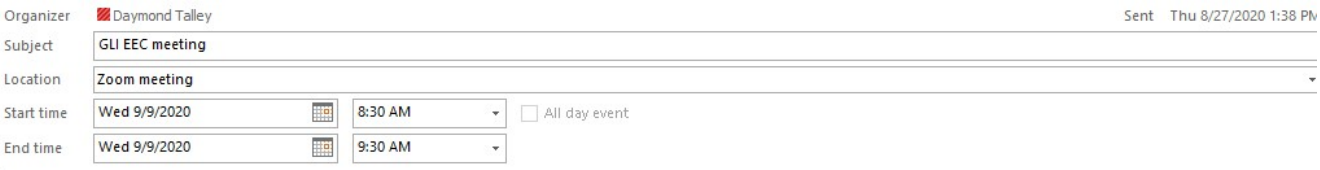


GLI EEC members,

We will be resuming EEC meetings next week on **August 12 at 8:30am – 9:30am via Zoom**. Call-in/log-in can be found below. Joining us for this meeting will be Representative Jim Gooch, the Chairman of the Kentucky House Natural Resources and Energy Committee. This will be a great opportunity for us to connect with a key policymaker and get a preview of the 2021 legislative session in Frankfort. During the call, I will facilitate a Q&A session with Rep. Gooch. If you have a question that you would like to submit ahead of time, please send that to me by Monday. See the full meeting agenda below.

- Call to order/Roll call
- Guest speaker: Rep. Jim Gooch
- Subcommittee reports
- LMAPCD RMP/Reg. 5.15 Discussion (additional information on this item will be sent out next week)

B

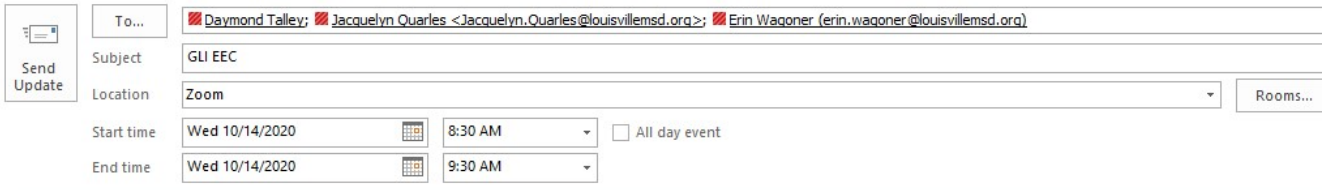


[EXTERNAL]
GLI EEC members – good afternoon. Please see the information below regarding our next meeting on September 9, 2020. This meeting will take place via Zoom. In addition, if you have not had a chance to complete GLI's 2021 State Issues Survey, please do so by clicking this link: https://www.surveymonkey.com/r/XSB6DTW. The survey takes about five minutes.

September 9, 2020: 8:30am – 9:30am
Agenda:

- Guests: Keith Talley and Michelle King - Multipollutant Stakeholder Group Final Report discussion
  - The final report can be accessed here: https://louisvilleky.gov/sites/default/files/air_pollution_control_district/documents/allother/2
- Energy and environment priorities for GLI's 2021 State Legislative Agenda
  - Please review the attached draft document. If you have edits or additions, please email those to me (caull@greaterlouisville.com) ahead of time.
- Subcommittee reports

C



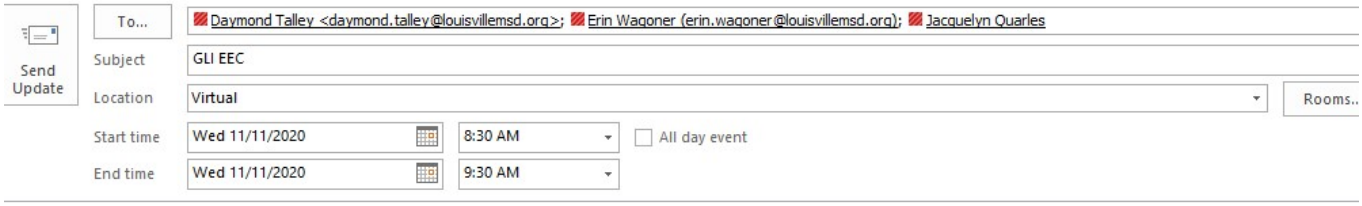
Good afternoon GLI EEC – Our next meeting will take place on **October 14, 2020, at 8:30am via Zoom**. We will be joined by Paul Miller from the KY EEC Division of Water. Please see below for an agenda + log-in information.

GLI EEC October 14 Agenda

I. Call to order
II. KY EEC Division of Water Presentation
    a. Paul Miller, Director of the Division of Water, KY EEC
III. Subcommittee Reports
IV. Adjourn

Call-in/Log-in Information
Join via link
https://us02web.zoom.us/j/82932909528

D



GLI EEC – please take note of our next meeting on November 11 at 8:30am. Call-in/log-in information is below. I will send out a meeting agenda next week.

GLI EEC Meeting – November 11, 8:30am

Join Zoom Meeting
https://us02web.zoom.us/j/82049104501
OR
Dial in
1 646 876 9923
1 301 715 8592
1 312 626 6799
Meeting ID: 820 4910 4501

E

Organizer: Daymond Talley — Sent: Wed 12/2/2020 12:42
Subject: GLI EEC December meeting
Location: Zoom
Start time: Wed 12/9/2020 8:30 AM — All day event
End time: Wed 12/9/2020 9:30 AM

[EXTERNAL]

EEC members – hope you are all doing well. Three notices for all you to be aware of:

- Our next meeting will take place on **December 9 at 8:30am**. We will be joined by Dan Byers, Vice President of the U.S. Chamber's Global Energy Institute. Dan will give us a briefing on federal environmental policy issues and what the Chamber is expecting from the incoming administration in Washington. Log-in information is below.
- APCD is holding a public meeting regarding Reg. 5.15, Chemical Accident Prevention Provisions, this evening at 6:00pm. More information can be found here.
- Louisville Metro Planning and Design Services is holding a series of workshops on the Land Development Code initiative that we discussed briefly at our November meeting. One of these workshops will focus on environmental issues related to land development. That workshop is scheduled for December 12 at 10:00am. More information can be found here.

F

Organizer: Daymond Talley — Sent: Wed 4/7/2021 7:24
Subject: GLI EEC Meeting
Location: Zoom
Start time: Wed 4/14/2021 8:30 AM — All day event
End time: Wed 4/14/2021 9:30 AM

GLI EEC Member,

April 2021 Meeting
The next virtual meeting of the EEC will be on Wednesday April 14th at 8:30 AM. The agenda is as follows:

1. Call to Order
2. Guest Presentation - Rachael Hamilton, Director, Louisville Metro APCD - General Update on Air Issues including Advanced Notice of Public Rulemaking for Reg 2.04, Ozone, PM2.5, Air Toxics, etc.
3. Local Update
4. General Assembly Update
5. Subcommittee Reports - Air, Water, Waste
6. Old/New Business
7. Adjourn

Please use the following link to access the meeting:
https://us02web.zoom.us/j/82269249283?pwd=WHFCbk85dnQva1JqQUZrRG5RTkFxdz09

G

Organizer	Daymond Talley
Subject	GLI EEC meeting
Location	Zoom
Start time	Wed 5/12/2021 8:30 AM
End time	Wed 5/12/2021 9:30 AM

Sent Fri 5/7/2021 2:17

All day event

Please take note that the next GLI EEC meeting will be this coming Wednesday May 12th at 8:30 am. The link is the following:

Log-in/Call-in Information
https://us02web.zoom.us/j/82269249283
Or call-in: 1 646 876 9923, MEETING ID: 822 6924 9283

Agenda

1. Call to Order
2. Special Presentation - Kasey Maier, President, Waterfront Botanical Gardens - Update on Phase 1 including the Ellen T Leslie Environmental Classrooms, the Japanese Garden, and upcoming events and partnerships.
3. Review/Revise GLI's Federal Agenda (attached)
4. Update on Lou Metro APCD Reg 2.04/Air Subcommittee Update - Reg 2.04 Announcement Attached
5. Water/Waste Subcommittee Updates
6. Old.New Business
7. Adjourn

APPENDIX 2.1.13 CONSTRUCTION INDUSTRY EDUCATIONAL MATERIALS

Profile
Solutions for your Environment

Lunch & Learn Erosion Control Series:

Presented to: msd Safe, clean waterways

Webinar Presentation
May 27, 2021 @ 9am EST



Hydraulic Erosion Control & Soil Restoration – Save Soil, Dollars, & Time

Engineered Hydraulic Erosion Control products have a proven track record of:

- Reducing environmental risks and site failures.
- Improving vegetation establishment
- Managing water flow
- Enhancing aesthetics

Derek Oosterhouse of Profile Products will offer solutions from innovative breakthroughs in Erosion Control & Soil Restoration Systems to aid in your product selections. By utilizing soil testing and selecting the correct erosion control material, you can ensure successful vegetation establishment on every project site.



Derek Oosterhouse
Regional / Market Development Manager
Midwest U.S. & Eastern Canada
doosterhouse@profileproducts.com
(616) 581-6904

Derek has over 12 years of experience in the vegetation establishment and erosion control industry. He has managed projects and business in over 25 countries and encountered a variety of site challenges and unique projects along the way.

Product Links

ProGanics Topsoil Alternative ● Soil Amendments ● Flexterra HP-FGM ● www.profileproducts.com

Profile
Solutions for your Environment

The 5 Fundamentals for Establishing Vegetation

1. Understand Your Substrate



- It all starts with a soil test. Soil testing is key to determine soil fertility, the ability of the soil to supply essential elements, and to ensure proper species selection when establishing vegetation.

2. Pick the Right Plant Species



- What is the intended application?
- What are the different characteristics of the site?
- What kind of maintenance activities will be performed?

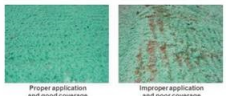
These and other questions can assist you in understanding the environment and avoiding seed selection mistakes.

3. Select the Correct Erosion Control Practices



- The correct cover is necessary to protect both the seed and soil. Take into account the erosion control product's effectiveness, it's ability to facilitate vegetation establishment, and the functional longevity required for that protection.

4. Ensure Proper Installation



- Follow comprehensive and detailed specifications.
- Follow Installation guidelines to maximize performance and meet desired results.
- Use tools and calculators. Rely on experience.

5. Conduct Inspection and Maintenance Activities

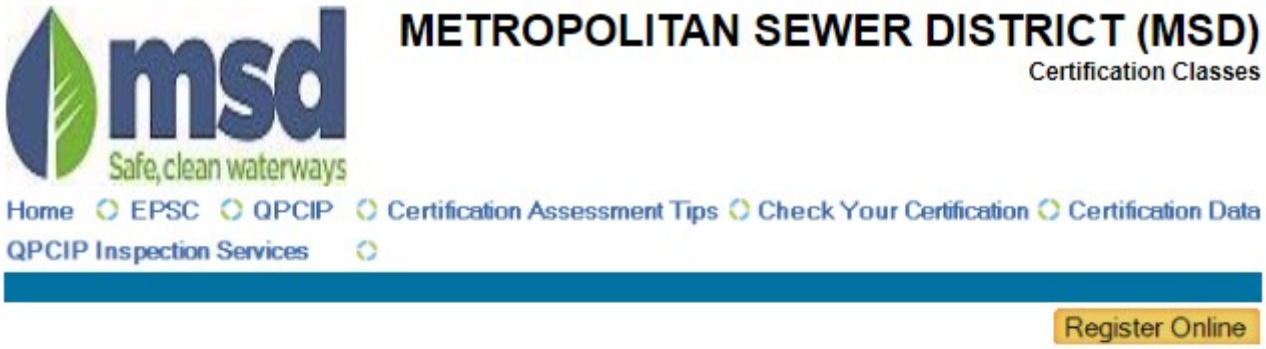


- Initial inspection to ensure installation is in accordance with plans, specs, and is fully documented. Subsequent inspections at predetermined time intervals and after significant precipitation or a potentially damaging weather event. All inspection activities must be completed by qualified professionals.

MSD EPSC Training (On-Going)

2.1.13-B

In order to educate contractors and homebuilders about erosion prevention and sediment control (EPSC) requirements and to meet the EPSC ordinance, MSD teaches classes for both contractors and homebuilders. These classes are administered by Jefferson County Public Schools. During 2020, no classes were able to be offered due to the COVID-19 pandemic. This in person class format was transitioned to an online self-paced class as of January 2021 and is available in both English and Spanish in the hope to educate a larger customer base.
Website link: http://lifelonglearning4u.com/msd/



Click on the "reload" or "refresh" button on your browser to ensure you are viewing the latest version.

Due to the adoption of the Louisville and Jefferson County EPSC Ordinance, area Home Builders (Single-Lot Residential Construction or Demolition), Contractors, Inspectors, and Certified Plan Reviewers are required to participate in training courses and as a result, receive certification in compliance with the ordinance.

Erosion Prevention and Sediment Control (EPSC) Certification courses are prepared by MSD and offered online in cooperation with JCPS Adult & Continuing Education. EPSC courses listed are currently held online and access is granted after the student has been registered and then entered as a participant in the online course. Pre-registration with Adult & Continuing Education/Louisville Learns is required.

A Stormwater Prevention Resource Training video is also available for anyone to view. Please note that the Resource Training Videos do not result in an EPSC certification.

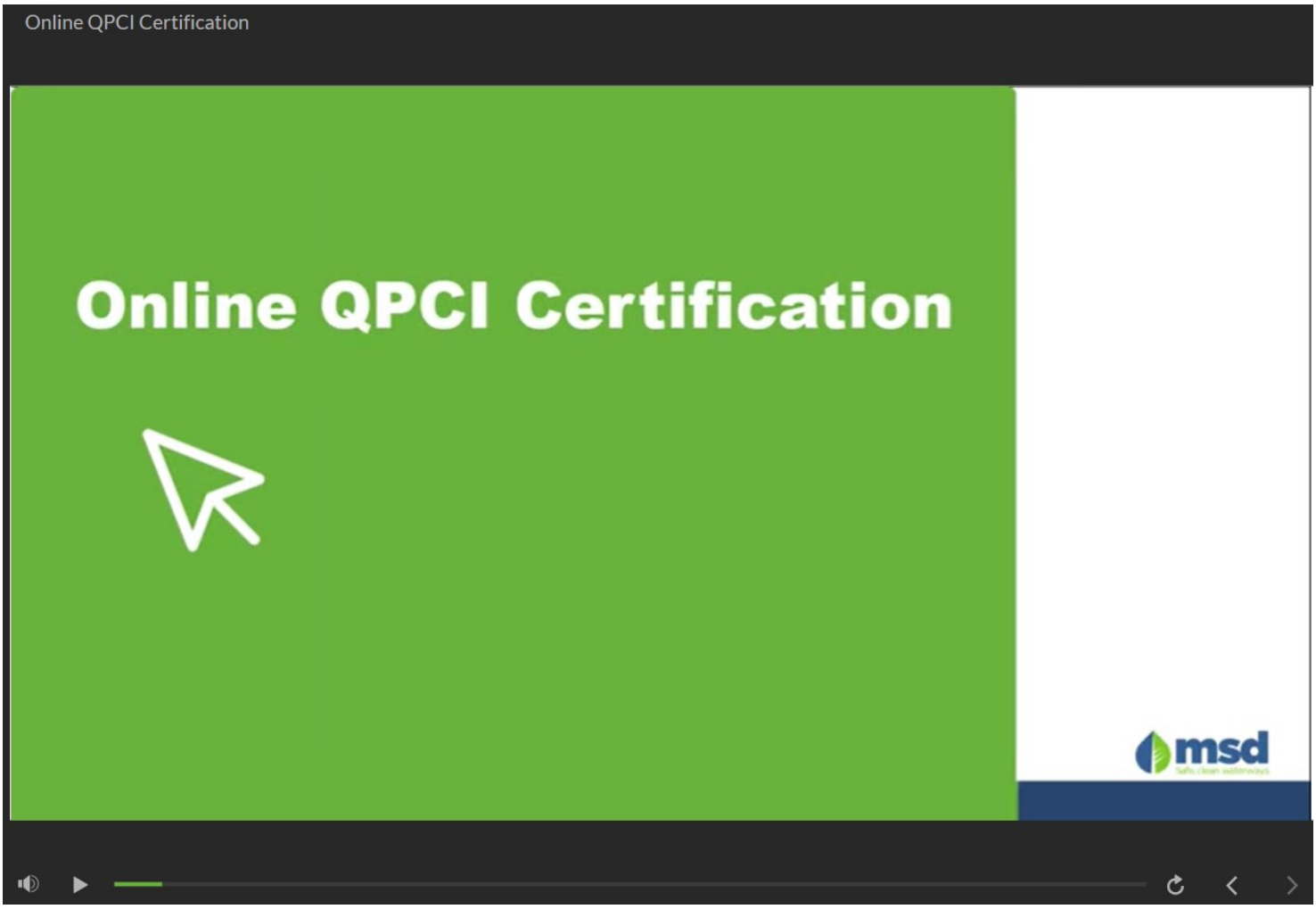
Online Courses:

- **Home Builder (Single-Lot Residential Construction or Demolition) -** Course fee: $89
- **Contractor** - Course fee $95

MSD Qualified Post-Construction Inspector Training (QPCI) (On-Going)

2.1.13-C

Required annual inspections of post-construction best management practices must be completed by a Qualified Post-Construction Inspector (QPCI) per the Long Term Maintenance and Operation Agreement (LTMOA). The training, Qualified Post-Construction Inspector page, is provided free of charge. An 80% or better on the follow up quiz to receive the QPCI certification.
Website link: http://oit.louisvillemsd.org/



Organizer: Boydston, Gail <gail.boydston@Indy.Gov> Sent: Tue 12

Subject: Peer Cities Meeting

Location: WebEx

Start time: Thu 1/7/2021 10:00 AM All day event

End time: Thu 1/7/2021 11:30 AM

[EXTERNAL]

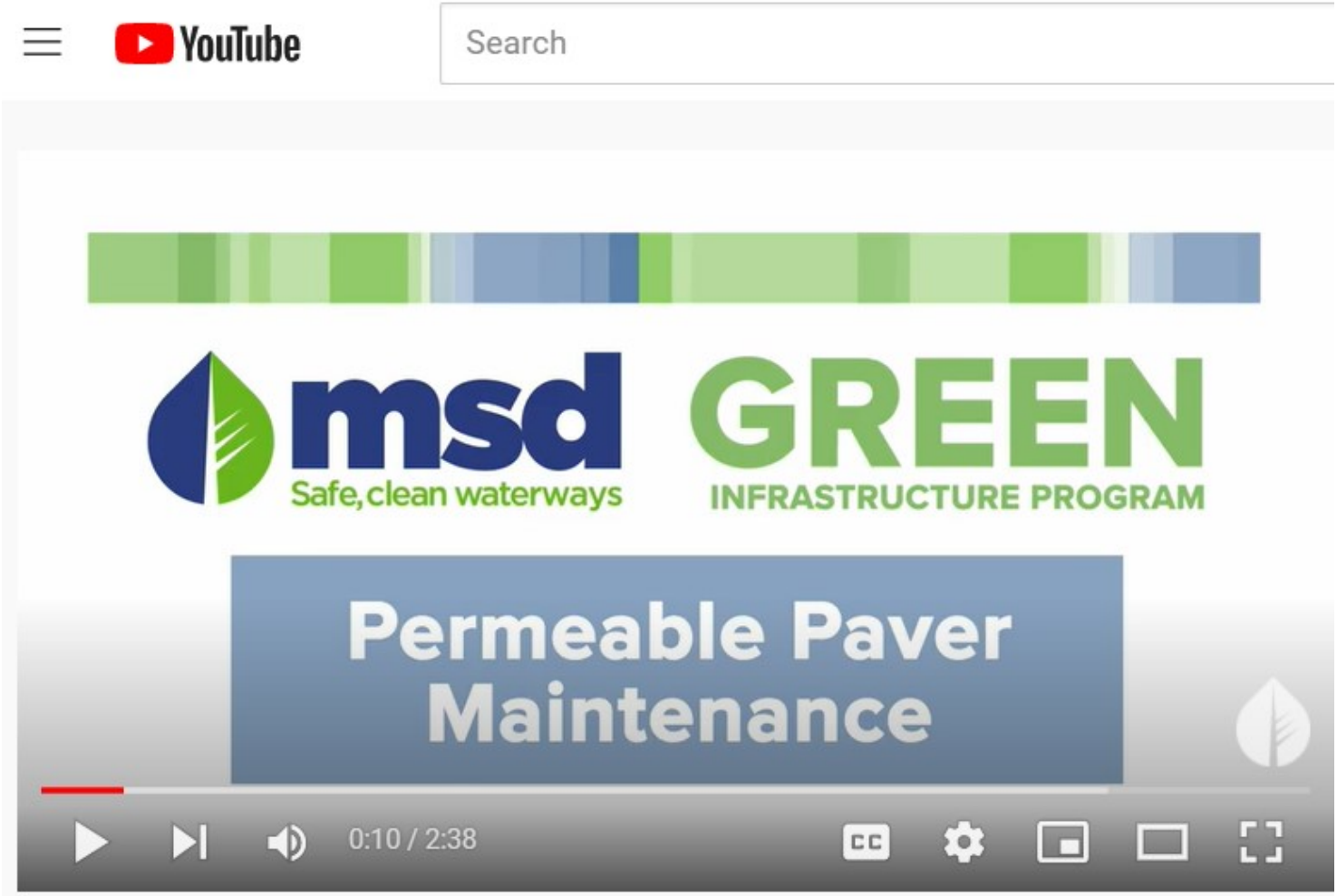
We welcome a guest speaker this month, Brett Clark, Louisville MSD, to share a presentation on Post-Construction BMP inspection and management with the team.

https://indy.webex.com/indy/j.php?MTID=md77cb9e4fbeec8c0c1fd39f6017510f0
Thursday, Jan 7, 2021 10:00 am | 1 hour 30 minutes | (UTC-05:00) Eastern Time (US & Canada)
Meeting number: 179 500 1726
Password: DPW_SW
c2f098bbc88c42acbe47eca95af963a1

Join by video system
Dial 1795001726@indy.webex.com
You can also dial 173.243.2.68 and enter your meeting number.

Join by phone
+1-408-418-9388 United States Toll
1-844-992-4726 United States Toll Free
Access code: 179 500 1726

Permeable Paver Maintenance Video **2.1.13-E**
(https://www.youtube.com/watch?v=rg4F1jbH57k**)**



APPENDIX 2.1.14 RAIN GARDEN HANDBOOK

Rain Garden Handbook and Rain Garden Plant Guide (On-Going) 2.1.14-A

Website link: https://louisvillemsd.org/sites/default/files/inline-files/Rain%20Garden%20Handbook%204th%20Edition_0.pdf



Website link: http://louisvillemsd.org/sites/default/files/inline-files/Rain%20Garden%20Plant%20Guide_0.pdf

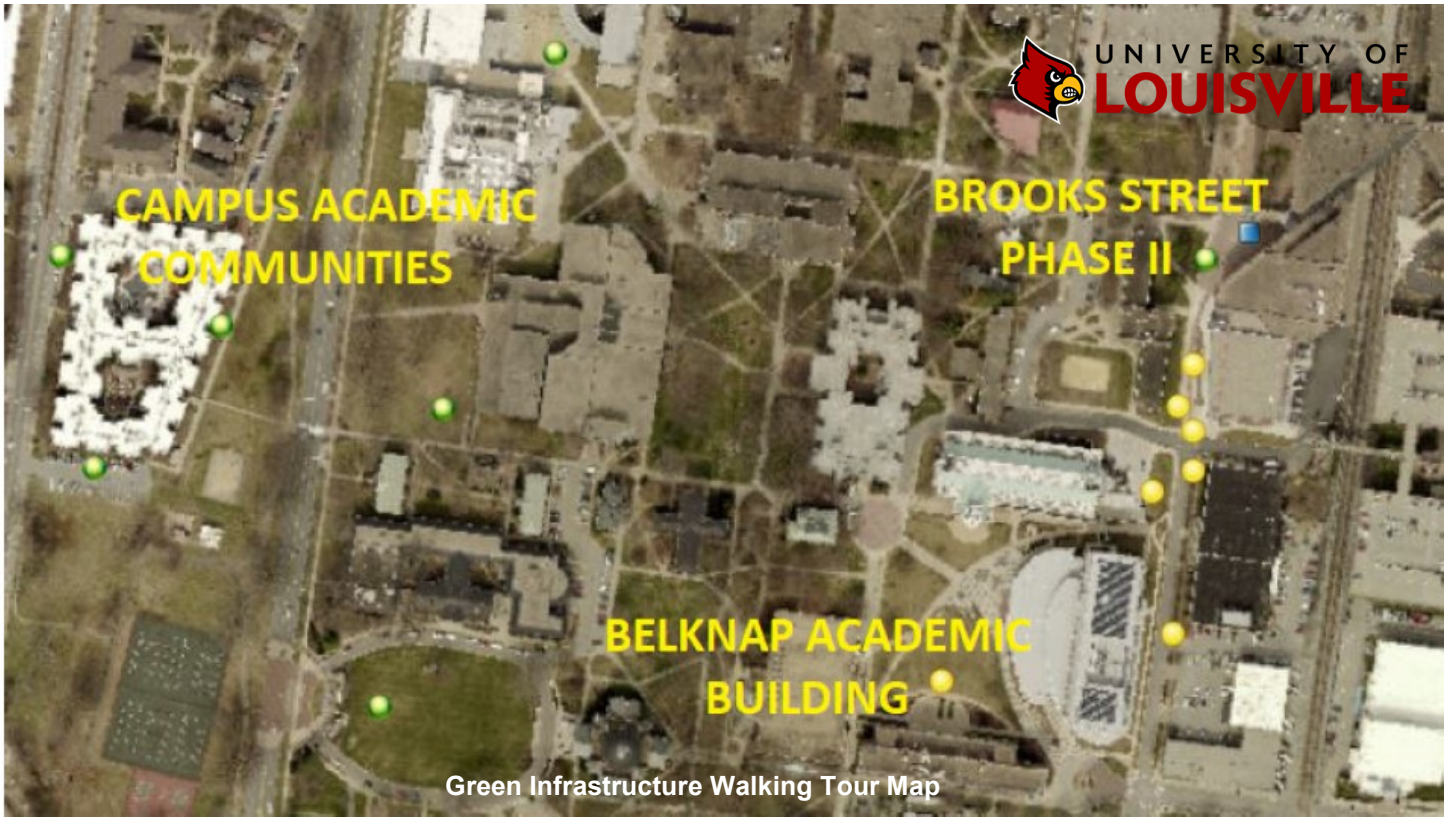


APPENDIX 2.1.16 PUBLIC NOTIFICATION SYSTEM

SummerWorks - University of Louisville Green Walking Tour (July 14, 2020) 2.1.15-A

Louisville MSD participates in Louisville SummerWorks. This program is led by KentuckianaWorks, the Louisville Region's Workforce Development Board, in partnership with YouthBuild Louisville to expose area youth to early job experiences and mentorship opportunities.

As part of this program, Louisville MSD staff host a tour of green infrastructure, stormwater and sanitary facilities on the University of Louisville Belknap Campus.



Green Infrastructure Walking Tour Map

Louisville MSD
July 22 ·

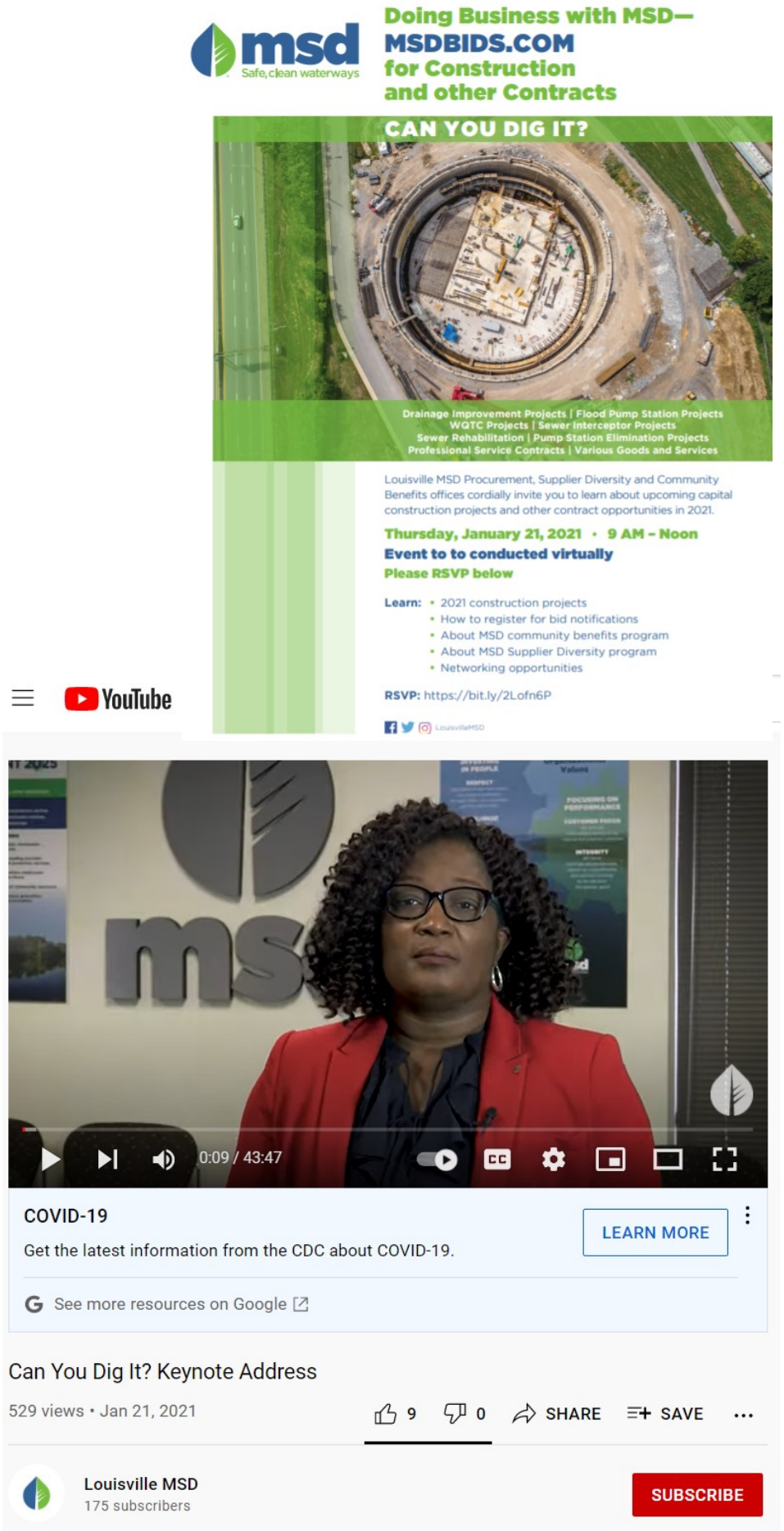


Jefferson Memorial Forest & Natural Areas is at Chickasaw Park.
July 21 · Louisville ·

Louisville ECHO is at Chickasaw Park today with SummerWorks. Youth are gaining experience installing an infiltration trench to improve water quality. Big shout out to our job coach Tala Alasad, who has been doing a great job working with the youth all summer. We are very proud of our Land Management team (Bryan, John, Kenneth, and Allison) who have eagerly shared their knowledge with an an inspiring group of young adults. The future is bright!

Wilderness Louisville
Louisville MSD
Louisville Parks and Recreation
National Recreation and Park Association Great Urban Parks Campaign

7

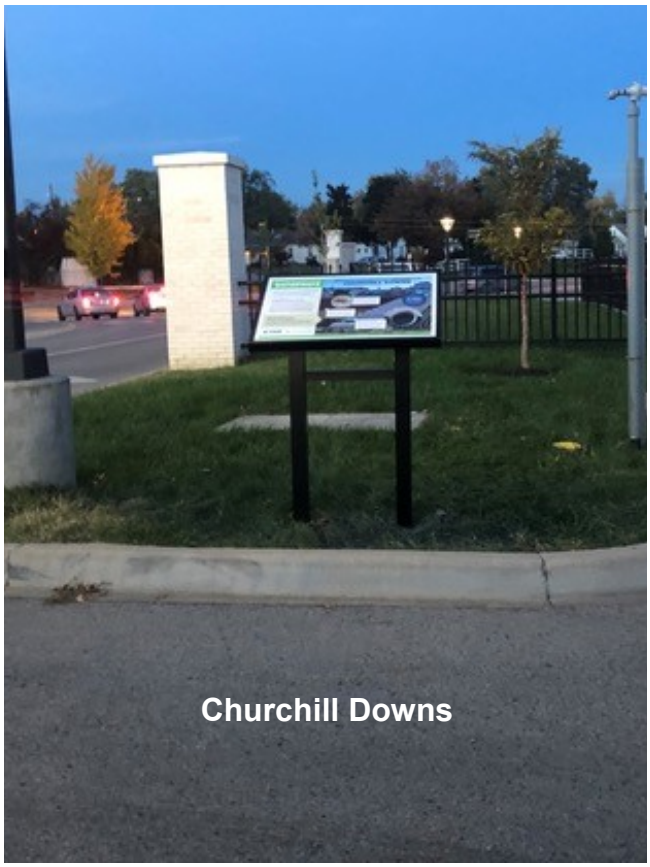

msd
Safe, clean waterways
Doing Business with MSD—
MSDBIDS.COM
for Construction
and other Contracts
CAN YOU DIG IT?
Drainage Improvement Projects | Flood Pump Station Projects
WQTC Projects | Sewer Interceptor Projects
Sewer Rehabilitation | Pump Station Elimination Projects
Professional Service Contracts | Various Goods and Services
Louisville MSD Procurement, Supplier Diversity and Community Benefits offices cordially invite you to learn about upcoming capital construction projects and other contract opportunities in 2021.
Thursday, January 21, 2021 · 9 AM – Noon
Event to to conducted virtually
Please RSVP below
Learn:
2021 construction projects
How to register for bid notifications
About MSD community benefits program
About MSD Supplier Diversity program
Networking opportunities
RSVP: https://bit.ly/2Lofn6P
YouTube
0:09 / 43:47
COVID-19
Get the latest information from the CDC about COVID-19.
LEARN MORE
See more resources on Google
Can You Dig It? Keynote Address
529 views • Jan 21, 2021
9
0
SHARE
SAVE
Louisville MSD
175 subscribers
SUBSCRIBE

Green Infrastructure Education Signage (On-Going)

2.1.15-D



Louisville Urban League
Sports & Learning Campus



Churchill Downs

Website: https://louisvillemsd.org/news

Home → MSD News

Green infrastructure



May 17, 2021

The MSD MS4 Development Department is reviewing and revising the MSD Green Infrastructure Design Manual (MSD Design Manual Chapter 18). This project's goals are to:

- Create more consistent standards where current standards are duplicative or unclear;
- Simplify and clarify the content of the standards for easier interpretation;
- Update requirements to address issues that have been found with existing green infrastructure practices;
- Ensure the standards are encouraging design outcomes that align with MSD policies; and
- Create a more accessible and user-friendly document.

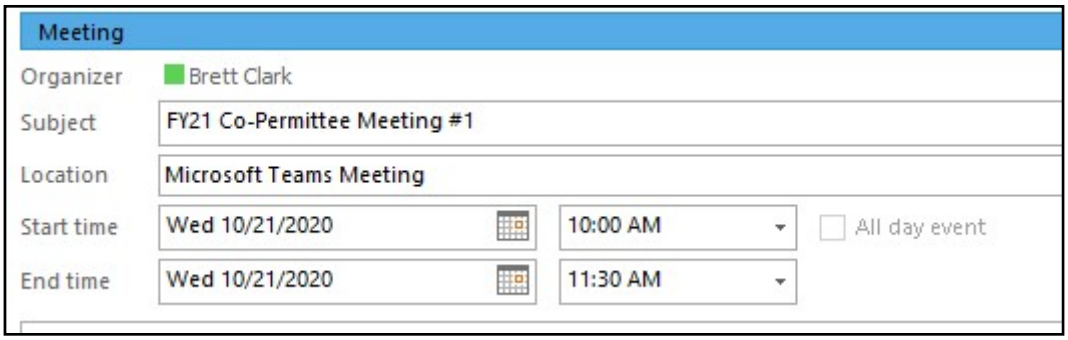
CHAPTER 18 - PDF

EXHIBITS FOR COMMENT

CHAPTER 18 - WORD

Staff invites the general public to review and comment on the draft Green Infrastructure Design Manual document. Members of the public can read the draft and submit comments to msdms4@louisvillemsd.org The draft will be available for comment until May 28, 2021.

APPENDIX 2.1.17 CO-PERMITTEE MEETINGS





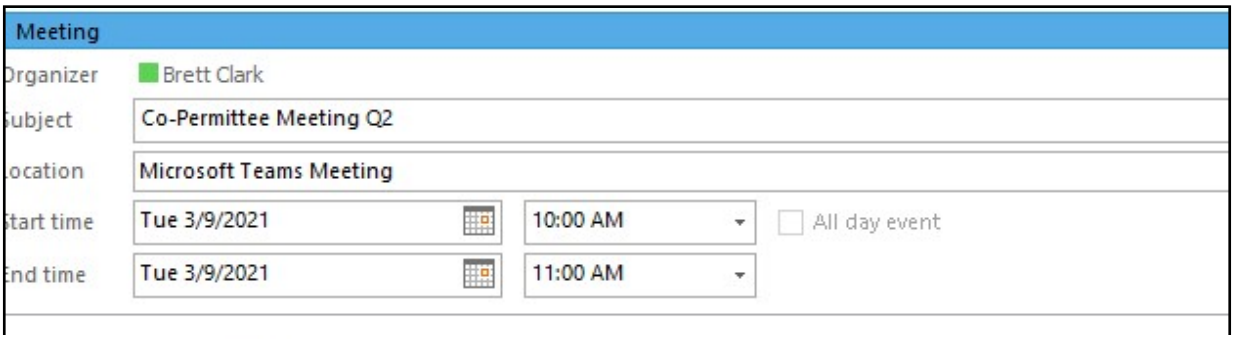
msd
Safe, clean waterways

700 West Liberty Street | Louisville, KY 40203-1911
Phone: 502.540.6000 | LouisvilleMSD.org

Louisville MS4 Co-permittee Virtual Meeting
October 21, 2020

Agenda:

1. Introductions
2. IDDE Training Discussion
3. Illicit Discharge and Emergency Spill Response
4. Next Meeting



msd
Safe, clean waterways
700 West Liberty Street | Louisville, KY 40203-1911
Phone: 502.540.6000 | LouisvilleMSD.org



Louisville MS4 Co-permittee Virtual Meeting
March 9, 2021

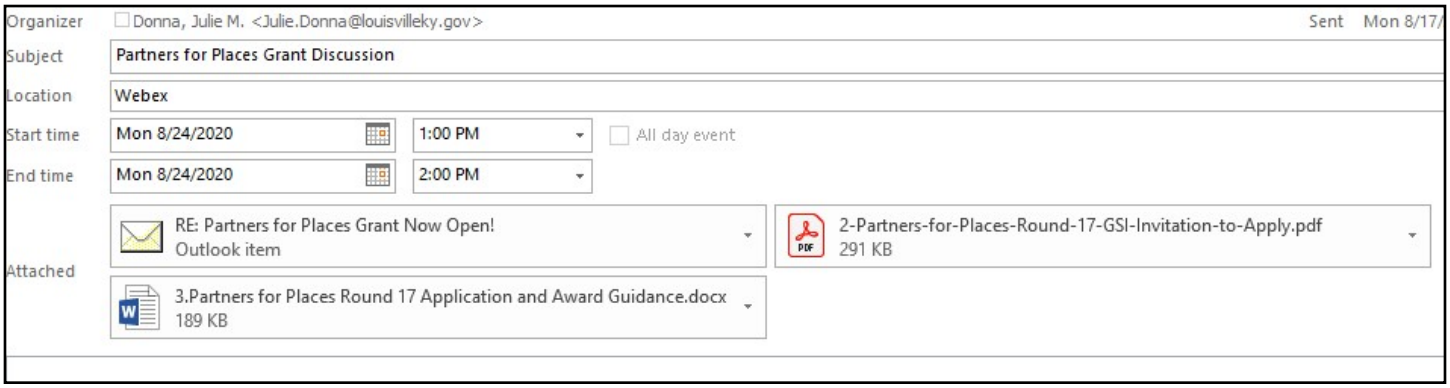
Agenda:

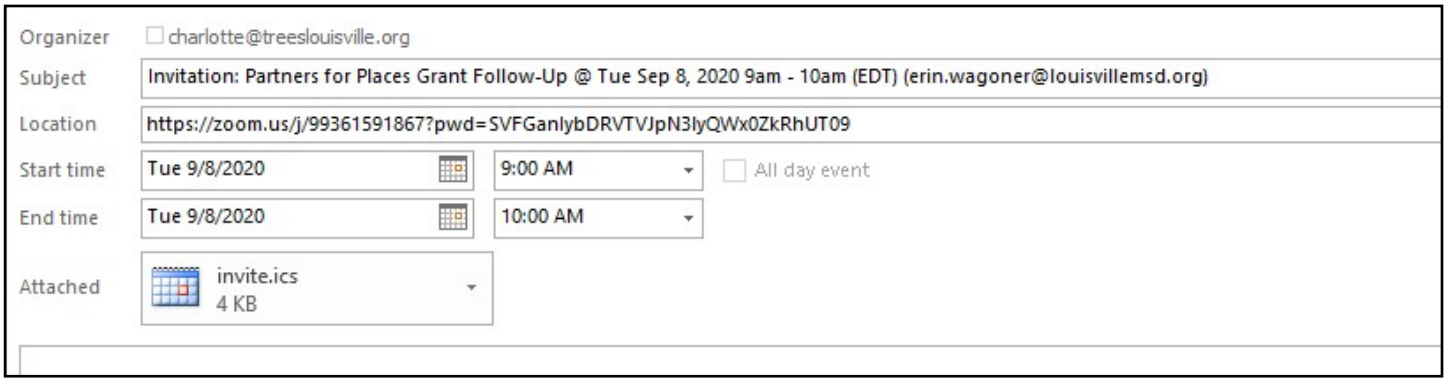
1. Introductions
2. Co-Permittee/MSD staff Facility SWPPP inspection
3. AGOL/Survey 123 Demo
4. Coordinate Illicit Discharge and Emergency Spill Response Training
5. Illicit Discharge and Emergency Spill Response since last meeting
6. Next Meeting

APPENDIX 2.1.18 LOUISVILLE METRO OFFICE OF SUSTAINABILITY

Partners for Places Grant Assistance (August 24 and September 8, 2020)

2.1.18-A





APPENDIX 2.2.2 STANDARD OPERATING PROCEDURES FOR DRY WEATHER SCREENING FOR ILLICIT DISCHARGE/CONNECTION

MS4 Program:	Industrial Stormwater Program
MS4 Program Task:	Illicit Discharge Detection & Elimination
Documentation Date/Rev/Author:	June 1, 2021 Version 001 LR/MM

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ATTACHMENTS

A MS4 Dry Weather Screening for Illicit Discharge (ID) Overview Flowchart

B Background Information on MSD MS4 Permit and Glossary

C Sample Project Database Excerpt

D Thermal Imagery for Detecting Non-storm Flows from Storm Sewers Technical Report

E Technical Memo entitled "Thermal Imagery Results – Potential Illicit Discharge Categories"

F Illicit Discharge Detection & Elimination Thermal Imagery Sample Findings Batch 1 dated March 21, 2013 and Illicit Discharge Detection & Elimination Thermal Imagery Sample Findings Batch 2 dated April 18, 2013

G GIS Datasets for Desktop Review

H Sample Anomaly Documentation

I Thermal Anomaly Desktop Review Database

J Field Inspection Supplies

K MS4 Dry Weather Screening for Illicit Discharge (ID) Field Inspection Form

L Dry Weather Discharge Screening Handout

M 2020 Thermal Anomalies for Field Investigation Packet

1. Introduction

1.1 Purpose

This Standard Operating Procedure (SOP) is intended to guide users in procedures for initial dry weather screening and follow-up investigations of potential and suspected illicit discharges/connections, as identified in the thermal imagery for detecting non-storm flows from storm sewer project conducted within the Louisville and Jefferson County Metropolitan Sewer District (MSD) Municipal Separate Storm Sewer System (MS4) service area, in and around Louisville, Kentucky.

This SOP documents the procedures defined for thermal imagery analysis and inspections based on the third round of Aerial Thermal Infrared Imagery collected in January of 2020. This SOP includes a GIS assisted, desktop-based screening and prioritization of thermal anomalies identified, followed by field inspections when warranted. Field inspections include documentation and rapid visual assessment tools for water quality screening, use of field test kits to provide quantitative assessments, as well as, follow-up actions that may be necessary, depending on findings. These procedures were originally developed during the screening and field investigations conducted between April 2013 and July 2014 and revised in June 2021.

Specific goals for this SOP:

- Prepare teams to conduct on-site field investigations with relevant background information;
- Provide consistent and efficient procedures for prioritizing field investigations and establishing inspection priorities based on the degree that these flows may contribute to water quality impairments;
- Provide standard and repeatable procedures for characterizing detected dry weather flow; and
- Increase success in collection of useful and relevant data to support the identification and elimination of priority illicit discharges/connections within the MS4.

1.2 Applicability/Scope

This SOP is a part of MSD's overall program to address illicit discharge detection and elimination (IDDE), as required by MSD's KPDES Permit No. KYS-000-001(MS4 Permit), and as summarized in the document titled *Implementation Plan for Illicit Discharge Detection and Elimination and Industrial Programs* (MSD, January 25, 2012).

This SOP is targeted at data collection and preliminary investigations of dry weather flows at locations identified through Aerial Thermal Infrared Imagery. The initial thermal data collection and analysis is supported by desktop-based screening review utilizing available knowledge of existing infrastructure and permitted activities within the MS4. This procedure is

followed by field investigations of thermal anomalies of interest which may result in identification of illicit discharges or connections.

A broad array of locations may be investigated using this SOP. These locations range from MS4 outfalls or conveyances located in the public right of way to outfalls or conveyances located on private properties. It also includes screening for potential illicit discharges or connections that enter into both, the MS4 and Waters of the Commonwealth. If field investigations involve public facilities or private commercial/industrial properties, investigation work may be conducted concurrently with the existing MS4 Industrial Facility Inspection Program (see SOP Number IWD-01).

As written, this SOP assumes that these activities will be conducted by resources outside of IWD, such as consultants. Depending on the structure of the team completing these activities, some references, communication, reporting procedures and other ancillary functions may need to be adjusted.

1.3 Summary of Methods

Generally, this SOP includes data processing, field assessment and localized investigation and follow-up guidelines. A flowchart providing an overview to this method is attached to this SOP (Attachment A).

Attachment B to this SOP provides a glossary of terms, including some background information.

Various tasks were undertaken before initiation of field work. These tasks both reduced the amount of field work necessary, allowed for more effective assessment of inspected sites and allowed for prioritization of sites for field follow-up investigation. This included the collection and assessment of relevant data to better identify the sources of discharges and pollutants expected to be contained within potential discharges, as well as to characterize thermal anomalies in the context of land uses, ownership, regulatory status, proximity to MS4 conveyances and outfalls or other site specific considerations. These are defined in Section 2.0 of this SOP.

Field investigations included planning site visits during appropriate dry weather and environmental conditions, documenting the conditions found at the locations identified, and collecting water quality data and samples as necessary. Field investigations also included localized investigations utilizing available field tools that helped determine the immediate source of any identified discharges within the vicinity of the outfall. Field investigation protocol is found in Section 3.0 of this SOP.

Follow-up procedures included systematic documentation and storage of the data collected, along with direction for the outcomes defined through the field investigations. These actions included further site investigation or upstream surveillance of streams, facilities, properties, or other nearby

infrastructure. These actions also included sending referrals to departments within MSD or other regulatory agencies governing the types of discharges and activities identified. Follow-up procedures are found in Section 4.0 of this SOP.

1.4 Documentation & Data Storage

Documentation of each thermal anomaly identified was entered into the Thermal Anomaly Desktop Review Database (project database) during review under this SOP. The database was updated periodically as field inspections were conducted. The Aerial Thermal Infrared Imagery was provided as a shape file for inclusion in MSD's Geographic Information System. Findings of the desktop review, field investigations, and follow up recommendations made under this SOP were added to the database as appropriate. A sample database excerpt is attached to this SOP as Attachment C as an illustration of the database fields and example entries for the desktop review and field screenings.

Within this digital database, low potential sites not selected for assessment based on desktop review were included to document rationale for this decision. A hard-copy segmented folder was created for each anomaly site. The folder contains separate tabs including the results of desktop review, historical documents (relevant customer requests, emergency response investigations, permits if applicable, and inspection documentation), thermal imagery mapping, other relevant maps within the area, field inspection documents, follow-up inspections and activities, and any photographs taken during field follow-up/site visit inspections. Hard copies are stored in an accessible location at MSD, within the Industrial Waste Department (IWD).

2. Thermal Anomaly Screening

2.1 Supporting Work Performed Outside SOP IWD-03

The procedure for developing initial work products identifying and categorizing thermal anomalies is beyond the scope of this SOP. However, a narrative summary of this process is included below. A detailed discussion of the work can be found in the Technical Report, Attachment D, entitled "Thermal Imagery for Detecting Non-storm Flows from Storm sewers Technical Report" dated May 3, 2013.

2.1.1 Aerial Thermal Infrared Imagery

MSD utilized an imagery contractor that specializes in conducting thermal imagery to complete a series of low-altitude (approximately 6,000 feet) flight lines across Jefferson County from an aircraft equipped with a wide area imaging thermal infrared sensor capable of quantifying differences in surface temperature, including the surfaces of streams. The flyover was conducted during the winter in dry weather conditions, when an illicit (non-stormwater) discharge into a stream or ditch would be most likely detectable with thermal

infrared imaging. After collection of thermal infrared imagery, the data was developed into a series of mosaic or image files that can be imported and displayed dynamically in a GIS format as a background image to provide a context to the data. The thermal plumes are observable through visualizations of thermal emissivity in the infrared spectrum. Potential illicit discharges, referred to as "thermal anomalies" appear as plumes of liquid joining or flowing downstream and are indicated based upon elevated temperatures (presumed discharges) compared to the receiving water and/or surrounding surfaces.

2.1.2 Identification of thermal anomalies

A visual screening was conducted by the contractor that collected and processed the thermal infrared imagery. Anomalies were identified through a systematic search within a 250 ft buffer zone surrounding hydrologic features defined in existing mapping of surface hydrology within Jefferson County. Attachment E, the Technical Memo dated February 27, 2013, entitled "Thermal Imagery Results – Potential Illicit Discharge Categories" includes guidance provided to assist with identification of thermal anomalies.

2.1.3 Categorization and Initial Prioritization of Thermal Anomalies

In 2014, MSD utilized a consultant to review the Aerial Thermal Infrared Imagery work product referred to in Sections 2.1.1 and 2.1.2 in order to compile a listing of thermal anomalies with one of three assigned categories that could be used for either immediate field investigation or as the starting point for an intensive desktop review directed toward further prioritization for targeted field investigation.

Category 1 – Possible Area of Interest – Warm sections of water bodies; strong plume not visible; infrastructure nearby; depth possible factor; possible discharge from natural springs or streams.

Category 2 – Probable Area of Interest – Warm plume present with linear tail, elliptical head; infrastructure nearby; other parts of the river or lake is cooler; nearby water bodies have a more uniform temperature.

Category 3 – Other Area of Interest– Anomalies that did not fit into probable or possible classification; amorphous warm shapes with center near or under infrastructure; includes a minimal number of reference points annotating commonly encountered thermal signatures around water bodies.

Thermal anomalies grouped into each of the categories discussed above were delivered to MSD in two packets which are included in Attachment F of this SOP, entitled "Illicit Discharge Detection & Elimination: Thermal Imagery Sample Findings", batch 1, dated

March 21, 2013 (Attachment F1) and batch 2, dated April 18, 2013 (Attachment F2).

As evaluation for thermal imagery progresses and more IDDE records are managed by MSD, an alternative categorical classification may be used to better direct field staff.

2.2 Desktop Review of Identified Thermal Anomalies

While Aerial Thermal Infrared Imagery is an excellent method to screen a large area in a short amount of time, it is an initial screening tool that does not provide enough clarity for targeted efficient field investigation. One example of a limitation of the technology is that the sizes of individual heat plumes that define each anomaly are a snapshot of temperatures at the surface, at a specific time. The temperature difference and size perceived is a function of not only the quantity and temperature of the discharge but are also affected by depth, flow characteristics, and background temperature of the receiving water. Therefore, MSD chose to employ other methodologies to better characterize the thermal anomalies for categorization and prioritization for field investigation.

A Desktop Review was conducted to compare the thermal anomaly locations to existing infrastructure and photographic data in order to screen for permitted discharges, false positives, and other types of characteristics that are clearly not illicit discharges. During this process, the thermal anomalies were divided into different risk categories from those with a low potential to contribute to water quality impairment, such as a known permitted outfall for one of MSD's Water Quality Treatment Centers, to those with a high probability of causing impairment such as a business with an apparent straight pipe potentially discharging process wastewater to the MS4 or a water body. Field investigation was typically not conducted on the low risk sites; however, several of these sites were selected for field investigation as a way to validate the conclusions of the desktop review. Less intensive investigation was acceptable on the moderate risk sites, such as visual field assessments, and the higher risk sites required thorough investigation through field inspection utilizing all available field screening tools.

The Desktop Review was conducted by technical staff with experience in illicit discharge detection and MS4 inventories. Future Desktop reviews are intended to be conducted by a knowledgeable engineer or experienced technician. Ideally that person will have all the following qualifications/experience, listed in order of importance:

- An understanding of the workings of municipal infrastructure and basic hydrology concepts;
- Experience with Sanitary Sewer Evaluation Survey (SSES) and/or MS4 inventories;

- Familiarity with the area of study, ideally a long-time resident of the area;
- Knowledge of industrial facility wastewater/stormwater permitting and compliance activities; and
- A working knowledge of and experience viewing GIS databases.

2.2.1 Data Utilized in Desktop Review

Attachment G lists all of the data sources used in the desktop review. The data was compiled into an MXD or map file. The most effective method of displaying the data in a single interface was found to be the LOJIC Web Interface Portal.

The reviews were documented in an Excel spreadsheet called the Thermal Anomaly Desktop Review Database, based on a scoring rubric which is discussed below. Reference to the sample database excerpt in Attachment C will facilitate review of this procedure. The sample database excerpt also contains fields for the complete scoring rubric.

2.2.2 Desktop Review Procedure

The consultant reviewer loaded the data discussed in Section 2.2.1 into the ArcMap viewer. It was up to the reviewer to determine which layers were appropriate at what stages of the review process. To clearly asses all relevant data, layers were turned on and off throughout the review of each anomaly site.

After loading the data, each anomaly site was reviewed using the following method:

- Locate the thermal anomaly
- Load the appropriate thermal imagery mosaic and review any coordination with topography, buildings, and infrastructure; particularly water, sewer and drainage infrastructure. Adjustment of the visualization and display of the thermal mosaic may be necessary for each anomaly to better discriminate the shape, intensity and boundaries of the anomaly. This was done utilizing the custom histogram tool in ArcINFO/ArcGIS
- Create a bookmark labeling the anomaly with the anomaly ID number and Street name, for easy retrieval of the image, if necessary.
- Identify the area upslope from the anomaly, using the available topography, sewer, and drainage infrastructure. Within this area:

  - Identify the types of nearby businesses, hazardous material and industrial information, customer service records and other incident related materials.
  - Review current, and historical aerial imagery which can document changes in water levels, changes in land use, construction activities, and indications of algae or other water quality factors at the surface when photos were taken. No charge resources may provide different perspectives, including street level, angled aerial images, and historical imagery. These have previously included Google maps (maps.google.com) Google Earth or www.viewmystreet.com
- Review any other relevant information, such as KPDES permit locations, MSD issued discharge permits or HMPC plans, any IWD or customer service case details (documented in MSD's HANSEN Database). Take time to toggle between sources and develop a thorough understanding of the available information until a recommendation for field investigation can be made, based on reviewed information and the scoring rubric described below.
- Thermal anomaly database information from previous reviews should be incorporated into the desktop review procedure and displayed in the ArcMap viewer, for comparison to new data.

2.2.3 Population of Desktop Review Database

The following was documented in the project Thermal Anomaly Desktop Review Database (spreadsheet). A sample excerpt from the database is provided in Attachment C. This process was performed in 2014.

- Document relevant information including apparent infrastructure, receiving stream, access information, anticipated discharge types/sources, and any comments about important observations for a field inspection if performed, or reasons no inspection was necessary.
- Overrule Criteria: If a specific conclusion about the nature and illicit discharge status was made (i.e., running vehicle, known ground water spring, KPDES permitted POTW, previous illicit discharger, etc.), it was noted in the overrule

criteria and the scoring rubric was not completed. Specific reference to previous thermal flyover and field inspection results under this program should be made to facilitate future desktop review efforts.

- Complete the scoring rubric. A score was assigned for each of the criteria, and the total score for the site was calculated. The scoring rubric has been designed to allow ranking of sites based on the objectives of the program and MS4 permit requirements. A maximum score of 70 is possible, and a minimum score of -20 is possible.

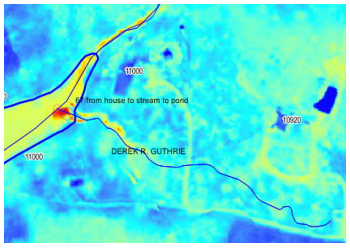
The rubric categories are:

- ERI & HAZMAT Info: (0-10)
  - This score was based on proximity and relevance of emergency response investigations, HMPC plan holders and HAZMAT inventories documented and mapped in HANSEN
  - Score criteria:
    - 0 - no information nearby to thermal anomaly location
    - 1- Unrelated MS4 or HAZMat ERI case or a small hazardous materials quantity (less than reportable quantity) with no other history of release. Examples: auto accident with fuel tank rupture, or 55 gal drum of petroleum product at commercial facility with no incident history.
    - 2-5- HazMat facility with a Hazardous Materials Use and Spill Prevention Control (HMPC) plan. Score depends on proximity to anomaly. Example: outdoor storage of 500 gal fuel tank
    - 6-10 - Industrial facility with HMPC plan, major material inventory or combination. Score depends on proximity to anomaly. Example: Significant Industrial User and HAZMAT Permit holder site. Score depends on proximity to anomaly and scale of industry.

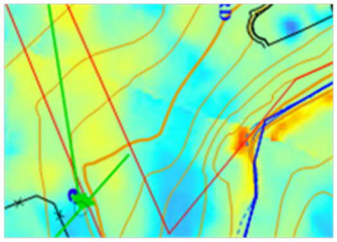
- 6-10- MS4 or HazMat ERI case with confirmed or suspected MS4 impact in violation of Article 5 of the MSD Wastewater/Stormwater Discharge Regulations (WDR). Score depends on proximity to anomaly.

- Business Activity: (0-10)
  - This score was based on federal businesses documented included in the LOJIC database
  - Score criteria:
    - 1-2 - Office type commercial business nearby.
    - 3-5 - Non office commercial business nearby.
    - 5-10 - Businesses with higher potential for illicit discharge. Score depends on proximity to anomaly. Examples: Manufacturing, food processing or production, construction, coatings application, etc.
- Site Land Use: (1-10)
  - This score is determined by visual assessment and classification in PLANNING DISTRICTS layer.
  - Score criteria:
    - 0 - wild forest/park
    - 1-2 - suburban residential or agricultural,
    - 2-5 - commercial/urban residential/institutional – depending on density & development type
    - 6- 10 – industrial – depending on density & size
- Discharge to MS4 likely: (0 or 10)
  - Score of 0 OR 10, topography and proximity to MS4 will define expectation of entering known MS4 infrastructure
  - Score Criteria:

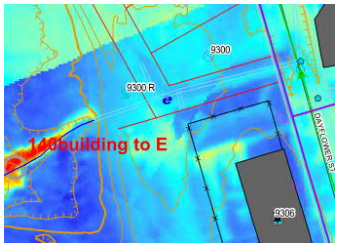
- 0 – No identifiable path or little chance for anomaly site to discharge to MS4 infrastructure.
- 10 – Identifiable or expected path for discharge to known MS4 infrastructure



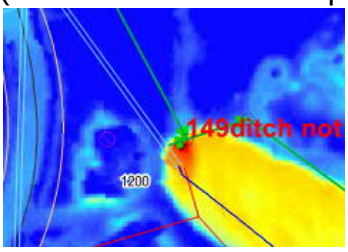
1 – unlikely sewer / septic source



8- likely sewer / septic source (note sewer with unmapped end)



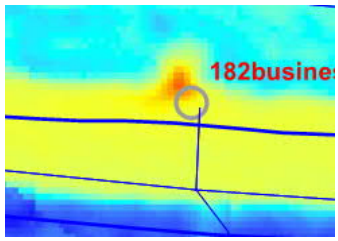
10 – anomaly at storm sewer outlet



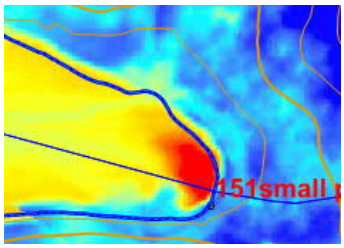
10 – anomaly near sanitary sewer manhole

- Source Sewer/Septic Nearby (0-10)
  - Score based on topography and proximity to define expectation of anomaly to be a leaking/overflowing sewer or septic system. Note: proximity to storm sewers discharging at this location should also be considered.
  - Score criteria: see sample photos for scoring

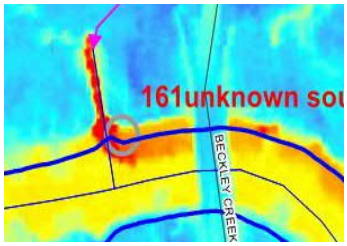
- Signal Intensity (0-10)
  - Score to describe relative heat load (size and intensity of temperature differential) in anomaly from surrounding background
  - Score criteria: see sample photos for scoring



1 – weak plume pattern



5- moderate plume



10- strong plume pattern

- Plume Pattern (0-10)
  - Score to describe if signal appears to be consistent with point source discharge and dispersion into water body.
  - Score criteria: see sample photos for scoring

- Shallow Water Expectation (0, -5 or -10)
  - Score of 0,-5 OR -10 (subtract points) for suspicion that anomaly is related to shallow standing water or solar heating effects. Note: This is more likely on south facing surfaces and may be supported through historical imagery with differing water levels.
  - Score Criteria: see sample photos for scoring and description below
    - 0 – No indications of these effects
    - -5 – slight or moderate suspicion of shallow water or solar heat
    - -10 – strong suspicion of shallow water or solar heating

- KPDES Permitted Site (0 or -10)
  - Score of -10 if site is known to have permitted KPDES direct discharge of type that may be appropriate for signature, such as: POTW,

Non-contact cooling water, flood pumping station.

- Otherwise score 0.

- Provide a recommendation for inspection (Yes or No), and where appropriate, a short explanation of why an inspection should or should not be performed. Inspection recommendations generally followed site scores, with higher scores more likely to be recommended for inspection. Typically scores below the median of all scores were not inspected, without other indications or influencing factors, such as proximity to other sites being inspected.

In 2014, 103 of the thermal anomalies were scored using the rubric. The median of those scores was 18.55. All anomaly sites with a score of 18 or higher were inspected, in the absence of overrule criteria for the site.

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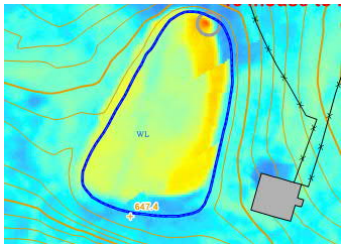
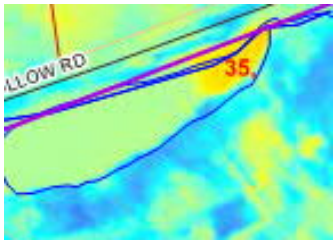


-5 – shallow water at pond right bank



-10- shallow water at right end of pond (same pond as right)



-10 – shallow water / shallow slope aerial photo. Note animal in water (same pond as center)

In 2020, areas of shallow ponding were not relayed to MSD staff. 40 sites were recommended to MSD staff for site inspection. The raking system defined for previous studies was not used due to the consultant's ability to review lessons learned from 2014 field inspections. See Appendix M for the 2020 Thermal Anomalies for Field Investigation Packet.

2.3 Inspection Site Selection

Site selection resulted from the Desktop Review for each site discussed above, and was incorporated in the project database. Based on the Desktop Review of Identified Anomalies (Section 2.2), a scoring and recommendations for each anomaly was compiled. The results of this scoring should be reviewed with the project team to verify the level and number of anomalies that are to be reviewed with field inspections. This may be done periodically throughout the desktop review process or once it is completed.

Sites should be selected for inspection based on the following criteria:

- Overrule criteria (either include or exclude from inspection)
- Rubric score
- Additional reviewer recommendations

Sites above the median rubric score will generally be inspected, along with a small control group (5% +/- of total sites) of those not selected for inspection from desktop review in order to validate the desktop review criteria.

In compiling the preliminary list of recommendations, the reviewer can add or remove sites from the inspection list based on compelling information or concerns. This information may include, but is not limited to: a KPDES or other permit for the site, specific documented site history in HANSEN, or the reviewer's knowledge of the area. These changes to the inspection list should be reviewed with the project team and documented in the Overrule Criteria section of the project database for each anomaly site.

2.3.1 Desktop Review Documentation

A digital file for all anomaly sites was prepared after completion of documentation associated with the site. This file included the Desktop Review information. A sample anomaly site documentation is shown in Attachment H.

Desktop review documentation was also placed in a hard-copy folder created for each anomaly. After desktop review, each folder contained complete documentation of the desktop review and the information necessary to perform the field investigation, including support maps. Support maps are intended to provide relevant information to crews doing field inspections for selected thermal anomalies. Support maps to document reasoning for not performing a field inspection were also included. The following steps were completed to produce this documentation:

- Export a map of the location using the LOJIC Quick Map Tool that shows relevant infrastructure, property lines, thermal imagery, the identified hot spot and topographic information.
- In addition, a map showing aerial imagery, infrastructure and some other features, but without topography is also typically created.
- Additional maps were sometimes necessary to show combinations of information or different map scales. One common additional map is a larger scale map showing the land use of the contributing area of the MS4 system, without aerial or infrared imagery or topography. Another example showed the extent of a single large property to help identify the location and access to the anomaly site from the entrance to the property.
- Relevant records from HANSEN Database, including relevant customer service and work order history, ERI cases, etc.
- For permitted industrial sites, the site HMPC plan, Wastewater Discharge Permit, or KPDES permits should be reviewed and potentially included in the folder.
- Any useful information from other sources, such as www.viewmystreet.com or Google Earth, should also be provided in digital and hard copy form for data storage and field inspections.
- Findings for the site from Thermal Anomaly Desktop Review Database (included as Attachment I to this SOP)

3. Field Inspection

3.1 Preparation for Field Inspections

Field inspections were conducted by a 2-person team with a strong background in various activities associated with the project. When possible, one of the inspection team members was the same person who conducted the Desktop Review, and already had familiarity with the inspection sites. The Field Inspection team possessed each of the following qualifications/experience between the two team members, listed in order of importance:

- An understanding of the workings of municipal infrastructure and basic hydrology concepts.

- Experience with Sanitary Sewer Evaluation Survey (SSES) and/or MS4 inventories.
- Illicit discharge detection, surface water investigations or other Clean Water Act compliance related field experience.

A list of sites for field inspections was generated through the desktop review procedure outlined in Section 2.

As part of the desktop review, a summary for each site was generated and placed in a segmented folder. This documentation was later included in the hard copy of the project database.

A daily route and overall map of inspection sites was prepared to help with planning an efficient order of inspection and to assist with navigation between sites. The inspection schedule/route was prepared to provide maximum flexibility due to variability in site characteristics, accessibility, etc.

Up to 15 sites were prepared for a daily inspection schedule. An average of 6-10 sites were inspected in an 8-10 hour day, with some inspections taking significantly longer than average, and many taking less time.

Sites with existing MSD industrial discharge permits, the ERPI assigned to the facility accompanied the inspection team when possible. The MSD inspector made appropriate preparations with facility personnel.

A list of recommended supplies and equipment for field inspections is included in Attachments J1, J2, J3 and J4.

3.1.1 Health & Safety

When performing field work, safety procedures must always be observed. Always follow MSD or the consultant's life-safety documents and policies and refer to specific industrial facility safety requirements when entering industrial facilities.

Specific safety concerns with this work may include

- Outdoor and wilderness type environment hazards
- Traffic safety and control
- Confined space awareness
- Hazardous chemicals used with water quality testing kits.
- Entering private property and performing inspections in remote or isolated areas. Inspections teams shall use discretion when entering private property without the expressed permission of the property owner.

3.1.2 Scheduling Field Inspections

Seasonal considerations should be reviewed when scheduling field inspections. Since the thermal imaging flyover is likely to the completed during the winter, it is anticipated that data will become available for field inspections in early spring. Ideally, inspections should be conducted as close to the flyover date as practical, and before the growth of seasonal greenery, since many streams and areas of interest will be more difficult to access/observe with the growth of seasonal foliage. Field inspections should not be conducted during times of potential snow cover and ground frost, which might hide or suspend some discharges.

Field inspections should be conducted a minimum of 36 hours after the end of a runoff producing rainfall (0.1 to 0.2 in rainfall) in the local area. For a heavy rainfall (approximately 0.5 in or above) and/or drainage areas larger than 1 square mile, 3 to 5 days is recommended and will allow for better observation of dry weather surface water quality, and avoid lingering wet weather induced drainage and turbidity. Weather forecasts should be for safe outdoor working conditions. If light rainfall occurs during inspections, it is the responsibility of the field team to determine if continuing inspections is appropriate. Inspections immediately following runoff producing rainfall are not appropriate.

3.2 Field Inspections

Field inspections should be conducted with at least a two person team due to safety concerns.

Field inspections should generally follow the layout of the field inspection form (Attachment K). The initial fields of the form are completed upon arrival at the site. A brief description of the inspection process is provided below.

- If the investigation will be on residential or private property, the inspection team should try to notify the resident/occupant before entering. Upon making contact, the inspection team should provide the resident/occupant with a Fact Sheet or informational letter from MSD and the resident/occupant should be allowed to ask questions regarding the inspection/investigation. If contact cannot be made with a private property owner/occupant, leave a door hanger to notify the owner/resident of the need for an inspection. Attachment L, “Dry Weather Discharge Screening Handout” trifold brochure will be utilized during future thermal follow-up efforts. Local residents/occupants may be able to provide insight into intermittent or ephemeral discharges and other activities at the site not observable during the inspection;

- Use maps and other documents complied during the desktop review;
- Complete Section 1, Site Data, of the Field Inspection Form. This includes weather, and other general information about the inspection and site. Collect the GPS coordinates and photograph the location;
- Complete Section 2, Outfall Description, of the Field Inspection Form. Depending on the geography of the thermal anomaly, it may be necessary to identify secondary or other anomaly sites. Identification and characterization of flowing or non-flowing discharge signs may be necessary to identify thermal sources.
- Complete Section 3, Physical Indicators for Flowing Outfalls Only, and Section 4, Physical Indicators for Both Flowing and Non-flowing Outfalls, as appropriate. Any indicators of potential illicit discharges should be documented according to the field form.
- If appropriate, water quality screening may also be done, see Section 5, On Site Water Quality Screening, of the Field Inspection Form.
- A localized field investigation should be undertaken to determine the source of the thermal anomaly, if not apparent. This may include reviewing existing infrastructure in the area, such as sewers, water mains, irrigation systems, building foundation or sump pump drains, and MS4 systems.
- Additional discharge sites should be documented including: GPS coordinates, photographs, documentation of outfall type, flow rate (if any), and quality indicators.
- Following Characterization of nearby and associated sites, the remainder of the Field Inspection Form (Sections 6, 7 and 8) should be completed.

3.2.1 Visual/Physical Assessment

A rapid assessment of the visual and physical characteristics of the site around the thermal anomaly was undertaken, and documented on the field form. This assessment is intended to inventory the thermal anomaly site and provide a qualitative and repeatable assessment of indicator or potential illicit discharges without requiring intensive analysis. This assessment includes flow and physical/biological indicators within and around the stream.

3.2.2 Water Quality Screening

Quantitative water quality assessments are not appropriate at all sites but should be evaluated based on the number and type of indicators of potential illicit discharges identified in the Visual/Physical Assessment above. The use of simple test strips and colorimetric methods are recommended to develop screening-level data in real time. Tests are intended to help assess and identify the source of discharges when a direct source is not apparent, but are not appropriate for documentation of water quality standards compliance and reporting. The specifications and instructional information for the recommended screening test methods are included in Attachments J1, J2, J3 and J4**,** Field Inspection Supplies. Check with the manufacturers of these tools to confirm the most current methods.

- Test strips and other test kits are used and evaluated based on the directions supplied with the tests;
- Fluoride testing is used to confirm the presence of water that has been through the potable water system. Follow the directions supplied with the fluoride pocket colorimeter. CAUTION: The reagent supplied with this test is a strong acid and appropriate PPE must be used. Samples and reagent should not be disposed of on the ground or into surface waters. Waste samples and reagents should be stored in a sealed container with an absorbent stabilizer sufficient to absorb all free liquids. See employer life-safety documents for guidance on handling potentially hazardous chemicals; and

Inspection team members should be familiar with the normal water quality constituents and parameters being measured in various types of water that may be encountered, along with dynamics of disinfectants and other additives in local public water supplies. This may include sampling of available waters (potable, disinfected effluent, irrigation, etc.) in nearby distribution systems that would be helpful in establishing a baseline for comparison of various parameters, specifically chlorine, hardness and fluoride, which could vary throughout a distribution system. While discharges containing these parameters may not be of great environmental concern, experience indicates they are likely to be encountered, and positive identification will rule out other possible sources.

3.2.3 Sample Collection, Illicit Discharges & Emergency Response

Generally, sample collection and laboratory analysis should be initiated at sites where suspect discharges are observed, and a determination cannot be otherwise made. If a determination can be made at the site that an illicit discharge is occurring, sampling will be up to the discretion of the responding inspection team.

If sample collection for laboratory analysis is necessary, the ERPI on-call should be contacted. The ERPI will collect samples and send them for analysis within normal MSD channels through the appropriate chain of custody.

MSD customer service should be notified, and the inspection team should wait for the ERPI on call and meet them at the site, for either sample collection or a known illicit discharge.

Emergencies, such as personal injury, should be reported to 911 immediately and to the project manager as soon as possible.

3.2.4 Localized Investigation

Upon arriving and assessing the thermal anomaly site, it will be necessary to conduct a localized investigation of the site to determine the source of any discharges. This may include reviewing the drainage course that discharges into localized streams, and short runs of storm sewers or other infrastructure markers in the area, including sanitary sewer manholes, the locations of local foundation drains and drainage facilities, and other underground utility indications, such as water meter vaults and valve boxes. Additional follow-up investigations may be required, depending on the results of the initial investigation & receiving water characterization.

3.2.5 Completing Site Inspections

Once the site inspection has been completed, overall characterization should be documented and a conclusion and recommendation should be noted on the inspection form. The overall characterization should be based on the number of indicators present, the intensity of those indicators, and other context in background or field observations. In the absence of a definitive result (False Positive, Allowable discharge, or Obviously Illicit), the following scoring rubric applies:

Number of Indicators (Field Form Section 3 & 4)	**Typical Characterization**
Up to 2 slight and 1 moderate	Unlikely Illicit
Up to 5 slight and 3 moderate or 1 strong indicator	Potential Illicit

More than 5 slight and 3 moderate or 1 strong indicator	Suspect Illicit

Table 1: Overall Discharge Characterization Guideline

The following conclusions may result based on field inspections and desktop review data:

- Groundwater spring (do not reinspect without cause)
- Anticipated intermittent discharge – (reinspect soon or in subsequent program years)
- Undetermined, potential discharge (reinspect in subsequent program years, or do not reinspect without cause)
- Undetermined, suspect discharge (reinspect soon or schedule follow-up inspection)
- Allowed discharge type (do not reinspect without cause)
- False Positive (non-water thermal source)/ (do not reinspect without cause)

Potential Illicit and Suspect Illicit Discharges will usually be classified as "anticipated intermittent discharge" or "undetermined" and will normally be scheduled for review or reinspection in subsequent program rounds or reinspection sooner, depending on findings.

4. Follow-Up Procedures

4.1 Inspection documentation

Data collected in the field, and observations should be documented in the project database. Digital photos should be uploaded to electronic folders for each inspection site. All information should also be filed with the thermal anomaly site folder (hard copy, including printouts of photos).

4.2 Follow-up Investigations

Depending on the findings of initial field investigations, it may be necessary to conduct follow-up investigations. The investigations may be required to validate information or to complete more complex tasks such as dye testing or smoke testing. Follow-up inspections may need to be coordinated with property owners not contacted or available during initial investigations.

Enforcement activities will be coordinated and led by MSD's Project Manager or designee.

Additional resources provided by MSD, such as CCTV investigations or maintenance activities should be coordinated through the MSD Project Manager or designee.

4.3 Inter-agency Coordination

Some anomalies identified will require coordination with other agencies. Specific examples that may be encountered include:

- Water main leaks/breaks – Coordinate with loss prevention personnel at the Louisville Water Company and MSD Project Manager or designee.
- Failing septic tanks and domestic straight pipe discharges – Coordinate with the Louisville Metro Department of Public Health and Wellness and MSD Project Manager or designee.
- KPDES permitted sites- Coordinate with MSD Project Manager or designee and KDOW Louisville Regional Office.

For each discharge identified, the specific nature of the discharge will need to be evaluated to determine who has regulatory responsibility and what agency has authority and/or a mandate to mitigate any discharges.

Correspondence with outside agencies should be documented in the site folder and coordinated with the MSD Project Manager.

5. References

- Implementation Plan for Illicit Discharge Detection and Elimination and Industrial Programs (MSD, January 25, 2012)
- KPDES Permit No. KYS000001 – “MS4 Permit” (KDOW, June 7, 2011)
- Municipal Separate Storm Sewer System (MS4) Stormwater Quality Management Plan (SWQMP) (MSD, October 2011)
- Wastewater/Stormwater Discharge Regulations (WDRs) – MSD, effective November 26, 2013)
- Resources that have been recommended by Mike Moore:
    - https://kgs.uky.edu/kgsweb/DataSearching/watersearch.asp may be useful for the interactive map they provide for water well and springs throughout Kentucky.
    - More maps of Kentucky can be viewed on: https://kygeonet.ky.gov/ and may provide additional information related to this study such as the aerial photography and elevation data as the infrared readings were taken at an aerial level.

APPENDIX 2.2.3 IDDE SUMMARY

APPENDIX 2.2.3 IDDE SUMMARY

Customer Service Requests for Fiscal Year 2021

Service Req. #	Req. Type	Request Date	Resp.	Address	Resolved Date	Resolution Code
5342669	DISCH	7/5/2020 8:27	MIC		7/6/2020 0:00	CLOSED
5342800	DISCH	7/6/2020 16:53	MIC	6900 ARBOR MANOR WAY LOUISVILLE KY 40228-0000	7/13/2020 10:42	INSPT
5343714	DISCH	7/14/2020 16:32	MIC	10802 STONESTREET RD LOUISVILLE KY 40272-0000	7/15/2020 14:43	REFER
5344080	DISCH	7/18/2020 11:08	MIC	4311 SHENANDOAH DR FINCASTLE KY 40241-0000	7/19/2020 12:59	NOFRTH
5344352	ODOR	7/21/2020 11:32	MIC	711 MAGAZINE ST LOUISVILLE KY 40203-0000	7/21/2020 14:57	NOFRTH
5344661	SEWIN	7/23/2020 15:42	MIC	1200 SOUTHWESTERN PKY LOUISVILLE KY 40211-0000	7/28/2020 9:51	NOPRB
5345574	DRAIN	7/30/2020 21:09	MIC	2351 NEW MILLENNIUM DR SHIVELY KY 40216-0000	7/31/2020 9:48	NOFRTH
5345693	DISCH	7/31/2020 13:54	MIC	531 COUNTRY LN LOUISVILLE KY 40207-0000	7/31/2020 15:30	NOFRTH
5346295	DISCH	8/6/2020 9:30	MIC	2801 JOAN AVE LOUISVILLE KY 40205-0000	8/7/2020 12:59	REFER
5346417	DISCH	8/7/2020 8:39	MIC	4717 FERRER WAY JEFFERSONTOWN KY 40299-0000	8/7/2020 0:00	CLOSED
5346459	DISCH	8/7/2020 15:36	MIC	8601 FERNDALE RD LOUISVILLE KY 40291-0000	8/7/2020 16:45	NOMSD
5346787	ODOR	8/11/2020 10:42	MIC	7804 MARY SUE DR LOUISVILLE KY 40291-0000	8/11/2020 15:00	NOPRB
5347296	DISCH	8/15/2020 19:45	MIC	4416 EAGLES COVE CT LOUISVILLE KY 40241-0000	8/16/2020 9:06	NOFRTH
5347748	DISCH	8/19/2020 8:36	MIC	15811 WATERSTONE CT LOUISVILLE KY 40245-0000	8/19/2020 12:50	NOFRTH
5348123	DISCH	8/22/2020 8:38	MIC	857 E WATER ST LOUISVILLE KY 40206-0000	8/22/2020 12:26	INSPT
5351037	DISCH	9/16/2020 9:00	MIC	1207 E WASHINGTON ST LOUISVILLE KY 40206-0000	9/16/2020 15:55	NOPRB
5351392	DISCH	9/18/2020 15:13	MIC	7200 NATIONAL TPKE 101 LOUISVILLE KY 40214-0000	9/18/2020 0:00	NOFRTH
5351828	ODOR	9/23/2020 10:49	MIC	1922 PEONY DR LOUISVILLE KY 40211-0000	9/23/2020 0:00	NOPRB
5351964	DISCH	9/24/2020 15:18	MIC	914 ALBEMARLE CT HURSTBOURNE KY 40222-0000	9/25/2020 0:00	NOPRB
5352520	DISCH	9/30/2020 11:32	MIC	1800 W MUHAMMAD ALI BLVD LOUISVILLE KY 40203-0000	9/30/2020 12:30	NOFRTH
5352618	DISCH	10/1/2020 7:54	MIC	107 W HILL ST 100 LOUISVILLE KY 40208-0000	10/1/2020 12:00	NOMSD
5352948	ODOR	10/5/2020 11:41	MIC	2425 LINDBERGH DR LOUISVILLE KY 40208-0000	10/6/2020 13:29	DUPLI
5353216	DISCH	10/7/2020 10:49	MIC	3751 WOODGREEN CT 1 LOUISVILLE KY 40215-0000	10/7/2020 14:25	REFER
5353341	DISCH	10/8/2020 12:30	MIC	1601 GREYLING DR LOUISVILLE KY 40272-0000	10/8/2020 14:30	NOFRTH
5353598	DISCH	10/12/2020 10:27	MIC	13909 BEESTON BLVD LOUISVILLE KY 40272-0000	10/13/2020 11:16	NOFRTH
5353757	DISCH	10/13/2020 13:20	MIC	15803 NORTHVILLE PL LOUISVILLE KY 40245-0000	10/14/2020 11:02	NOPRB
5353785	ODOR	10/13/2020 22:17	MIC	6004 WILLOW OAK CT LOUISVILLE KY 40059-0000	10/14/2020 13:55	NOFRTH
5353997	ODOR	10/15/2020 11:05	MIC	1418 WURTELE AVE LOUISVILLE KY 40208-0000	10/16/2020 9:39	NOFRTH
5354620	DISCH	10/21/2020 10:45	MIC	9300 BARTLEY DR LOUISVILLE KY 40291-0000	10/21/2020 13:23	REFER
5354877	DISCH	10/23/2020 14:27	MIC	2618 W BROADWAY LOUISVILLE KY 40211-0000	10/23/2020 14:56	DUPLI

Service Req. #	Req. Type	Request Date	Resp.	Address	Resolved Date	Resolution Code
5354879	DISCH	10/23/2020 14:30	MIC	2613 W BROADWAY LOUISVILLE KY 40211-0000	10/27/2020 11:35	NOPRB
5355301	DISCH	10/28/2020 9:59	MIC	6510 HUNTERS CREEK BLVD LOUISVILLE KY 40258-0000	11/11/2020 16:00	NOFRTH
5355521	DISCH	10/29/2020 15:30	MIC	7011 SHALLOW LAKE RD PROSPECT KY 40059-0000	10/30/2020 10:00	NOFRTH
5355953	DISCH	11/3/2020 13:22	MIC	1024 BERRY BLVD LOUISVILLE KY 40215-0000	11/4/2020 13:08	NOFRTH
5357505	DISCH	11/16/2020 15:41	MIC	1100 E OAK ST LOUISVILLE KY 40204-0000	11/16/2020 17:10	NOPRB
5357827	DISCH	11/19/2020 8:04	MIC	10638 WATTERSON TRL JEFFERSONTOWN KY 40299-0000	11/19/2020 9:58	NOFRTH
5358459	DISCH	11/25/2020 22:53	MIC	2400 AMPERE DR JEFFERSONTOWN KY 40299-0000	11/26/2020 13:48	NOFRTH
5359179	DISCH	12/4/2020 10:53	MIC	4162 BARDSTOWN RD LOUISVILLE KY 40218-0000	12/7/2020 8:33	CLOSED
5359343	DISCH	12/7/2020 12:32	MIC	1900 PORTLAND AVE LOUISVILLE KY 40203-0000	12/8/2020 10:42	NOFRTH
5359600	ODOR	12/9/2020 11:49	MIC	2209 MEADOW DR LOUISVILLE KY 40218-0000	12/11/2020 0:00	NOPRB
5359601	ODOR	12/9/2020 11:50	MIC	3425 BARDSTOWN RD LOUISVILLE KY 40218-0000	12/9/2020 0:00	NOPRB
5359950	DISCH	12/14/2020 14:14	MIC	1862 MELLWOOD AVE LOUISVILLE KY 40206-0000	12/15/2020 15:00	NOMSD
5359970	DISCH	12/14/2020 16:29	MIC	9418 SLAYTON CT LOUISVILLE KY 40229-0000	12/15/2020 5:33	DEFER
5360133	DISCH	12/15/2020 14:25	MIC	4707 WALNUT HILLS DR LOUISVILLE KY 40299-0000	12/15/2020 15:30	NOFRTH
5360457	DISCH	12/18/2020 12:29	MIC	1809 CUMMINGS RD LOUISVILLE KY 40272-0000	12/21/2020 13:12	REFER
5360725	SEWIN	12/22/2020 8:59	MIC	9113 DARLEY DR TEN BROECK KY 40241-0000	12/22/2020 9:59	NOFRTH
5360762	BCKUP	12/22/2020 16:45	MIC	3108 DIXIE HWY SHIVELY KY 40216-0000	12/29/2020 6:52	CLOSED
5361992	DISCH	1/6/2021 11:11	MIC	3701 HILLCREEK RD LOUISVILLE KY 40220-0000	1/7/2021 8:50	CCASE
5362349	ODOR	1/9/2021 10:33	MIC	3610 DAYTON AVE ST MATTHEWS KY 40207-0000	1/11/2021 9:23	NOPRB
5362518	DISCH	1/11/2021 16:06	MIC	3702 MUD LN LOUISVILLE KY 40229-0000	1/13/2021 16:46	CCASE
5362902	ODOR	1/14/2021 9:27	MIC	1302 DIXIE HWY LOUISVILLE KY 40210-0000	1/15/2021 13:16	NOFRTH
5362941	DISCH	1/14/2021 13:59	MIC	1745 PAYNE ST LOUISVILLE KY 40206-0000	1/15/2021 11:05	NOFRTH
5363748	DISCH	1/22/2021 10:41	MIC	10430 DOVE CHASE CIR MIDDLETOWN KY 40299-0000	1/22/2021 15:37	NOFRTH
5363923	DISCH	1/25/2021 11:03	MIC	3110 BROWNSBORO RD LOUISVILLE KY 40206-0000	1/25/2021 14:08	NOFRTH
5364366	DISCH	1/27/2021 12:02	MIC	300 HILLCREST AVE LOUISVILLE KY 40206-0000	1/28/2021 9:41	NOFRTH
5365067	DISCH	2/3/2021 14:16	MIC	14000 DARWIN BLVD LOUISVILLE KY 40272-0000	2/3/2021 16:10	CCASE
5367002	DISCH	2/23/2021 16:08	MIC	1313 ST ANTHONY PL LOUISVILLE KY 40204-0000	2/25/2021 12:29	INFO
5367128	DISCH	2/24/2021 14:00	MIC	107 N WATTERSON TRL MIDDLETOWN KY 40243-0000	2/24/2021 14:00	CCASE
5367137	CONST	2/24/2021 15:42	MIC	13312 AIKEN RD MIDDLETOWN KY 40223-0000	3/11/2021 9:30	CCASE
5370025	ODOR	3/12/2021 15:17	MIC	9323 LONGHORN CT LOUISVILLE KY 40118-0000	3/12/2021 0:00	NOFRTH
5372122	ODOR	3/26/2021 15:57	MIC	1067 MARY ST LOUISVILLE KY 40204-0000	3/29/2021 17:47	NOFRTH
5372521	DISCH	3/30/2021 14:57	MIC	7909 SHERRY LYNN CT LOUISVILLE KY 40228-0000	3/30/2021 16:30	NOFRTH
5373297	ODOR	4/6/2021 8:14	MIC	2111 W BROADWAY LOUISVILLE KY 40211-0000	4/6/2021 11:02	NOFRTH

Service Req. #	Req. Type	Request Date	Resp.	Address	Resolved Date	Resolution Code
5373394	DISCH	4/6/2021 16:48	MIC	1008 ALTA CIR LOUISVILLE KY 40205-0000	4/6/2021 19:44	NOMSD
5373967	DISCH	4/9/2021 14:37	MIC	3514 BROCKTON LN 1 LOUISVILLE KY 40220-0000	4/12/2021 15:15	NOFRTH
5374427	DISCH	4/13/2021 13:59	MIC	3903 LEES LN LOUISVILLE KY 40216-0000	4/13/2021 13:00	NOMSD
5374813	DISCH	4/15/2021 15:30	MIC	4101 CAMP GROUND RD LOUISVILLE KY 40211-0000	4/15/2021 17:47	CCASE
5375196	DISCH	4/19/2021 11:14	MIC	9909 SILVERWOOD LN LOUISVILLE KY 40272-0000	4/19/2021 13:00	NOFRTH
5375596	CONST	4/21/2021 10:33	MIC	13319 AIKEN RD MIDDLETOWN KY 40223-0000	4/21/2021 12:00	NOFRTH
5376263	DISCH	4/26/2021 13:45	MIC	14501 DIXIE HWY LOUISVILLE KY 40272-0000	4/26/2021 15:20	CCASE
5376281	DISCH	4/26/2021 16:01	MIC	4410 ESTATE DR LOUISVILLE KY 40216-0000	4/27/2021 10:20	NOFRTH
5376441	ODOR	4/27/2021 9:30	MIC	9323 LONGHORN CT LOUISVILLE KY 40118-0000	4/27/2021 10:45	NOMSD
5377252	DISCH	5/3/2021 11:08	MIC	5303 ALPINE WAY LOUISVILLE KY 40214-0000	5/4/2021 9:15	NOPRB
5377319	DISCH	5/3/2021 16:56	MIC	306 MEADOWOOD CT 4 LOUISVILLE KY 40214-0000	5/4/2021 13:15	NOFRTH
5377498	DISCH	5/4/2021 13:00	MIC	1053 GOSS AVE LOUISVILLE KY 40217-0000	5/4/2021 14:30	CCASE
5378509	DISCH	5/11/2021 11:41	MIC	2209 STEPHAN LN LOUISVILLE KY 40214-0000	5/12/2021 7:34	CUST
5378736	DISCH	5/12/2021 15:50	MIC	6212 MARAVIAN DR LOUISVILLE KY 40258-0000	5/13/2021 7:21	NOFRTH
5378921	DISCH	5/13/2021 17:17	MIC	14114 GLENDOWER DR LOUISVILLE KY 40245-0000	5/14/2021 11:22	NOFRTH
5379017	BCKUP	5/14/2021 10:20	MIC	1832 S 3RD ST LOUISVILLE KY 40208-0000	5/14/2021 15:10	NOFRTH
5379036	DISCH	5/14/2021 11:49	MIC	13160 MAGISTERIAL DR LOUISVILLE KY 40223-0000	5/14/2021 14:30	NOFRTH
5379448	DISCH	5/18/2021 15:29	MIC	4028 S 3RD ST LOUISVILLE KY 40214-0000	5/18/2021 18:00	NOFRTH
5379551	DISCH	5/19/2021 10:04	MIC	6001 HACKNEY COACH DR INDIAN HILLS KY 40207-0000	5/19/2021 11:58	NOFRTH
5380144	DISCH	5/24/2021 10:19	MIC	405 SPRINGWOOD LN ST MATTHEWS KY 40207-0000	5/24/2021 15:30	NOPRB
5380213	DISCH	5/24/2021 17:06	MIC	7209 LAWNSIDE DR LOUISVILLE KY 40214-0000	5/25/2021 0:00	NOMSD
5380217	DISCH	5/24/2021 18:05	MIC	4400 PROGRESS BLVD LOUISVILLE KY 40218-0000	5/25/2021 0:00	CCASE
5380511	DISCH	5/26/2021 9:50	MIC	1601 PARKRIDGE PKY LOUISVILLE KY 40214-0000	5/27/2021 13:29	NOFRTH
5380552	DISCH	5/26/2021 14:15	MIC	801 EASTERN PKY LOUISVILLE KY 40217-0000	5/27/2021 14:15	NOFRTH
5380720	DISCH	5/27/2021 11:46	MIC	7209 LAWNSIDE DR LOUISVILLE KY 40214-0000	5/28/2021 10:37	NOMSD
5380897	DISCH	5/29/2021 8:17	MIC	3311 7TH STREET RD LOUISVILLE KY 40216-0000	6/1/2021 8:30	NOFRTH
5381610	DISCH	6/3/2021 19:24	MIC	15301 DIXIE HWY LOUISVILLE KY 40272-0000	6/3/2021 19:40	NOFRTH
5382412	DISCH	6/9/2021 11:06	MIC	101 E WASHINGTON ST LOUISVILLE KY 40202-0000	6/11/2021 13:09	CCASE
5382771	DISCH	6/11/2021 14:48	MIC	3701 W MAGNOLIA AVE LOUISVILLE KY 40211-0000	6/15/2021 18:20	CCASE
5383167	ODOR	6/15/2021 15:09	MIC	3805 BROWNSBORO RD INDIAN HILLS KY 40207-0000	6/17/2021 12:04	INSPT
5383173	ODOR	6/15/2021 15:50	MIC	7215 W ORELL RD LOUISVILLE KY 40272-0000	1/1/2021 0:00	NOFRTH
5383335	DISCH	6/16/2021 14:46	MIC	5602 BRINSON DR LOUISVILLE KY 40216-0000	6/17/2021 9:40	NOFRTH
5383349	DISCH	6/16/2021 15:35	MIC	208 STILLWOOD CT LOUISVILLE KY 40223-0000	6/17/2021 14:15	NSF

Service Req. #	Req. Type	Request Date	Resp.	Address	Resolved Date	Resolution Code
5383370	DISCH	6/16/2021 19:28	MIC	4400 WOLFSPRING DR LOUISVILLE KY 40241-0000	6/17/2021 14:04	NOFRTH
5383634	DISCH	6/18/2021 12:32	MIC	4510 ALGONQUIN PKY LOUISVILLE KY 40211-0000	6/19/2021 8:56	CCASE
5384220	DISCH	6/24/2021 11:07	MIC	4309 HUNSINGER LN LOUISVILLE KY 40220-0000	6/24/2021 14:01	NOPRB
5384357	DISCH	6/25/2021 8:29	MIC	1400 WILLOW BEND PL MIDDLETOWN KY 40299-0000	6/25/2021 16:28	INFO
5384409	DISCH	6/25/2021 16:22	MIC	8601 CITADEL WAY JEFFERSONTOWN KY 40220-0000	6/25/2021 19:00	CCASE
5384737	DISCH	6/29/2021 9:10	MIC	4730 ALLMOND AVE LOUISVILLE KY 40209-0000	6/29/2021 12:09	CLOSED

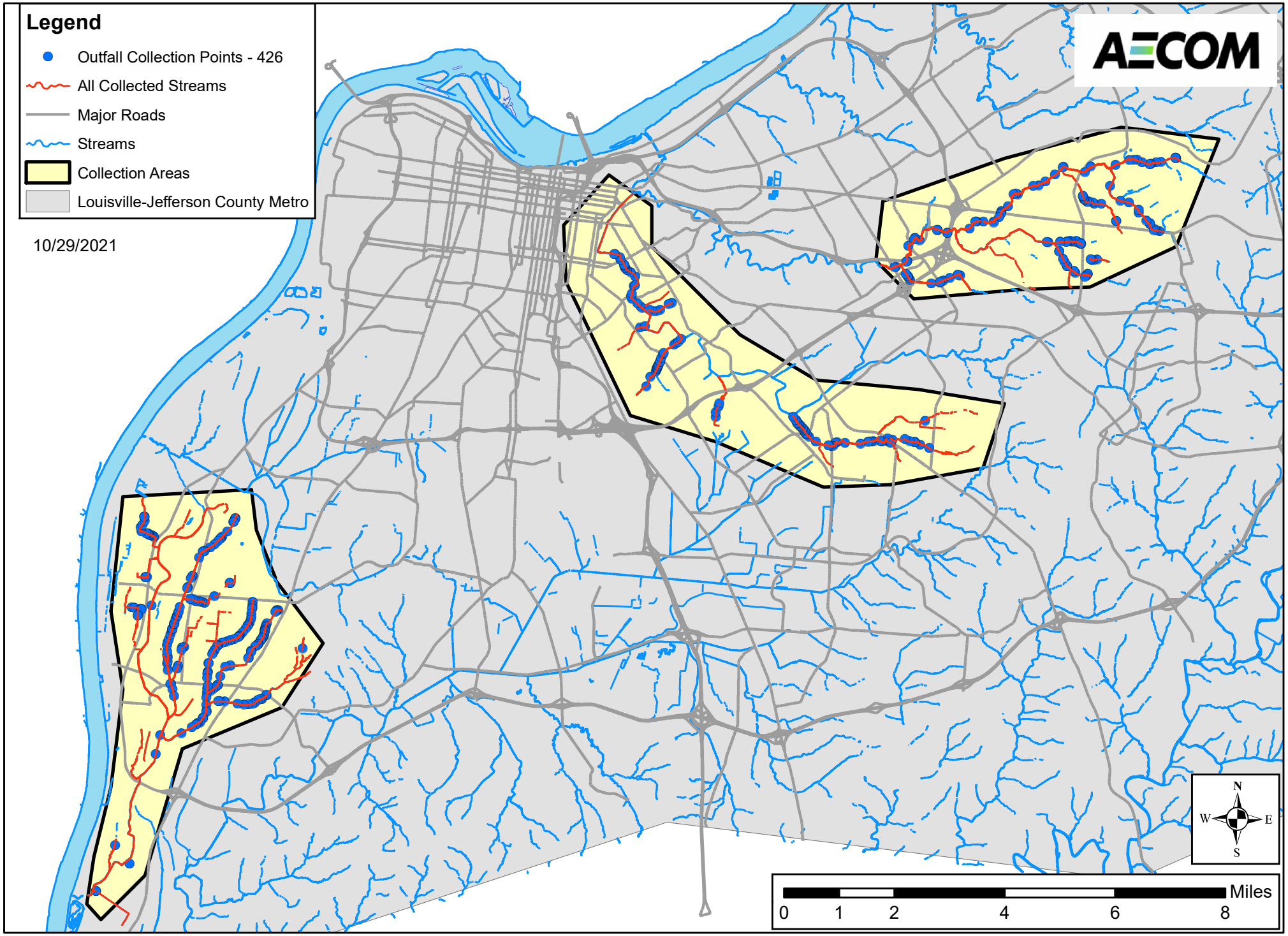
Indicates within the Combined Sewer System

Indicates within the Municipal Separate Sewer System

APPENDIX 2.2.4.1 SUSPECTED OUTFALL MAP

APPENDIX 2.2.4.1 SUSPECTED OUTFALL MAP

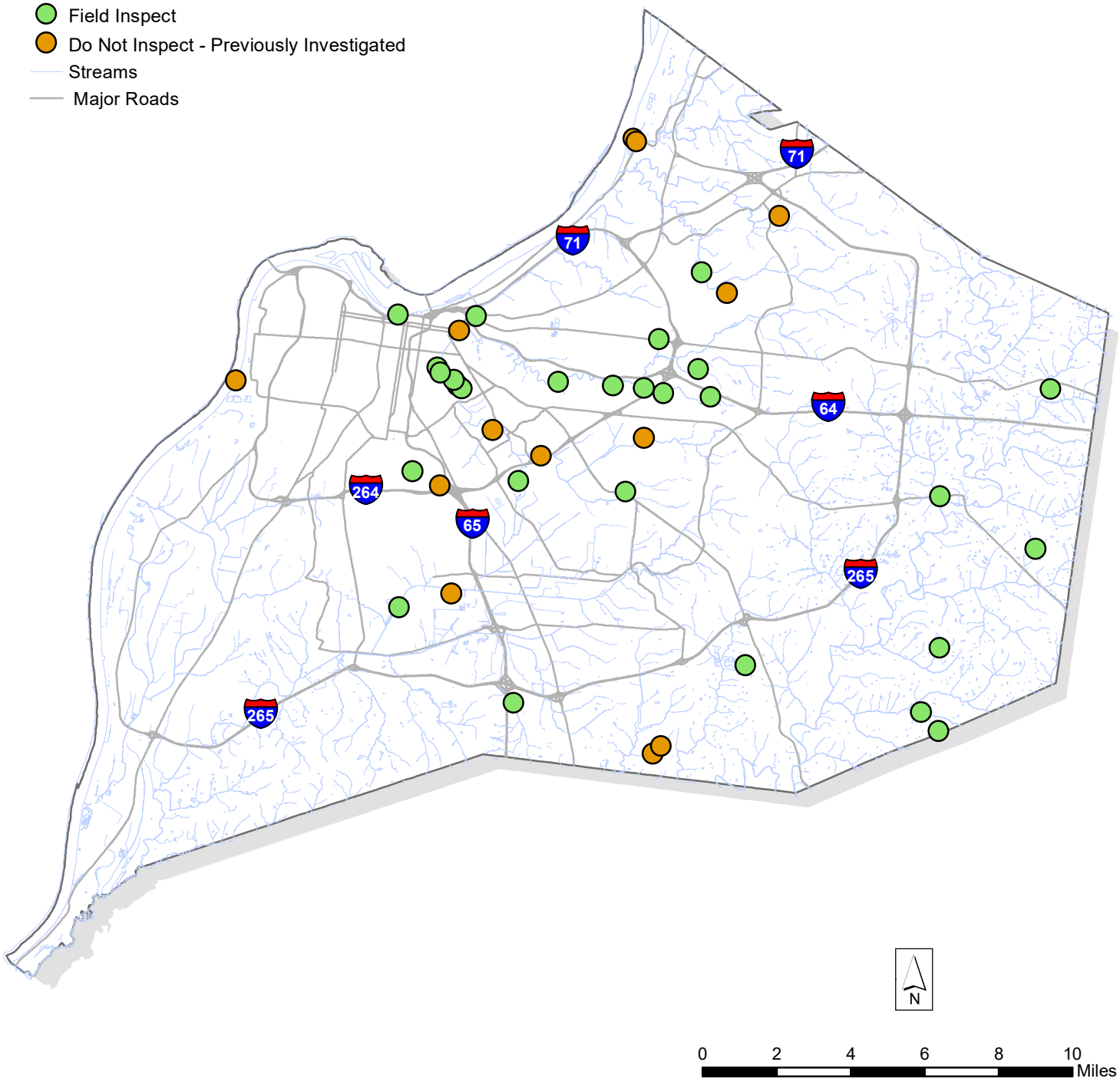
Outfall Data Collection July 2020 - June 2021



APPENDIX 2.2.4.2 IDDE THERMAL FIELD INVESTIGATION PACKET

2020 Thermal Anomalies for Field Investigation

Field Investigation Information Packet



October 2020

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2020 Digital Thermal Analysis Findings

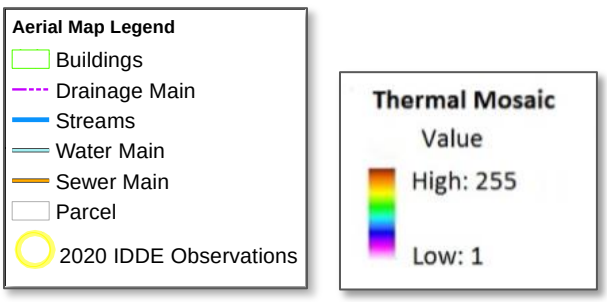
DESKTOP ANALYSIS SUMMARY

40 thermal observation sites have been identified as thermal anomalies through a digital desktop analysis of Quantum Spatial's 2020 Thermal Imagery datasets. Findings have been spatially recorded in an Observation Shapefile with attributes of stream name, address, site observation, heat signature type, aerial map scale, thermal signature map scale, inspect (yes/no), and corresponding imagery tile. Corresponding site maps have been crafted to direct Metropolitan Sewer District field crews to each site for additional investigation. Aerial Imagery and Thermal Signature Maps include LOJIC's 3ft 2016 imagery cached service basemap and LOJIC data layers. Maps scales are unique to each site and selected to illustrate the most informative resolution of nearby features which could contribute to the observed signature. Scale by site and map type are identified in the observation shapefile and documented on each map. Desktop Analysis Findings Include:

- Observation Shapefile
    - 40 attributes
        - 27 Newly Identified Thermal Observation Sites
        - 13 Previously Identified Thermal Observation Sites
- 78 maps (Thermal and Aerial)
    - 39 mapped sites - 2 sites at Captains Quarters are in close proximity and shown together
    - Map scales vary for each site. Generally, they are at 1:4,000, 1:2,000, and 1:1000 as needed for the most informative resolution.
- Areas of shallow ponding were not recorded. However, shallow ponding sites were observed throughout Jefferson County as they were in past desktop analyses. Past thermal imagery field investigations have found shallow ponding sites to be false positives.
- 13 sites were recognized as Previously Identified Thermal Observation Sites. Those sites were identified as previously identified or known illicit discharges. As noted within the shapefile those sites have details listing 'known illicit' and do not necessarily be field investigated.

MAPS FOR FIELD INVESTIGATION

Aerial imagery maps and corresponding thermal signature maps were produced for each site. LOJIC's 3ft 2016 imagery is the aerial basemap used. These maps are intended to be, clean, simple, and informative to direct MSD staff to each site for additional analysis. The scale of the aerial maps is intended to show what feature are in close proximity and could contribute to the signature. As in past thermal imagery analyses, higher heat signatures are coded as red/orange and lower values are coded as blue/purple/white values. The following map legends should be referenced for each map type.



THERMAL IMAGERY DATA

Thermal imagery data data was acquired during nighttime hours on February 22nd and February 23rd, 2020. Refer to Quantum Spatial Acquisition Completion Report dated June 26, 2020 for full data summary. The below graphic from the Acquisition Completion Report illustrates data collection by date and flight line collection path.

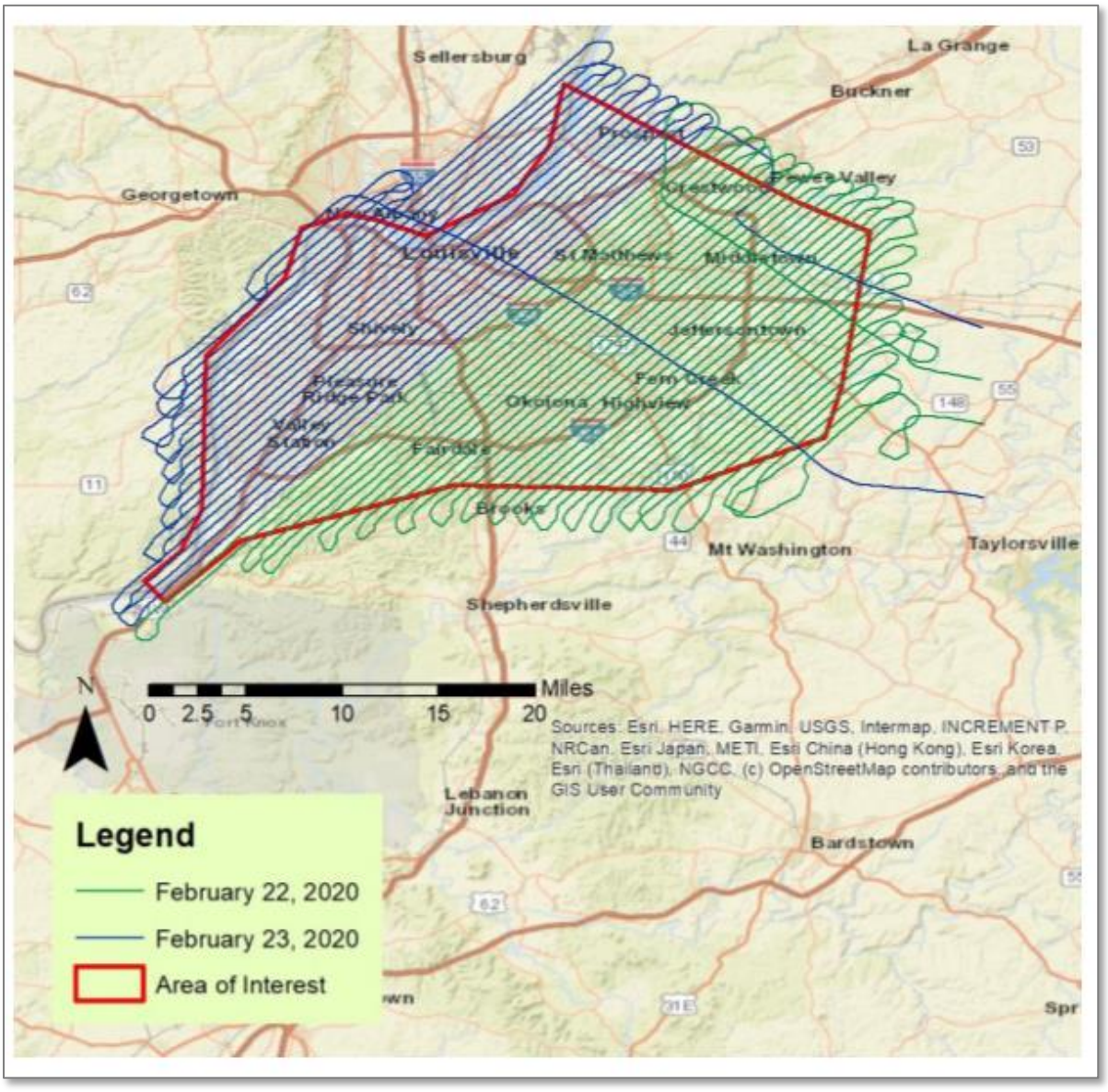


Figure: Map showing flight lines for the ITRES TABI 1800 thermal infrared sensor, by date

Newly Identified Thermal Observation Sites

27 sites have been digitally identified as observations warranting further investigation.

Site Address	Stream Name	Site Observation	Heat Signature Type	Imagery Tile
1731 Mellwood Ave Louisville, KY 40206	Beargrass Creek	Heat signature	Heat Signature	133315
4141 Bardstown Road Louisville, KY 40218	Buechel Branch	Heat signature in stream between buildings	Heat signature	155634
7201 National Turnpike Louisville, KY 40214	Culvert near Northern Ditch	Discharge in culvert under Brady Corp.	Heat signature	170418
720 Oxmoor Ln Louisville, KY 40222	Foxmoor Creek	Possible flow from building at Oxmoor Farm	Possible flow	161735
7713 Westport Road Louisville, KY 40222	Goose Creek	Possible discharge from structure.	Heat Signature	170418
14725 Brush Run Road Louisville, KY 40299	Jenkins Creek	Potential shallow ponding, possible flow	Shallow ponding	124923
4740 Dunbar Valley Rd Fisherville, KY 40023	Lake/Pond	Visible gradation, possible flow	Flow	124923
937 Phillips Ln Louisville, KY 40209	Lake/Pond	Heat signature beginning at culvert within the KY Exposition Center Fairgrounds	High heat signature	124112
5901 Dutchmans Lane Louisville, KY 40205	Middle Fork Beargrass Creek	Big Spring Country Club Golf Course	Probable	170418
2571 Cherosen Rd Louisville, KY 40205	Middle Fork Beargrass Creek	Heat signature west of Seneca Park	Heat Signature	121316
9721 Ranger Rd Louisville, KY 40229	Mud Creek	Heat signature, possible flow	Heat Signature	151634
141 North 6th St Louisville, KY 40202	Ohio River	Flow. Under the belvedere into the Ohio River	Flow	142125
11061 Dawson Hill Rd Louisville, KY 40299	pond	Heat signature. Review nearby building	Heat Signature	122941
17006 Shelbyville Rd Fisherville, KY 40023	pond	Heat signature	Possible	133744
3000-3098 South Pope Lick Road Louisville, KY 40299	Pope Lick	Heat signature near train trestle at Pope Lick Rd	Flow	133744
1321 Ellison Ave Louisville, KY 40204	South Fork Beargrass Creek	Multiple areas of high heat signatures on South Fork Beargrass Creek	Heat Signature	130824
1302 Castlewood Dell Louisville, KY 40204	South Fork Beargrass Creek	Two high heat signatures on this section of South Fork Beargrass Creek	Heat Signature	130824
1131 Schiller Ave Louisville, KY 40204	South Fork Beargrass Creek	Multiple areas of high heat signatures on South Fork Beargrass Creek	Heat Signature	130824
935 Logan St Louisville, KY 40204	South Fork Beargrass Creek	Multiple areas of high heat signatures on South Fork Beargrass Creek	Heat Signature	133315
1010 Highland Ave Louisville, KY 40204	South Fork Beargrass Creek	Multiple areas of high heat signatures on South Fork Beargrass Creek	Heat Signature	133315
10516 Providence Dr Lousiville, KY 40291	Stream to Cedar Creek	Heat signature. Property owner: Reserve at Glemnary Homeowners Association	Heat Signature	134551
4601 Shelbyville Rd Louisville, KY 40207	Stream to Middle Fork Beargrass Creek	Ditch near Office Depot & Medley's Auto Center	Possible flow	170418

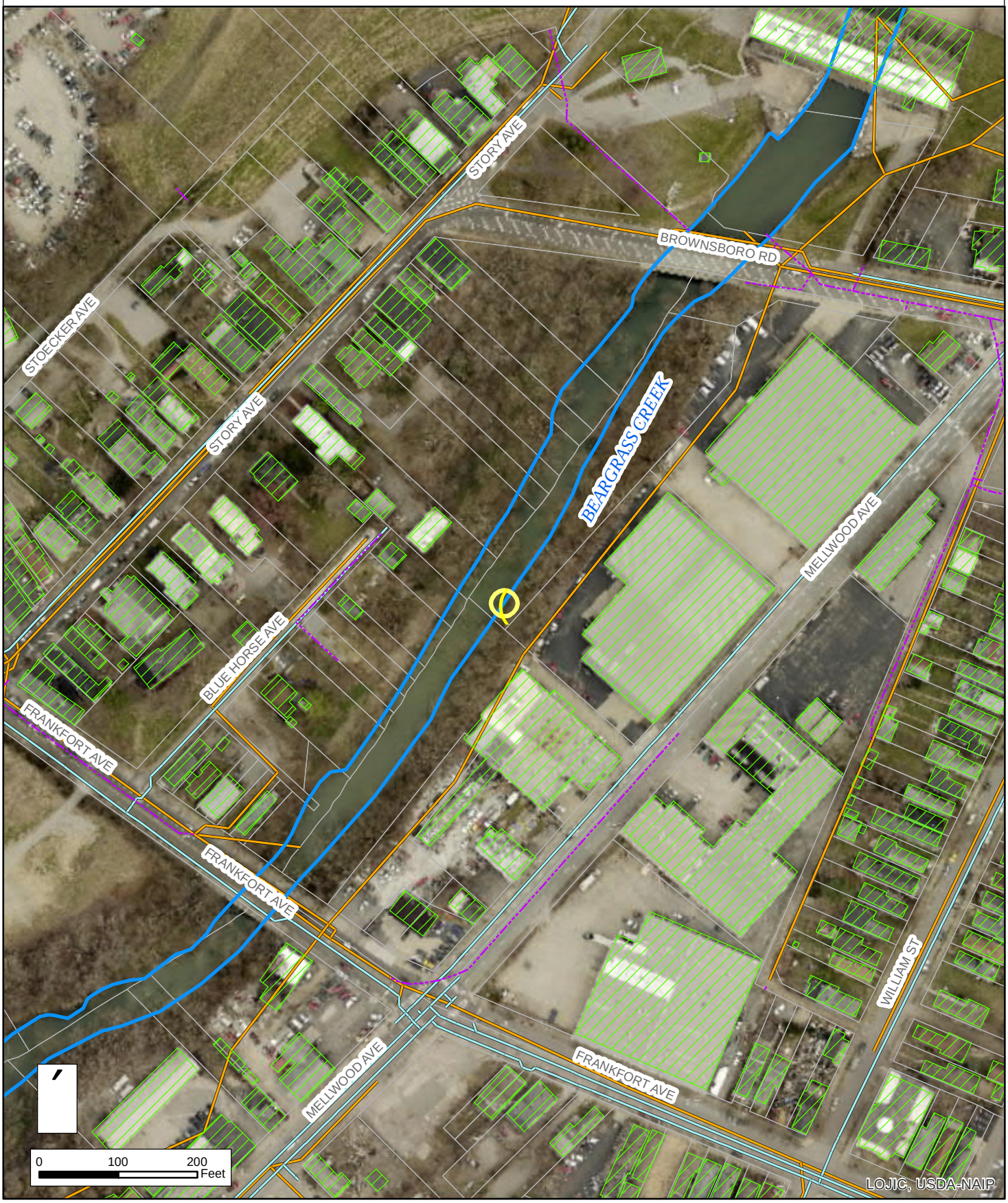
4400 Annshire Ave Louisville, KY 40213	Stream to South Fork Beargrass Creek	Heat signature at USPS Facility	Heat signature	170418
6420 New Dutchmans Pkwy Louisville, KY 40205	Weicher Creek	Heat signature/flow adjacent to U of L Hospital facility.	Flow	164043
4231 Hillbrook Dr Louisville, KY 40220	Weicher Creek	Possible flow into stream. Heat signature present.	Possible flow	161735
9000 Limehouse Ln Louisville, KY 40220	Weicher Creek	Oxmoor Country Club. Flow from culvert.	Possible flow	155634
15511 Dawson Hill Place Louisville, KY 40299	Wheelers Run	Possible plume/flow.	Possible Flow	123817

1731 Mellwood Ave Louisville, KY 40206

Thermal Observation: Heat Signature

Comments:

Heat signature

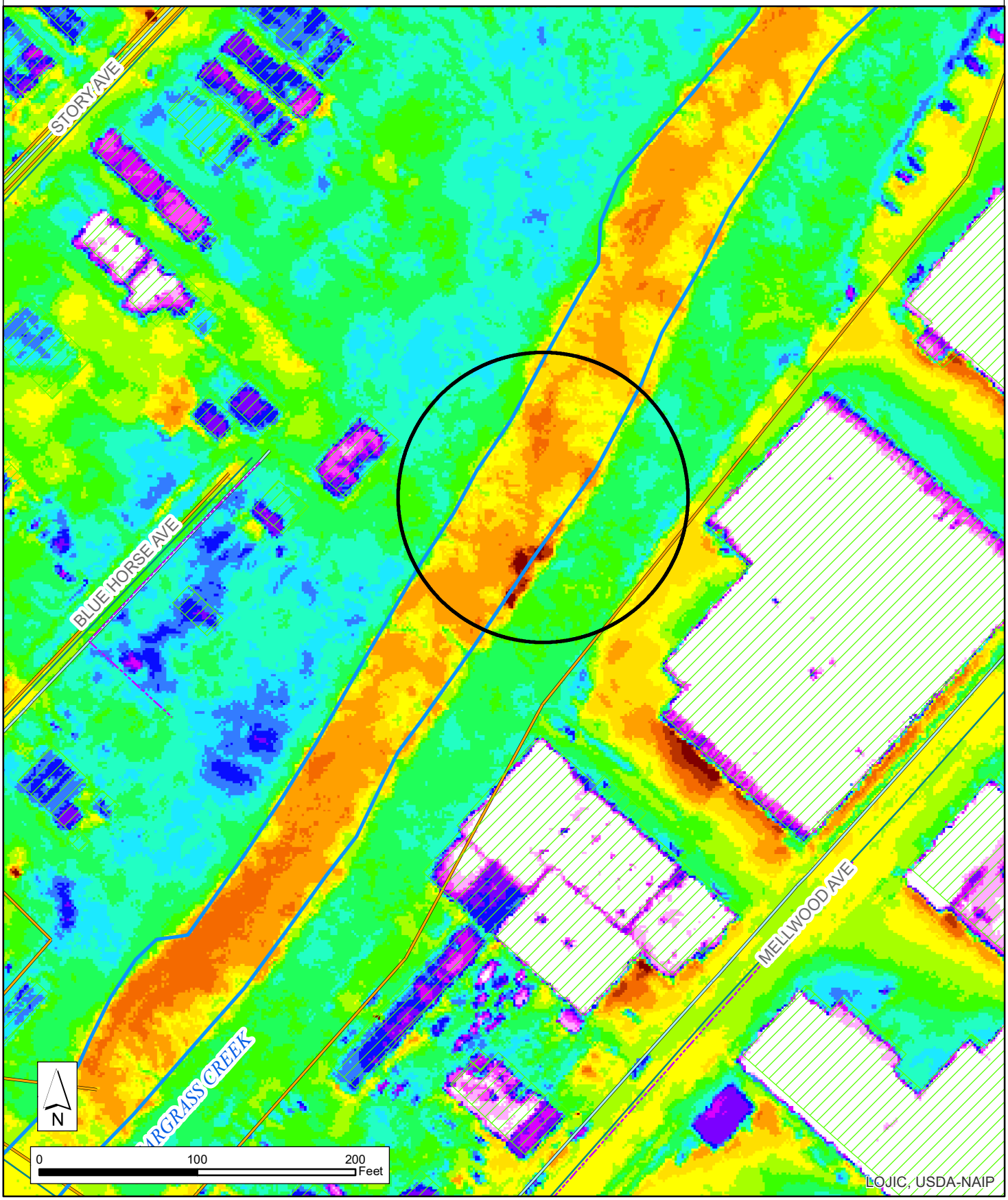


1731 Mellwood Ave Louisville, KY 40206

Thermal Observation: Heat Signature

Comments:

Heat signature

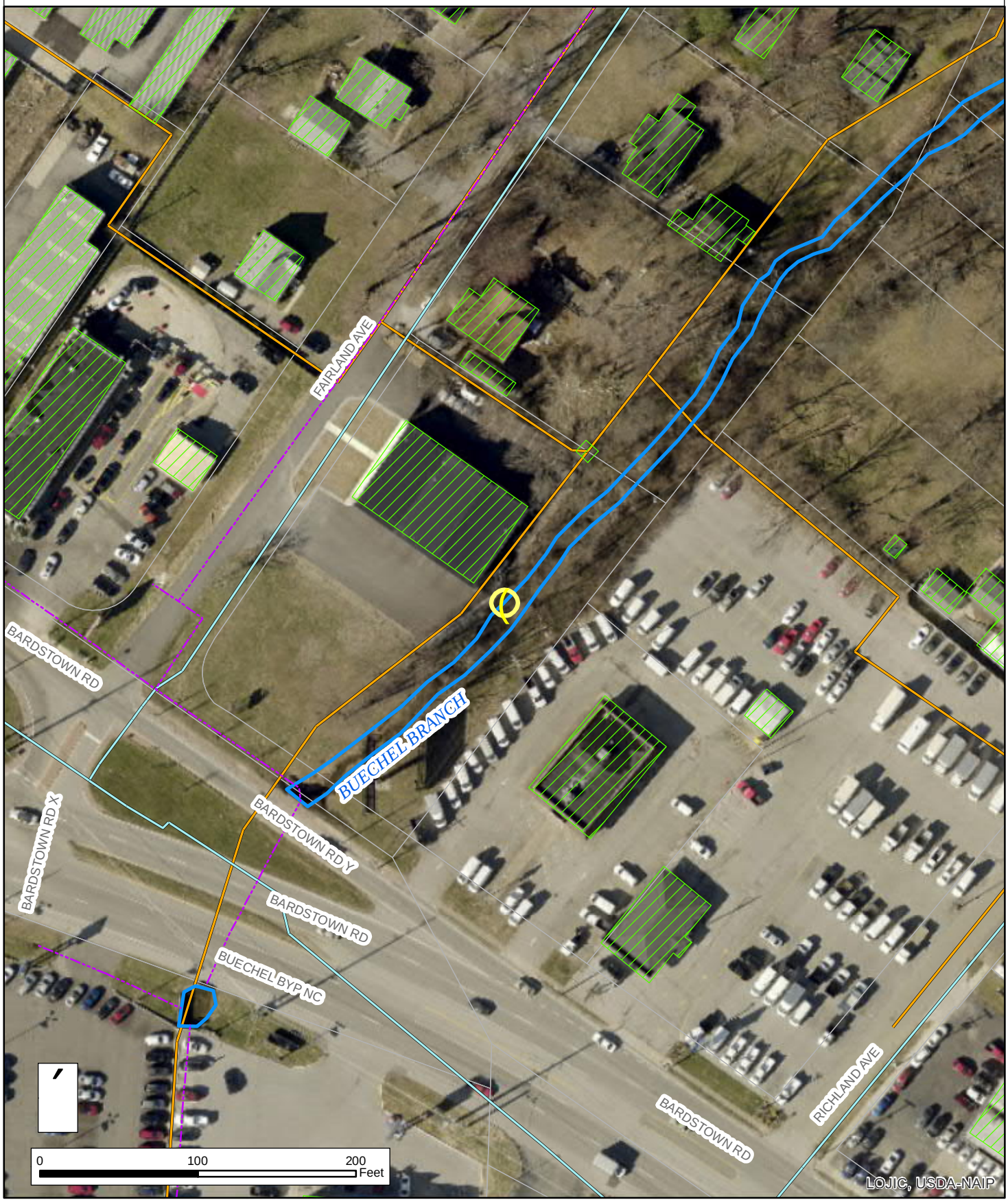


4141 Bardstown Road Louisville, KY 40218

Thermal Observation: Heat signature

Comments:

Heat signature in stream between buildings

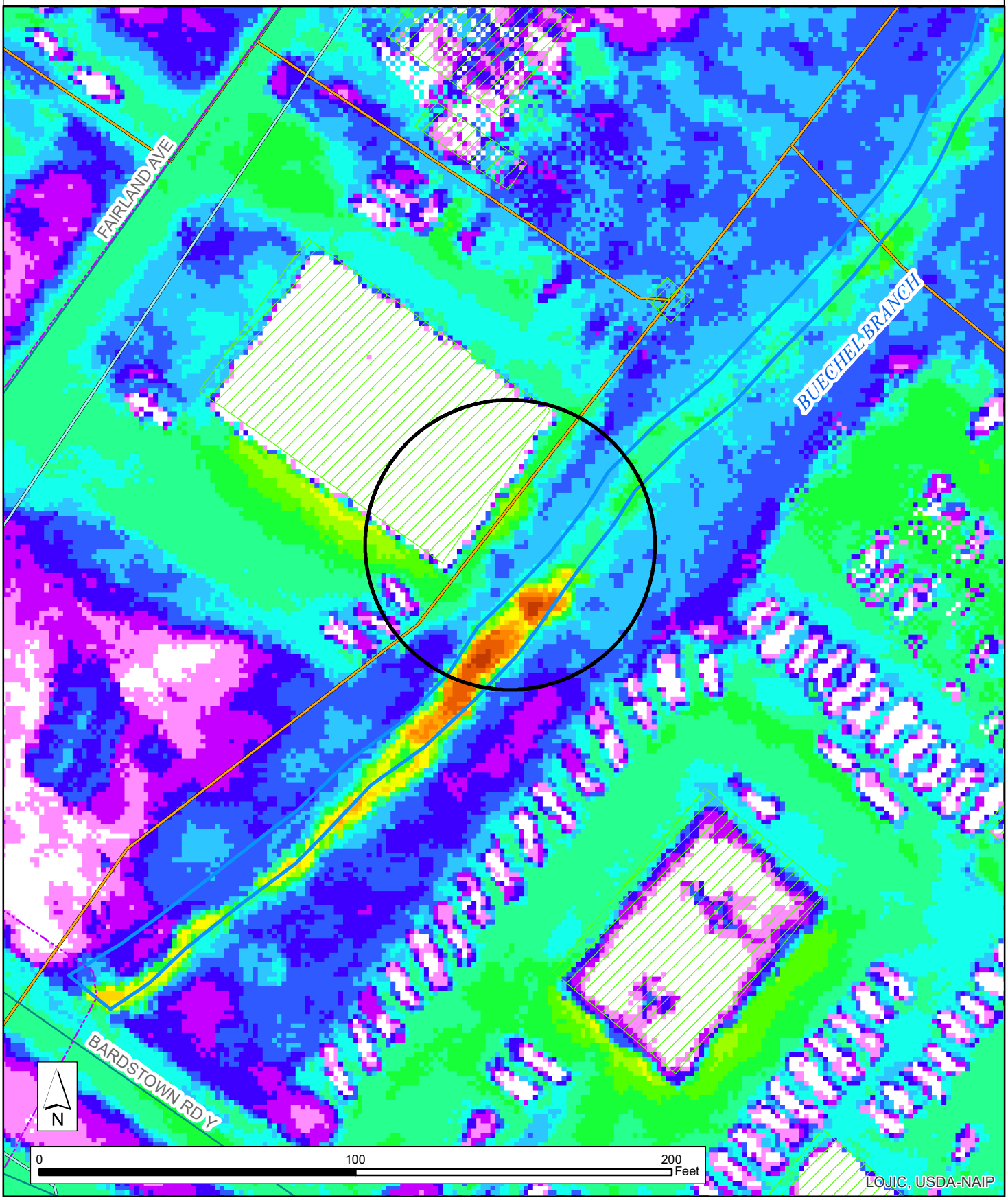


4141 Bardstown Road Louisville, KY 40218

Thermal Observation: Heat signature

Comments:

Heat signature in stream between buildings

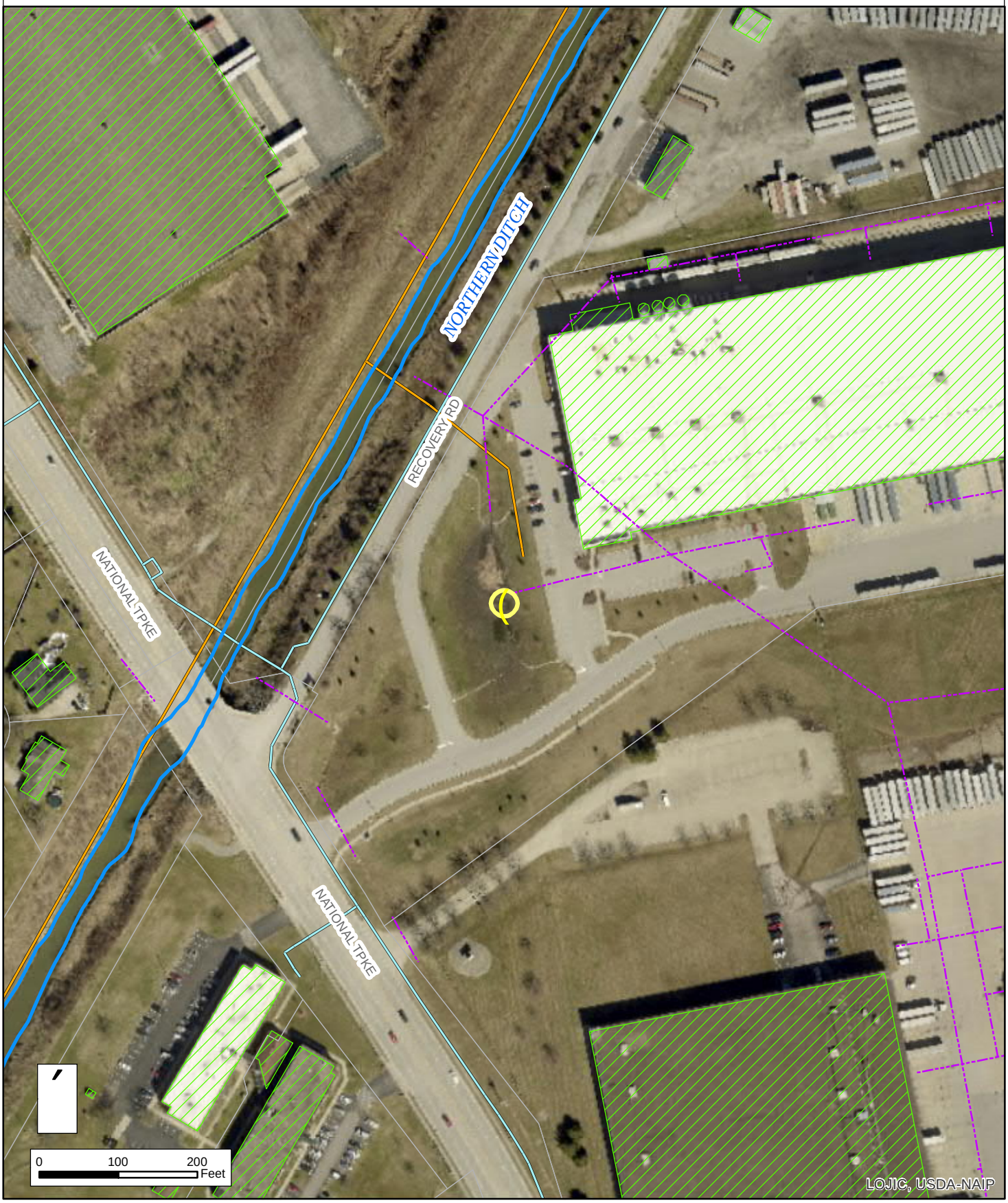


7201 National Turnpike Louisville, KY 40214

Thermal Observation: Heat signature

Comments:

Discharge in culvert under Brady Corp.

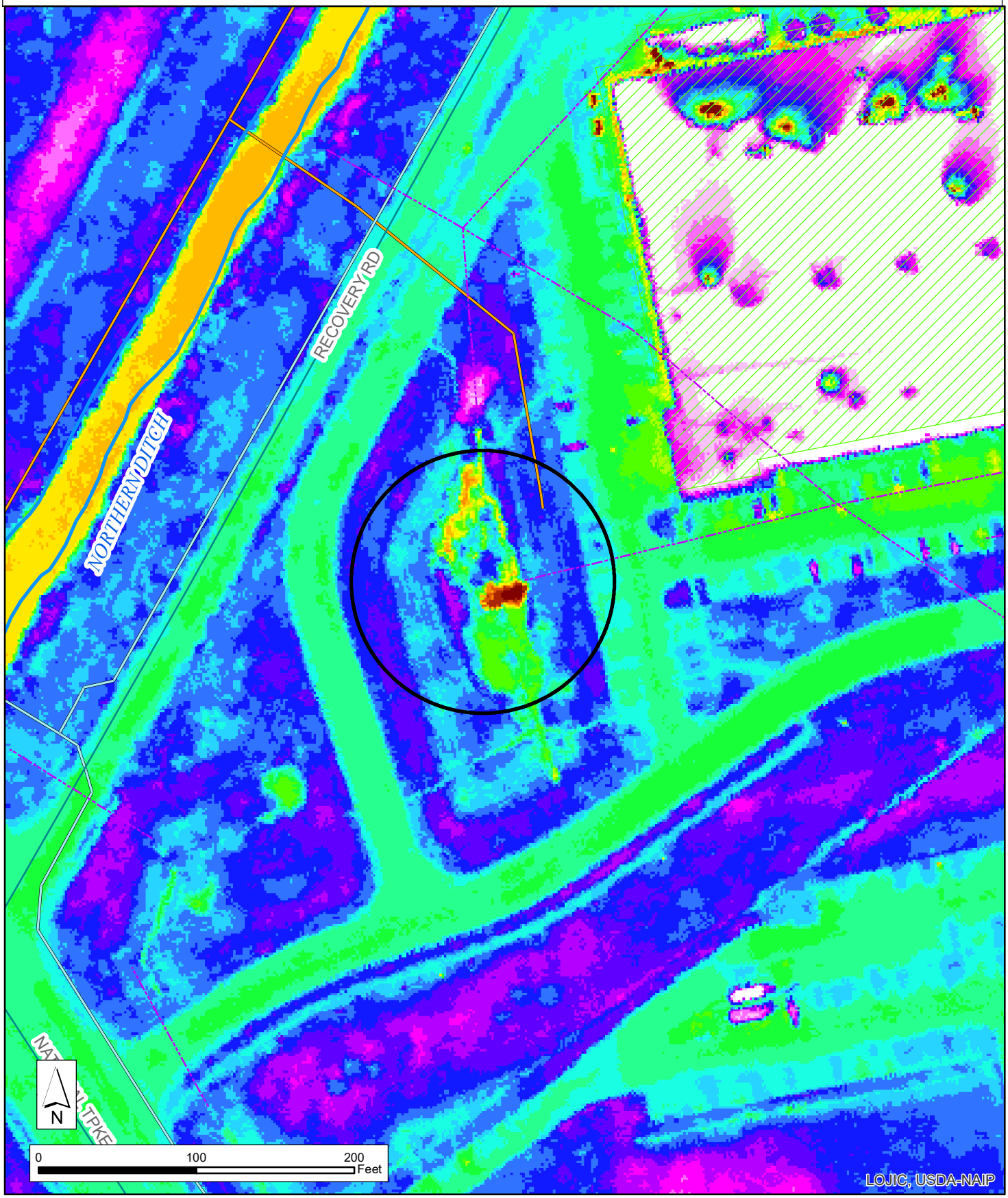


7201 National Turnpike Louisville, KY 40214

Thermal Observation: Heat signature

Comments:

Discharge in culvert under Brady Corp.

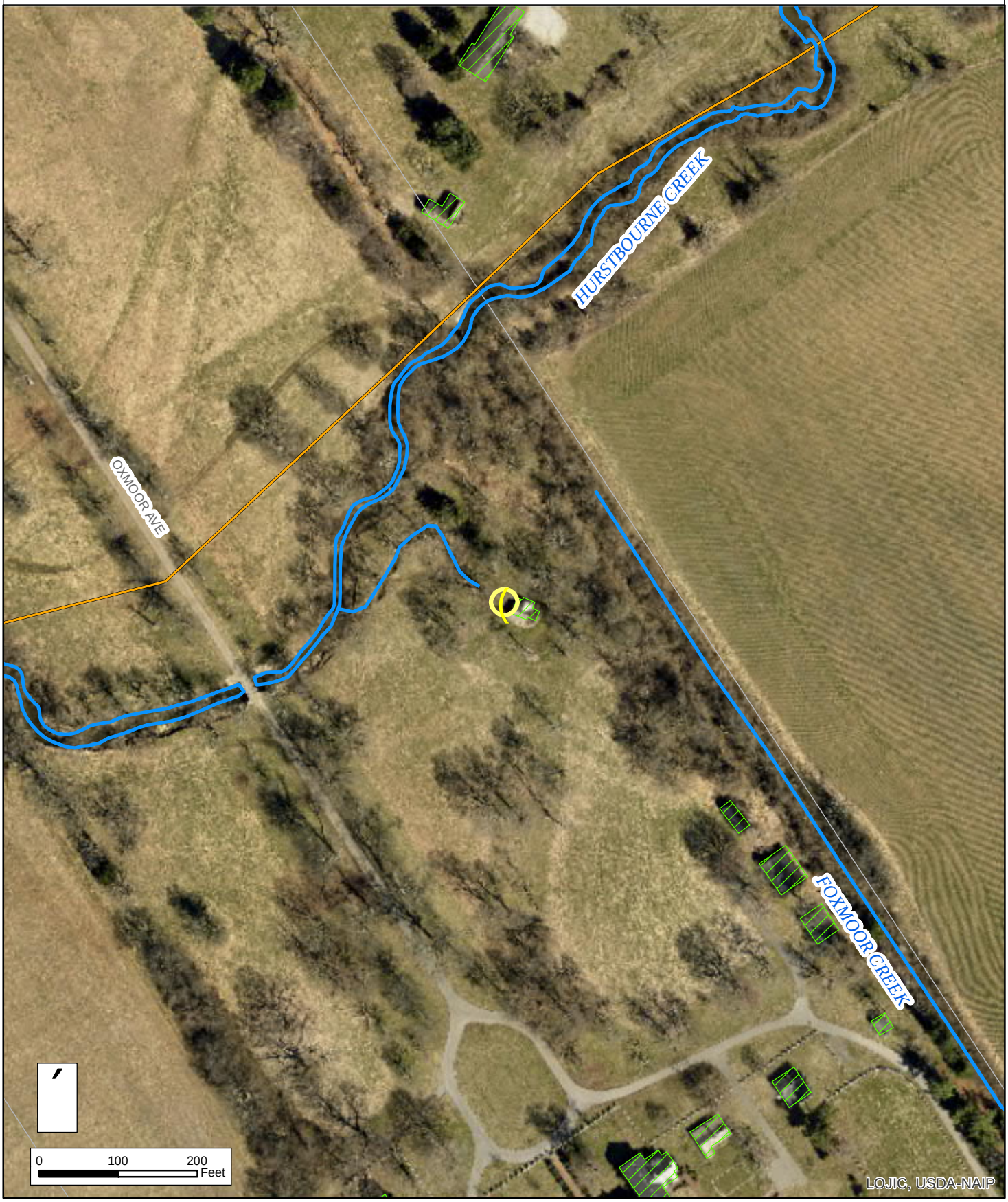


720 Oxmoor Ln Louisville, KY 40222

Thermal Observation: Possible flow

Comments:

Possible flow from building at Oxmoor Farm

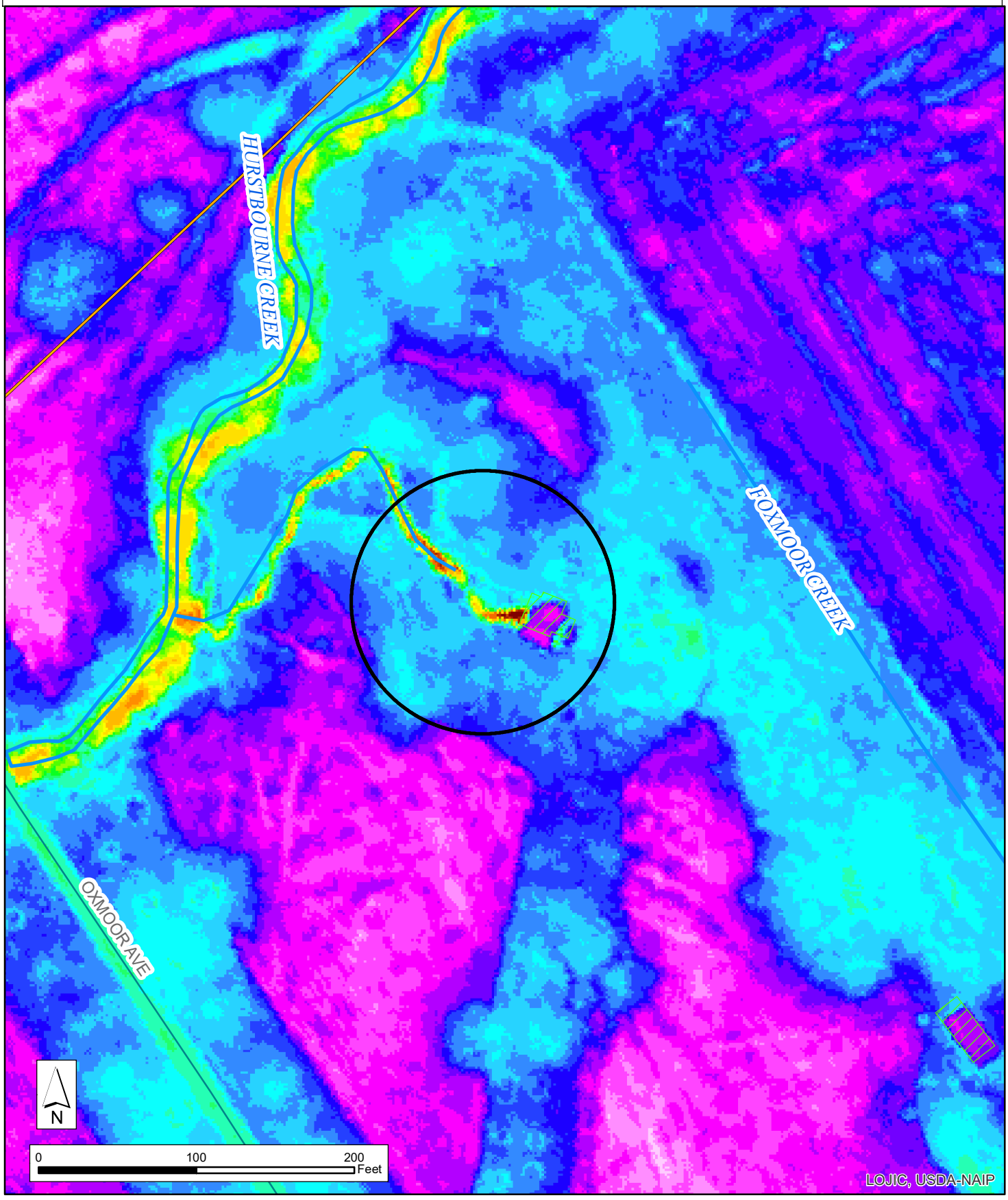


720 Oxmoor Ln Louisville, KY 40222

Thermal Observation: Possible flow

Comments:

Possible flow from building at Oxmoor Farm



7713 Westport Road Louisville, KY 40222

Thermal Observation: Heat Signature

Comments:

Possible discharge from structure.

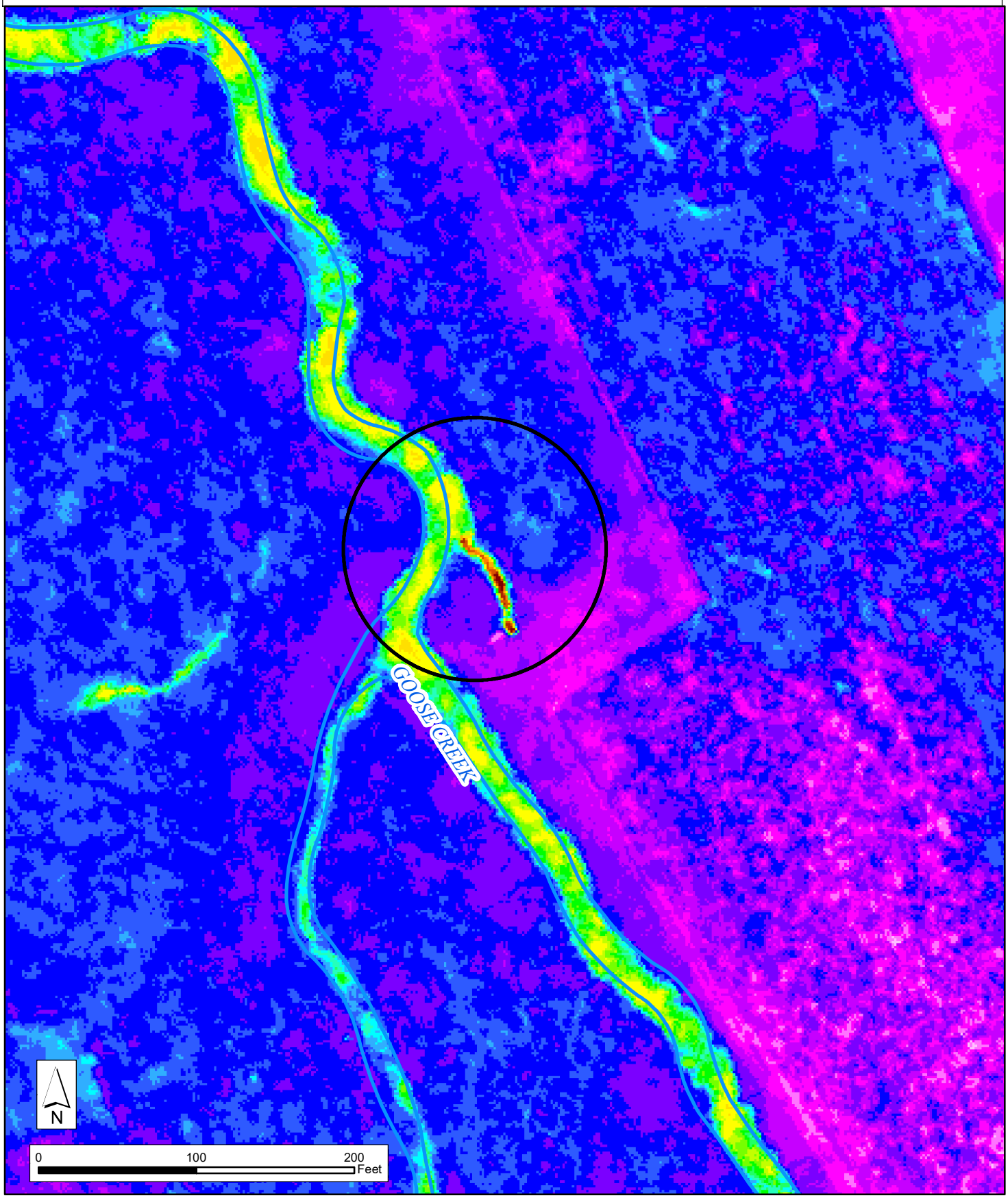


7713 Westport Road Louisville, KY 40222

Thermal Observation: Heat Signature

Comments:

Possible discharge from structure.

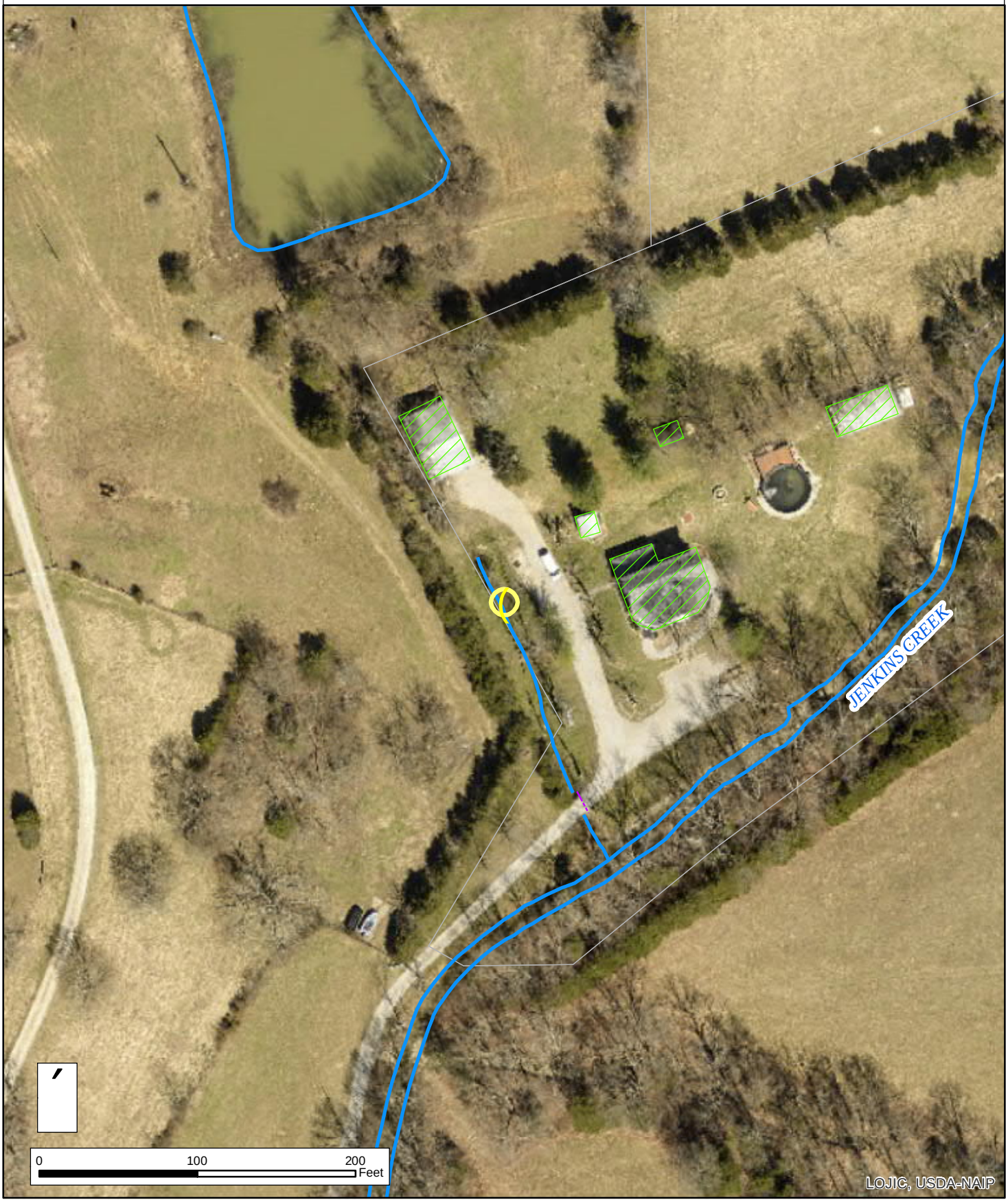


14725 Brush Run Road Louisville, KY 40299

Thermal Observation: Shallow ponding

Comments:

Potential shallow ponding, possible flow

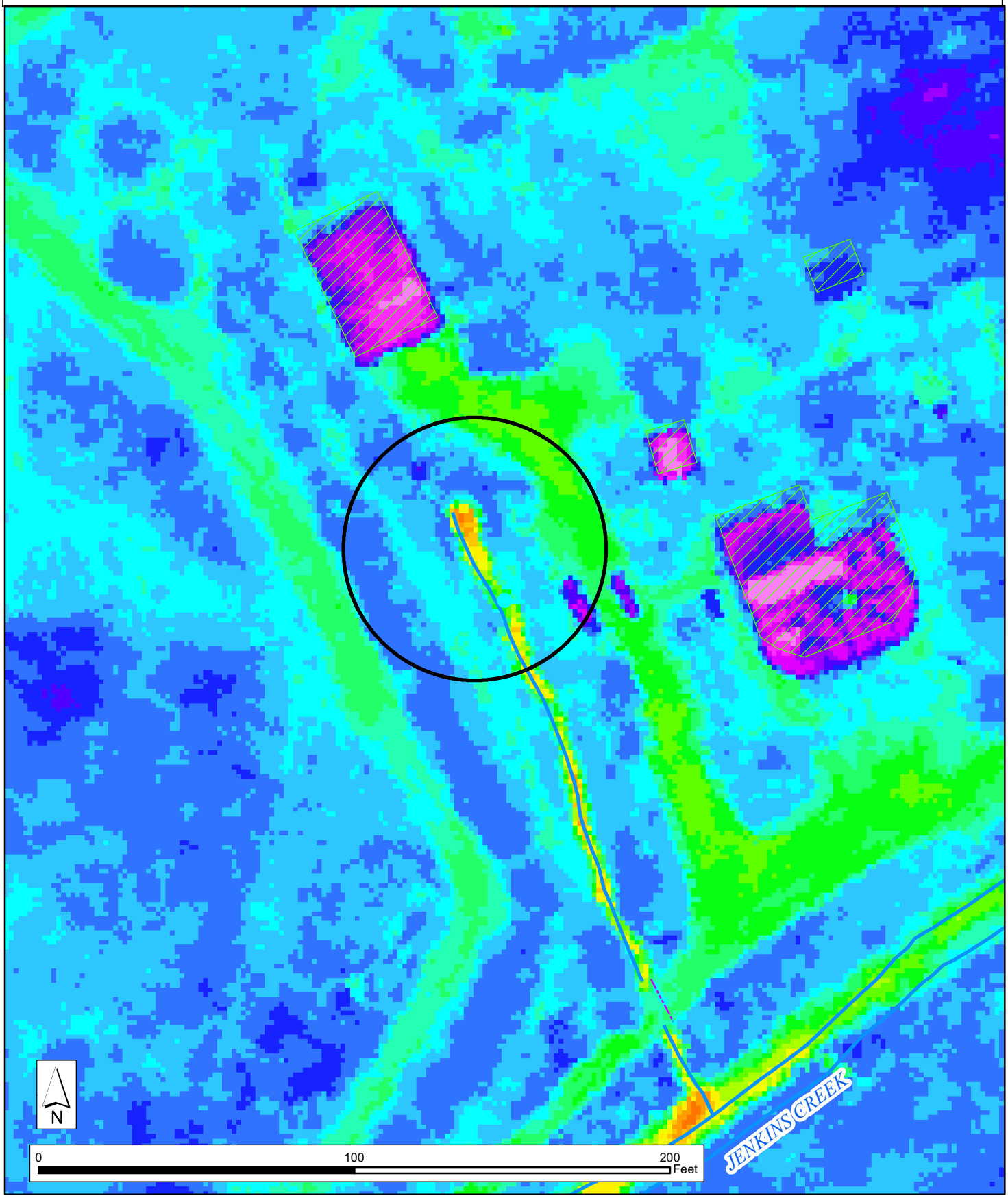


14725 Brush Run Road Louisville, KY 40299

Thermal Observation: Shallow ponding

Comments:

Potential shallow ponding, possible flow



4740 Dunbar Valley Rd Fisherville, KY 40023

Thermal Observation: Flow

Comments:

Visible gradation, possible flow

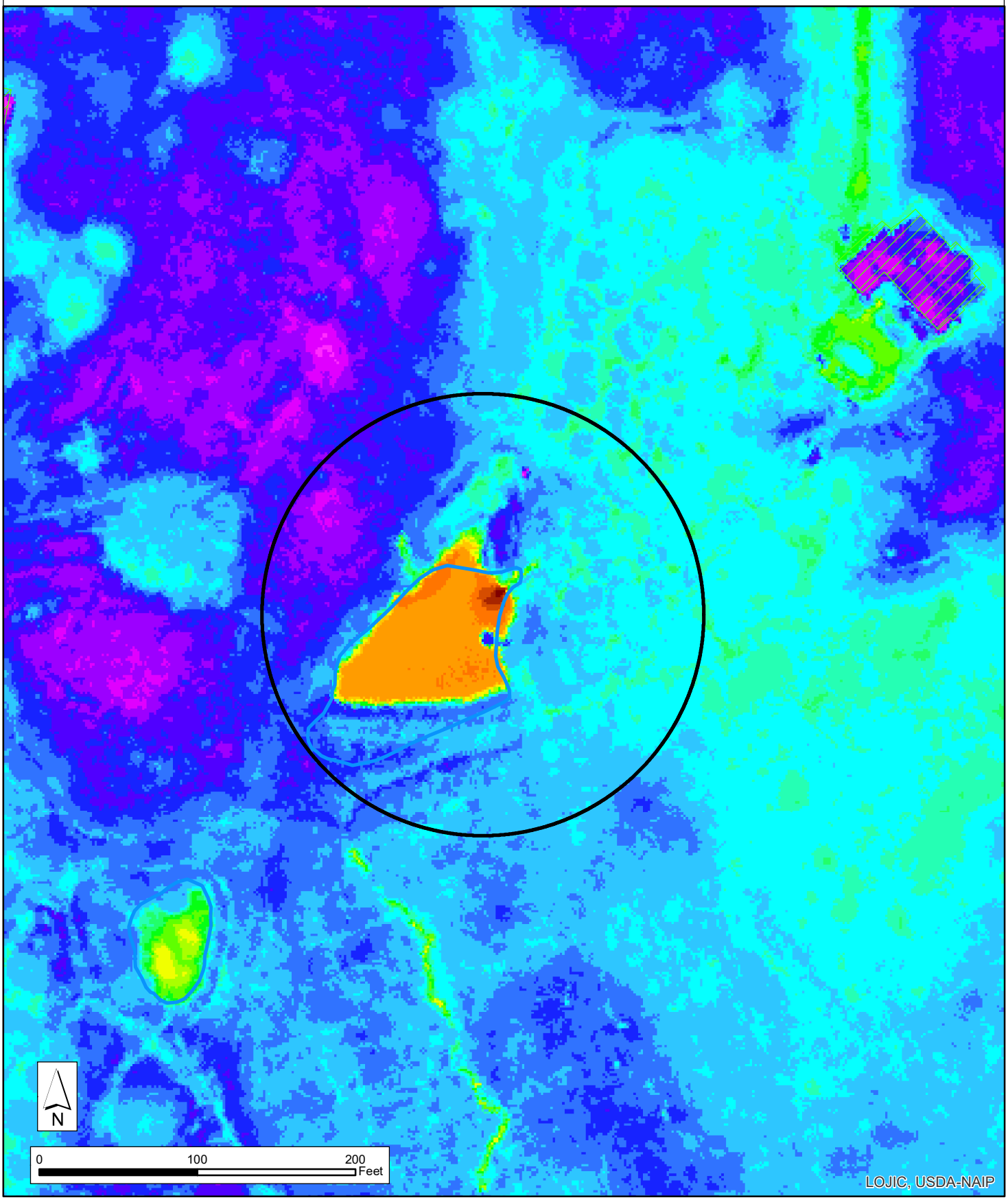


4740 Dunbar Valley Rd Fisherville, KY 40023

Thermal Observation: Flow

Comments:

Visible gradation, possible flow

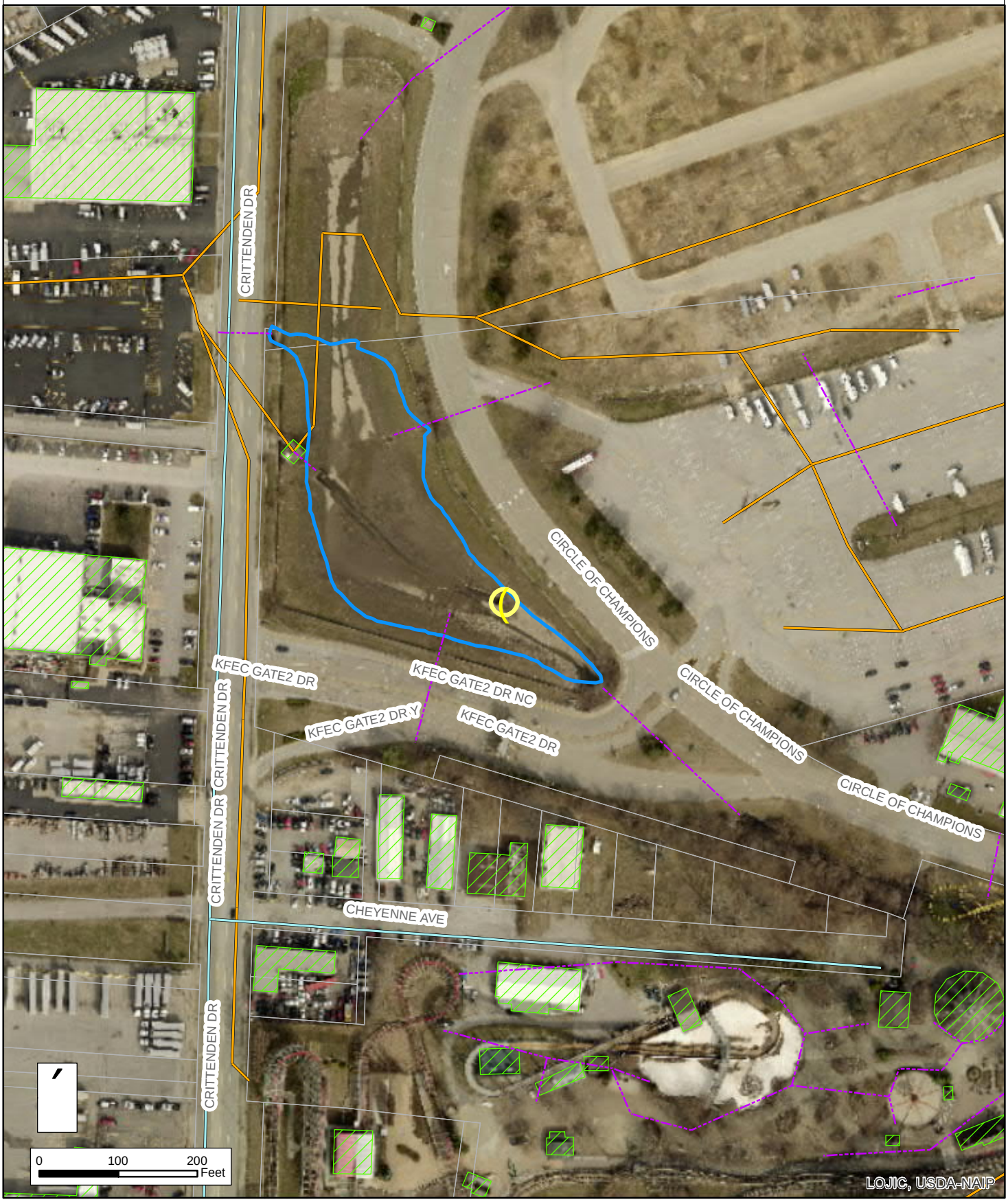


937 Phillips Ln Louisville, KY 40209

Thermal Observation: High heat signature

Comments:

Heat signature beginning at culvert within the KY Exposition Center Fairgrounds

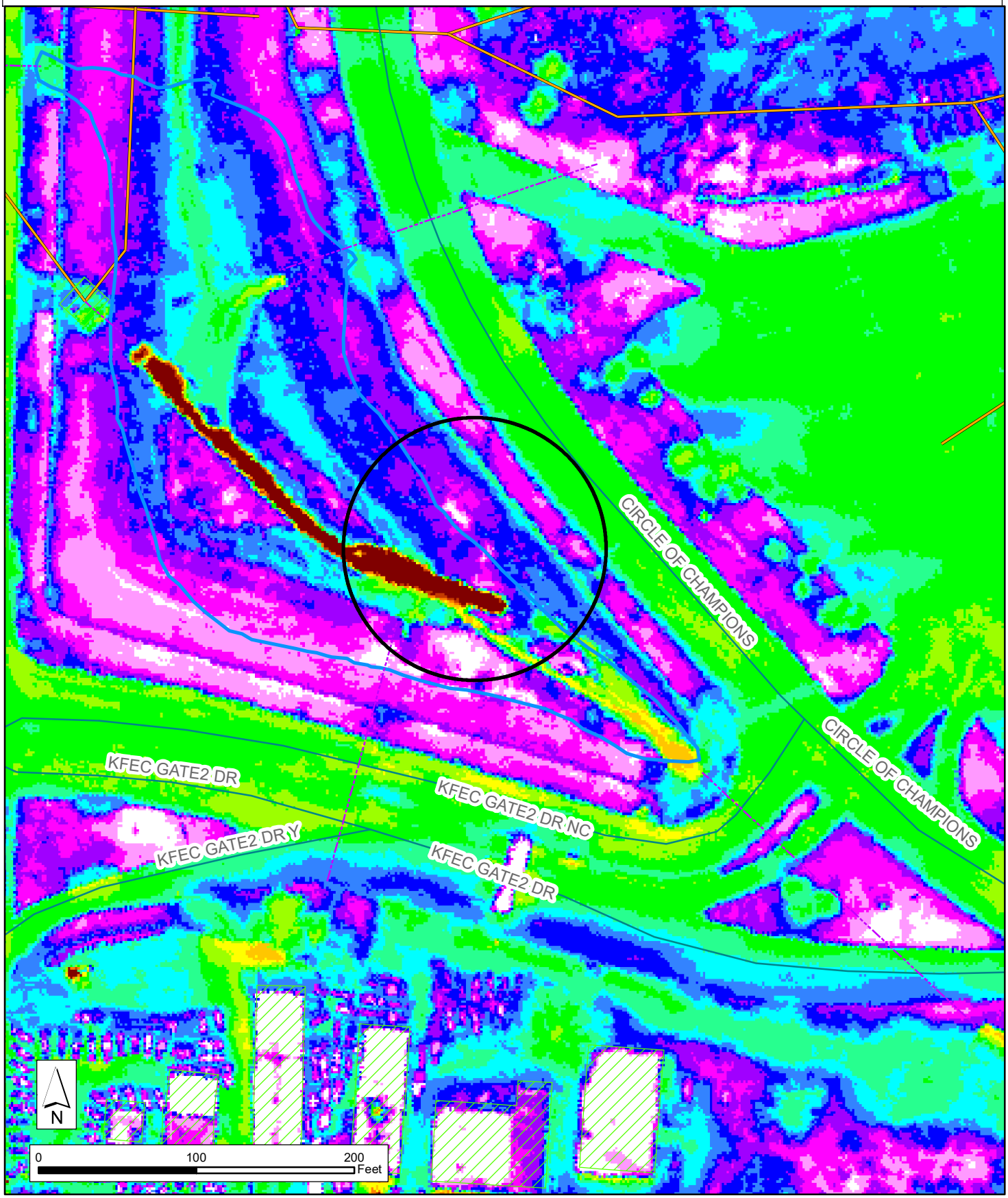


937 Phillips Ln Louisville, KY 40209

Thermal Observation: High heat signature

Comments:

Heat signature beginning at culvert within the KY Exposition Center Fairgrounds

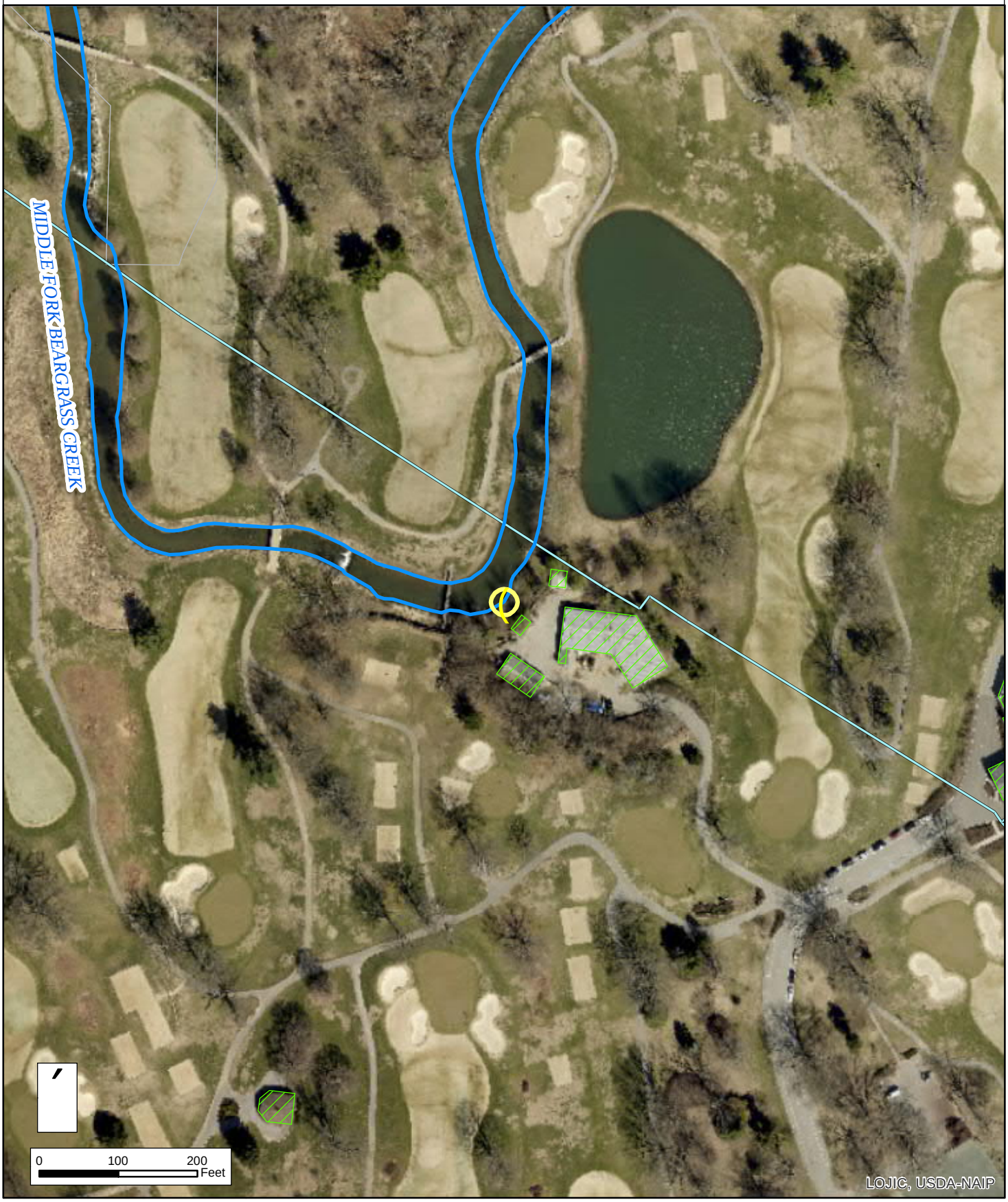


5901 Dutchmans Lane Louisville, KY 40205

Thermal Observation: Probable

Comments:

Big Spring Country Club Golf Course

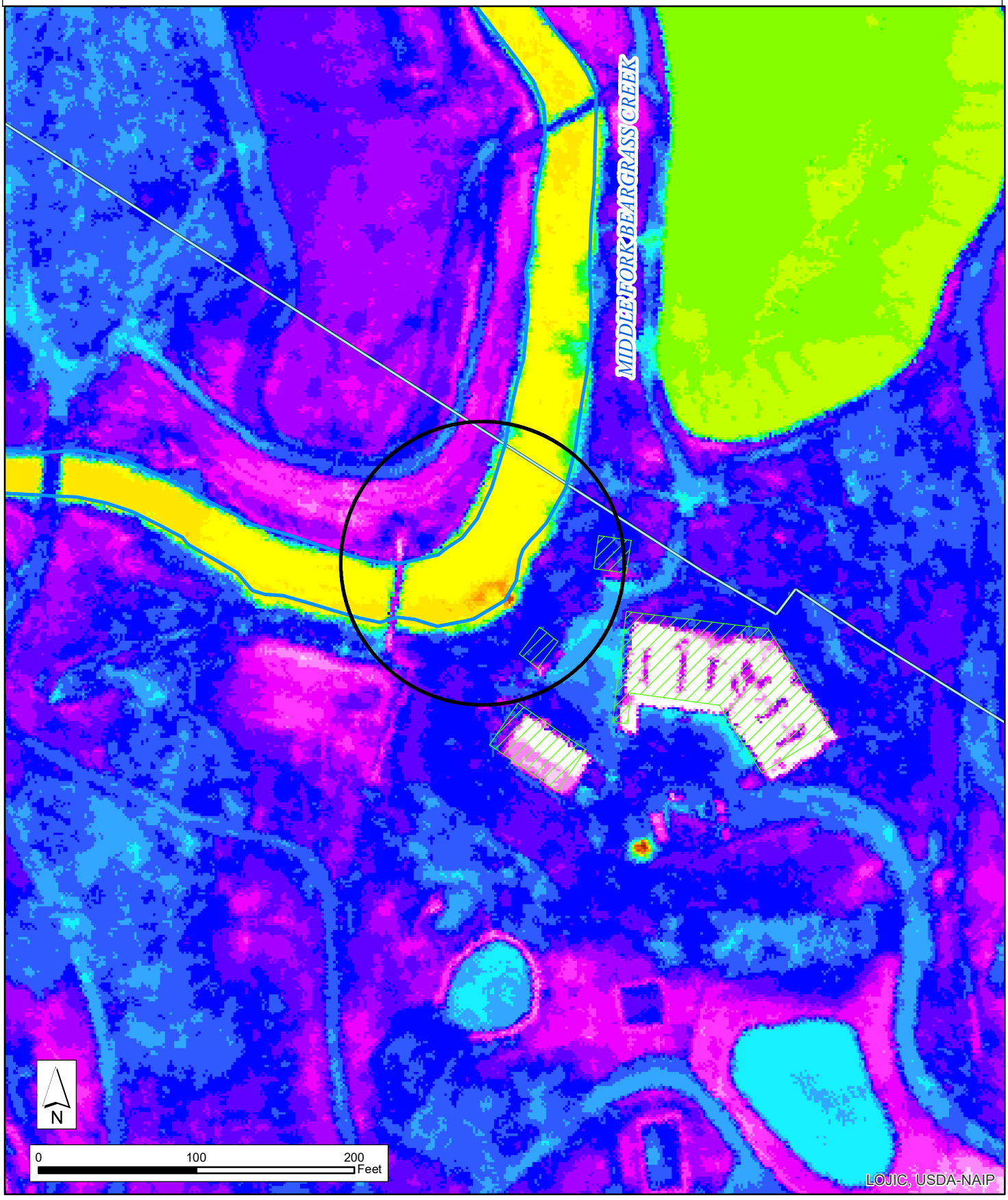


5901 Dutchmans Lane Louisville, KY 40205

Thermal Observation: Probable

Comments:

Big Spring Country Club Golf Course

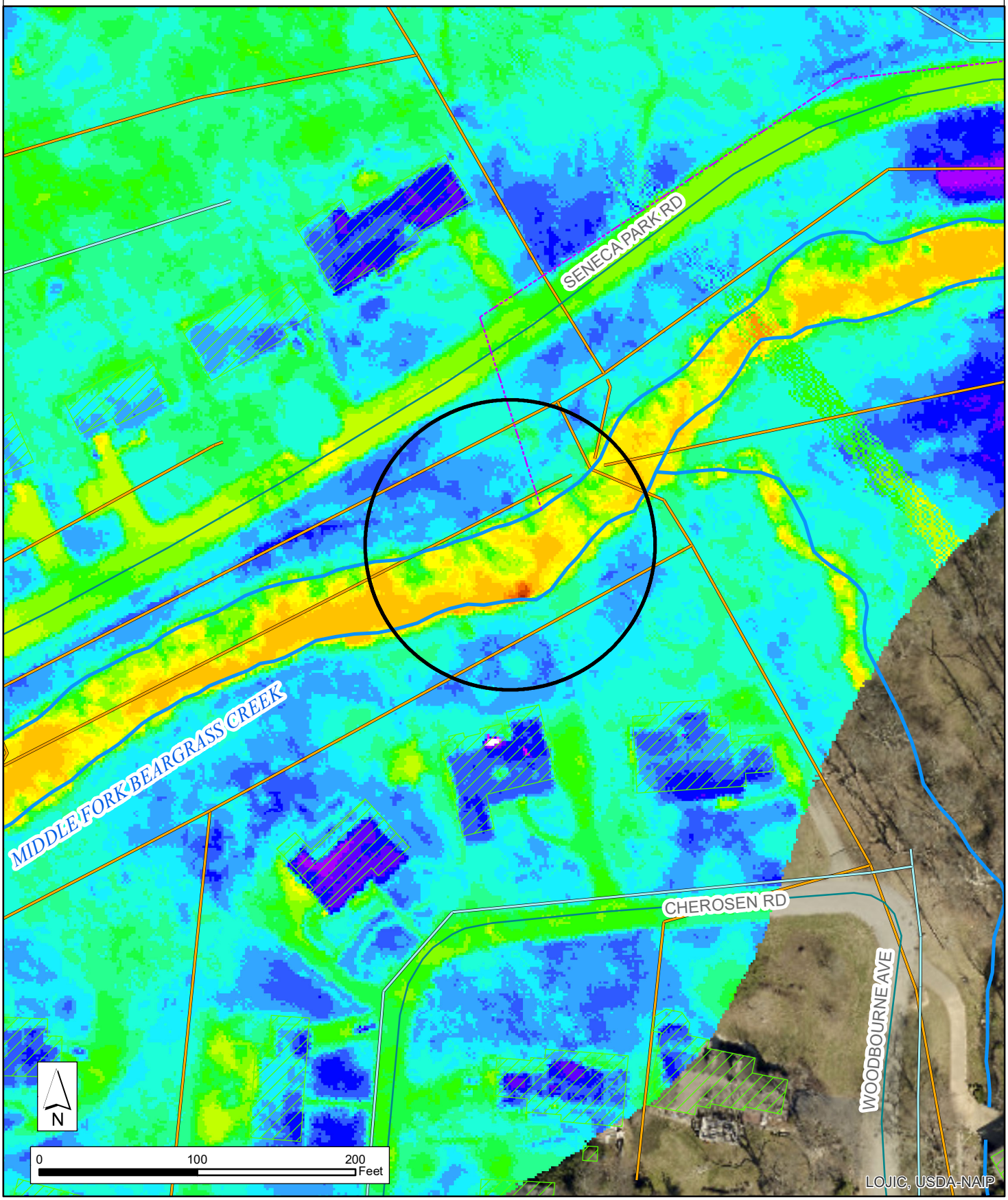


2571 Cherosen Rd Louisville, KY 40205

Thermal Observation: Heat Signature

Comments:

Heat signature west of Seneca Park

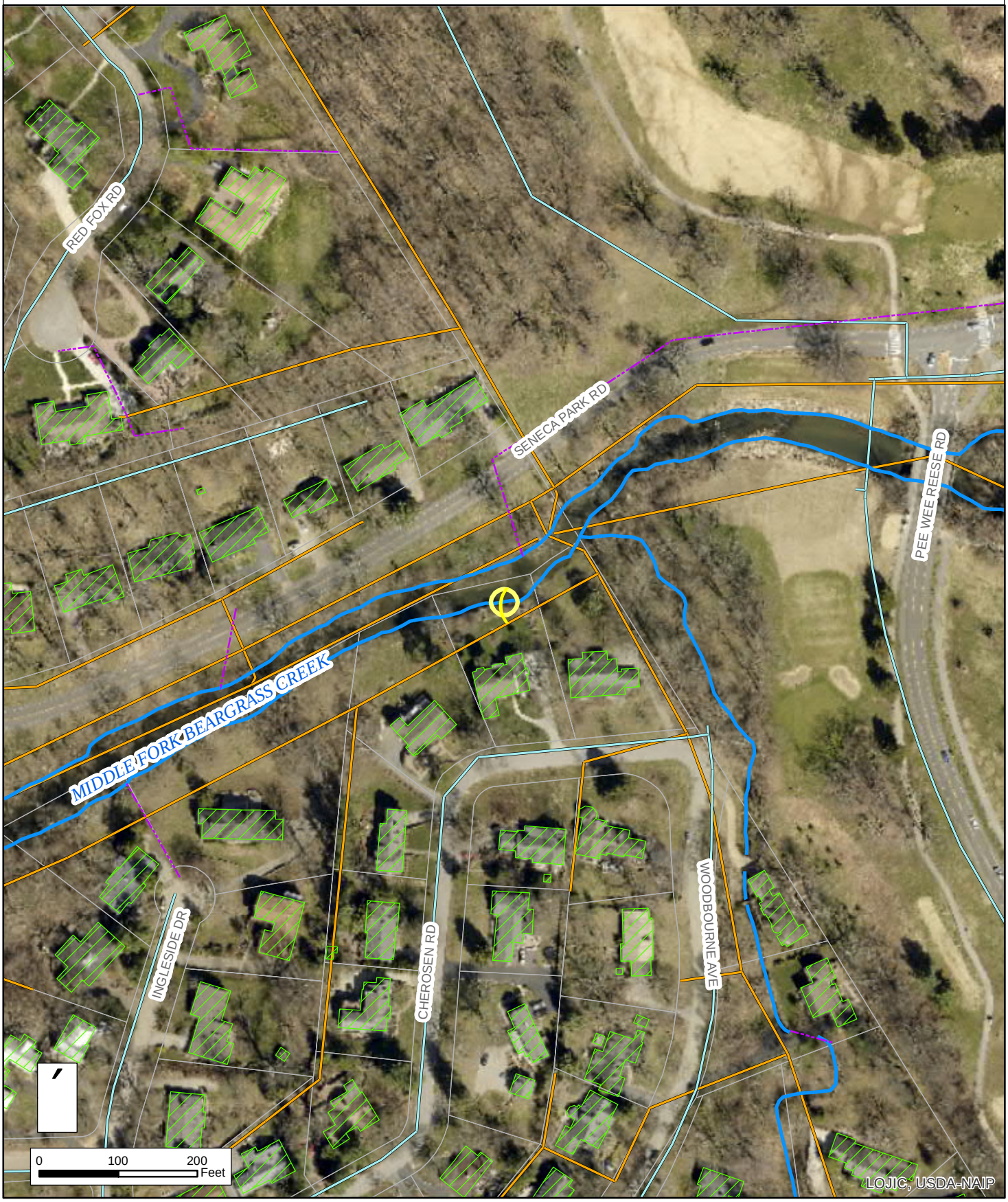


2571 Cherosen Rd Louisville, KY 40205

Thermal Observation: Heat Signature

Comments:

Heat signature west of Seneca Park

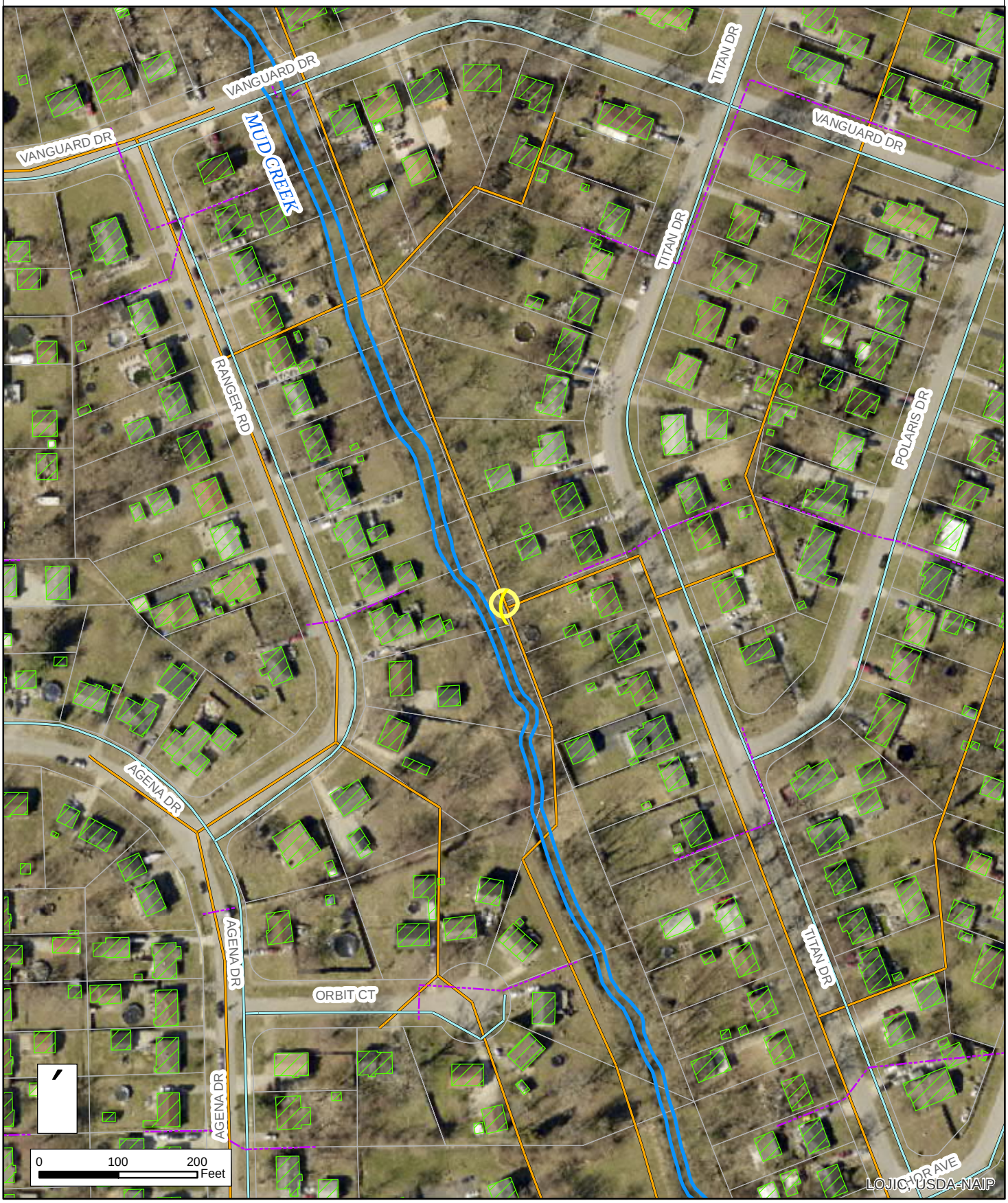


9721 Ranger Rd Louisville, KY 40229

Thermal Observation: Heat Signature

Comments:

Heat signature, possible flow

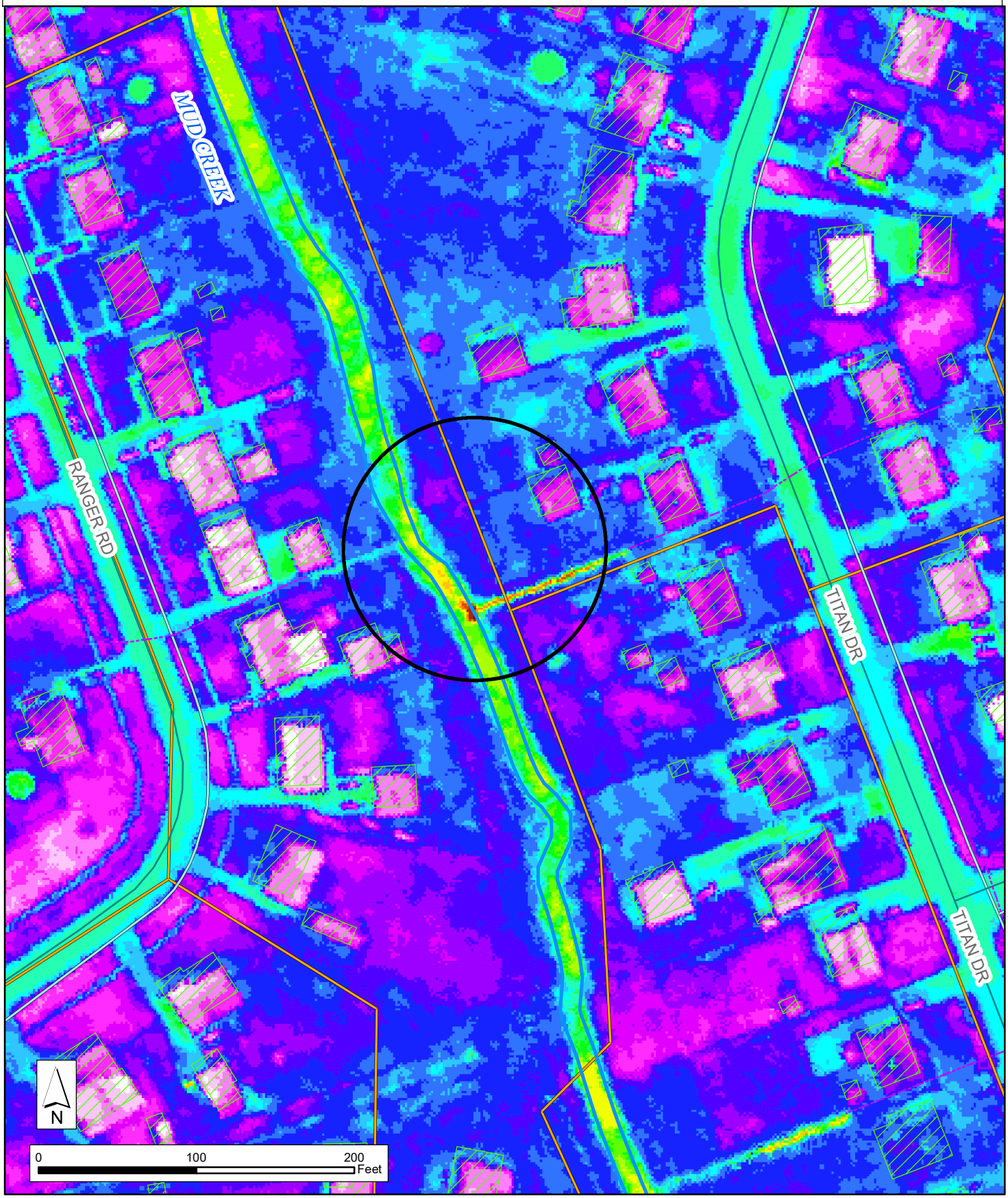


9721 Ranger Rd Louisville, KY 40229

Thermal Observation: Heat Signature

Comments:

Heat signature, possible flow

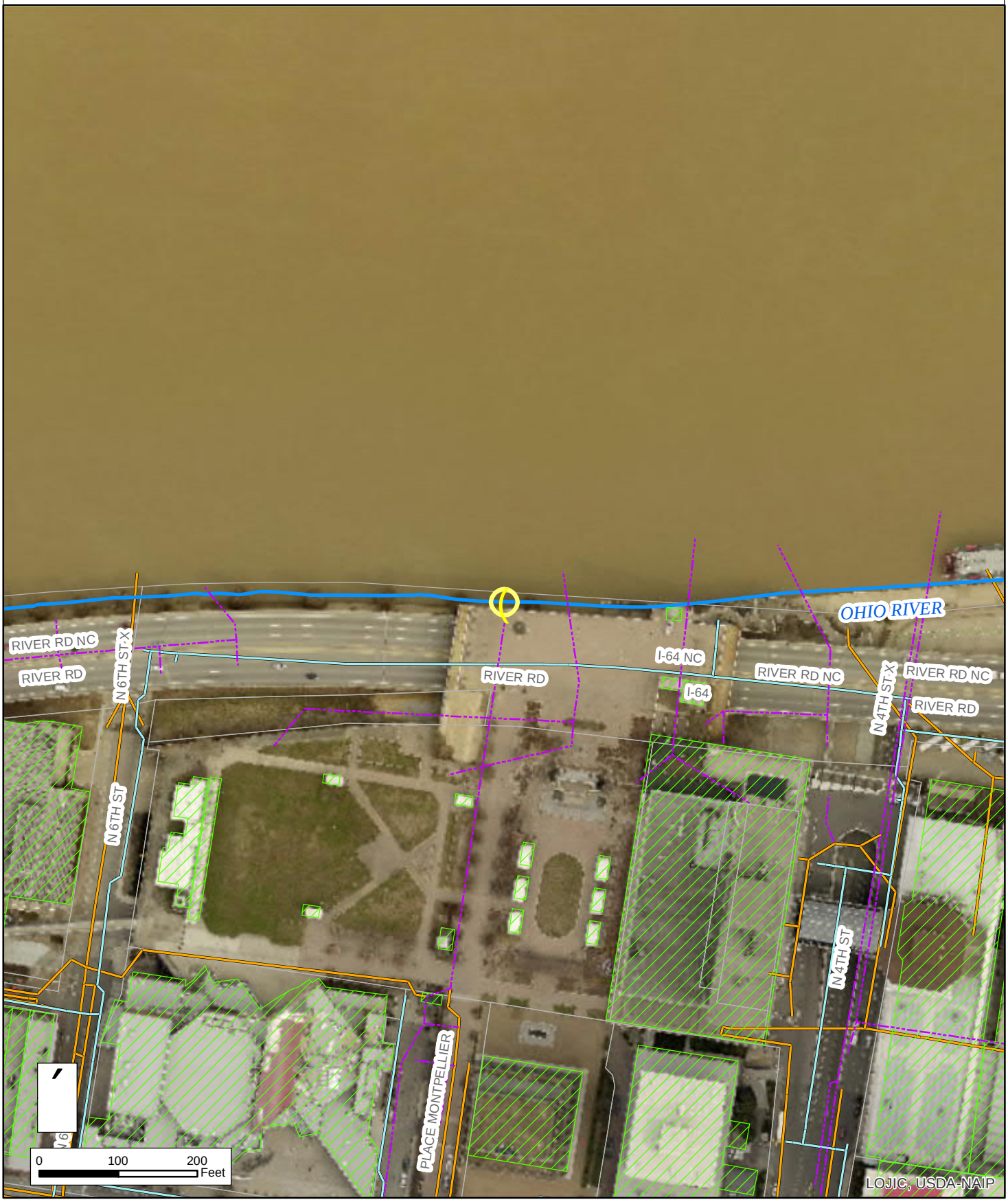


141 North 6th St Louisville, KY 40202

Thermal Observation: Flow

Comments:

Flow. Under the belvedere into the Ohio River



141 North 6th St Louisville, KY 40202

Thermal Observation: Flow

Comments:

Flow. Under the belvedere into the Ohio River

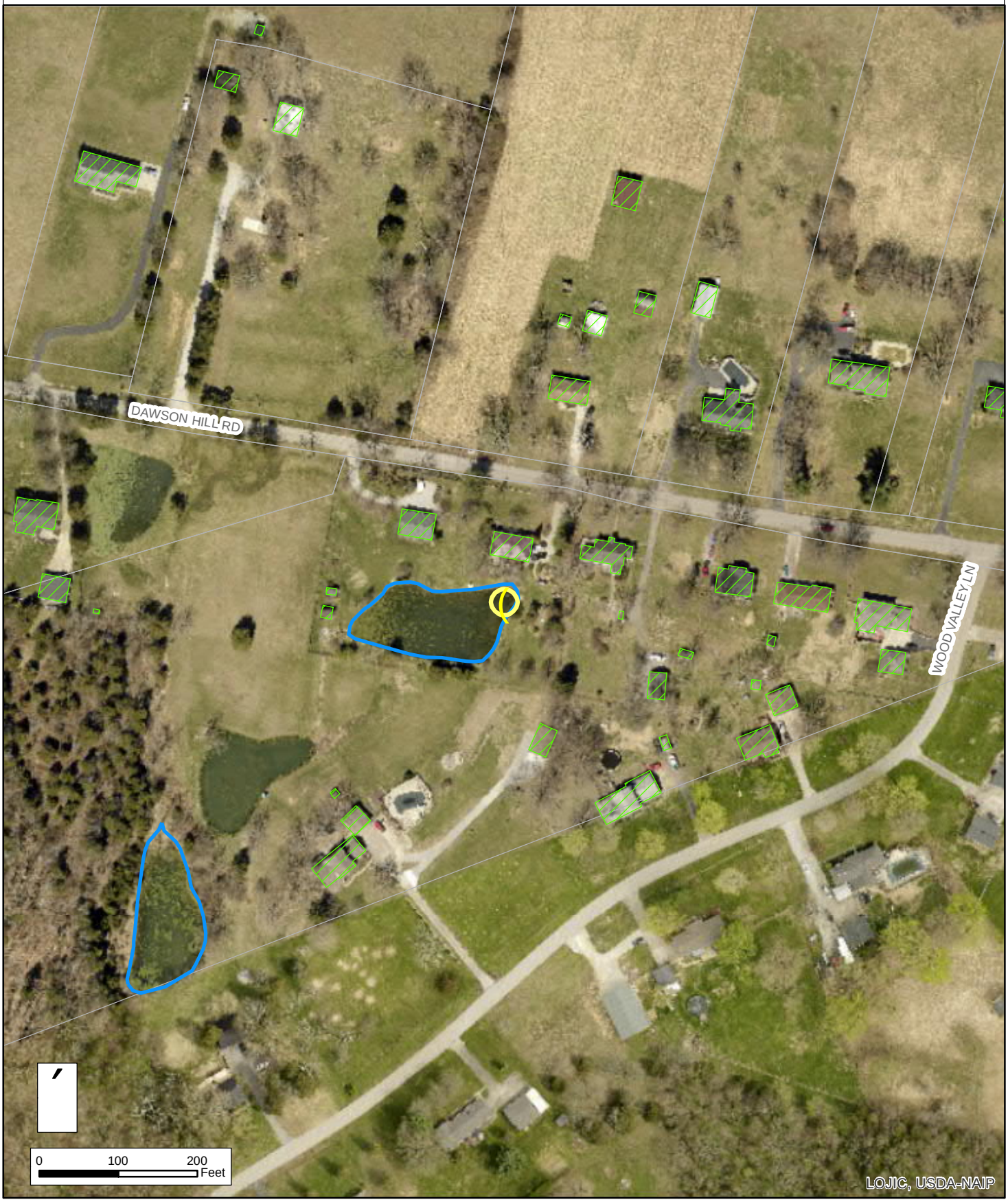


11061 Dawson Hill Rd Louisville, KY 40299

Thermal Observation: Heat Signature

Comments:

Heat signature. Review nearby building

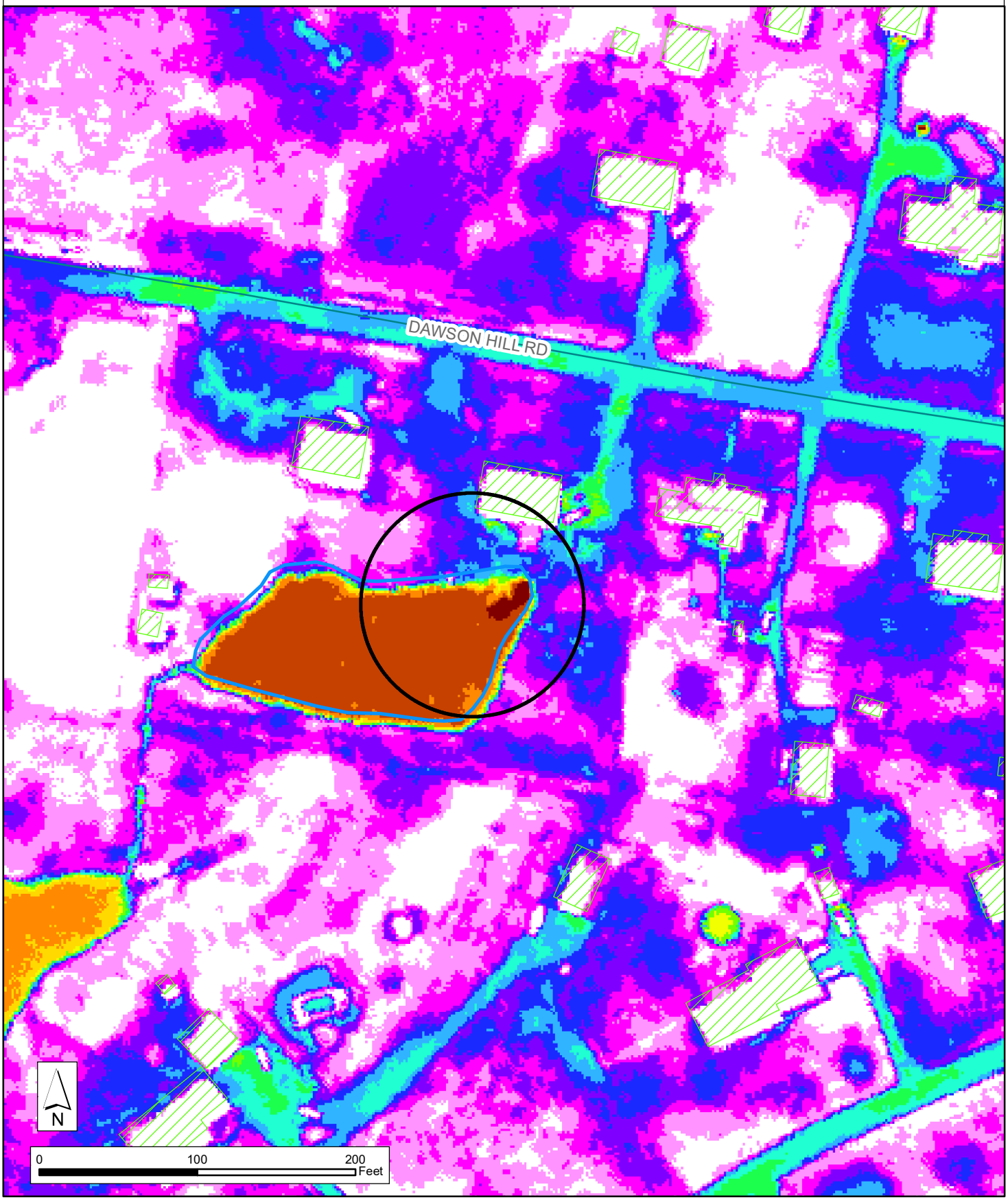


11061 Dawson Hill Rd Louisville, KY 40299

Thermal Observation: Heat Signature

Comments:

Heat signature. Review nearby building



17006 Shelbyville Rd Fisherville, KY 40023

Thermal Observation: Possible

Comments:

Heat signature

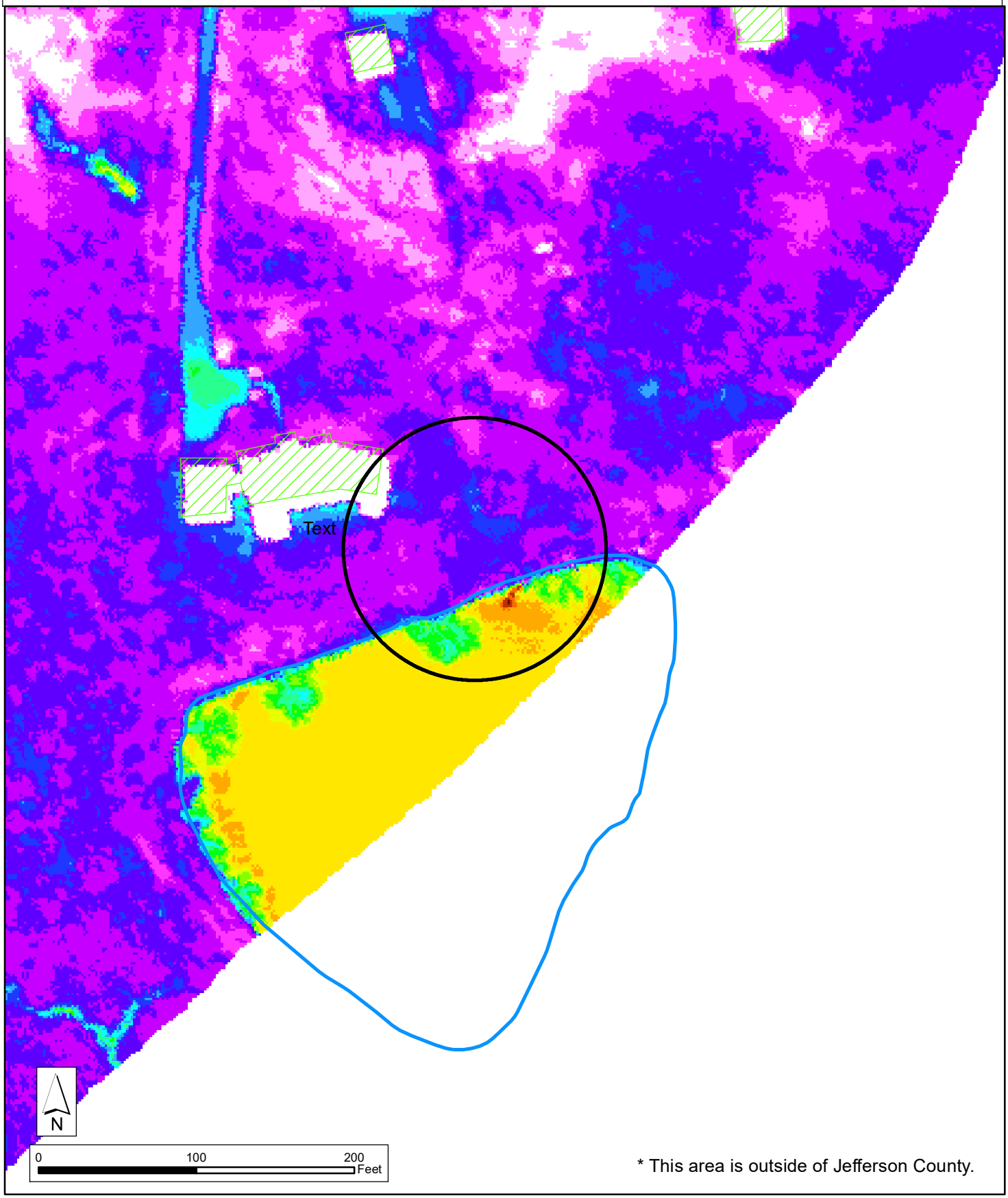


17006 Shelbyville Rd Fisherville, KY 40023

Thermal Observation: Possible

Comments:

Heat signature



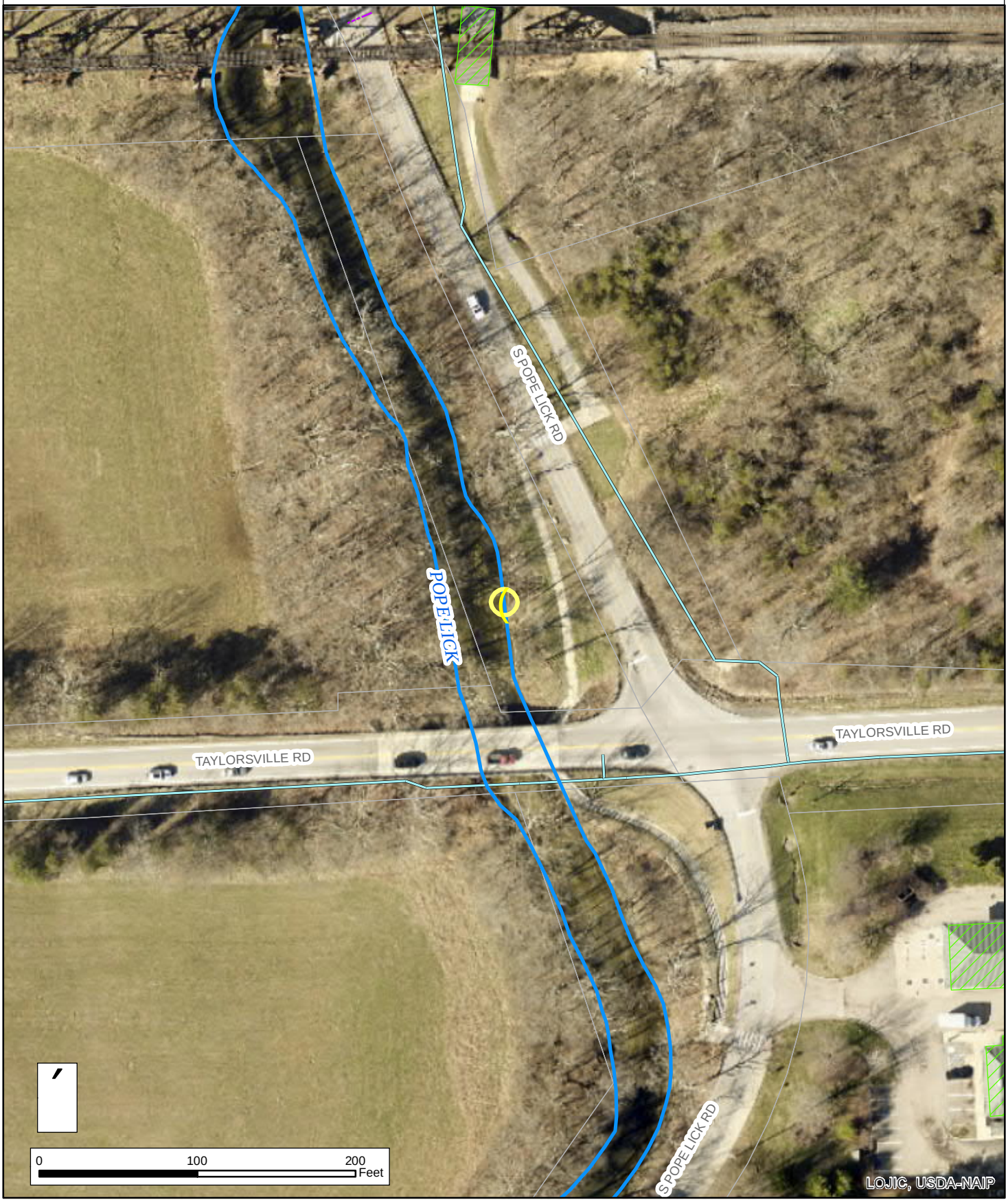
* This area is outside of Jefferson County.

3000-3098 South Pope Lick Road Louisville, KY 40299

Thermal Observation: Flow

Comments:

Heat signature near train trestle at Pope Lick Rd

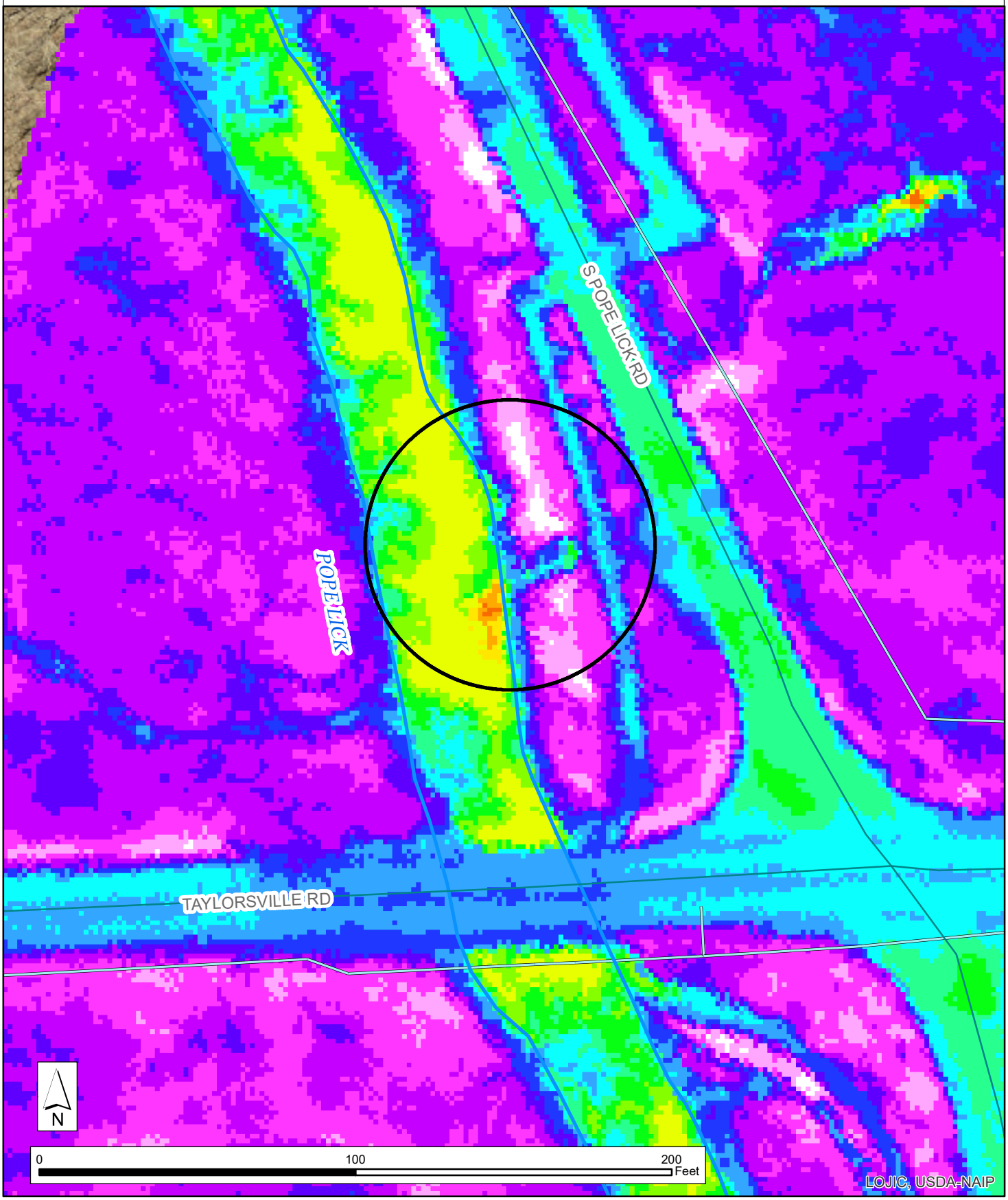


3000-3098 South Pope Lick Road Louisville, KY 40299

Thermal Observation: Flow

Comments:

Heat signature near train trestle at Pope Lick Rd

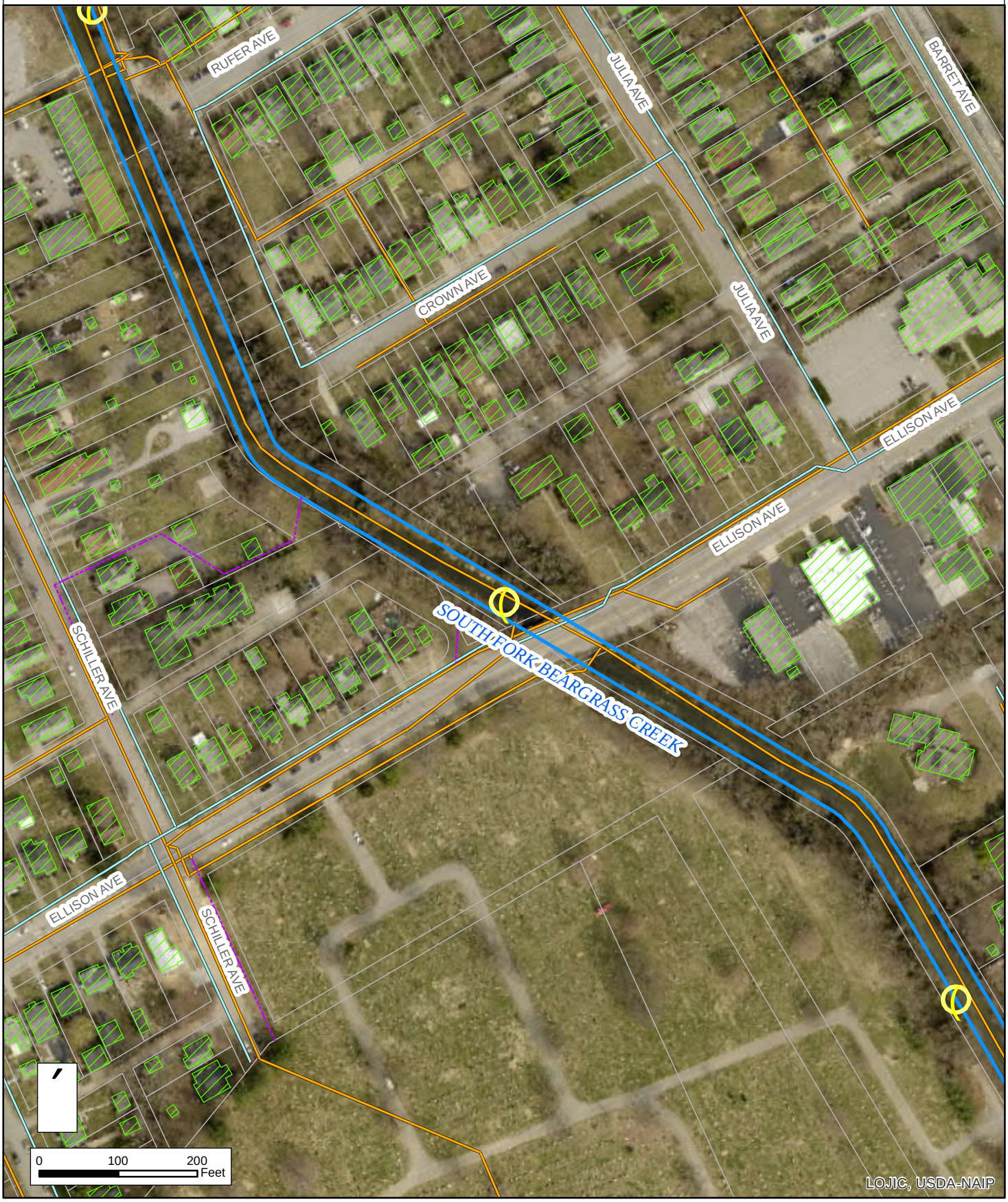


1321 Ellison Ave Louisville, KY 40204

Thermal Observation: Heat Signature

Comments:

Multiple areas of high heat signatures on South Fork Beargrass Creek

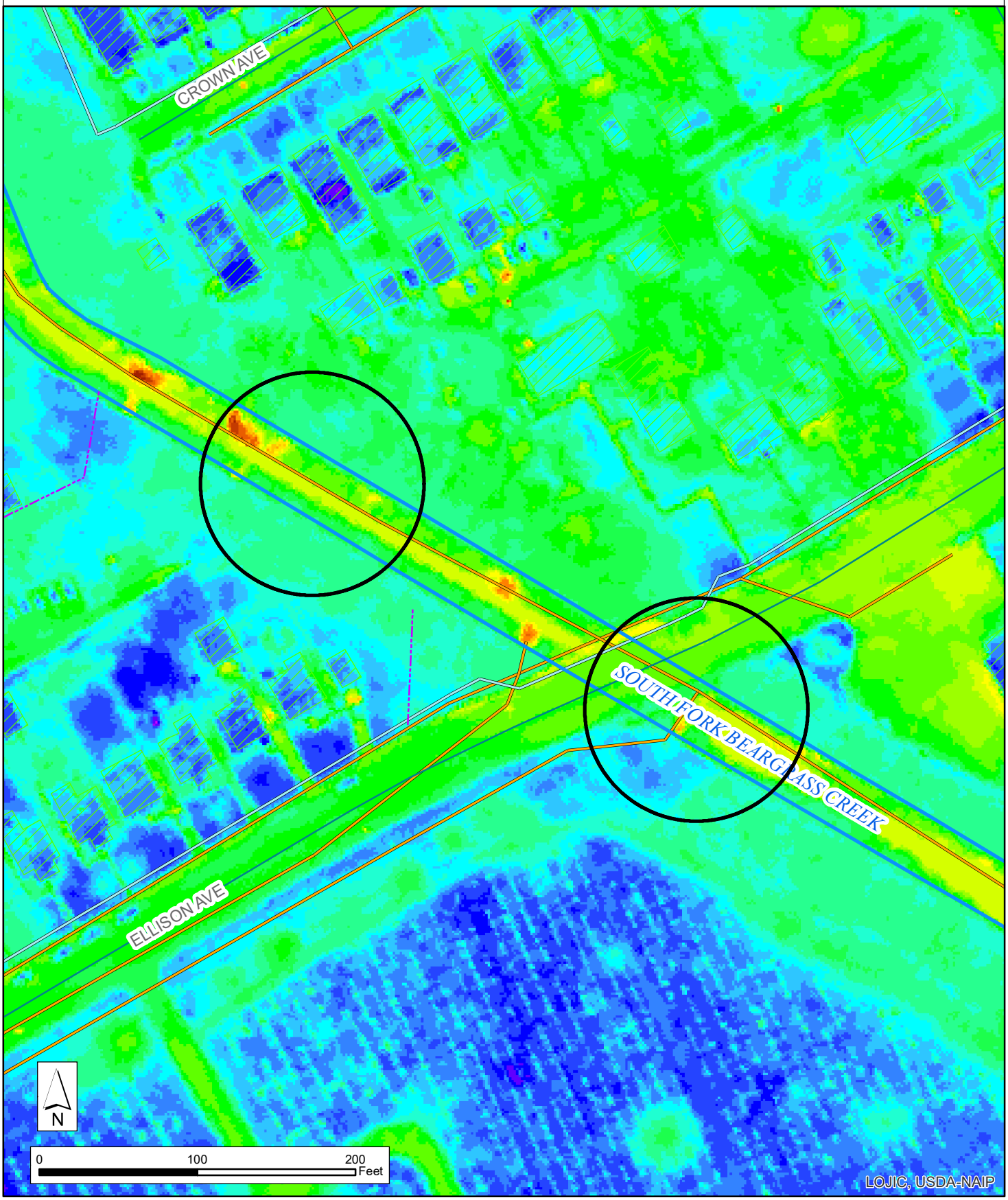


1321 Ellison Ave Louisville, KY 40204

Thermal Observation: Heat Signature

Comments:

Multiple areas of high heat signatures on South Fork Beargrass Creek

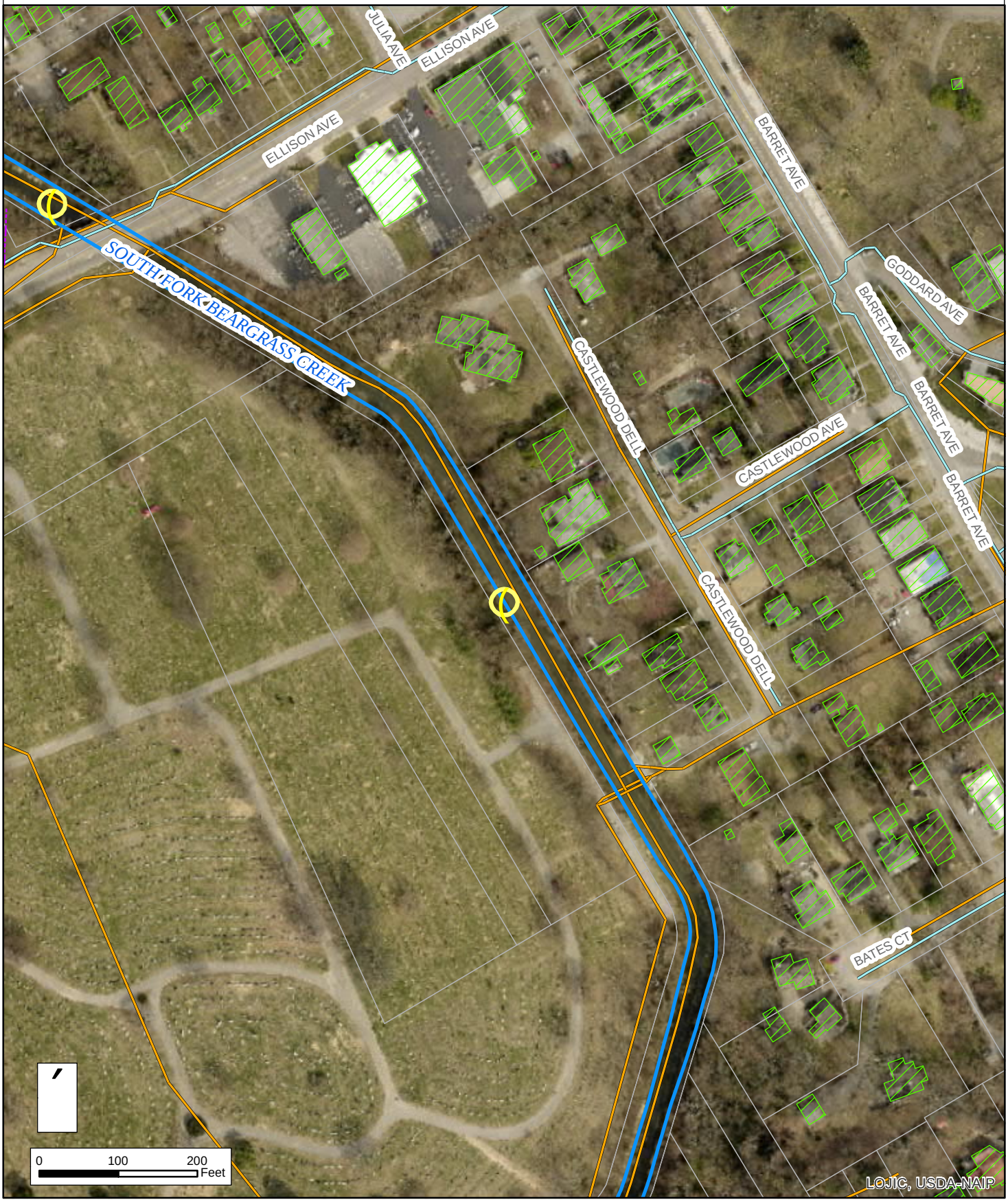


1302 Castlewood Dell Louisville, KY 40204

Thermal Observation: Heat Signature

Comments:

Two high heat signatures on this section of South Fork Beargrass Creek



1302 Castlewood Dell Louisville, KY 40204

Thermal Observation: Heat Signature

Comments:

Two high heat signatures on this section of South Fork Beargrass Creek

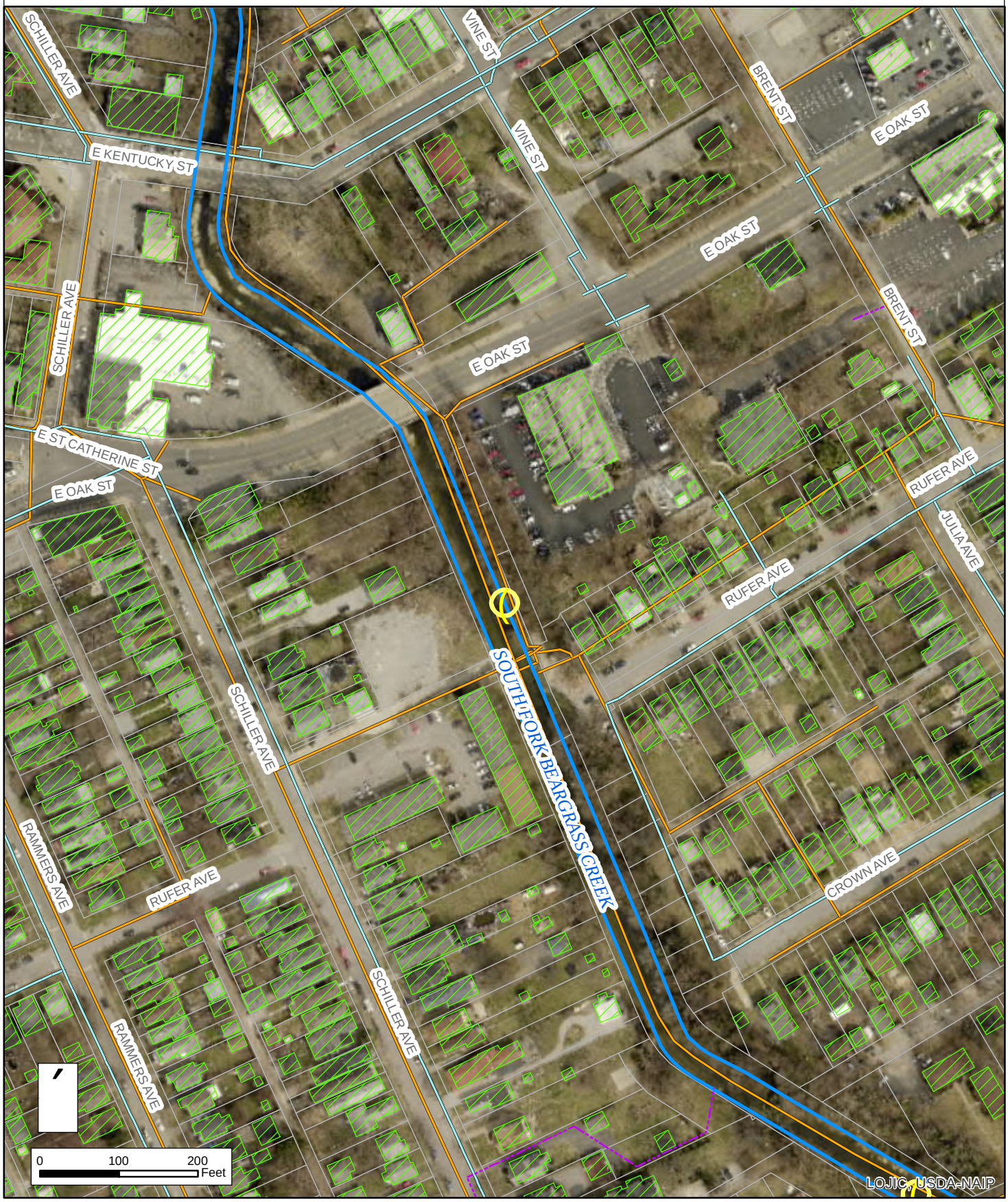


1131 Schiller Ave Louisville, KY 40204

Thermal Observation: Heat Signature

Comments:

Multiple areas of high heat signatures on South Fork Beargrass Creek

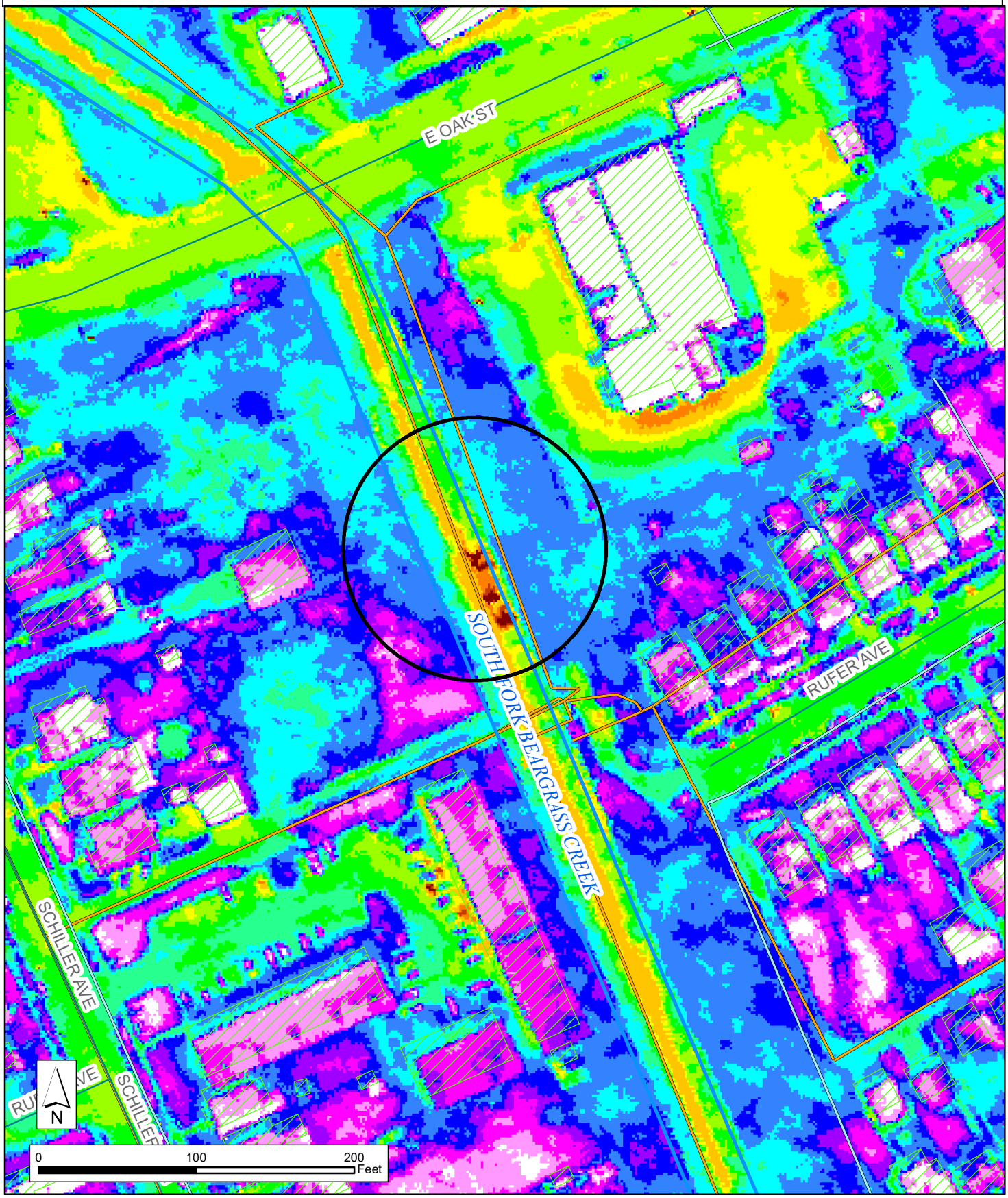


1131 Schiller Ave Louisville, KY 40204

Thermal Observation: Heat Signature

Comments:

Multiple areas of high heat signatures on South Fork Beargrass Creek

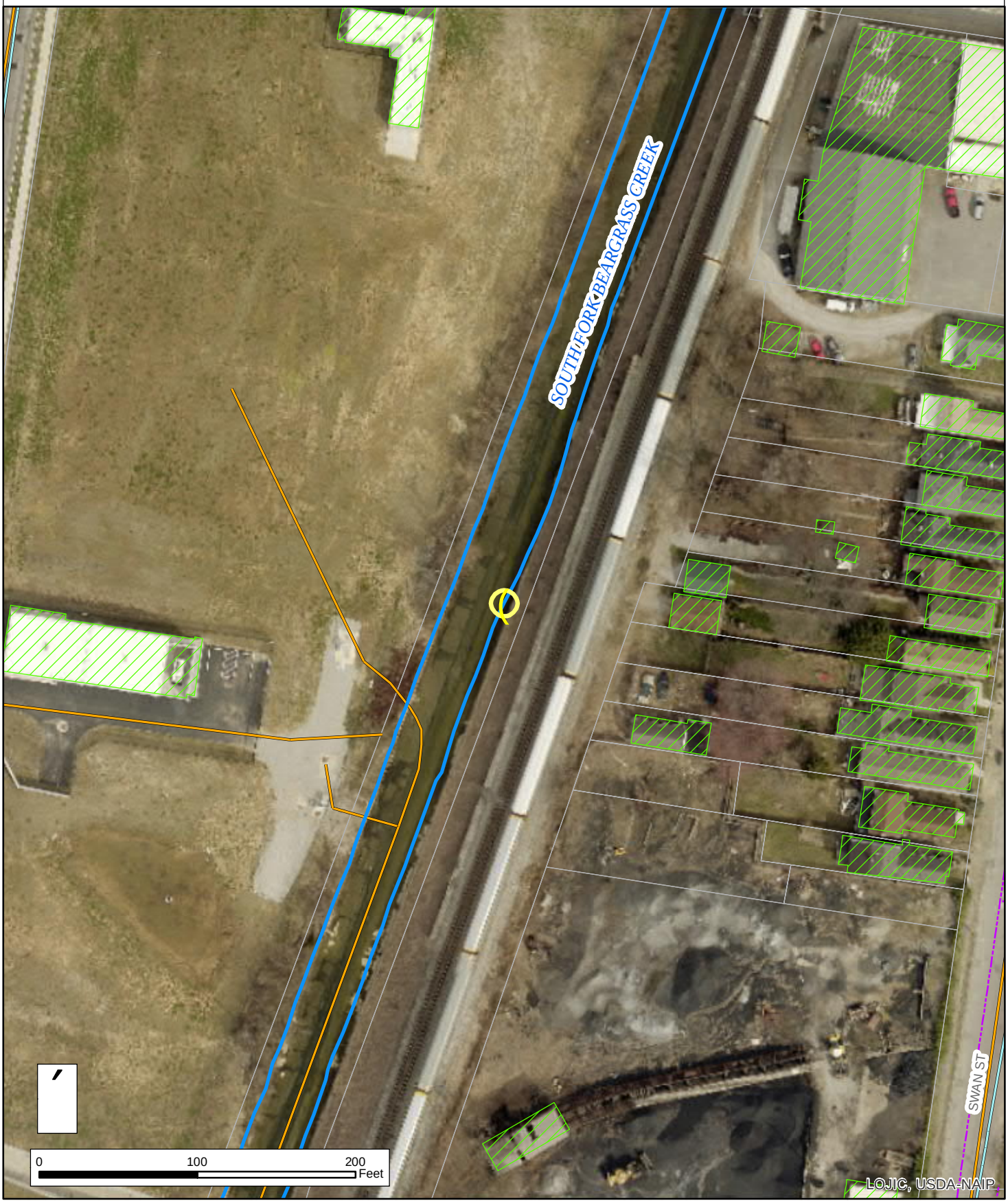


935 Logan St Louisville, KY 40204

Thermal Observation: Heat Signature

Comments:

Multiple areas of high heat signatures on South Fork Beargrass Creek

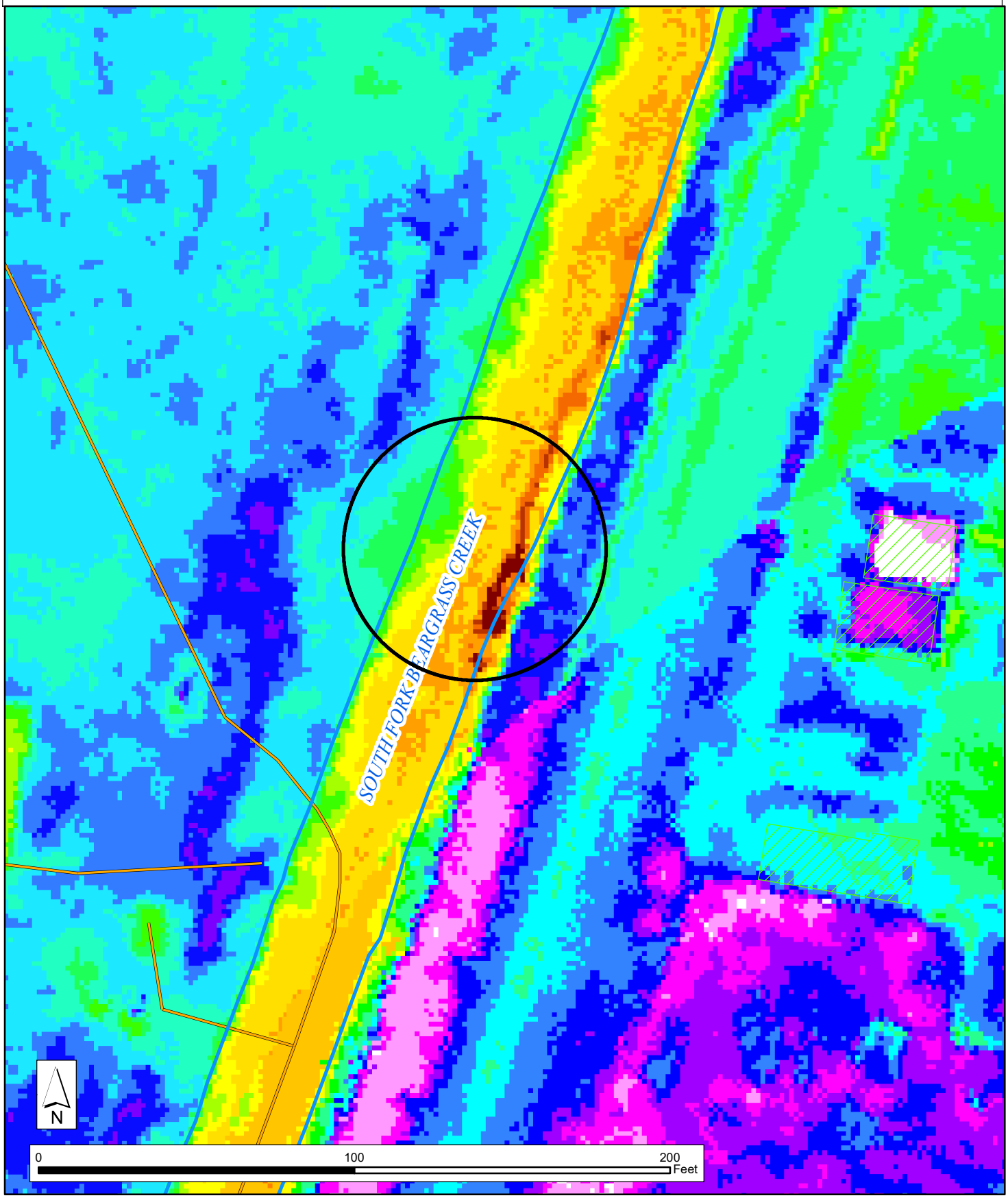


935 Logan St Louisville, KY 40204

Thermal Observation: Heat Signature

Comments:

Multiple areas of high heat signatures on South Fork Beargrass Creek

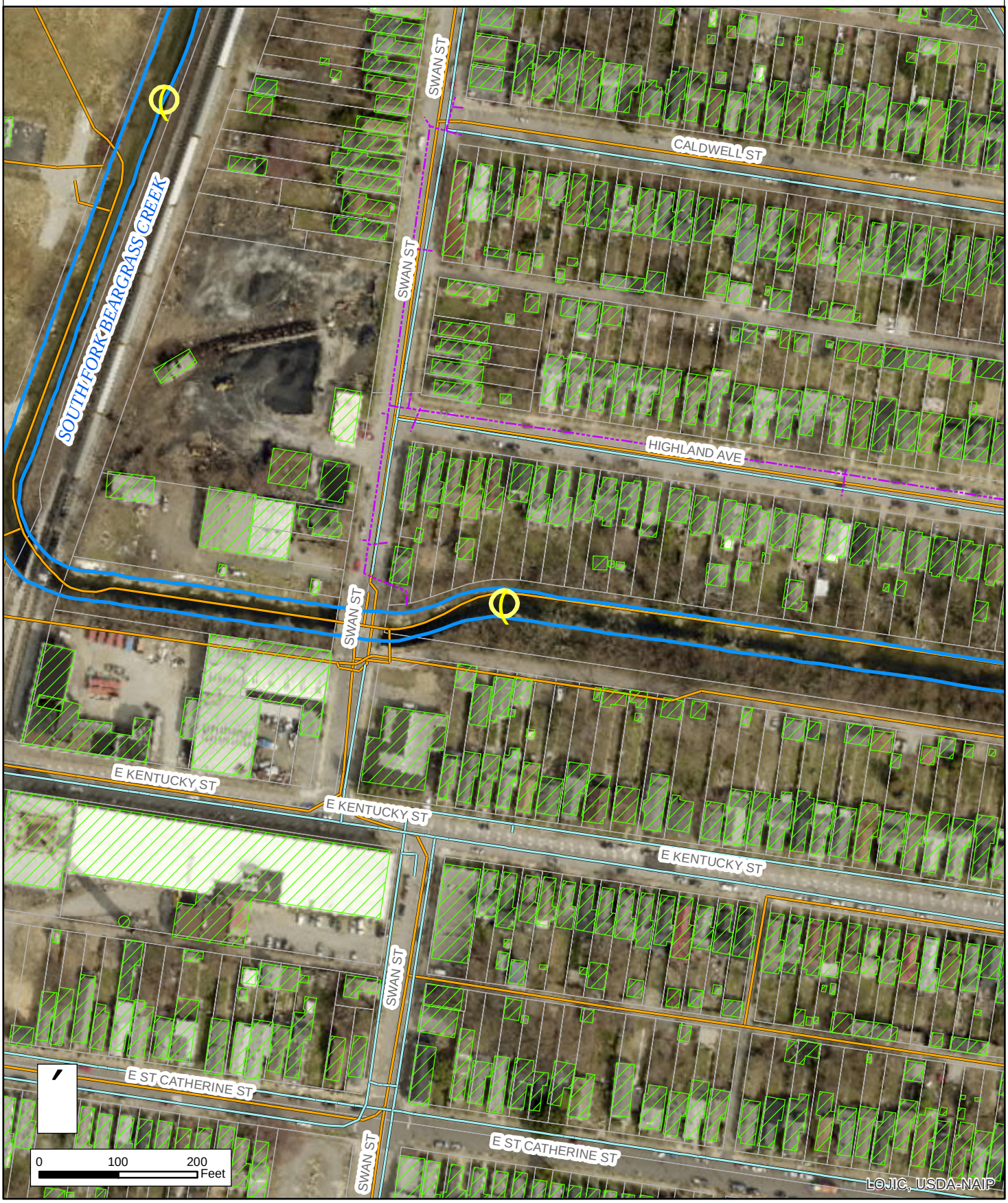


1010 Highland Ave Louisville, KY 40204

Thermal Observation: Heat Signature

Comments:

Multiple areas of high heat signatures on South Fork Beargrass Creek



1010 Highland Ave Louisville, KY 40204

Thermal Observation: Heat Signature

Comments:

Multiple areas of high heat signatures on South Fork Beargrass Creek

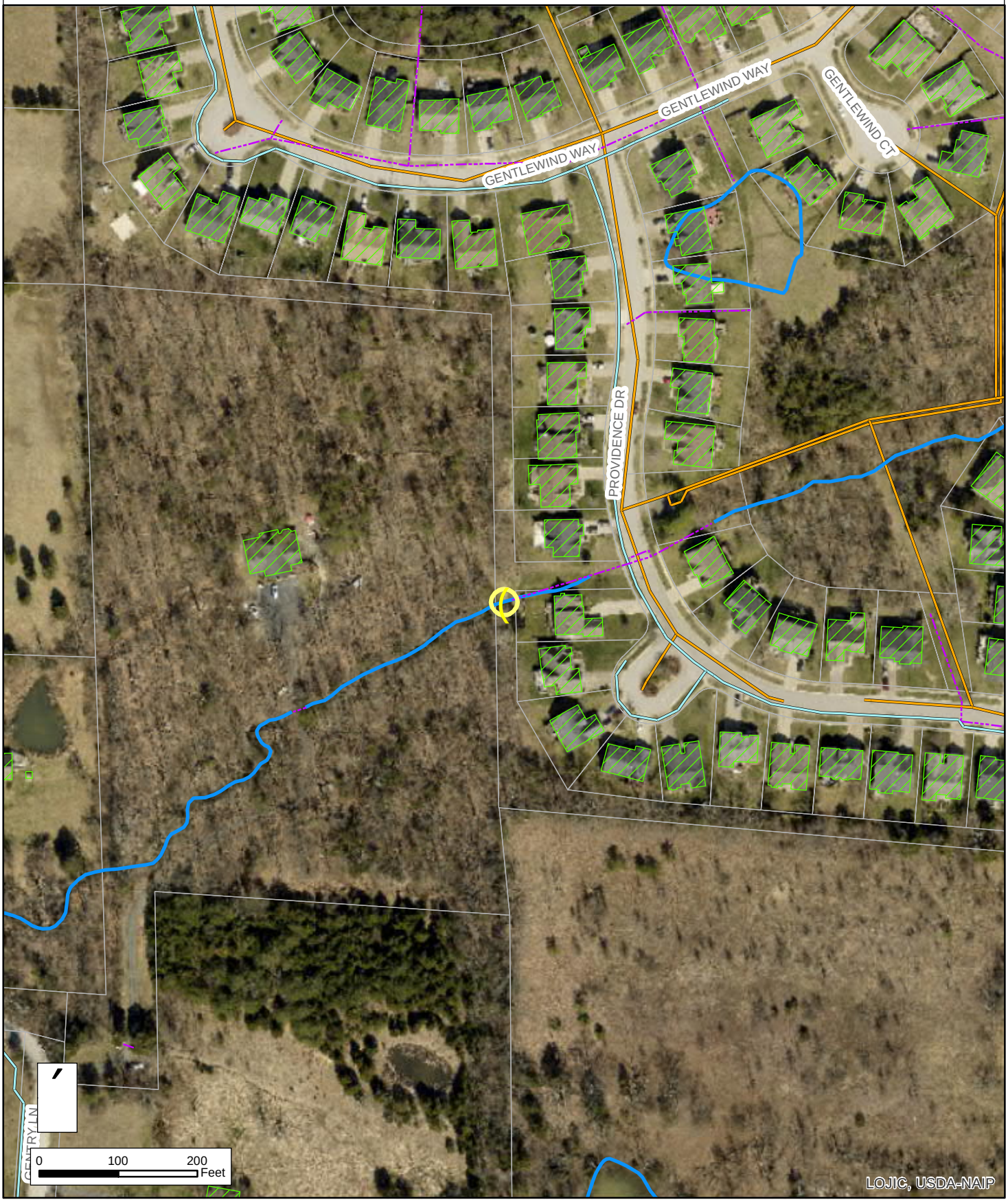


10516 Providence Dr Lousiville, KY 40291

Thermal Observation: Heat Signature

Comments:

Heat signature. Property owner: Reserve at Glemnary Homeowners Association

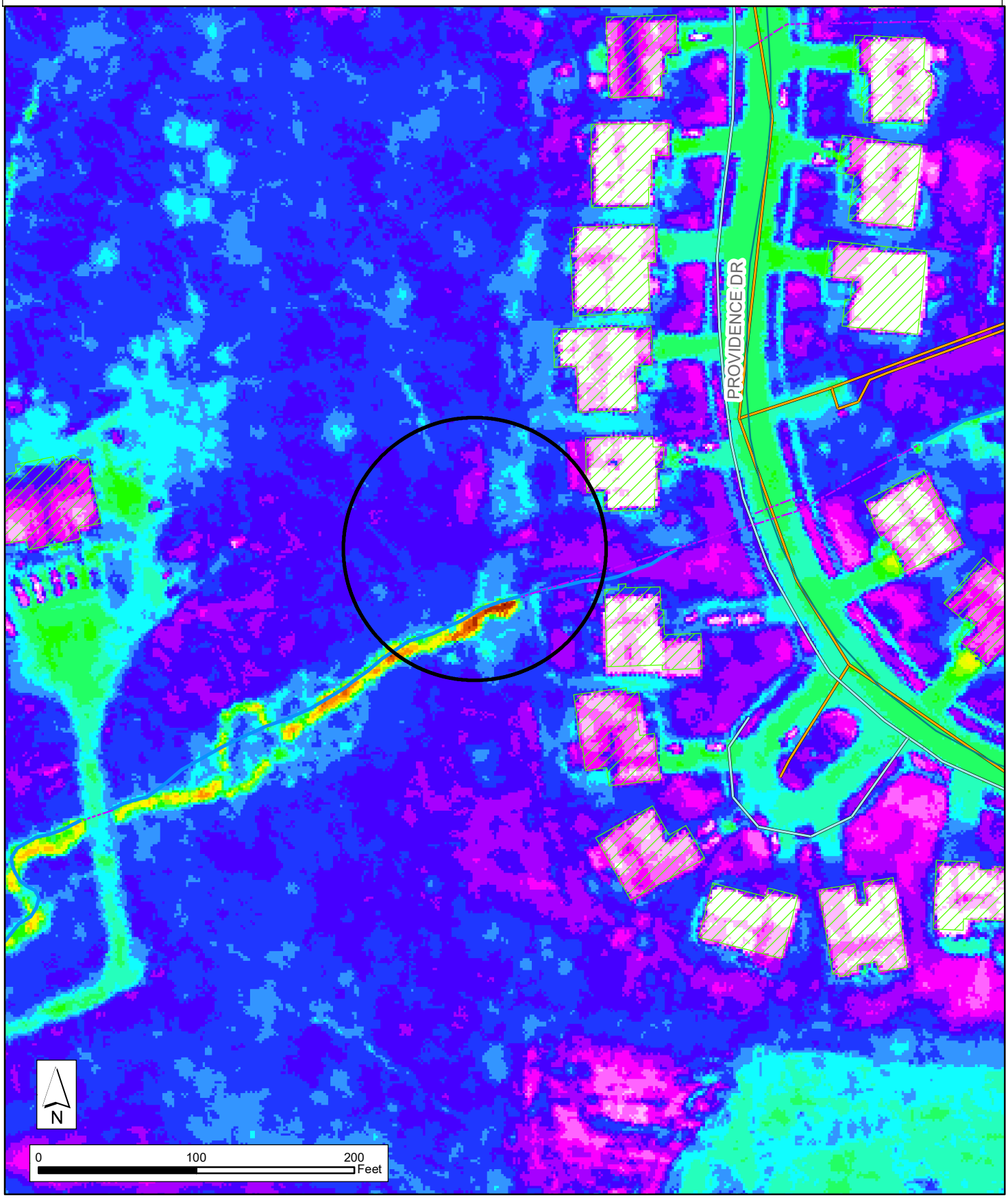


10516 Providence Dr Lousiville, KY 40291

Thermal Observation: Heat Signature

Comments:

Heat signature. Property owner: Reserve at Glemnary Homeowners Association

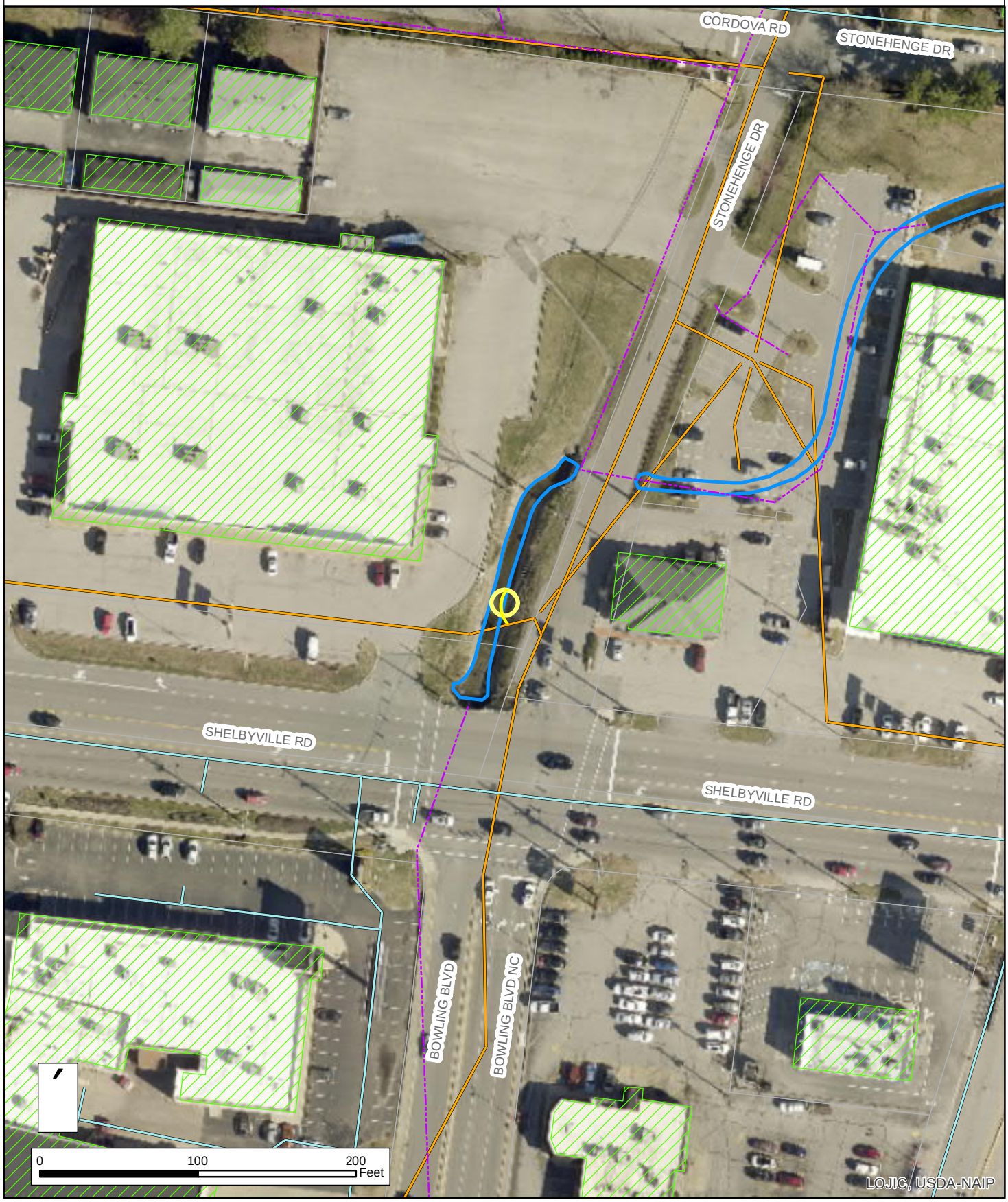


4601 Shelbyville Rd Louisville, KY 40207

Thermal Observation: Possible flow

Comments:

Ditch near Office Depot & Medley's Auto Center

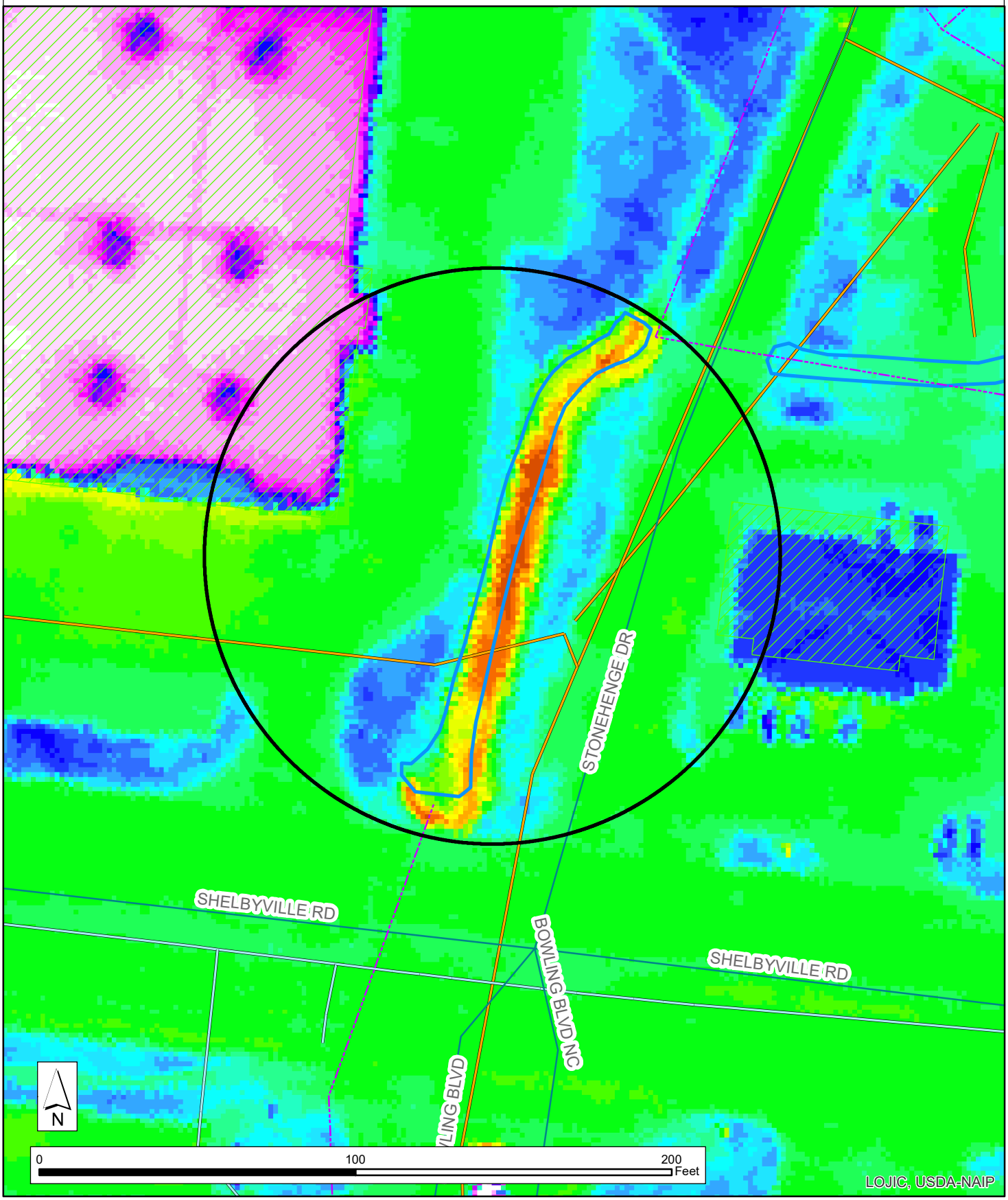


4601 Shelbyville Rd Louisville, KY 40207

Thermal Observation: Possible flow

Comments:

Ditch near Office Depot & Medley's Auto Center

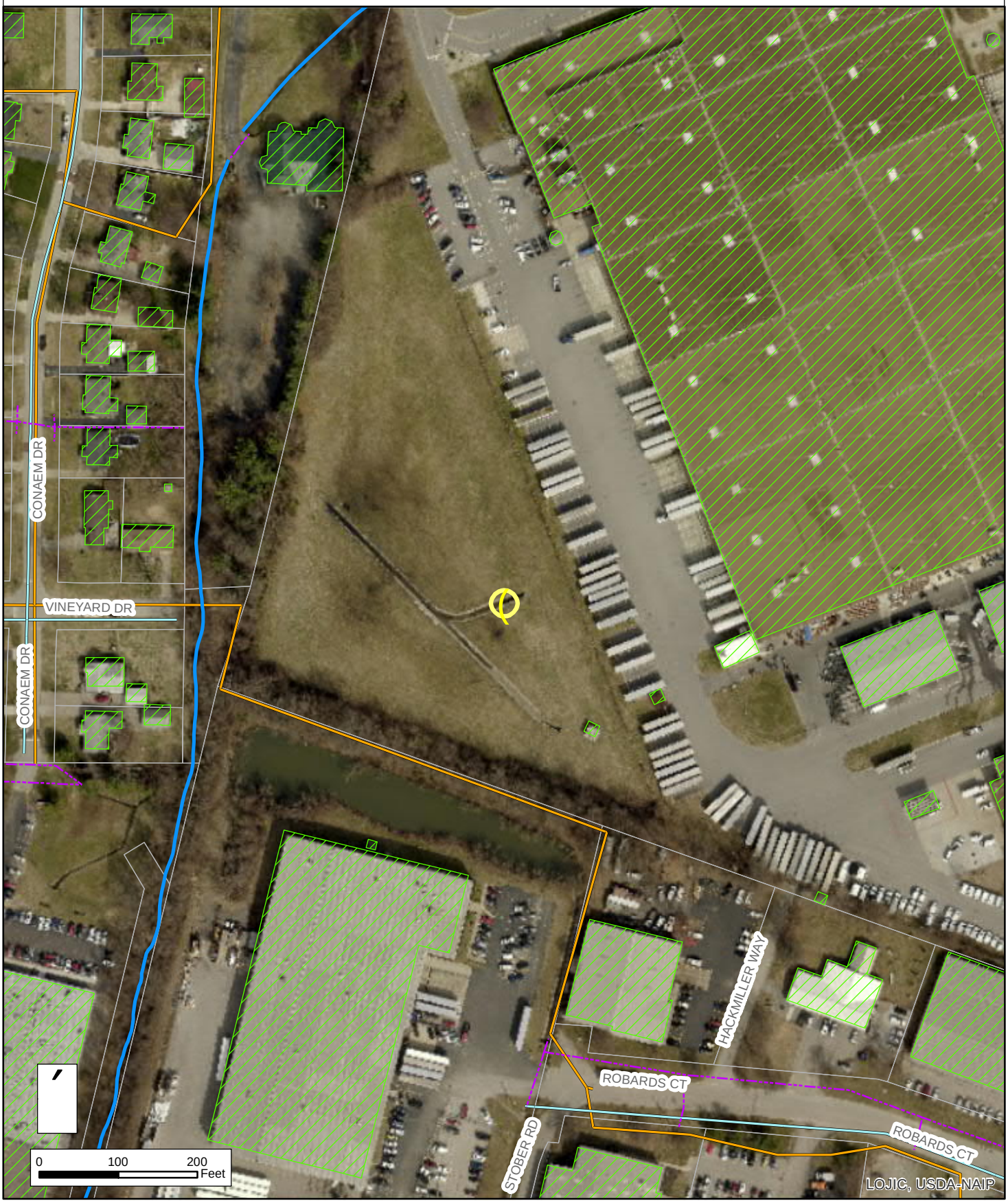


4400 Annshire Ave Louisville, KY 40213

Thermal Observation: Heat signature

Comments:

Heat signature at USPS Facility

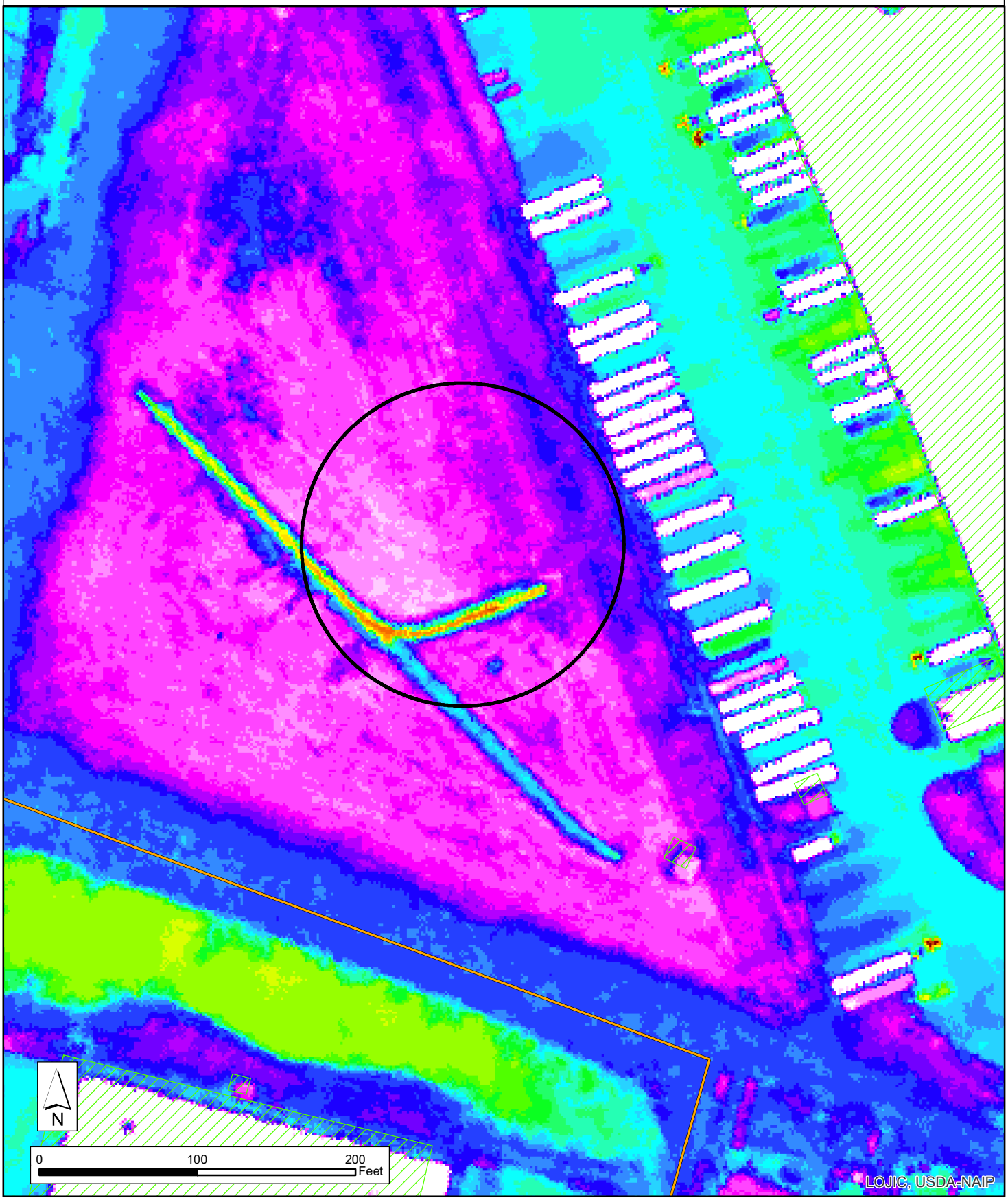


4400 Annshire Ave Louisville, KY 40213

Thermal Observation: Heat signature

Comments:

Heat signature at USPS Facility



6420 New Dutchmans Pkwy Louisville, KY 40205

Thermal Observation: Flow

Comments:

Heat signature/flow adjacent to U of L Hospital facility.

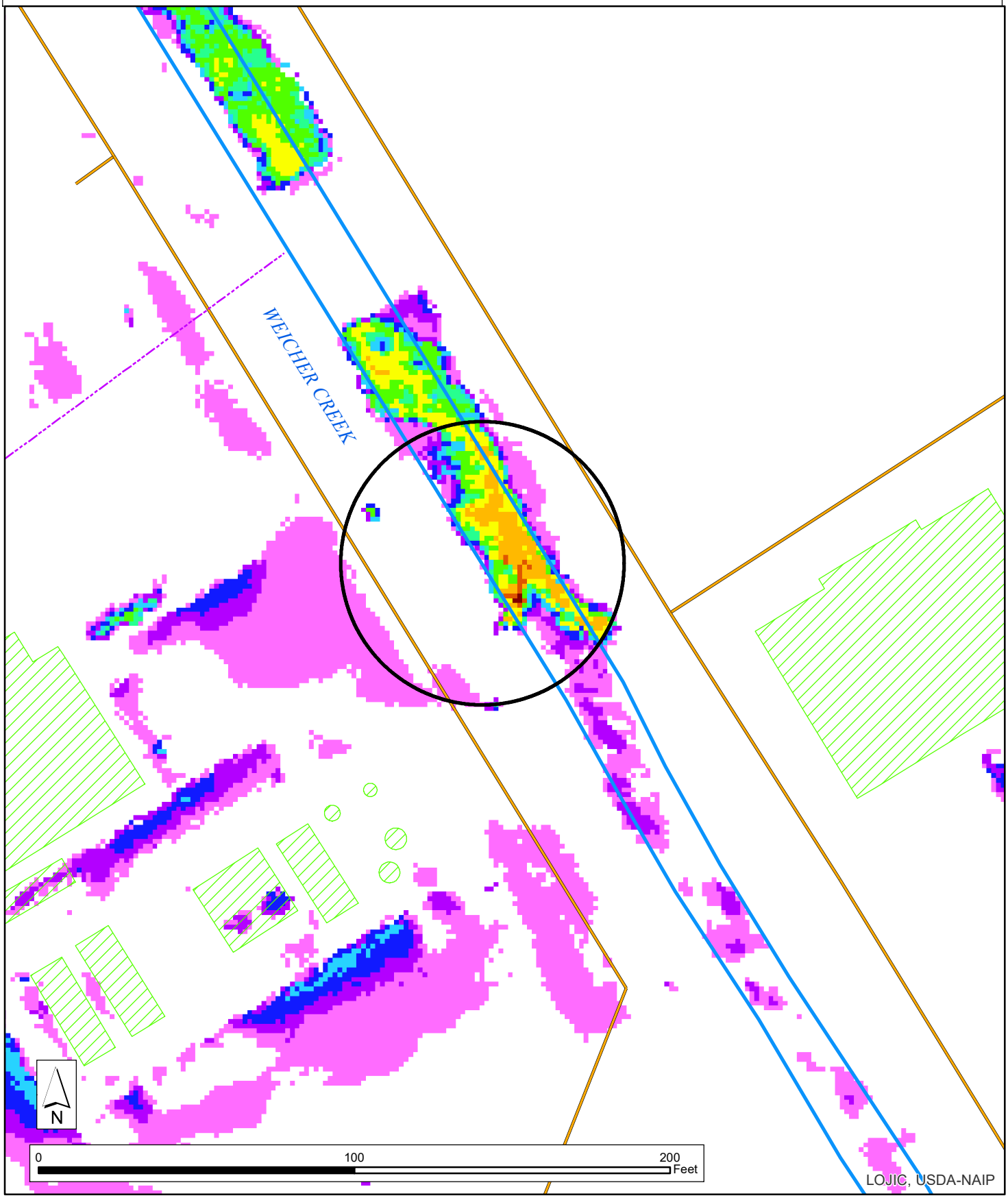


6420 New Dutchmans Pkwy Louisville, KY 40205

Thermal Observation: Flow

Comments:

Heat signature/flow adjacent to U of L Hospital facility.

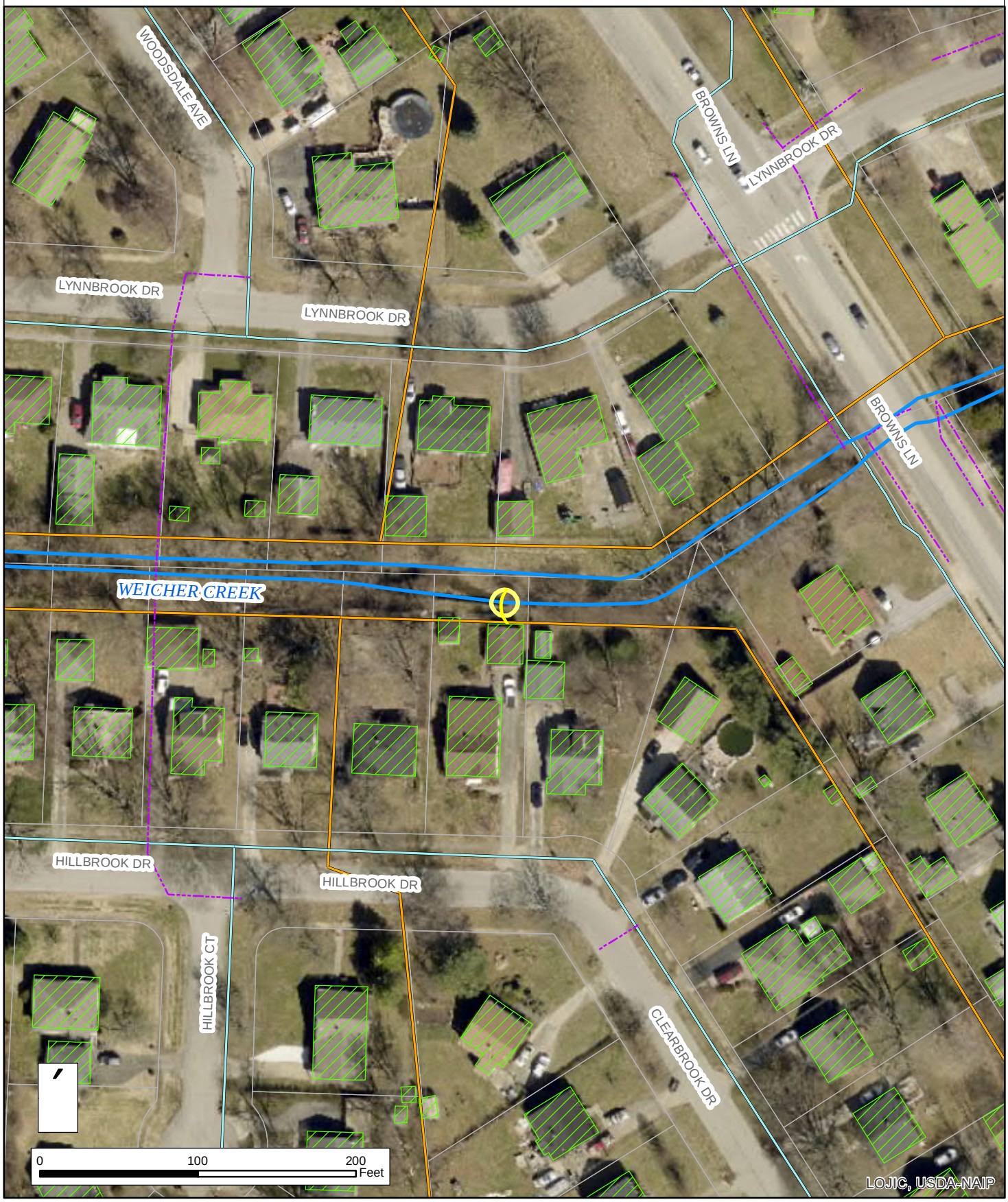


4231 Hillbrook Dr Louisville, KY 40220

Thermal Observation: Possible flow

Comments:

Possible flow into stream. Heat signature present.

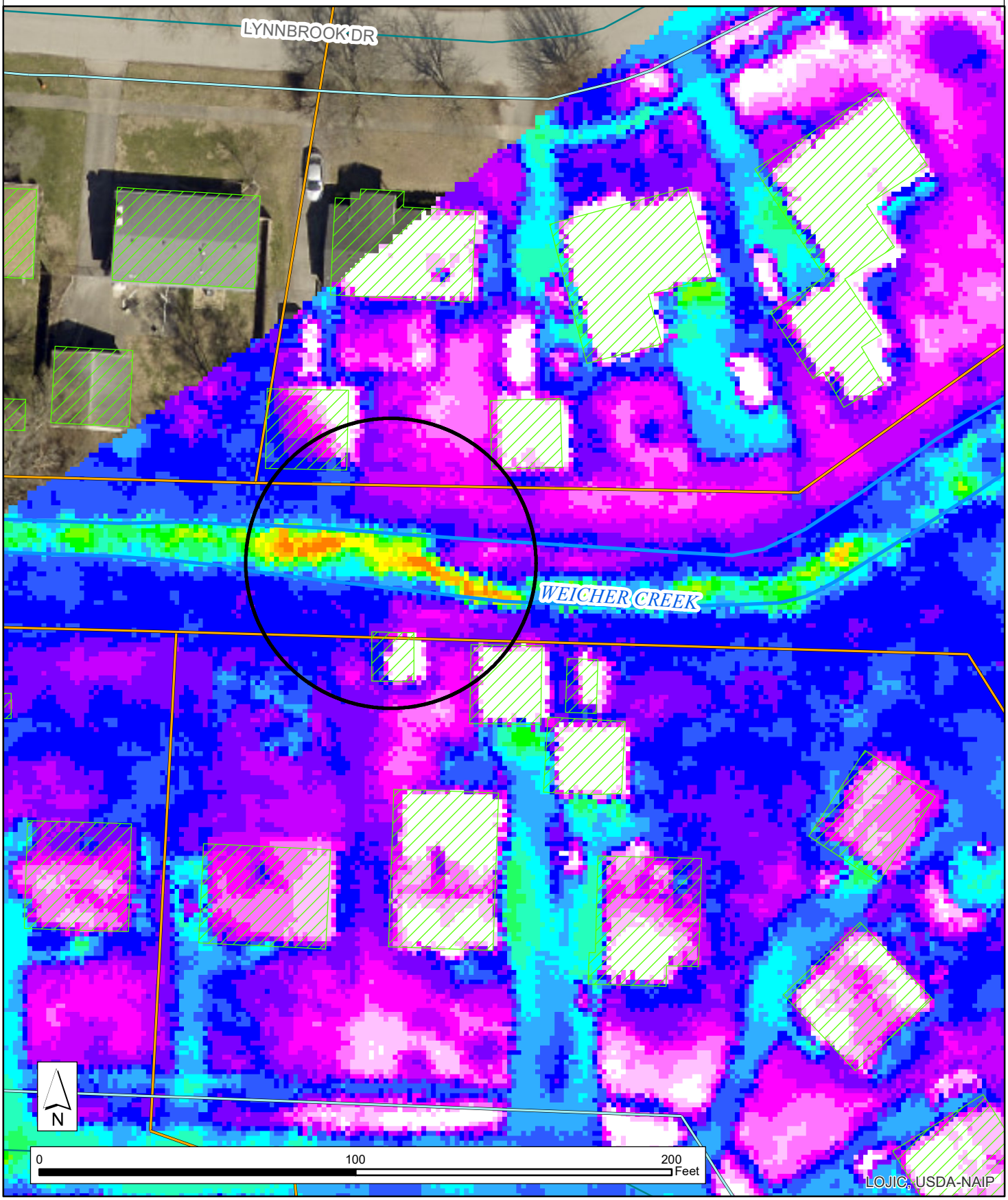


4231 Hillbrook Dr Louisville, KY 40220

Thermal Observation: Possible flow

Comments:

Possible flow into stream. Heat signature present.



9000 Limehouse Ln Louisville, KY 40220

Thermal Observation: Possible flow

Comments:

Oxmoor Country Club. Flow from culvert.

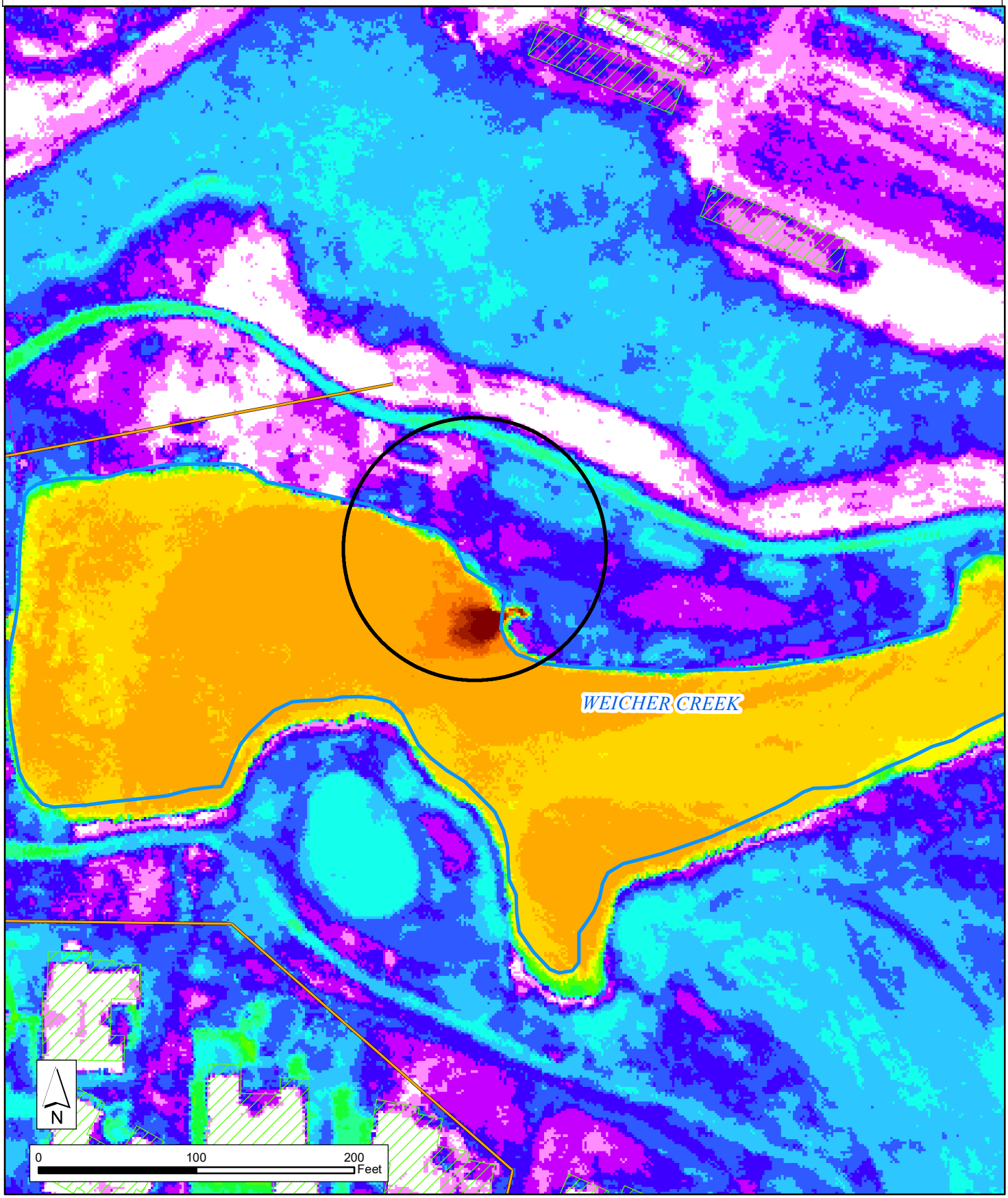


9000 Limehouse Ln Louisville, KY 40220

Thermal Observation: Possible flow

Comments:

Oxmoor Country Club. Flow from culvert.



15511 Dawson Hill Place Louisville, KY 40299

Thermal Observation: Possible Flow

Comments:

Possible plume/flow.

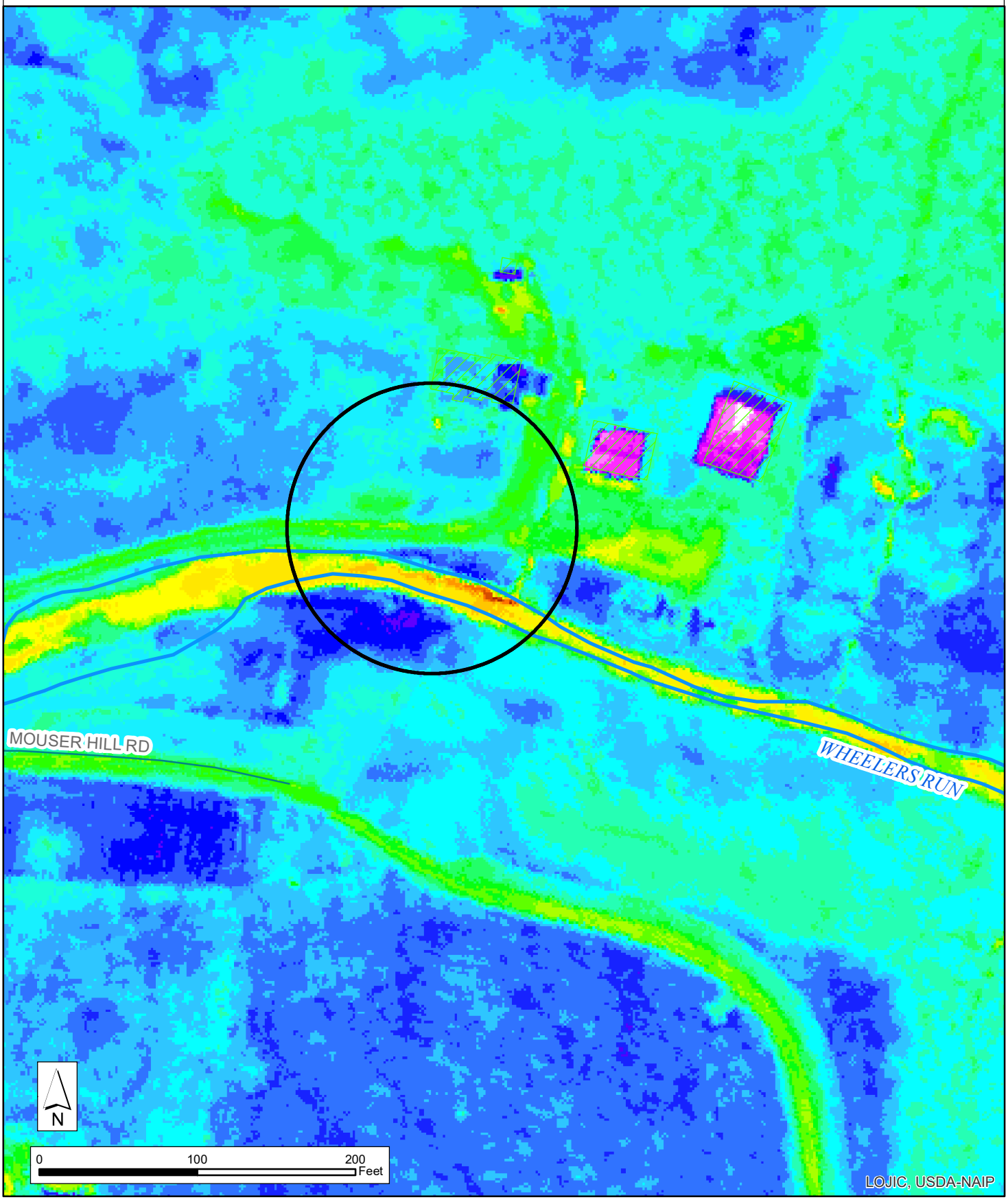


15511 Dawson Hill Place Louisville, KY 40299

Thermal Observation: Possible Flow

Comments:

Possible plume/flow.



Previously Identified Thermal Observation Sites

13 sites have been previously observed in past Thermal Imagery desktop analysis and field investigations. These sites have been previously determined to be permitted discharges or investigated and found to be non-issues.

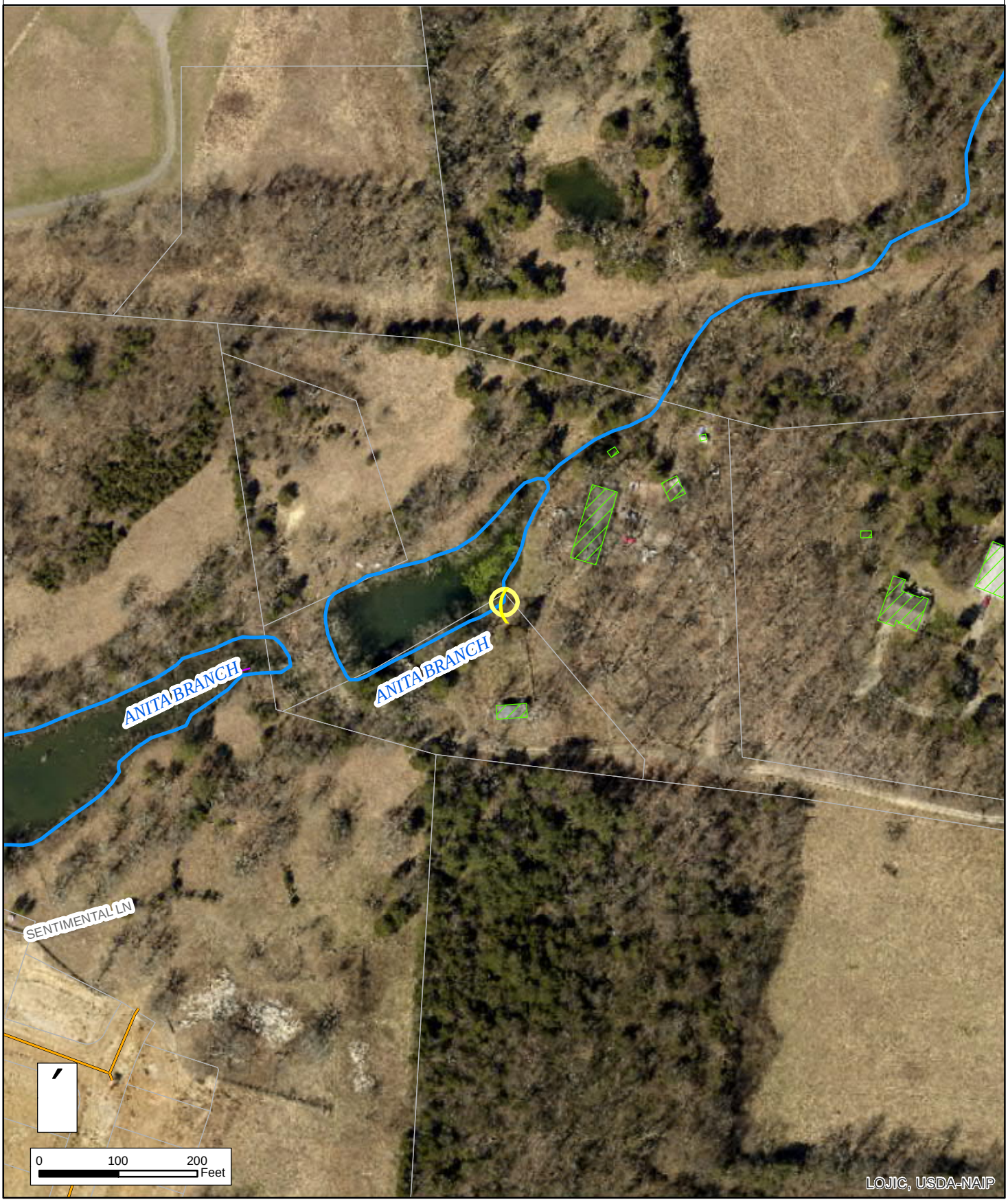
Site Address	Stream Name	Site Observation	Heat Signature Type	Imagery Tile
11000 Cedar Creek Rd Louisville, KY 40229	Anita Branch	Possible plume. Inspected in 2015	Heat Signature	134551
10702 Cedar Creek Rd Louisville, KY 40229	Anita Branch	Heat signature. Inspected in 2015.	Heat Signature	134551
1100 East Market St, Louisville, KY 40206	Beargrass Creek	Heat signature at Home of the Innocents, permitted. Known discharge. Inspected in 2015.	Heat Signature	133315
5702 Captains Quarters Rd Prospect, KY 40059	Harrods Creek	Do not inspect. Inspected in 2015. Captain's Quarters Yacht Club.	Flow	133315
5702 Captains Quarters Rd Prospect, KY 40059	Harrods Creek	Do not inspect. Inspected in 2015. Captain's Quarters Yacht Club.	Flow	133315
4200 Springhurst Blvd, Louisville, KY 40241	Lake/pond flows to Little Goose Creek	Flow detected. Inspected in 2015. Springhurst Community Association	Flow	170418
SDF Airport Authority of Louisville 40209	N/A Culvert	Airport property. Known discharge.	High heat signature	121316
6709 Grade Ln Louisville, KY 40213	Northern Ditch	Heat signature. MSD owned property.	Flow	164043
4300 Gibson Lane Louisville, KY 40211	Ohio River	Flow into the Ohio River. Property owned by Metro Gov; adjacent to Buckeye Terminals LLC property.	Flow	151715
8700 Twin Ridge Ct Louisville, KY 40242	Pond	Flow of warmer water into pond. Inspected in 2015.	Flow	165226
179-101 Gardiner Lake Rd Louisville, KY 40205	South Fork Beargrass Creek	Heat signature detected. Inspected in 2015.Gardiner Lane Condos.	Heat Signature	170418
4757 Rockford Plaza Louisville, KY 40216	South Fork Beargrass Creek	Heat signature. Inspected in 2015	Possible flow	161735
1718 Nightingale Rd Louisville, KY 40213	South Fork Beargrass Creek	Heat signature Nightingale CSO Basin	Heat Signature	121316

11000 Cedar Creek Rd Louisville, KY 40229

Thermal Observation: Heat Signature

Comments:

Possible plume. Inspected in 2015

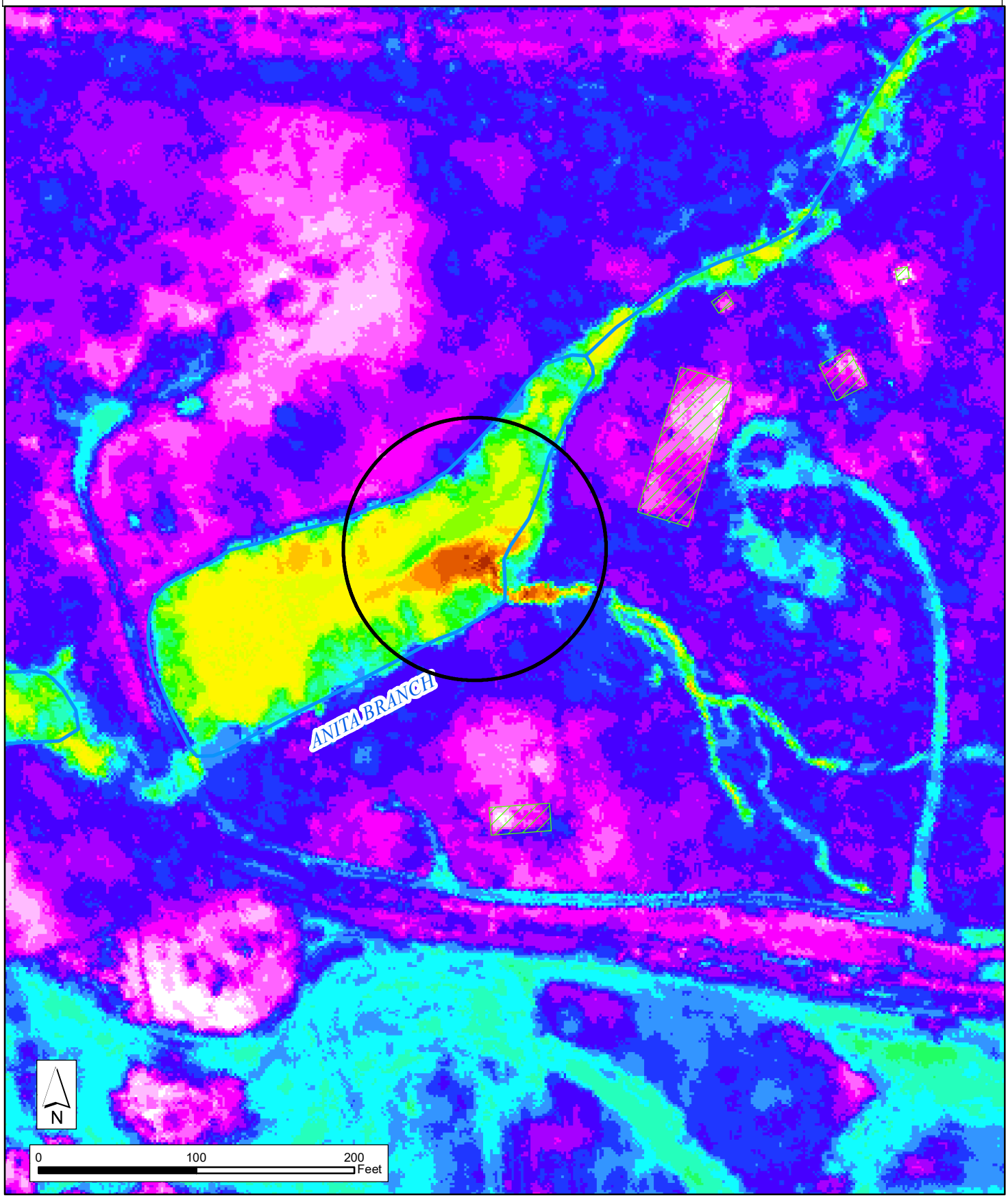


11000 Cedar Creek Rd Louisville, KY 40229

Thermal Observation: Heat Signature

Comments:

Possible plume. Inspected in 2015

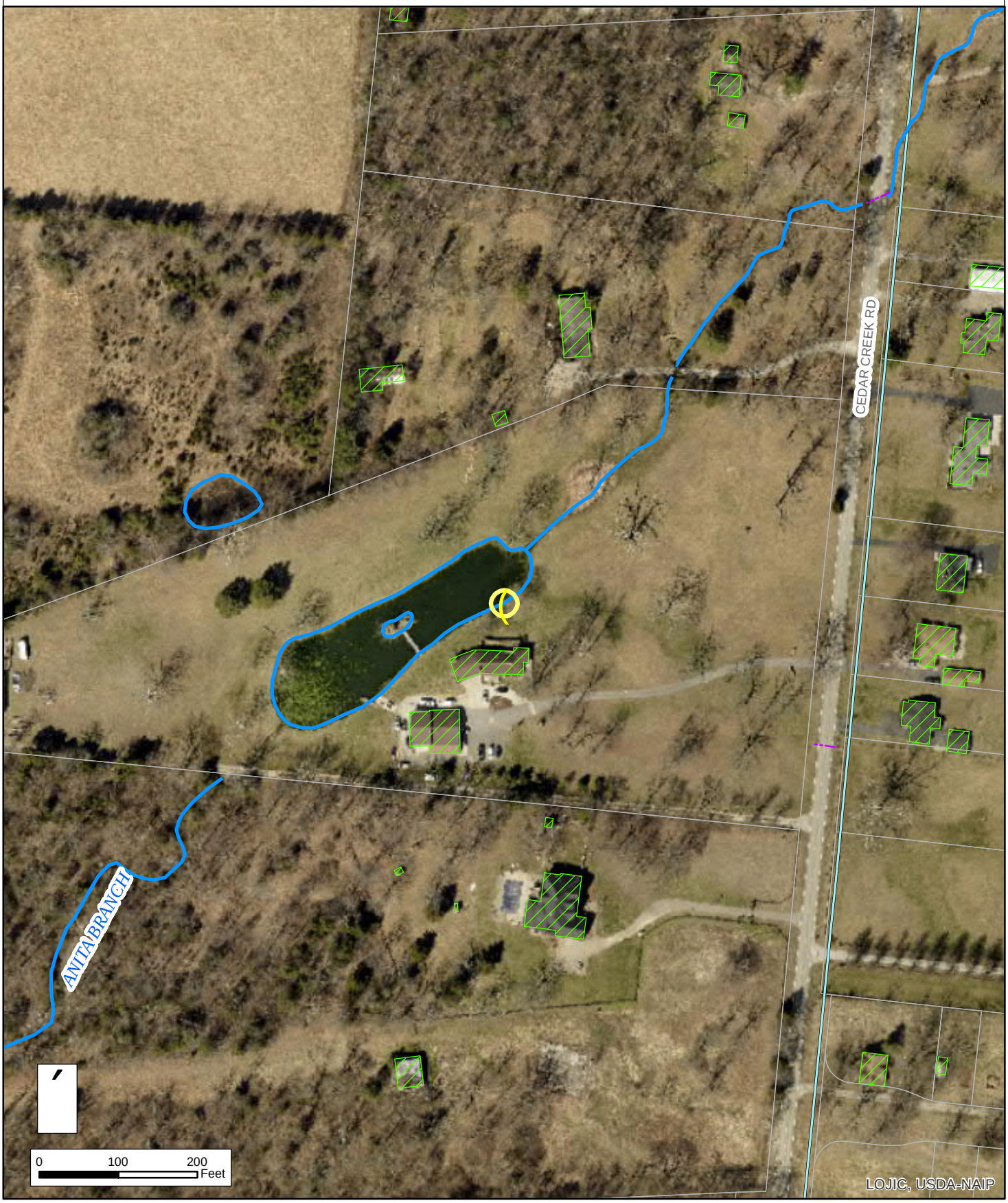


10702 Cedar Creek Rd Louisville, KY 40229

Thermal Observation: Heat Signature

Comments:

Heat signature. Inspected in 2015.

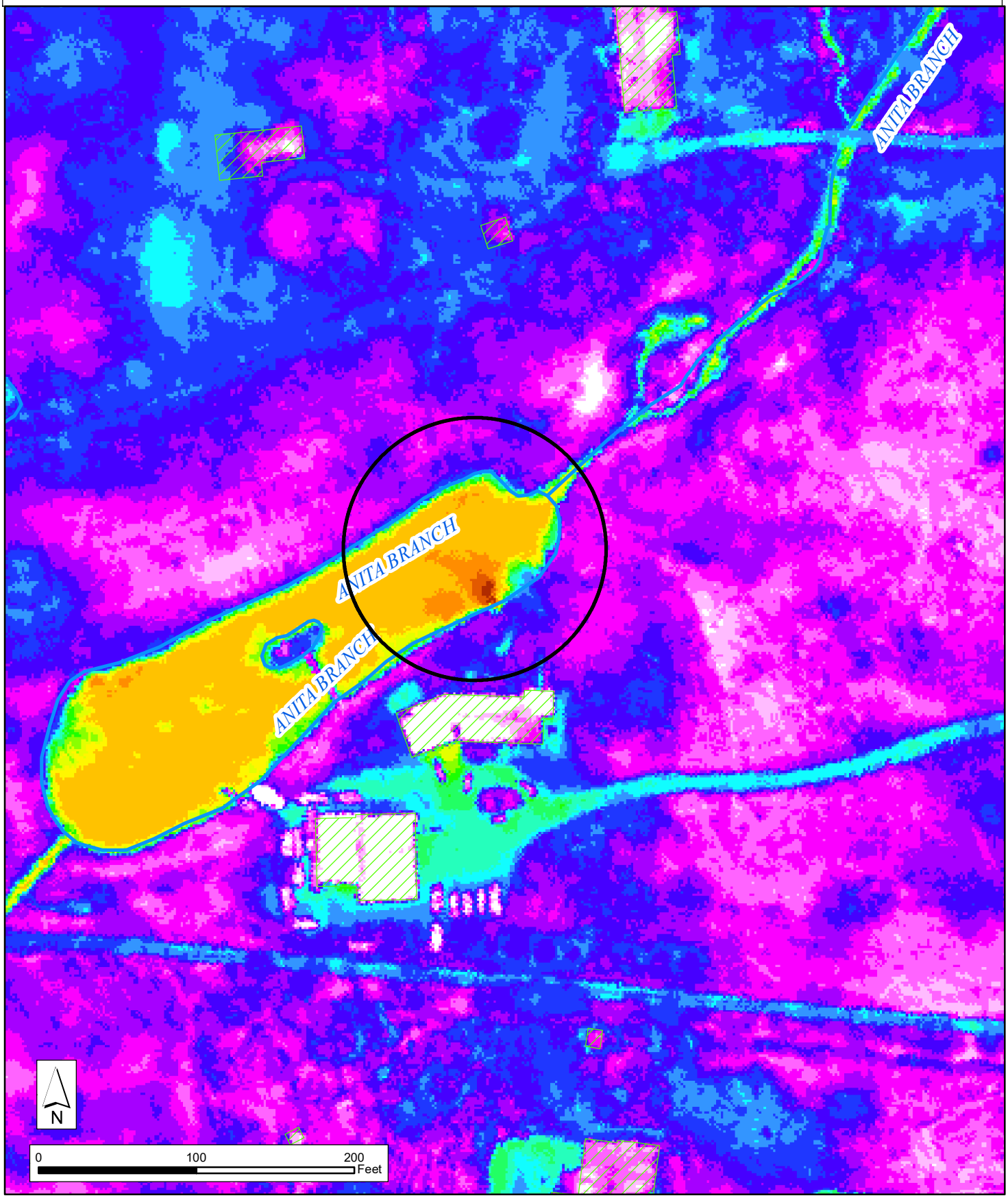


10702 Cedar Creek Rd Louisville, KY 40229

Thermal Observation: Heat Signature

Comments:

Heat signature. Inspected in 2015.

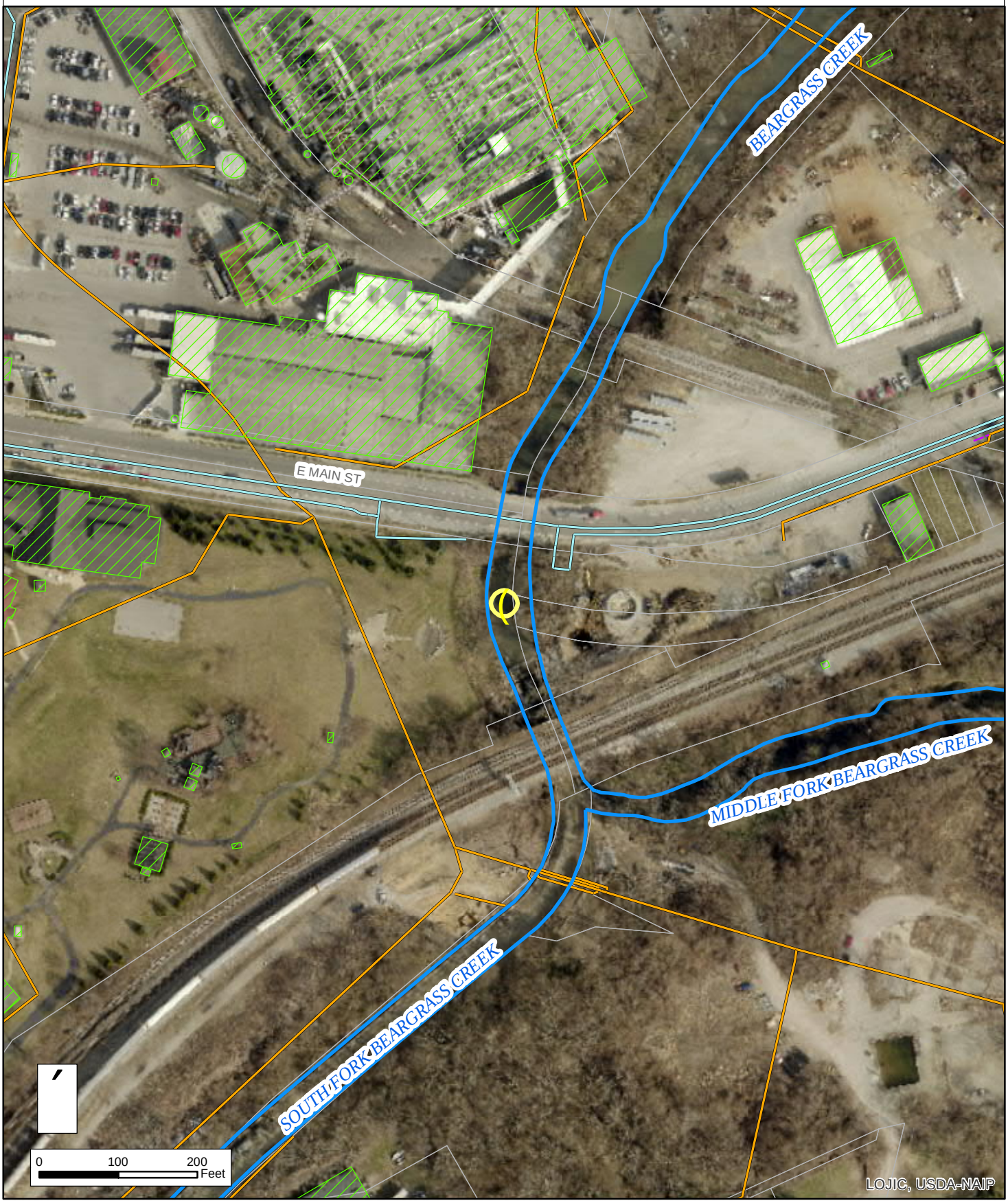


1100 East Market St, Louisville, KY 40206

Thermal Observation: Heat Signature

Comments:

Heat signature at Home of the Innocents, permitted. Known discharge. Inspected in 2015.

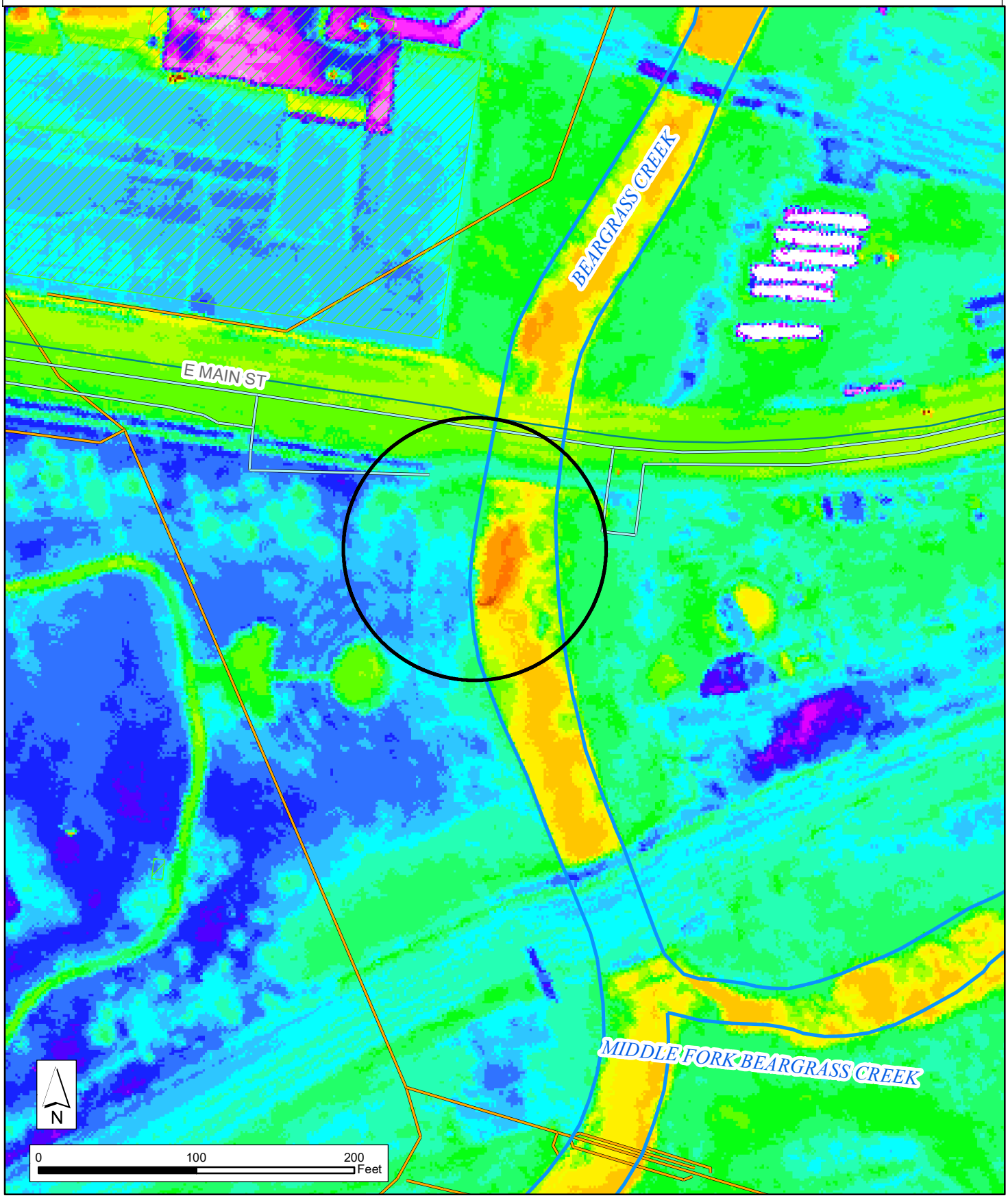


1100 East Market St, Louisville, KY 40206

Thermal Observation: Heat Signature

Comments:

Heat signature at Home of the Innocents, permitted. Known discharge. Inspected in 2015.



5702 Captains Quarters Rd Prospect, KY 40059

Thermal Observation: Flow

Comments:

Do not inspect. Inspected in 2015. Captain's Quarters Yacht Club.

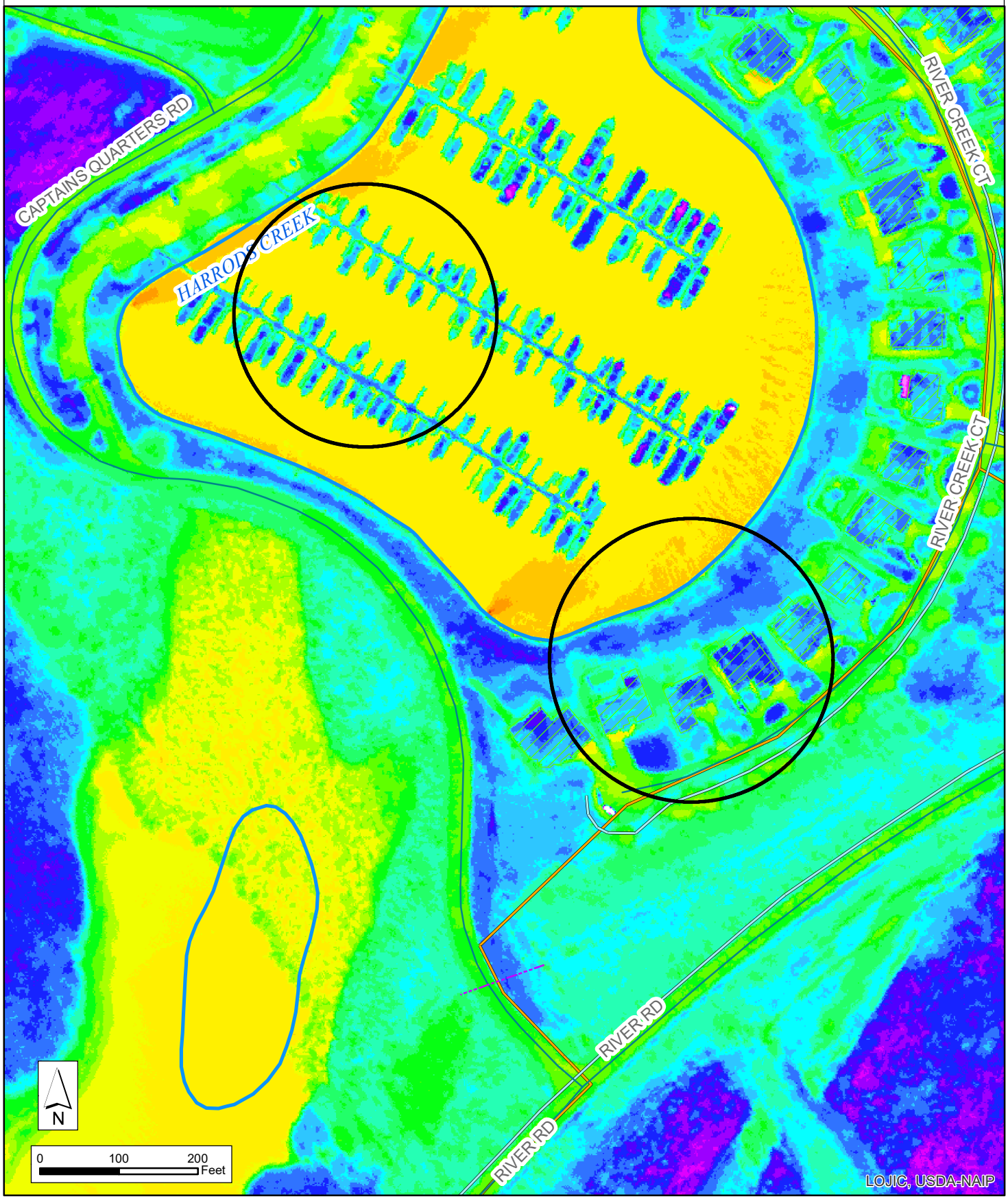


5702 Captains Quarters Rd Prospect, KY 40059

Thermal Observation: Flow

Comments:

Do not inspect. Inspected in 2015. Captain's Quarters Yacht Club.

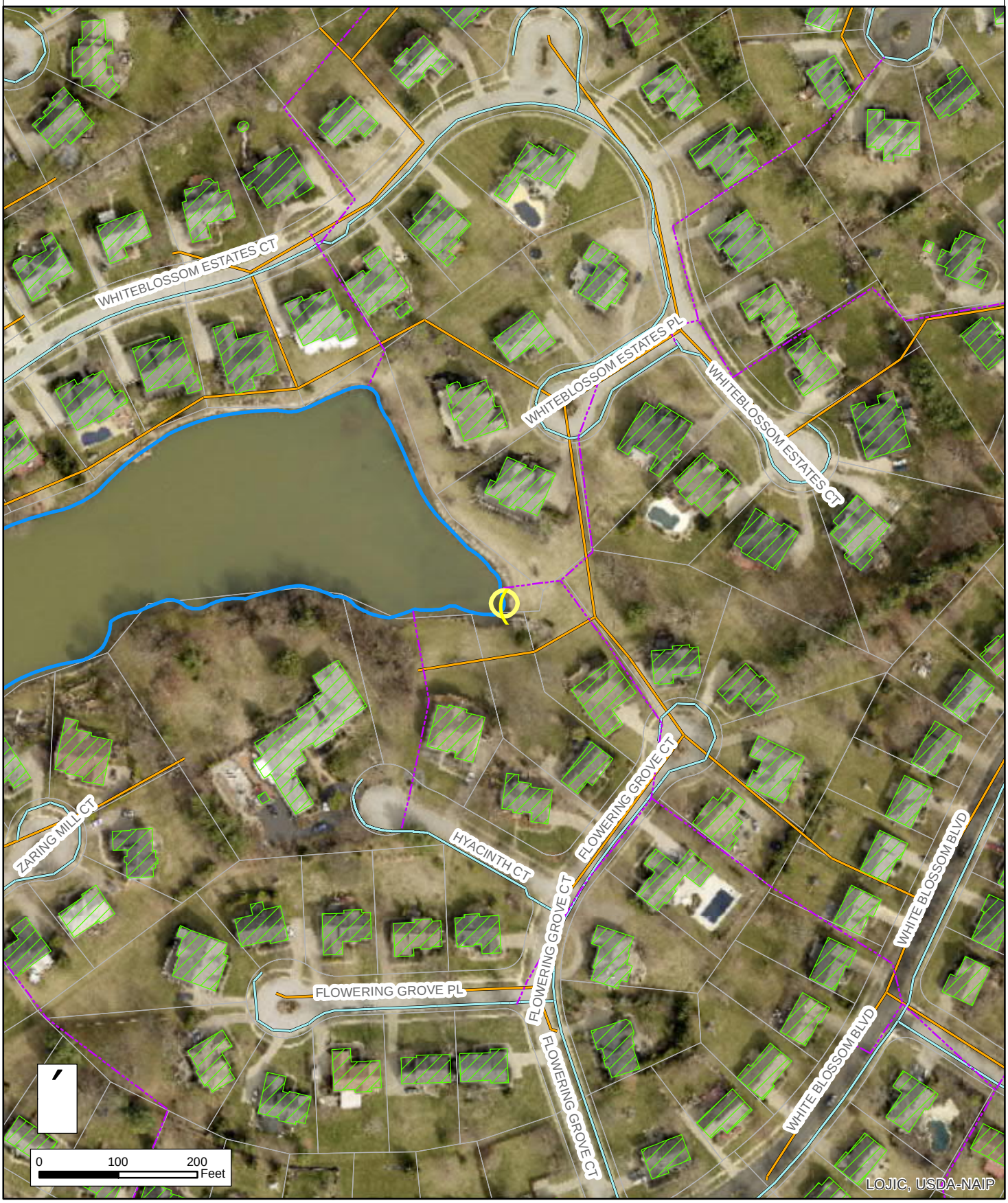


4200 Springhurst Blvd, Louisville, KY 40241

Thermal Observation: Flow

Comments:

Flow detected. Inspected in 2015. Springhurst Community Association

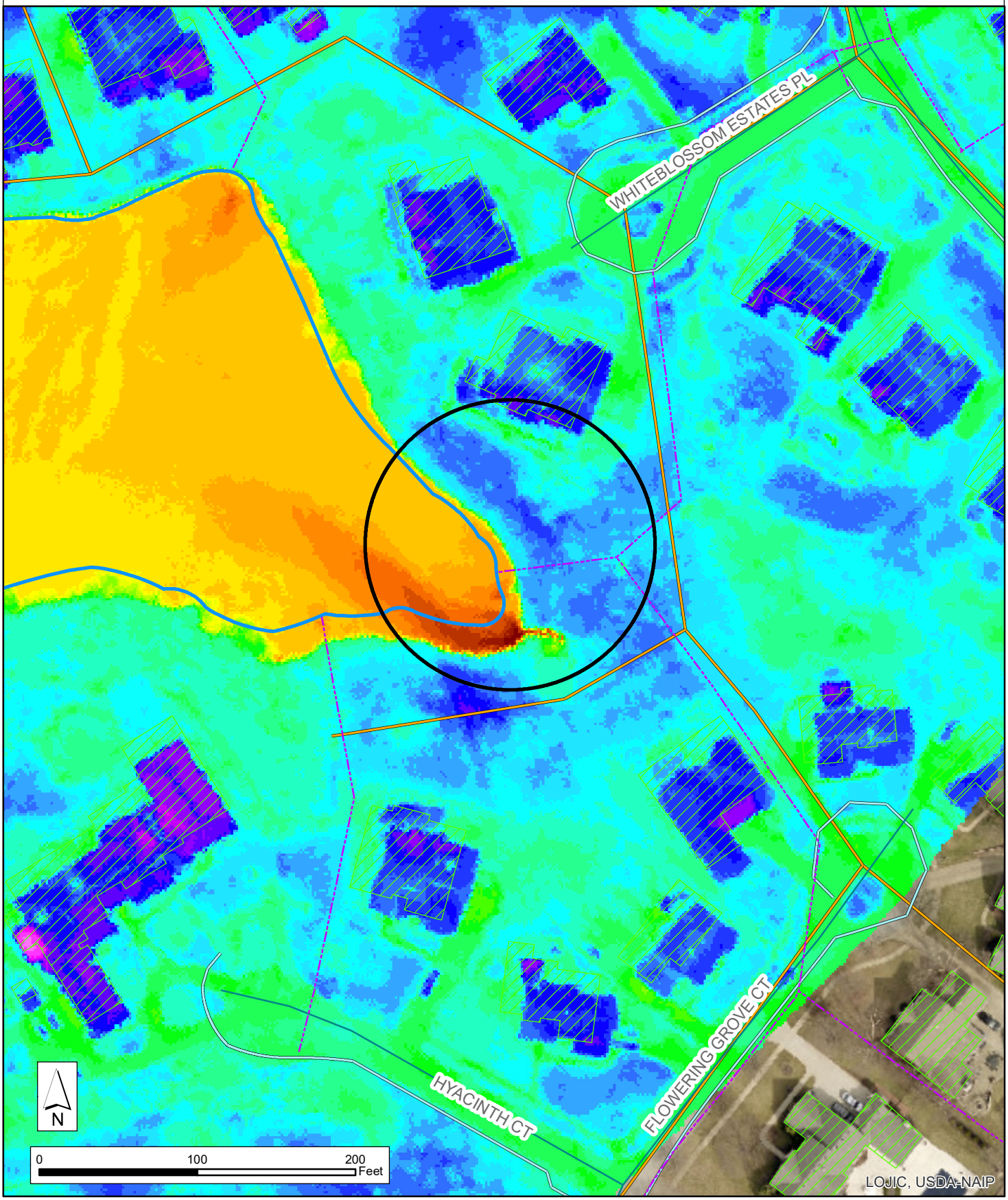


4200 Springhurst Blvd, Louisville, KY 40241

Thermal Observation: Flow

Comments:

Flow detected. Inspected in 2015. Springhurst Community Association

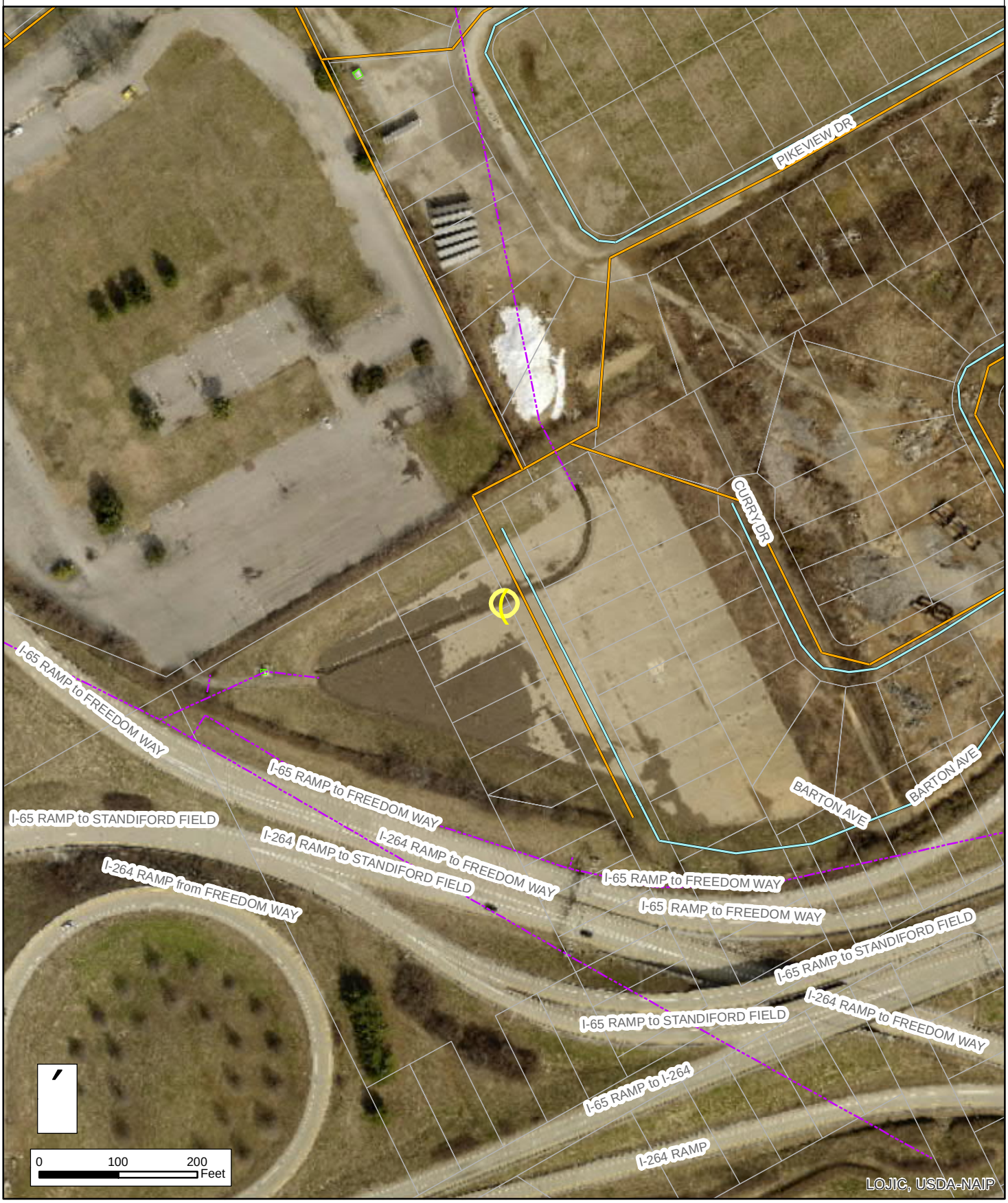


SDF Airport Authority of Louisville 40209

Thermal Observation: High heat signature

Comments:

Airport property. Known discharge.

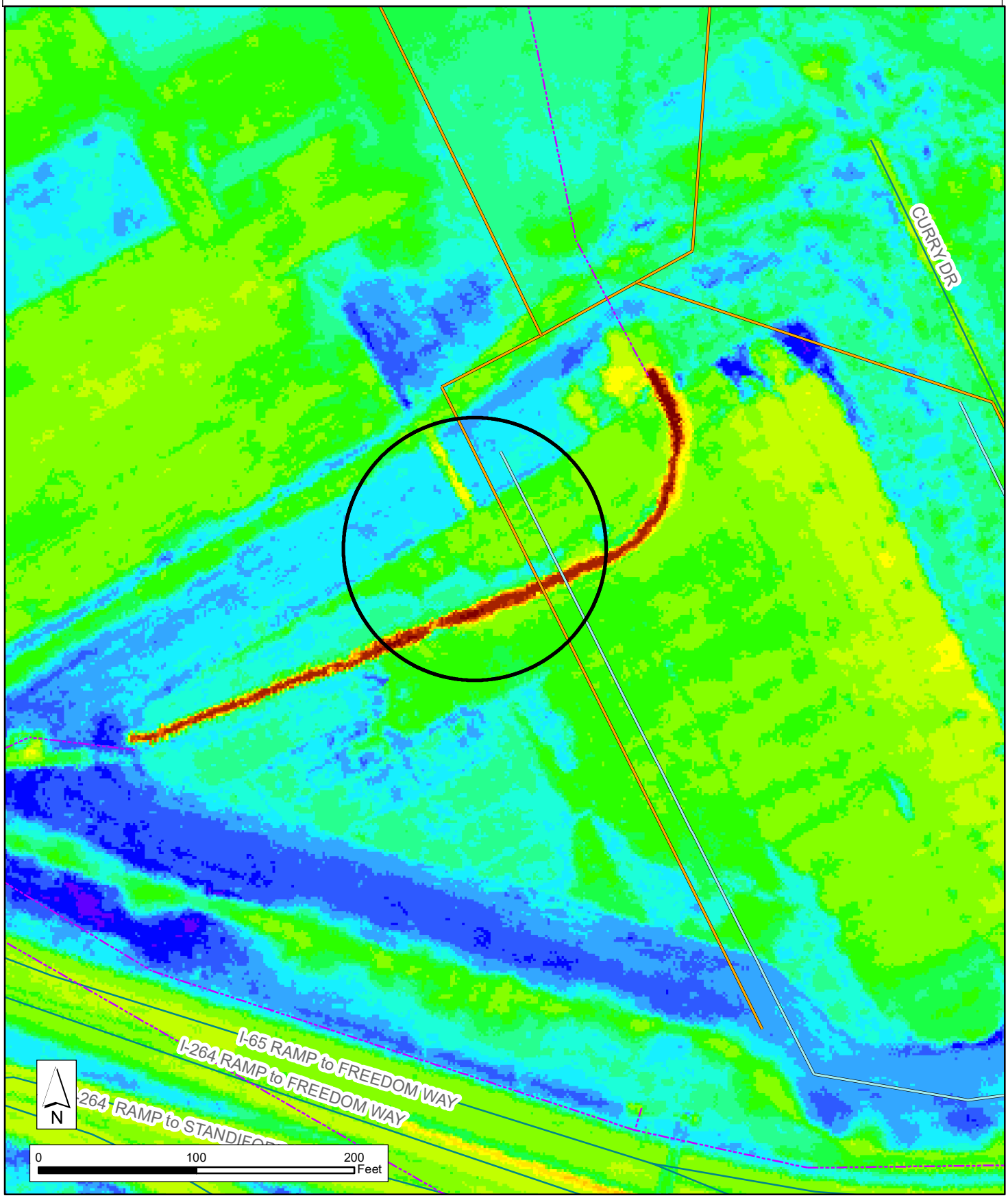


SDF Airport Authority of Louisville 40209

Thermal Observation: High heat signature

Comments:

Airport. Known discharge.



6709 Grade Ln Louisville, KY 40213

Thermal Observation: Flow

Comments:

Heat signature. MSD owned property.

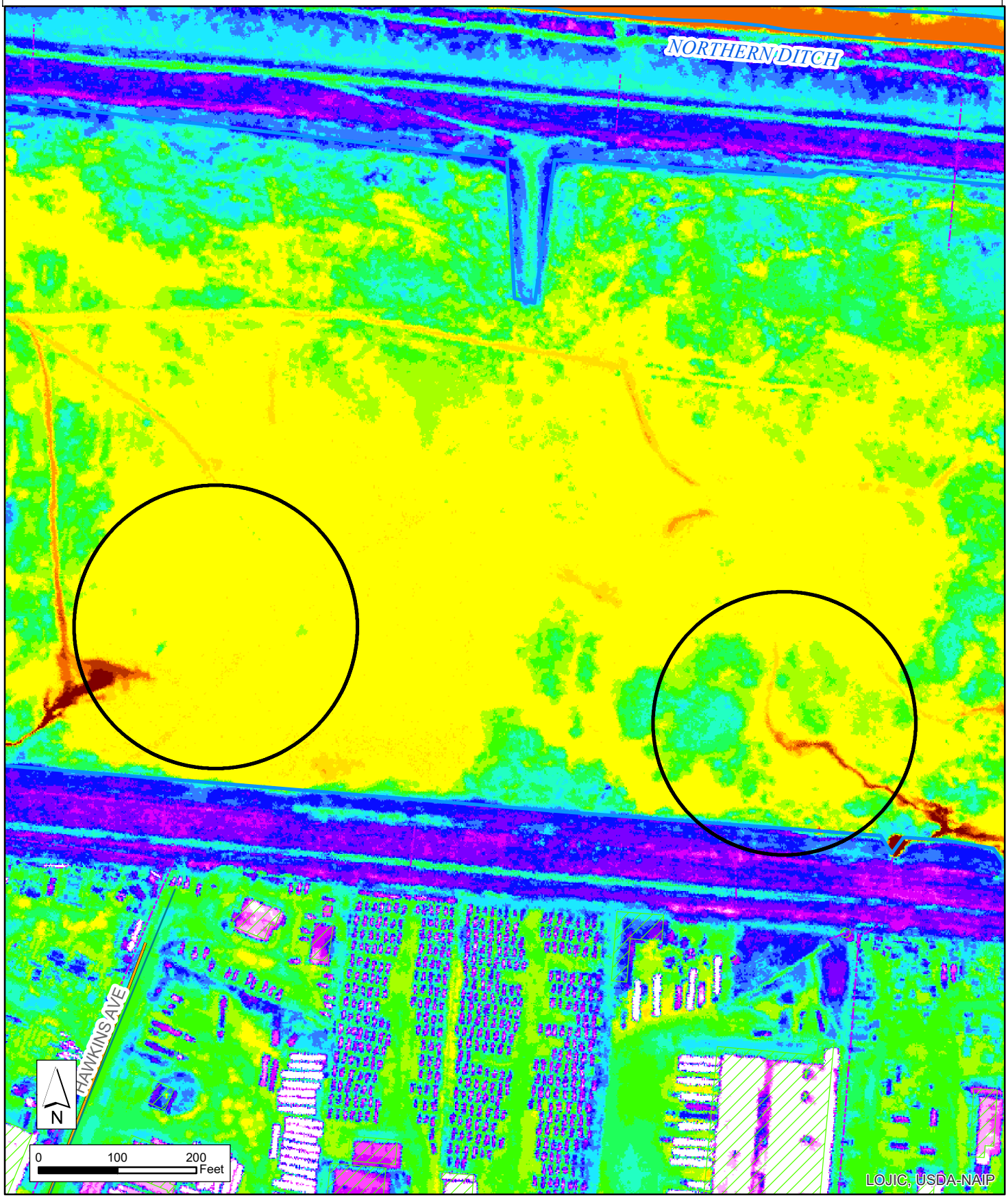


6709 Grade Ln Louisville, KY 40213

Thermal Observation: Flow

Comments:

Heat signature. MSD owned property.



4300 Gibson Lane Louisville, KY 40211

Thermal Observation: Flow

Comments:

Flow into the Ohio River. Property owned by Metro Gov; adjacent to Buckeye Terminals LLC property.

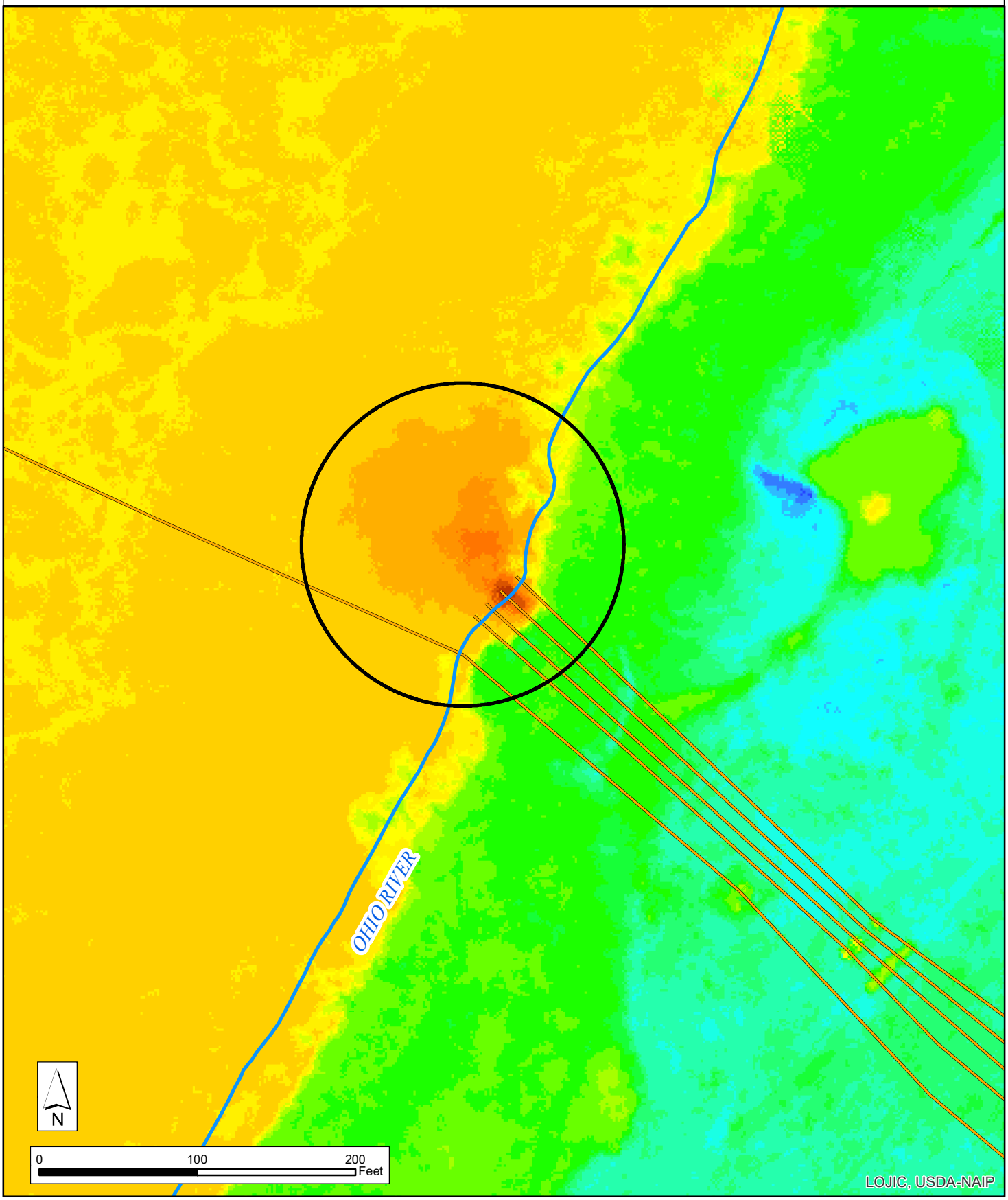


4300 Gibson Lane Louisville, KY 40211

Thermal Observation: Flow

Comments:

Flow into the Ohio River. Property owned by Metro Gov; adjacent to Buckeye Terminals LLC property.

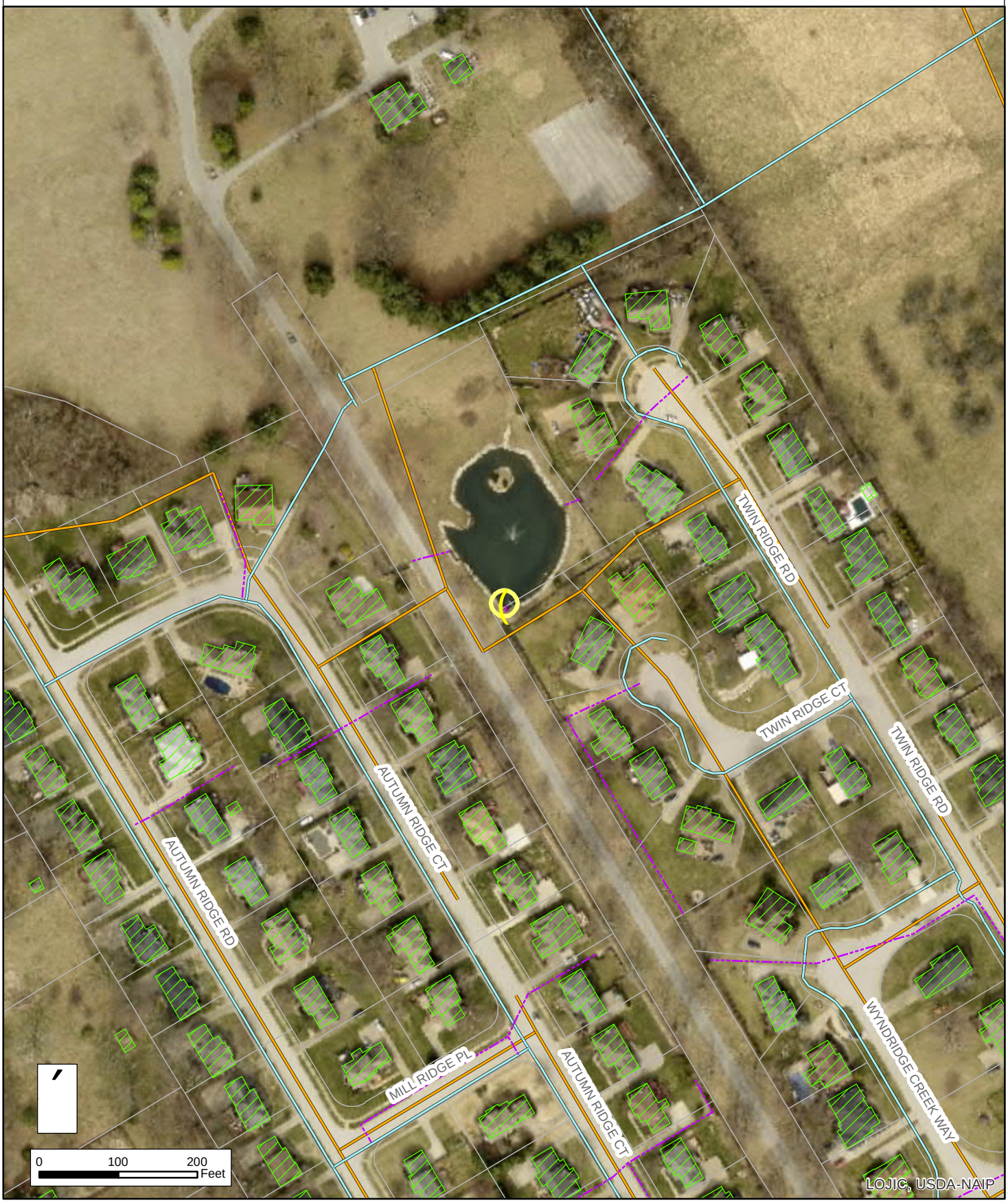


8700 Twin Ridge Ct Louisville, KY 40242

Thermal Observation: Flow

Comments:

Flow of warmer water into pond. Inspected in 2015.

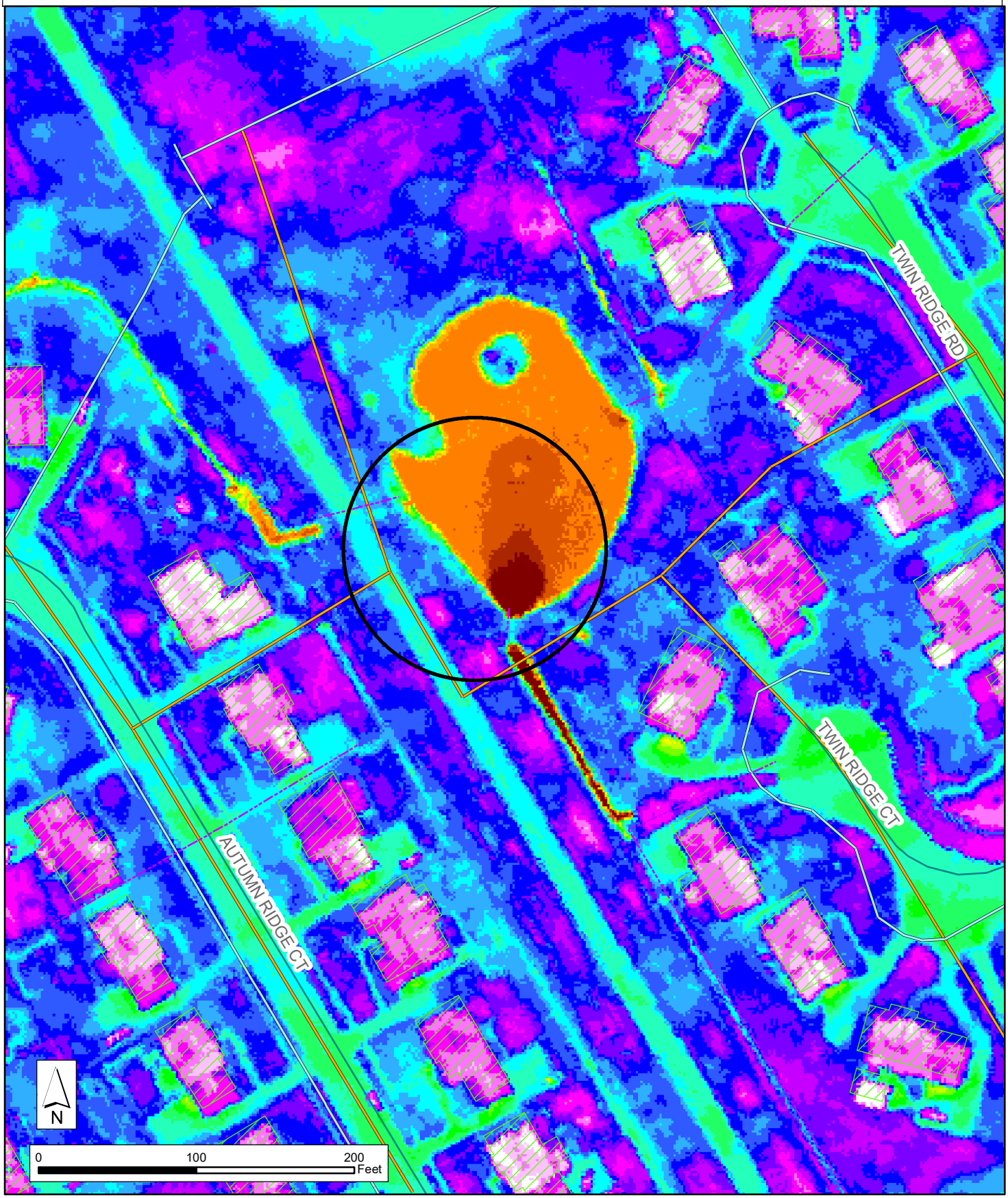


8700 Twin Ridge Ct Louisville, KY 40242

Thermal Observation: Flow

Comments:

Flow of warmer water into pond. Inspected in 2015.

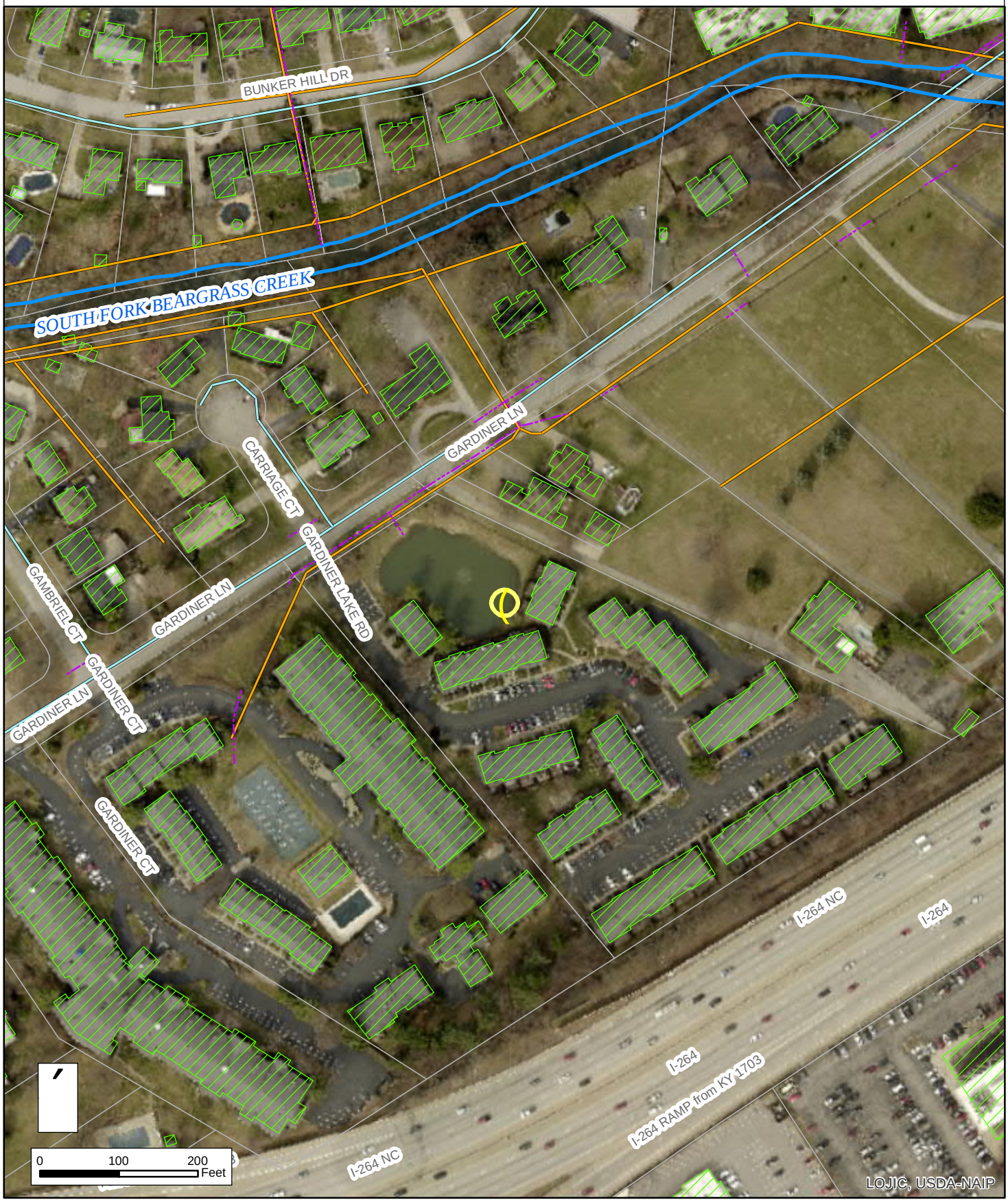


179-101 Gardiner Lake Rd Louisville, KY 40205

Thermal Observation: Heat Signature

Comments:

Heat signature detected. Inspected in 2015.Gardiner Lane Condos.

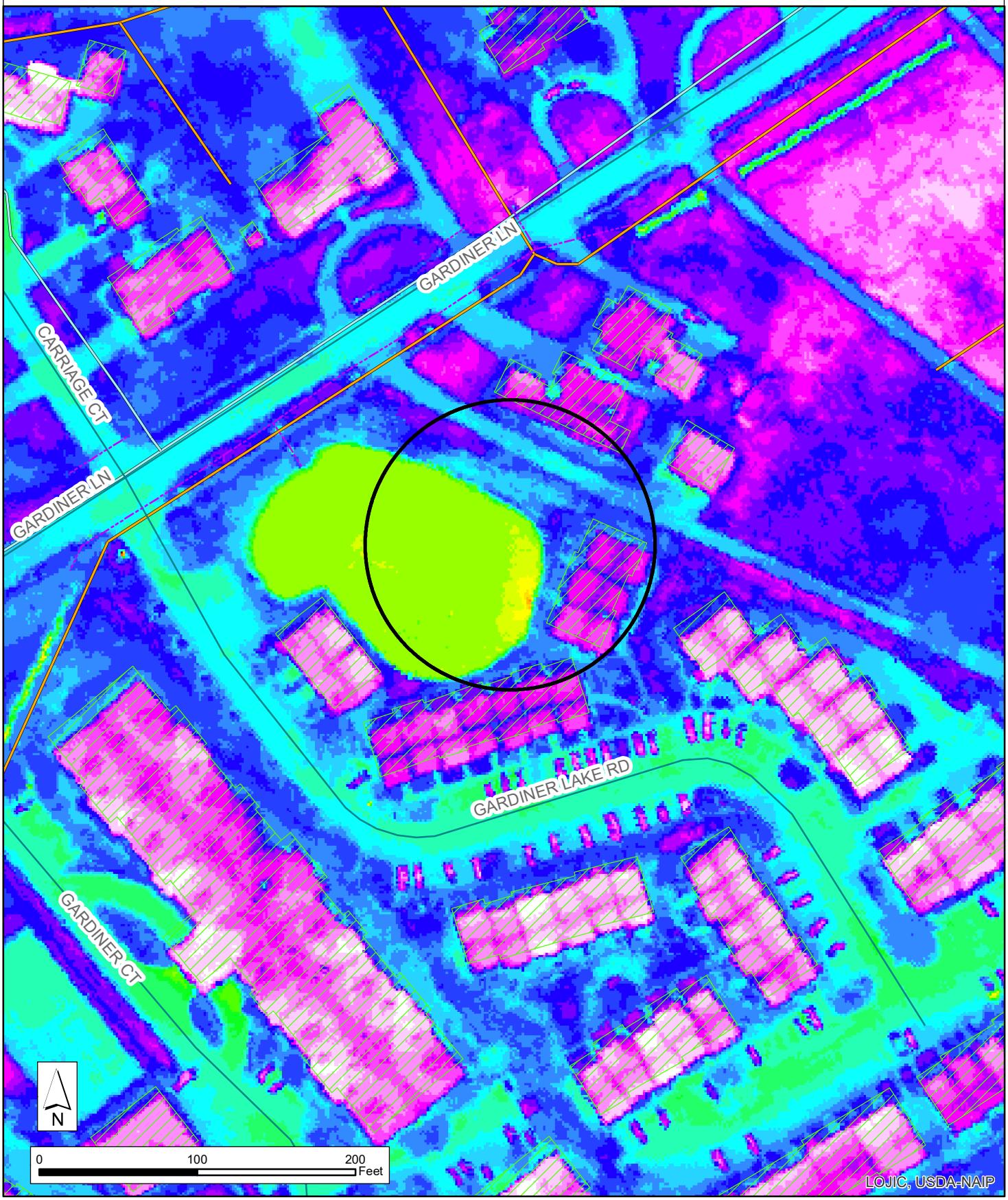


179-101 Gardiner Lake Rd Louisville, KY 40205

Thermal Observation: Heat Signature

Comments:

Heat signature detected. Inspected in 2015.Gardiner Lane Condos.

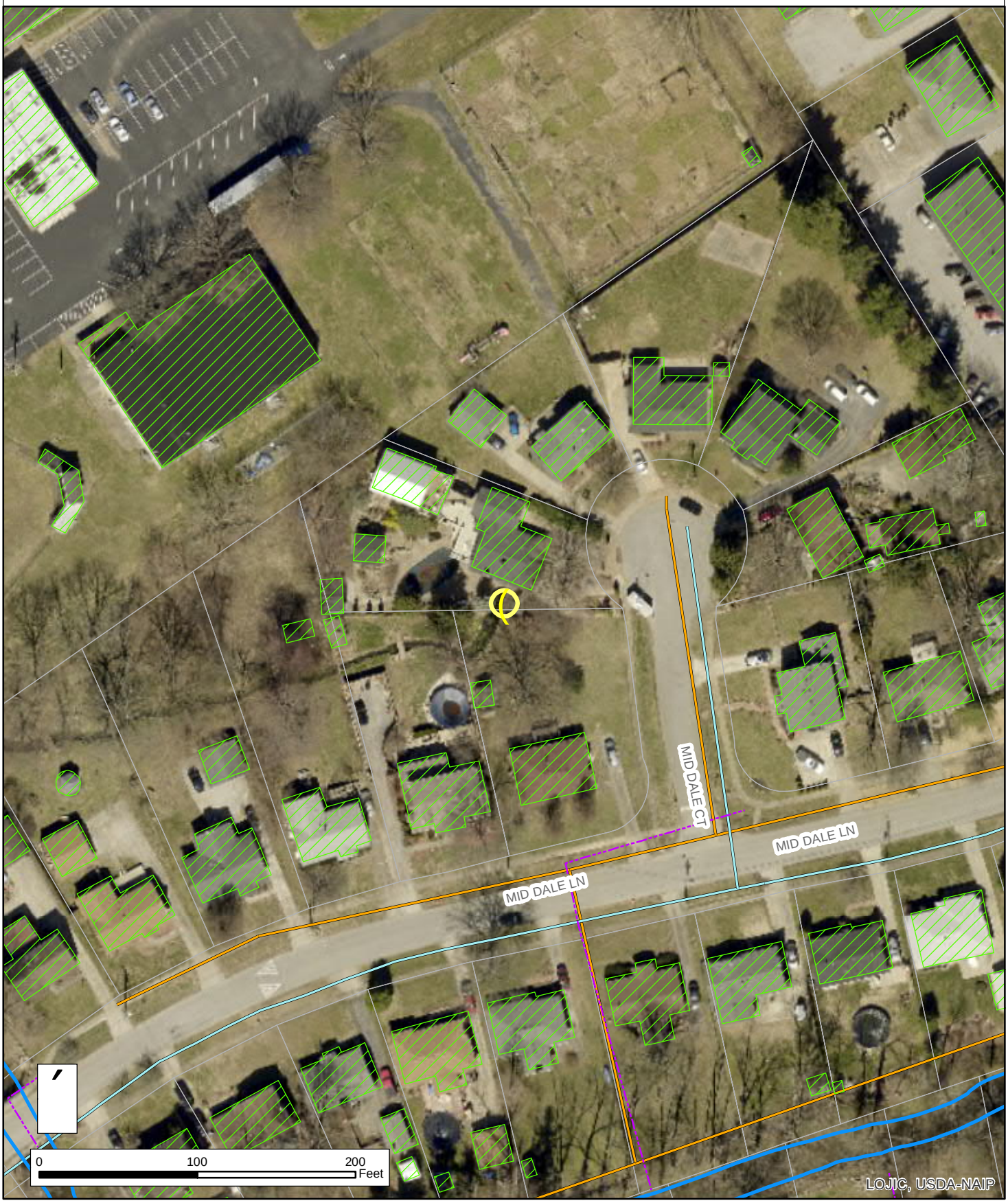


4757 Rockford Plaza Louisville, KY 40216

Thermal Observation: Possible flow

Comments:

Heat signature. Inspected in 2015

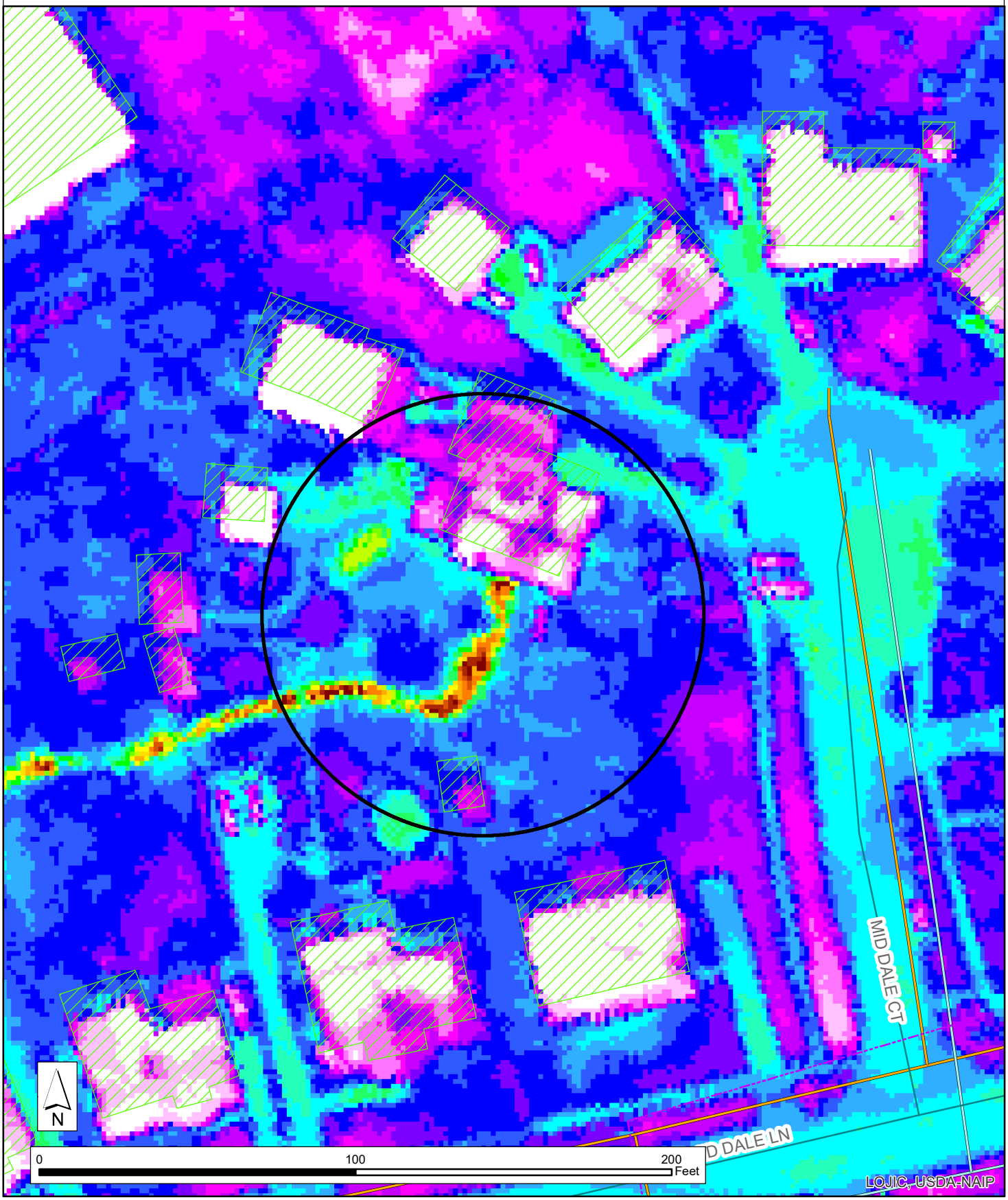


4757 Rockford Plaza Louisville, KY 402016

Thermal Observation: Possible flow

Comments:

Heat signature. Inspected in 2015



1718 Nightingale Rd Louisville, KY 40213

Thermal Observation: Heat Signature

Comments:

Heat signature Nightingale CSO Basin

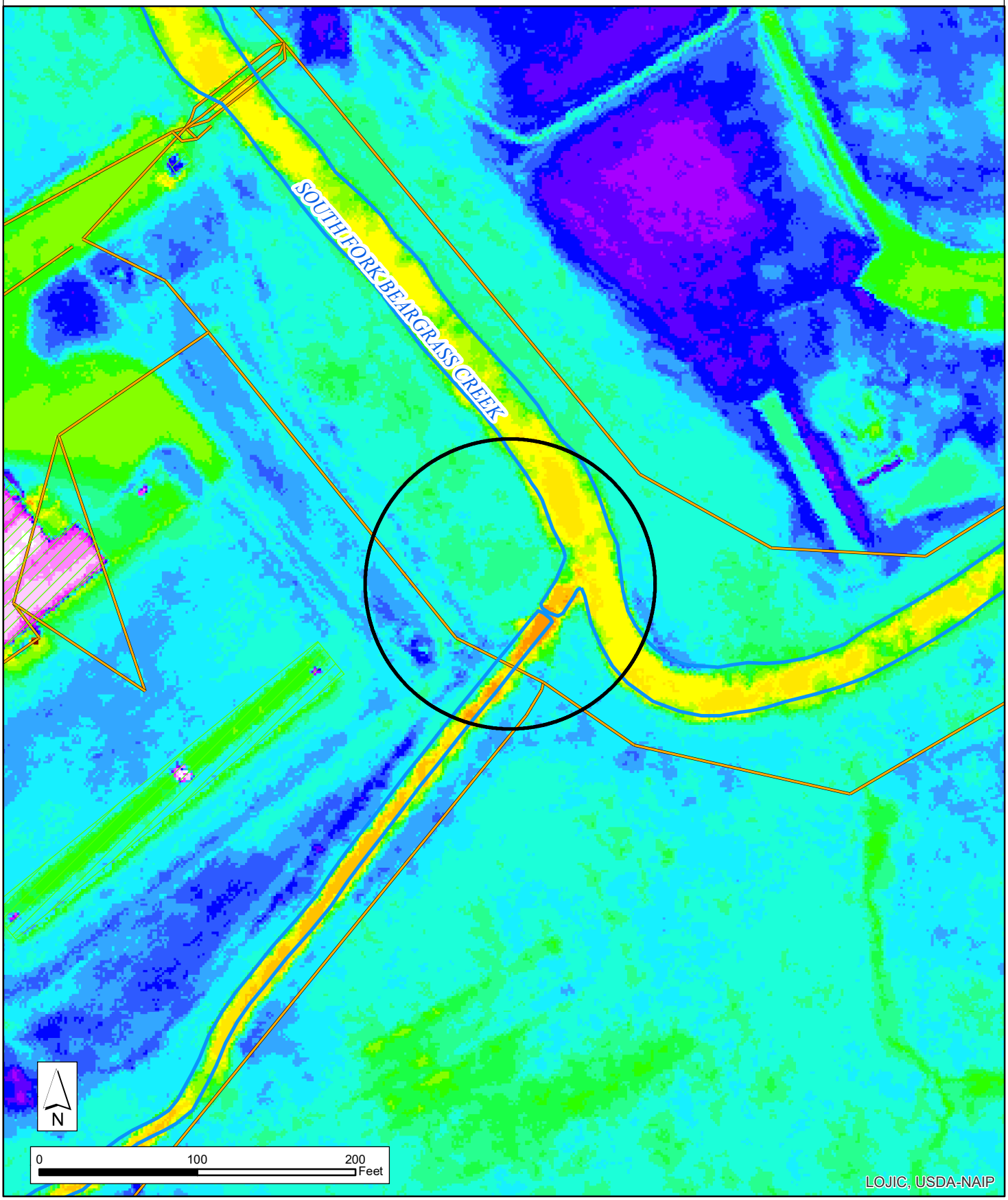


1718 Nightingale Rd Louisville, KY 40213

Thermal Observation: Heat Signature

Comments:

Heat signature Nightingale CSO Basin



APPENDIX 2.2.5 SUSPECTED OUTFALL INSPECTION SUMMARY

APPENDIX 2.2.5 Suspected Outfall Inspection Summary

Date of Inspection	Location	Inspector	Notes	Outcome
8/26/2021	935 Logan Street	McQueen	No Specific Outfall Identified; No evidence of dry weather flow; Previous evidence of stormwater flow; Growth covers suspected drains	Do no reinspect without cause
4/1/2021	935 Logan Street	AJP	No outfall - identified low point in stream; no apparent dry weather discharge	Do no reinspect without cause
8/26/2021	1010 Highland Ave	McQueen	No outfall initially identified/shallow area of channel; no evidence of flow during dry weather	Do no reinspect without cause
4/1/2021	1010 Highland Ave	McQueen	No discharge noted; shallow area of channel	Do no reinspect without cause
4/1/2021	1131 Schiller Ave	AJP	Potential illicit discharge (reinspect with ATV) - clear and consistent flow	Reinspect
8/26/2021	1131 Schiller Ave	McQueen	Remnants of previous storm water remain, but all drains and outfalls are dry and free of flow during dry weather	Do no reinspect without cause
4/1/2021	1302 Castlewood Dell	AJP	ATV needed for SF Beargrass Creek reinspection. Collect E.coli and chlorine test at other sites	Reinspect
8/26/2021	1302 Castlewood Dell	McQueen	All drains are dry and offer no signs of flow during dry weather. Remnants of flow remain from previous storm water run-off	Do no reinspect without cause
4/1/2021	1321 Ellison Ave	AJP	Request ecoli and chlorine test when channel is dry	Reinspect
8/26/2021	1321 Ellison Ave	McQueen	All drains are dry and show no signs of flow during dry weather. Remnants remain from previous storm water flow	Do no reinspect without cause
4/7/2021	1731 Mellwood Ave	AJP	Channel - no uniform depth; no physical indicators of possible discharge	Do no reinspect without cause
4/1/2021	2571 Cherosen Rd	AJP	Gutter/residential stormwater	Do no reinspect without cause
12/4/2020	3000-3098 S Pope Lick	AJP	Likely stormwater being heated in drainage channel by sun on rocks	Do no reinspect without cause
4/6/2021	4141 Bardstown Road	AJP	No outfall identified. Standing/stagnant water pooling and warming	Do no reinspect without cause
4/7/2021	4231 Hillbrook Dr	AJP	Shallow; pooling water heated by sun	Do no reinspect without cause
4/6/2021	4400 Annshire	AJP	Chlorine indicator turned pink; possible water main break	Reinspect
8/26/2021	4400 Annshire	McQueen	Will notify Louisville Water Company that flow continues. Same positive result as previously witnessed that chlorine is present via pink color in test vial. LWC advised two repairs made from previous inspection/ will advise on this report after checking area.	Do no reinspect without cause
4/7/2021	4601 Shelbyville Rd	AJP	Concrete warming pooled water	Do no reinspect without cause
8/26/2021	4601 Shelbyville Rd	McQueen	Same standing water from previous stormwater run off; No current flow into area	Do no reinspect without cause
4/1/2021	5901 Dutchmans Ln	McQueen	Constant runoff from golf course irrigation	Do no reinspect without cause
4/1/2021	6420 New Dutchmans	AJP	Reinspect - collect ecoli and chorine	Reinspect
8/26/2021	6420 New Dutchmans	McQueen	Stormwater culvert; No flow; Standing water from previous rain event	Do no reinspect without cause
4/6/2021	7201 National Trnpk	AJP	Concrete lined marshy green standing water; poor drainage; trash from parking lots; likely from parking lot drainage heated by concrete	Do no reinspect without cause
4/7/2021	7713 Westport Rd	AJP	Natural spring; pump house found old and abandoned	Do no reinspect without cause
4/7/2021	9721 Ranger Rd	AJP	Suspected water main break into storm system	Reinspect
8/26/2021	9721 Ranger Rd	McQueen	No flow at outfal; Storm drains in area that previously had flow were dry despite rain day before	Do no reinspect without cause
4/7/2021	10516 Providence Dr	AJP	Creek rerouted under road; warming in constructed creek bed rock and concrete	Do no reinspect without cause

APPENDIX 2.3.11 THIRD-PARTY IWD REFRESHER TRAINING

APPENDIX 2.3.11 THIRD-PARTY IWD REFRESHER TRAINING

IWD Annual Training - Field Inspections

November 2020

Industrial Waste Department Third Party Support

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Agenda

- Regulatory Review
- Stormwater Quality Management Plan (SWQMP)
- MS4 Inspection Process
- Enforcement
- MS4 Inspector Evaluations
- Training
- Inspection Examples
- Water Quality Background

Regulatory Review

Clean Water Act (CWA)

- The Clean Water Act (CWA) (1972) was amended to prohibit the discharge of any pollutant to the waters of the United States from a point source unless authorized by a National Pollutant Discharge Elimination System (NPDES) permit.
- Stormwater runoff draining large surface areas (agriculture and urban lands) were found to be major causes of water quality impairment and non-attainment of designated beneficial uses.
- Goal of “fishable and swimmable water”.



Clean Water Act (CWA)

- Sections of the Clean Water Act which specifically are relevant to stormwater address:
  - Regulation of stormwater discharges
  - Water quality standards for water bodies receiving stormwater runoff
  - Implications of non-attainment of water quality standards

MS4 Purpose

- As a river city, and a community with approximately 760 miles of streams and 38 miles of Ohio River shoreline, the purpose of MSD's MS4 program, as outlined in SWQMP, is to **address the KPDES MS4 Phase 1 program requirements** as specified in MSD's MS4 permit.
- The KDOW regulates MSD's MS4 Program.
- The SWQMP does not establish new regulatory requirements, but is to be utilized as a guide for compliance with the permit.

MS4 Annual Report

- The objective of the MS4 Annual Report is to provide information to the KDOW on how items in the MSD MS4 permit have been addressed for compliance in the reporting year between July 1, 2019, and June 30, 2020.



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MS4 Permit (KPDES No. KYS000001)

MSD MS4 permit was issued with an effective date of February 1, 2017, for a term of five years.

SWQMP covers the following:

- Public Education and Outreach
- Illicit Discharge Detection and Elimination Program
- Industrial Stormwater Program
- Construction Site Runoff Control
- Post-construction Site Runoff Control
- Pollution Prevention/Good Housekeeping
- Reporting and Records Retention

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Stormwater Quality Management Plan (SWQMP)

KYS000001
July 2017

Why Include Stormwater in Industrial Facility Inspections?

- A required measure for MSD's stormwater permit
- Confirm industrial facilities have regular activities to reduce pollution in stormwater and streams
- Educate facility about stormwater pollution prevention
- Potential pollutant discharge reduction
  - Avoid discharge of materials/clean-up costs

Industrial Program Requirements (IP)

- The objective of this portion of the SWQMP is to **develop**, **implement** and **enforce** programs to minimize pollutants and stormwater pollution in runoff from developed and re-developed areas.
- The program is designed to **provide long-term stormwater best management practices** to efficiently and effectively **treat stormwater runoff from** areas of new development and significant redevelopment.
- MSD's Industrial Waste Department (IWD) inspects and monitors commercial / industrial dischargers.

Industrial Program Requirements (IP)

TABLE 2.3 INDUSTRIAL PROGRAM REQUIREMENTS (IP)	
SWQMP ID #	IP 1 Legal Prohibition/Control Authority
1.	Industrial IDDE Program Enforcement (KDOW Referrals)
2.	Industrial IDDE Program Enforcement (Legal Authority)
3.	Industrial Facility Inventory
4.	"High Risk" Facility Definition
5.	HRIF Inventory Update
6.	HRIF and High-Risk HMPC Inspection
7.	Industrial Facility Control Measures
8.	Enforcement / Inspections
9.	MSD Plan Review
10.	Industrial & Commercial Community Outreach
11.	Third Party Oversight Inspection
Cooperative Efforts (MSD provides supportive or other non-lead role)	
12.	KDOW Support

Table 2.3, Industrial Program Requirements, has **12 element tasks**.

2.3.1 Industrial IDDE Program Enforcement (Implementation)

Frequency

- Permittee shall summarize in the **annual report** the **industrial enforcement actions and referrals** to Kentucky Division of Water

Activity Required

- For industrial properties, the permittee shall continue **to utilize the Wastewater/Stormwater Discharge Regulations**, **Hazardous Materials Ordinance** and **related checklists and procedures** for identification of potential illicit discharges and elimination of illicit discharges/ unauthorized stormwater discharges.
- The permittee shall perform analysis of industry property data layer in LOJIC cross linking with properties holding a Hazardous Materials (spill) Prevention Control (HMPC) Plan to identify potential sites that should be added to the program with consideration for High Risk Industrial Facilities designation (determined in other activities).

Reporting

- MSD's IWD, a part of the Operations Support Services Division, **inspects** and **monitors** commercial/industrial dischargers and is also responsible for **administering** and **enforcing the Hazardous Materials Ordinance**.
- IWD also manages MSD's wastewater **Pretreatment Program** to ensure compliance with **pretreatment standards**.
- The IWD maintains the data using **Hansen**, **LOJIC** and other **datasets** to keep the data updated and accurate.

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2.3.1 Industrial IDDE Program Enforcement (Implementation)

Frequency or Measure of Success	Activity Required
Permittee shall update as needed and maintain adequate legal authority to require compliance with this measure.	The permittee shall maintain adequate legal authority, per 401 KAR 5:060, Section 12(9)(b)3 and 40 CFR 122.26(b)(2), to require compliance and inspection of sites, inspection of priority industrial and commercial facilities, including establishing control measure requirements such as HMPC, Spill Prevention, Control and Countermeasure (SPCC) Plan and/or the Groundwater Protection Plan (GPP) for facilities that have a potential to discharge to the MS4 and enforce stormwater requirements.

- In 1985, the governments of both the City of Louisville and Jefferson County adopted an ordinance requiring the submittal of a HMPC Plan by any business that manufactures, uses, or stores hazardous materials in excess of designated quantities. This plan must state how a business will respond to spills or discharges of these materials. The Ordinance also directs MSD to administer and enforce the program. MSD also has legal authority through the Wastewater / Stormwater Discharge Regulation (WDRs). The WDRs define the terms of compliance and resulting enforcement for industries discharging to the collection system and for industrial/commercial facilities which discharge stormwater to the MS4.

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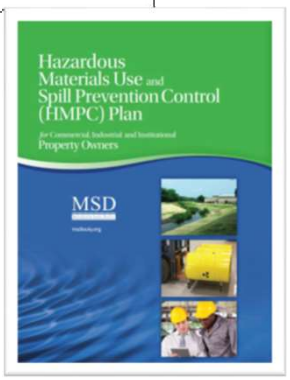
2.3.3 Industrial Facility Inventory

Frequency or Measure of Success	Activity Required
Permittee shall update annually and made available to the KDOW upon request	The permittee shall maintain an inventory of all potential industrial and commercial sites/sources that could contribute pollutant loads to the MS4.

- MSD has developed an inventory of potential industrial / commercial sites / sources that could contribute pollutants to the MS4. The HMPC Program requires industrial and commercial facilities which maintain a reportable quantity of hazardous materials to submit a HMPC Plan. This list of entities along with those identified as potential industrial users through the pretreatment program is utilized in the threat matrix.



2.3.4 "High Risk" Facility Definition

Frequency or Measure of Success	Activity Required
Review "High Risk" facility definition each permit cycle	The permittee shall identify Risk Factors to define facilities as "High Risk", "Moderate Risk" and "Low Risk".

- MSD has established risk factors within a threat matrix which is used to define "high risk" facilities in the community. This process is complex and incorporates defined attributes which indicate risk of illicit discharges and/or substantial pollutant loading to the MS4. MSD uses the definition to sort and distinguish Significant Industrial Users (SIUs) and qualifying facilities already included in HMO requirements. The threat matrix develops a numerical value which allows "moderate" and "low" risk facilities to be defined. Updates to the definition will be provided in the annual report.

2.3.5 High Risk Industrial Facility (HRIF) Inventory Update

Frequency or Measure of Success	Activity Required
Permittee shall summarize and report annually, the assessment and updates of any industrial facilities identified as "High", "Moderate", and "Low" risk	The permittee shall compare the datasets for local Approved HMPC Plan Facilities to the publicly available Facility data from local and state environmental and emergency response agencies to address the completeness and accuracy of High Risk Industrial Facilities identification. The permittee shall update the list of HRIFs at least once over the permit term, to account for the most recently available North American Industry Classification System (NAICS), Standard Industrial Classification (SIC) codes, Toxic Release Inventory (TRI) data, MSD's HMPC data and MSD's pretreatment program data with the goal of establishing a tiered list of industries to support priorities in MSD's industrial facility inspection program.

- MSD began performing a baseline analysis to list potential high and moderate risk industrial facilities several years ago. Based on this analysis, a threat matrix was developed to identify “High”, “Moderate” and “Low” risk facilities. MSD has reported updates as required per the MS4 permit. The last complete update of high risk facilities was completed in 2016. MSD will report the assessment results and updates.

2.3.5 High Risk Industrial Facility (HRIF) Inventory Update

- In addition to identifying HRIFs, "Moderate" and "Low" risk industrial facilities are identified to prioritize inspections. The prioritization results will be reported and updates summarized.
- When the threat matrix was developed, MSD began performing a baseline comparison of the datasets for local approved HMPC Plan Facilities to the publicly available facility data from local and state environmental and emergency response agencies to address the completeness and accuracy of HRIFs identification. KDOW was notified of the potentially qualifying facilities that do not have state issued KDPES permits.

2.3.6 High-Risk and Medium Risk Facilities

Frequency or Measure of Success	Activity Required
Permittee shall report the summary of prioritized inspections completed, and any enforcement resulting from the inspections.	Based on the results of the updated HRIF assessment, the permittee shall inspect high-risk facilities at least once every three (3) years and moderate risk facilities at least once every five (5) years.

MSD developed the framework for assessing risk from industrial facilities in 2010. Historically MSD has performed inspections based on filtering facilities through this threat matrix. Based on the results of the updated HRIF inventory performed in task 2.3.5, MSD will continue to inspect high priority facilities at least once every three (3) years and moderate risk facilities at least once every five (5) years. Prioritized inspections will be completed and documented. Results of the inspections will be summarized and included in annual compliance demonstration reports.

2.3.7 Industrial Facility Control Measures

Frequency or Measure of Success	Activity Required
Permittee shall report annually on control measures required of the high-risk industrial and commercial facilities to ensure compliance with this measure	The permittee shall require the High Risk industrial and commercial facilities to select, install, implement, and maintain control measures that promote prevention and source control for discharge of applicable pollutants of concern. This requirement may be addressed through Hazardous Materials (spill) Prevention Control (HMPC) Plan and/or federal programs such as SPCC Plan and/or the GPP that are already implemented at the industrial and commercial facilities. The permittee shall require the applicable facilities to identify the specific control measures, good housekeeping and maintenance procedures, and employee training necessary.

- In past years, hazardous material spills have caused or threatened to cause serious problems to the environment of Louisville and Jefferson County. In response to this, Louisville and Jefferson County adopted a Hazardous Materials Ordinance to prevent serious harm to the environment and reduce the likelihood of a problem from a hazardous material spill. The ordinance has been in place since 1985.

2.3.7 Industrial Facility Control Measures

- The ordinance requires that businesses which have hazardous materials on site must submit a plan for each business site as to how they will respond in the event of a hazardous material spill. An HMPC Plan must be submitted by any business which manufactures, uses, or stores hazardous materials meeting or exceeding minimum reportable quantities at their business location. Businesses that must submit plans are generally defined by an SIC code in the ordinance. Reportable quantities of hazardous materials shall include those contained in the most recent version of 40 CFR 302.4. Hazardous materials shall not include household wastes and other materials excluded by 40 CFR 261.4. Businesses which must submit plans are generally defined by an SIC code in the ordinance.
- A comprehensive list of industrial, commercial, and government facilities are required to submit HMPC Plans or apply for an exemption from HMO requirements.

2.3.8 Enforcement / Inspections

Frequency or Measure of Success	Activity Required
Within six months of the permit issuance, the Permittee shall develop the required criteria or procedures to comply with this measure	The permittee shall develop criteria or procedures for site inspections and enforcement including criteria to address how the MS4 will use enforcement authorities to ensure compliance with the industrial program requirements. The permittee shall enforce the procedures outlined in Section 95.11 of the Louisville Metro Code of Ordinances relating to hazardous materials.

- MSD has developed and implemented inspection procedures for site inspections. Authority to ensure compliance with the industrial program requirements is provided in the Hazardous Materials Ordinance and Wastewater/Stormwater Discharge Regulations. The procedures related to the MS4 program and hazardous materials ordinance are reviewed to determine if modifications are required. Training is provided to new IWD staff or as procedures and documentation are revised.

2.3.9 MSD Plan Review

Frequency or Measure of Success	Activity Required
Permittee shall assess at least every three (3) years and report changes to process in the annual report	The permittee shall determine if existing triggers in the new development and redevelopment plan and plumbing systems review process are sufficient to include appropriate industrial stormwater quality specialists/inspectors in the plan approval process.

- As a matter of routine business, the MSD Development Review Department refers potential projects to the IWD for additional review. Periodically, MSD assesses if triggers in the new development and redevelopment plan and plumbing systems review process are sufficient to include appropriate industrial stormwater program personnel in the plan approval process. The existing plan review triggers provide a means to involve the IWD. This task is intended to refresh associated staff with the indicators and/or checklists used to trigger their involvement and provide a basis for an expanded plan review process.
- Furthermore, the HMPC Plan is to be submitted on forms which are provided by MSD. A joint review is conducted by MSD and the Fire Department that has jurisdiction in the area of the business. Plans that are considered to be deficient will be returned to the business for correction and resubmission. Once approved, businesses will be responsible for implementing their plan including initiation of a training program for employees within their business.

2.3.10 Industrial & Commercial Community Outreach

Frequency or Measure of Success	Activity Required
The Permittee shall continue to identify materials developed and distribution estimates and summarize in the annual report	The permittee shall update as necessary and distribute outreach materials (brochure, fact sheets, etc.) to HMPC Facilities and other commercial operations of concern to promote illicit discharge elimination awareness.

- MSD sends letters to businesses that MSD believes are required to submit an HMPC Plan, concerning the schedule for submission. Businesses which believe they should be exempt from a submission are required to submit an exemption request form as described in the letter. The HMPC Plan must be submitted on an application form provided by MSD. MSD IWD personnel review and approve plans and inspect the facility to verify the plan accurately identifies control measures. Plans that are considered to be deficient are returned to the facility for correction and resubmission. Once approved, businesses are responsible for implementing their plan including initiation of a training program for employees.

2.3.10 Industrial & Commercial Community Outreach

- Historically, MSD has been very proactive in developing communication materials and coordinating with industrial and commercial customers. This communication includes dissemination of outreach materials on risk mitigation, and advisories of best practices. MSD will update, as necessary, outreach materials focused toward industrial/commercial sectors in order to promote IDDE awareness and related stormwater quality issues. MSD will continue to integrate these topics into existing outreach efforts. MSD anticipates that additional efforts, including development of new materials, will be necessary as the program continues to evolve. Based on the HRIF definition, prioritization, and inspection activities, materials will be developed focusing on relevant issues and audiences. Example materials will be provided in the MS4 Annual Report.

2.3.11 Third Party Oversight Inspection

Frequency or Measure of Success	Activity Required
Document training materials and the number of third party inspections conducted to be reported in the annual report	The permittee shall utilize third party inspections for development of recommendations of efficacy of permittee inspections and enforcement. Updates to training materials shall be administered for permittee personnel at least once per year, if necessary.

- MSD developed Standard Operating Procedures (SOP) for third party inspections in previous permit cycles. This protocol is utilized by MSD's contractors to perform inspections and training with MSD IWD staff at least once per year. There is a detailed checklist that is utilized to perform the oversight inspection, and provides the baseline framework for the briefing with the inspector. MSD will continue to follow and modify the SOP as the Industrial Program evolves and submit documentation in the annual report.

2.3.12 KDOW Support

Frequency or Measure of Success	Activity Required
Permittee shall summarize and include in the annual report any assistance given to the KDOW by MSD	As KDOW requests, the permittee shall accompany KDOW on inspections of KPDES stormwater permitted facilities in Jefferson County.

- MSD provides KDOW with site inspection support and requested information, documentation or reports for KPDES stormwater permitted facilities. The KDOW issues KPDES permits for all point-source and stormwater discharges from industrial facilities. The KPDES permits include a program to monitor and control pollutants in storm water discharges from landfills, hazardous waste treatment, disposal and recovery facilities and industrial facilities. In the annual report, MSD will provide a report summarizing assistance provided to KDOW.

MS4 Inspection Process

Preparing for Industrial Inspections

- Notify facility of inspection
- Review facility files, HMPC plan, permits, violations and corrective actions prior to visiting the site
- Confirm Threat Matrix Level and that the site is in the MS4 and not the Combined Sewer System
- Follow normal pretreatment/HMPC preparation protocols and procedures regarding safety



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Preparing for Industrial Inspections, Cont.

Equipment should be carried on the facility inspection:

- Personal Protective Equipment (PPE) (i.e. safety goggles/glasses, steel toed boots, hard hat, safety vest, hearing protection). PPE requirements are site specific and should be clarified with the facility prior to each inspection.
- Camera with extra backup batteries for inspection documentation that will include outfalls and potential illicit discharges.
- Blank Field Correction Notice (FCN) Forms.
- Blank MS4/HMPC Inspection Forms.

Equipment should be available in the vehicle:

- Tape measure.
- Manhole cover removal equipment.
- Miscellaneous tools and sampling supplies.
- MSD phone directory and cell phone.
- Door hangers and outreach materials.

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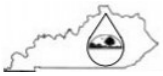
Non-KPDES vs. KPDES Permitted Sites for Inspection



Kentucky Pollutant Discharge Elimination System (KPDES)

Socioeconomic Demonstration and Alternatives Analysis

Non-KPDES sites

- Evaluate all activities, structures, storage areas, BMPs/procedures etc. that may affect stormwater discharges from a facility into the MS4 system
- Perform HMPC inspection wherever possible
- Document deficiencies and pursue corrective actions per WDR

KPDES permitted sites

- Inspection will be limited
- Perform a walk around facility property boundaries to identify locations where facility runoff enters MS4 and/or leaves the facility site
- If necessary, remove manhole covers to check for flows that may indicate an illicit discharge
- Document and refer suspected stormwater discharges to KDOW
- Perform HMPC inspection when possible

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Initial Facility Introduction and Protocol

- Introduce facility to MSD MS4 Program and Requirements
  - Facilities without KPDES permits may not have ever been inspected for stormwater discharge issues
- Present facility with Industrial and Commercial Community Outreach Materials
- Review Article 5 of the WDR with Facility, its requirements and what happens if deficiencies are encountered during inspection
- Review facility specific information and prior violations encountered with facility contact
- Whenever logistically possible conduct MS4 inspection simultaneous with HMPC inspection to avoid duplication





Plumbing Modification Program

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General Indoor Inspection Locations

- Chemical storage areas
- Floor drains
- Loading and unloading areas
- Hazardous and other material storage areas
  - Note entrances and exits for these areas
- Spill kits/spill procedure postings
- Vehicle and equipment maintenance areas
- General good housekeeping/pollution prevention

General Outdoor Inspection Locations

- Facility and parking lot drainage, grading, berming and curbing
- Storm inlets, catch basins, outfalls
- Outdoor material storage, loading areas, or maintenance/washing areas for issues
- Hazardous material storage areas
- Vehicle and equipment storage areas
- Pipes or outlet originating indoors or from processes
- Trash and recycling dumpster areas and general site cleanliness
- Construction activity and if present general condition of the areas
- Site Outfalls
- Condition of receiving waters and area downstream of outfall
- Document any BMPs in place or areas BMPs may be needed





Documenting the Inspection

- Complete inspection form developed for each facility inspection
  - Complete all fields
  - Mark answers with Yes, No or N/A
  - Add comments to the "comments and details" box
  - Fill in "Deficiencies Observed" and "Corrective Actions Required" boxes if deficiency is found at the site
    - Add details so facility can correct the identified detail
  - Complete FCN if these two boxes are completed
  - When to use Verbal Correction vs. FCN
- Send follow-up inspection documentation to facility if requested
- Enter inspection and subsequent enforcement/deficiency into the Hansen database for tracking
- Store inspection forms and photos in facility file on the "W: /" drive

	Inspection Questions	Yes	No	N/A	Comments/Details	Deficiencies Observed
9B	Have existing structural BMPs been updated or new structural BMPs been implemented since the last inspection? If YES, list in Comments field.		X			
10A	Does the facility have non-structural BMPs or SOPs to address operations that could impact stormwater? If YES, list in Comments field - outdoor storage of raw materials, products, wastes, outdoor process activities, loading/unloading operations, natural riparian areas, man-made riparian areas, dust or particulate generating processes, waste management, vehicle washing/storage, trash collection, winter de-icing, areas with leak/spill potential, record-keeping, maintenance of BMPs, material inventories, review of safety/stormwater, pollution prevention training, etc.	X	X		noted in IPPP and in-house training to control possible soils	
10B	Have existing non-structural BMPs or SOPs been updated or new non-structural BMPs or SOPs been implemented since the last inspection? If YES, list in Comments field.		X			
11	Has the facility conducted self-inspections and/or audits of BMP implementation, operations, or maintenance? If YES, list any findings in the Comment field.	✓			Done on monthly basis IPPP audits quarterly	

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Inspection Note Example

	Inspection Questions	Yes	No	N/A	Comments/Details	Deficiencies Observed	Corrective Actions Required
9B	Have existing structural BMPs been updated or new structural BMPs been implemented since the last inspection? If YES, list in Comments field.		✓		Training is provided Spill response	They will update training to include spill response	
10A	Does the facility have non-structural BMPs or SOPs to address operations that could impact stormwater? If YES, list in Comments field - outdoor storage of raw materials, products, wastes, outdoor process activities, loading/unloading operations, natural riparian areas, man-made riparian areas, dust or particulate generating processes, waste management, vehicle washing/storage, trash collection, winter de-icing, areas with leak/spill potential, record-keeping, maintenance of BMPs, material inventories, review of safety/stormwater, pollution prevention training, etc.		✓		Facility does not do fleet washing on the premises. However, they do have pressure washing available	Recommend they have established BMP to prohibit pressure washing outside the building	They recently cleaned the pit to OWS.
10B	Have existing non-structural BMPs or SOPs been updated or new non-structural BMPs or SOPs been implemented since the last inspection? If YES, list in Comments field.		✓				
11	Has the facility conducted self-inspections and/or audits of BMP implementation, operations, or maintenance? If YES, list any findings in the Comment field.	✓			1x mo they do facility audits		
12	Has the facility made any changes to building footprints, expansions, facility retrofits, or other site operations or process revisions? If YES, list in Comments field.		✓		Removal of fuel. Removed trailer (office)	Cargo boxes for ports stored (4)	
13	Was this site referred to a state agency by the inspector? If YES, list agency, individual contacted, date, and referral reason in Comments field.		✓		No record on file		
14	Did this inspection occur during dry weather (dry weather screening)?	✓			Last rain event 12/16/19		
15	Does the Threat Matrix need to be revised to reflect new/revised information collected during this inspection? If YES, explain in Comments field.		✓				
16	HMPC Inspection - LIST date of last HMPC Inspection. If no inspection within last 365 days, perform HMPC Inspection as component of this effort.	None since original inspection under Allied Systems 6/7/02					
17	Storm Drain/Storm Sewer Observations - LIST observations of non-outfall storm drains, such as trapped/untrapped condition, floatables control, evidence of dumping, blocked pipes, etc.	Storm sewers outfall at NW corner of property at (2) 24" steel pipe into ditch along north side of property. Ditch on south side does not receive direct disch.					
18	Stormwater Outfall Observations - LIST outfalls and DESCRIBE color, sheen, odor, dry weather discharge, stained or distressed vegetation, condition of energy dissipators at down stream inverts and condition of downstream receiving channel. Photo required for each KPDES-designated outfall or other outfall. For multiple outfalls COMPLETE the supplementary form. Add coordinates after the inspection is completed using the "tools" bar in HARP.	Outfall is into ditch across Grade Ln. Trash floating some sheen observed in pool below outfall. Other stormwater discharges to this point from adjacent properties. Advised they clean storm catch basins. One was holding water and could help drainage.					
19	Take photos that further support the issues or conditions, note where electronic versions are stored (i.e. W: DATA/IWD).	PowerPoint file with inspection pictures in network folder					
20	FOLLOW-UP INSPECTION NOTES (MS4):	Recommend reinspection					

Enforcement

When Issues are Encountered at a Facility

Document deficiency in a FCN Form

Explore potential control measure options and solicit solutions from the facility while on-site

Inquire as to the nature of the discharge or issue

- Is it an everyday occurrence?
- Was it a result of a failed BMP, process or operations?

If illicit discharge is noted use the field sampling kit to identify the source and support enforcement

If sewer overflow is occurring follow SORP

Field Correction Notice

- Fill in all blanks except "Date Corrections Made"
- Include general facility notes
- Check the box for the violation corresponding to the WDR violation present at the site
- Complete the explanation section with conditions at the site and correction required
- Corrections are required to be made within 10 calendar days from inspection

Enforcement and Follow-up

Facility should be re-inspected per the agreed upon follow-up date on the FCN

- If in compliance, no further action
- If not, Enforcement will be escalated according to ERP

HMPC violation discovered - pursue enforcement under HMO

Refer any sites with KPDES permits receiving FCN to KDOW for follow-up and review

Relationship with Company Contact

- MSD and company contact both want the company to be successful in achieving compliance
- Be respectful of time spent with company
- Be complimentary of things the plant does well
- Encourage housekeeping as a way to stay in compliance
- If office portion hits a slow point, get out into the plant
- Can corrections be made without enforcement?
- Follow up call

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MS4 Inspector Evaluations

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What is an Inspector Evaluation and why is it Important?

- Training for MSD Staff
- Ensure MSD MS4 permit compliance
- Identification of inspection process improvements and program needs
- Consistency in inspection process between all ECIs
- Answer questions ECIs may have regarding general stormwater issues



Selection and Scheduling of Inspections

Inspection evaluators will notify ECI of inspection and accompany them on a regularly scheduled industrial/commercial inspection

The evaluator will discuss any required PPE and facility specific safety training required

Facility inspection will be performed by MSD IP staff using existing forms and following current MSD procedures

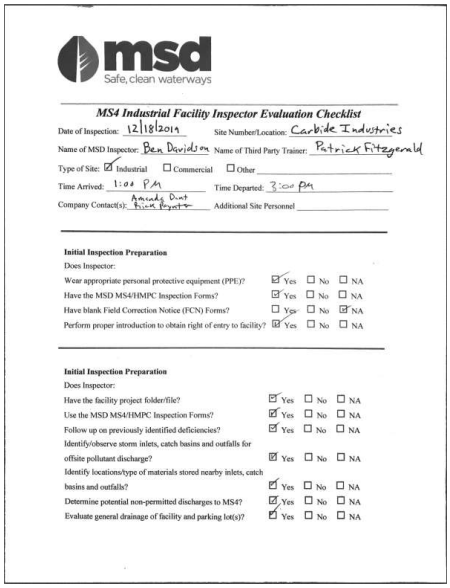
Inspector evaluators will follow ECI and facility contact throughout the inspection documenting issues and questions

Preparing for Inspection

Evaluator will :

- Assess whether inspector has appropriate PPE
- Determine if the inspector is following MS4 inspection procedures
- Observe the inspection process, documentation review process and follow-up procedures and documentation
- Evaluate if the inspector walked the entire site (internal and external) noting stormwater issues
- Note whether the ECI adequately explained the MS4 program

Inspector Evaluation Checklist



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MS4 Industrial Facility Inspector Evaluation Checklist

Date of Inspection: 12/18/2019 Site Number/Location: Carbide Industries

Name of MSD Inspector: Ben Davidson Name of Third Party Trainer: Patrick Fitzgerald

Type of Site: ☑ Industrial ☐ Commercial ☐ Other

Time Arrived: 1:00 PM Time Departed: 3:00 PM

Company Contact(s): Randy Dust, Rick Reynolds Additional Site Personnel

Initial Inspection Preparation

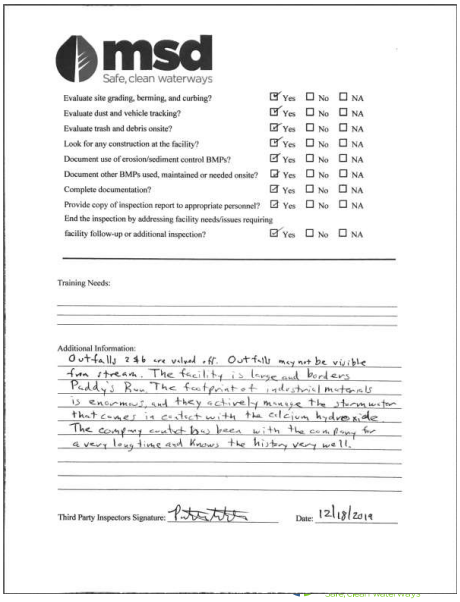
Does Inspector:

Wear appropriate personal protective equipment (PPE)?	☑ Yes	☐ No	☐ NA
Have the MSD MS4/HMPC Inspection Forms?	☑ Yes	☐ No	☐ NA
Have blank Field Correction Notice (FCN) Forms?	☐ Yes	☐ No	☑ NA
Perform proper introduction to obtain right of entry to facility?	☑ Yes	☐ No	☐ NA

Initial Inspection Preparation

Does Inspector:

Have the facility project folder/file?	☑ Yes	☐ No	☐ NA
Use the MSD MS4/HMPC Inspection Forms?	☑ Yes	☐ No	☐ NA
Follow up on previously identified deficiencies?	☑ Yes	☐ No	☐ NA
Identify/observe storm inlets, catch basins and outfalls for offsite pollutant discharge?	☑ Yes	☐ No	☐ NA
Identify locations/type of materials stored nearby inlets, catch basins and outfalls?	☑ Yes	☐ No	☐ NA
Determine potential non-permitted discharges to MS4?	☑ Yes	☐ No	☐ NA
Evaluate general drainage of facility and parking lot(s)?	☑ Yes	☐ No	☐ NA



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Evaluate site grading, berming, and curbing?	☑ Yes	☐ No	☐ NA
Evaluate dust and vehicle tracking?	☑ Yes	☐ No	☐ NA
Evaluate trash and debris onsite?	☑ Yes	☐ No	☐ NA
Look for any construction at the facility?	☑ Yes	☐ No	☐ NA
Document use of erosion/sediment control BMPs?	☑ Yes	☐ No	☐ NA
Document other BMPs used, maintained or needed onsite?	☑ Yes	☐ No	☐ NA
Complete documentation?	☑ Yes	☐ No	☐ NA
Provide copy of inspection report to appropriate personnel?	☑ Yes	☐ No	☐ NA
End the inspection by addressing facility needs/issues requiring facility follow-up or additional inspection?	☑ Yes	☐ No	☐ NA

Training Needs:

Additional Information:

Outfalls 2 & 6 are valved off. Outfall may not be visible from stream. The facility is large and borders Paddy's Run. The footprint of industrial materials is enormous, and they actively manage the stormwater that comes in contact with the calcium hydroxide. The company contact has been with the company for a very long time and knows the history very well.

Third Party Inspectors Signature: Patrick Fitzgerald Date: 12/18/2019

Inspector Evaluator Checklist

Documents whether ECI followed MSD inspection procedures and understood stormwater concerns

Verifies ECI reviewed facility documentation and issues

Documents if ECI evaluated during site walk:

- Site grading, storm drainage
- BMPs and erosion control measures
- Looked for illicit discharge and potential for pollutant release from storage and facility activities
- Good housekeeping practices at the facility
- Spill prevention procedures and clean up materials

Follow-up & Training

Evaluator will follow-up with inspector immediately following inspection

Evaluator will complete Refresher Form & MSD Training Sign-in log

Once all ECIs have been evaluated a follow-up training session will be scheduled with IWD and general observations will be discussed

Any additional training topics noted as needed by the ECI or by the evaluator will be covered as part of this session

Training

Third Party Review – Noted Items

- Level of detail during inspection has improved overall
- Clarification improved on structural vs. non-structural BMPs
- Loading/Unloading areas were observed
- Facility inspection for stormwater is more than just outfalls
  - Inspector still needs to observe chemical storage areas, etc. even on larger site inspections

Structural vs. Non-Structural BMPs

- Ideally both non-structural and structural BMPs should be employed in the landscape to treat stormwater runoff
- Non-structural BMPs are institutional, educational or pollution prevention practices designed to limit the amount of stormwater runoff or pollutants that are generated in the landscape
- Structural BMPs are engineered solutions that treat stormwater at the point of generation or at the point of discharge

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Structural vs. Non-Structural BMPs: Examples

Non-Structural

- Policies, procedures and SOPs
- Minimizing impervious area
- Stormwater disconnection

Structural

- Stormwater ponds
- Open channels (swales)
- Inlet interceptors





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Examples of Correct Practices



Examples of Correct Practices



Examples of Correct Practices

Covered outdoor storage



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Examples of Correct Practices

Pouring using a funnel

Secondary containment



Proper warning sign to show contents are hazardous material

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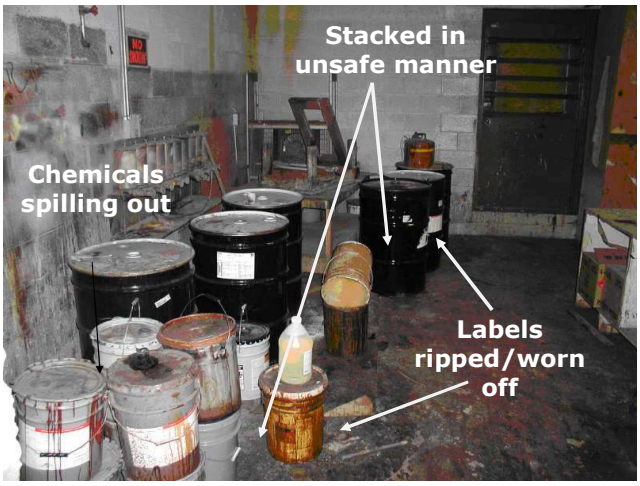
Examples of Incorrect Practices

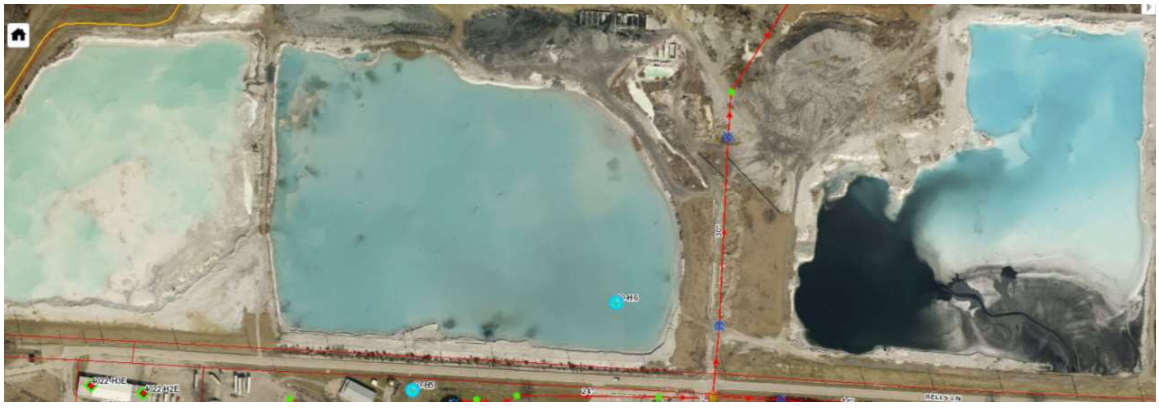


Examples of Incorrect Practices

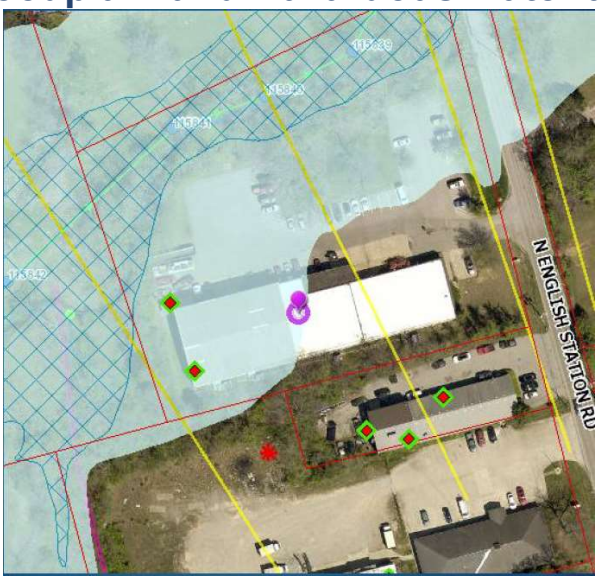


Inspection Examples

Threat Matrix as determinant



Floodplain and Hazardous Materials



Outfall Documented



Written Documentation

The majority of storm water comes from the facility as sheet flow across the impervious surface of the property. The material flows across pervious surfaces in some cases to storm water outfalls which lead to the MS4. In some areas, plastics, cardboard and paper materials are exposed to the elements. There exists a possibility that these materials can flow to the MS4 along with the storm water. Two of the outfalls were screened to prevent material from entering them. The other two outfalls did not have the screens on them.

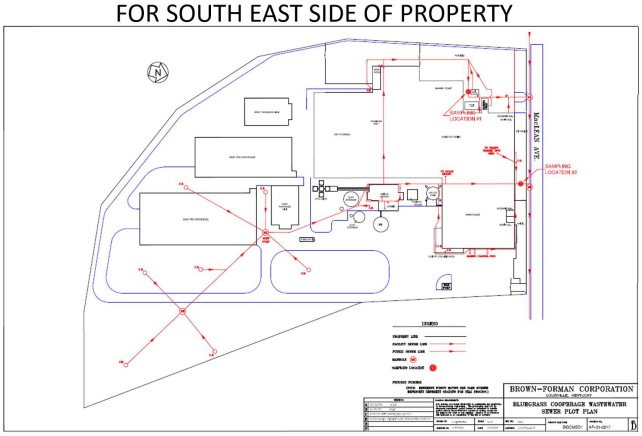
Hazardous materials are stored under a roofed structure within secondary containment. There is a sump across the entrance to this area to catch any spills that may occur during unloading of fuel and lubricants. Mitigation material is

Flow Direction Determined



Schematics Evaluated

FACILITY MAP OF DRAINAGE SOLUTION TO CENTRAL SUMP
FOR SOUTH EAST SIDE OF PROPERTY



Storage of Materials Evaluated



Outfall Pictures





Water Quality Background

10 Habitat Parameters

1. Epifaunal Subtrate/Available Cover
2. Embeddedness
3. Velocity Depth
4. Sediment Deposition
5. Channel Flow Status
6. Channel Alteration
7. Frequency of Riffles
8. Bank Stability
9. Vegetative Protection
10. Riparian Zone Width

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1. Epifaunal Substrate/Available Cover

RBP High Gradient Habitat				
Habitat Parameter	Condition Category			
	Optimal	Suboptimal	Marginal	Poor
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
1. Epifaunal Substrate/ Available Cover Score	Greater than 70% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are not new fall and not transient).	40-70% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of new fall, but not yet prepared for colonization (may rate at high end of scale).	20-40% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.	Less than 20% stable habitat; lack of habitat is obvious; substrate unstable or lacking.





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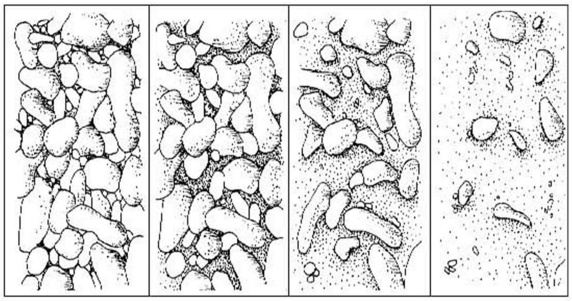
2. Embeddedness

RBP High Gradient Habitat				
Habitat Parameter	Condition Category			
	Optimal	Suboptimal	Marginal	Poor
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
2. Embeddedness Score	Gravel, cobble, and boulder particles are 0-25% surrounded by fine sediment. Layering of cobble provides diversity of niche space.	Gravel, cobble, and boulder particles are 25-50% surrounded by fine sediment.	Gravel, cobble, and boulder particles are 50-75% surrounded by fine sediment.	Gravel, cobble, and boulder particles are more than 75% surrounded by fine sediment.



3. Velocity Depth Regime

RBP High Gradient Habitat				
Habitat Parameter	Condition Category			
	Optimal	Suboptimal	Marginal	Poor
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
3. Velocity/Depth Regime Score	All four velocity/depth regimes present (slow-deep, slow-shallow, fast-deep, fast-shallow). (Sow is < 0.3 m/s, deep is > 0.5 m.)	Only 3 of the 4 regimes present (if fast-shallow is missing, score lower than if missing other regimes).	Only 2 of the 4 habitat regimes present (if fast-shallow or slow-shallow are missing, score low).	Dominated by 1 velocity/ depth regime (usually slow-deep).





4. Sediment Deposition

RBP High Gradient Habitat				
Habitat Parameter	Condition Category			
	Optimal	Suboptimal	Marginal	Poor
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
4. Sediment Deposition Score	Little or no enlargement of islands or point bars and less than 5% (<20% for low-gradient streams) of the bottom affected by sediment deposition.	Some new increase in bar formation, mostly from gravel, sand or fine sediment; 5-30% (20-50% for low-gradient) of the bottom affected; slight deposition in pools.	Moderate deposition of new gravel, sand or fine sediment on old and new bars; 30-50% (50-80% for low-gradient) of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition of pools prevalent.	Heavy deposits of fine material, increased bar development; more than 50% (80% for low-gradient) of the bottom changing frequently; pools almost absent due to substantial sediment deposition.





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5. Channel Flow Status

RBP High Gradient Habitat				
Habitat Parameter	Condition Category			
	Optimal	Suboptimal	Marginal	Poor
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
5. Channel Flow Status Score	Water reaches base of both lower banks, and minimal amount of channel substrate is exposed.	Water fills >75% of the available channel; or <25% of channel substrate is exposed.	Water fills 25-75% of the available channel, and/or riffle substrates are mostly exposed.	Very little water in channel and mostly present as standing pools.





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6. Channel Alteration

RBP High Gradient Habitat				
Habitat Parameter	Condition Category			
	Optimal	Suboptimal	Marginal	Poor
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
6. Channel Alteration Score	Channelization or dredging absent or minimal; stream with normal pattern.	Some channelization present, usually in areas of bridge abutments; evidence of past channelization, i.e., dredging, (greater than past 20 yr.) may be present, but recent channelization is not present.	Channelization may be extensive; embankments or shoring structures present on both banks; and 40 to 80% of stream reach channelized and disrupted.	Banks shored with gabion or cement; over 80% of the stream reach channelized and disrupted. Instream habitat greatly altered or removed entirely.





7. Frequency of Riffles

RBP High Gradient Habitat				
Habitat Parameter	Condition Category			
	Optimal	Suboptimal	Marginal	Poor
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
7. Frequency of Riffles (or bends) Score	Occurrence of riffles relatively frequent; ratio of distance between riffles divided by width of the stream <7:1 (generally 5 to 7); variety of habitat is key. In streams where riffles are continuous, placement of boulders or other large, natural obstruction is important.	Occurrence of riffles infrequent; distance between riffles divided by the width of the stream is between 7 to 15.	Occasional riffle or bend; bottom contours provide some habitat; distance between riffles divided by the width of the stream is between 15 to 25.	Generally all flat water or shallow riffles; poor habitat; distance between riffles divided by the width of the stream is a ratio of >25.





8. Bank Stability

RBP High Gradient Habitat				
Habitat Parameter	Condition Category			
	Optimal	Suboptimal	Marginal	Poor
Left/Right Bank	10 9	8 7 6	5 4 3	2 1
8. Bank Stability LB RB	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.	Moderately stable; infrequent, small areas of erosion mostly healed over. 5-30% of bank in reach has areas of erosion.	Moderately unstable; 30-6 bank in reach has areas o erosion; high erosion pote during floods.	





9. Vegetative Protection

RBP High Gradient Habitat				
Habitat Parameter	Condition Category			
	Optimal	Suboptimal	Marginal	Poor
Left/Right Bank	10 9	8 7 6	5 4 3	2 1
9. Vegetative Protection LB RB	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.	70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.	50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.	Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.





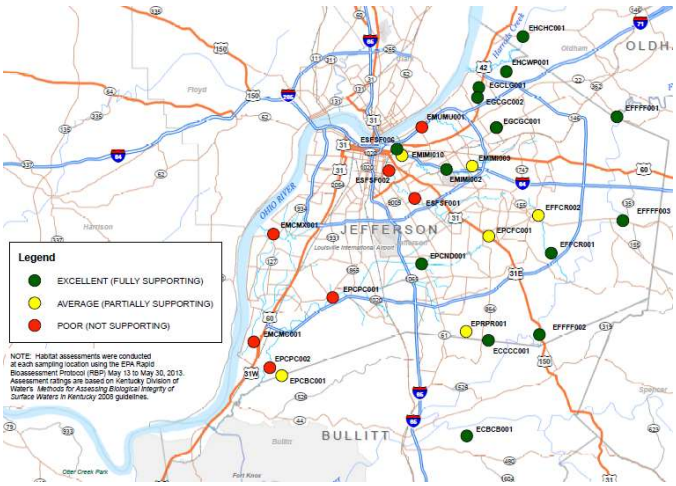
10. Riparian Zone Width

RBP High Gradient Habitat				
Habitat Parameter	Condition Category			
	Optimal	Suboptimal	Marginal	Poor
Left/Right Bank	10 9	8 7 6	5 4 3	2 1
10. Riparian Vegetative Zone Width LB RB	Width of riparian zone >18 meters; human activities (i.e., parking lots, roadbeds, clear cuts, lawns, or crops) have not impacted zone.	Width of riparian zone 12-18 meters; human activities have impacted zone only minimally.	Width of riparian zone 6-12 meters; human activities have impacted zone a great deal.	Width of riparian zone <6 meters: little or no riparian vegetation due to human activities.

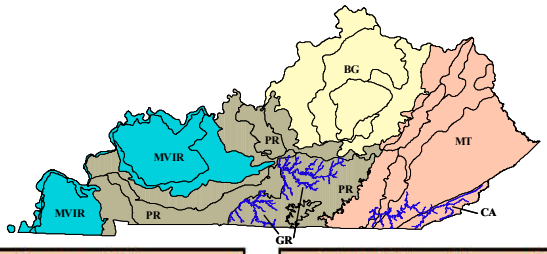




2013 Habitat Results



Kentucky Index of Biotic Integrity (KIBI)



Interior Plateau, Pennyroyal (PR)	
CLASSIFICATION	SCORE
EXCELLENT	≥ 67
GOOD	53-66
FAIR	35-52
POOR	17-34
VERY POOR	0-16

Interior Plateau, Bluegrass (BG)	
CLASSIFICATION	SCORE
EXCELLENT	≥ 52
GOOD	47-51
FAIR	31-46
POOR	16-30
VERY POOR	0-15

Index scores are based on reference reaches across the state

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Designated Use vs. Existing Use

Designated Use may be different from Existing Use!!

Designated Use

- Water quality goals from the Clean Water Act

Existing Use

- Actually attained on or after 11/28/1975
- Baseline water quality

Existing uses cannot be removed

Rope swing after rain event into Beargrass Creek



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Warm Water Aquatic Habitat (WAH) Designated Use (Goal)

- Surface water and substrate that can support naturally occurring aquatic organisms
- Most KY streams, lakes, including Jefferson County


Little Goose Creek at US 42






Muddy Fork Beargrass Creek at Mellwood Avenue

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Cold Water Aquatic Habitat (CAH) Designated Use (Goal)

Surface water and substrate that can support naturally occurring aquatic organisms *or*

Self-sustaining or reproducing trout populations on a year-round basis

Few KY streams

None in Jefferson County





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Cold Water Aquatic Habitat (CAH) Designated Use (Goal)

Waters suitable for ***full body contact*** recreation

May 1 to October 31 recreation season

Most KY streams, lakes, including Jefferson County



Louisville Ironman Competition



msd Safe, clean waterways

Secondary Contact Recreation (SCR) Designated Use (Goal)

Suitable for ***partial body contact*** recreation

All year

Most KY streams, lakes, including Jefferson County



Cedar Creek at Thixton Road



Floyds Fork at Ash Avenue

msd Safe, clean waterways

Domestic Water Supply (DWS) Designated Use (Goal)

Suitable for human consumption after conventional treatment

Near existing intakes

Ohio River at 2 Jefferson County locations



Major Provisions of WQS: Designated Uses

- Outstanding State Resource Water
  - KY Wild Rivers Act
  - Federal Wild and Scenic Rivers Act
  - Federally endangered or threatened species
  - May Include:
    - Surface waters in state or federal forest land, parks
    - Undisturbed watershed
- None in Jefferson County



Cedar Creek in Bullitt County is an OSRW

Major Provisions of WQS: Designated Uses

Outstanding State Resource Water

- KY Wild Rivers Act
- Federal Wild and Scenic Rivers Act
- Federally endangered or threatened species

May Include:

- Surface waters in state or federal forest land, parks
- Undisturbed watershed

None in Jefferson County



Cedar Creek in Bullitt County is an OSRW

msd Safe, clean waterways

End of Presentation

Questions?

Patrick Fitzgerald

- Patrick.Fitzgerald@aecom.com
- (502) 217-1526

Bethany Shain

- Bethany.Shain@aecom.com
- (502) 217-1529

msd Safe, clean waterways

APPENDIX 2.4.2 CONSTRUCTION INSPECTION SUMMARY

APPENDIX 2.4.2 CONSTRUCTION INSPECTION SUMMARY

July 1, 2020 – June 30, 2021 Data from EPSC Enforcement Application	Approximate Number of Inspections
Residential Inspection	37,295
Demolition	109
Capital	1,096
Lateral Extension	2,462
Floodplain	196
Emergency	127
Enforcement Request	28
Subdivision Inspection	2,959
WM EPSC Inspection	8,521
Total	52,793

APPENDIX 2.4.3 REVIEWED CONSTRUCTION PLANS

APPENDIX 2.4.3 REVIEWED CONSTRUCTION PLANS

Permit Number	Type	Project Name	Reviewer	Issued Date	Address
1104863	SUBDIV	MEREMONT AT LONG RUN SEC 1 PIPE EXTENSION	FUST	7/1/2020 10:17	MEREMONT HEIGHTS
1104875	SITE	Wright Elevator Solutions	MULLOY	7/6/2020 14:23	BLANKENBAKER
1104876	SITE	Cobblestone Estates Detention Basin Improvement	MULLOY	7/6/2020 15:18	GLASGOW
1104879	SITE	Broadfern Pump Station Elimination	MULLOY	7/6/2020 16:28	BROADFERN
1104884	SITE	LG&E PRESTON HWY GAS MAIN REINFORCEMENT	FUST	7/7/2020 9:26	ANTLE
1104885	SITE	Louisville City FC & NWSL Fields	HARDLEY	7/7/2020 11:12	RIVER
1104894	SITE	Hidden Forest Sec. 3	MULLOY	7/8/2020 14:54	MOUNT WASHINGTON
1104896	SITE	Beecher Terrace Phase 3 (Site)	MULLOY	7/8/2020 17:11	JEFFERSON
1104910	SITE	Breckenridge Center	MULLOY	7/15/2020 13:46	BRECKENRIDGE
1104913	SITE	Beacon Community Credit Union	MULLOY	7/15/2020 17:04	DIXIE
1104914	SITE	KEN TOWERY WESTPORT RD	FUST	7/16/2020 7:38	WESTPORT
1104920	SITE	B & G MORTUARY SERVICE	FUST	7/17/2020 8:39	PRESTON
1104926	SITE	Koppel-Dixie Hwy	MULLOY	7/17/2020 13:39	DIXIE
1104927	SITE	346 S S Peterson Ave Stream Restoration	MULLOY	7/17/2020 15:25	PETERSON
1104930	SITE	UAW	FUST	7/20/2020 11:18	COLLINS
1104932	SITE	Ballard High School Stadium Entry	HARDLEY	7/21/2020 9:49	BROWNSBORO
1104933	SITE	Preserve at Cedar Creek Sec. 2	MULLOY	7/21/2020 14:39	CEDAR CREEK
1104934	SITE	DaVita Dialysis	MULLOY	7/21/2020 15:25	PRESTON
1104935	SITE	1722 Gagel Ave Parking	MULLOY	7/21/2020 16:10	GAGEL
1104946	SITE	LOGISTICS AIRPARK NORTH CLEARING AND GRADING	FUST	7/22/2020 11:45	MINOR
1104947	SITE	Desales High School Practice Field	MULLOY	7/23/2020 14:17	KENWOOD
1104949	SITE	O'Reilly Auto Parts 5911 Bardstown Rd	MULLOY	7/23/2020 18:05	BARDSTOWN
1104957	SUBDIV	The Breakers at Prospect - Phase 2	HARDLEY	7/24/2020 11:45	SUTHERLAND FARM
1104962	SITE	Long Run Driving Range	HARDLEY	7/27/2020 11:06	FLAT ROCK
1104965	SUBDIV	Catalpa Farms Section 9	BRADLEYB	7/28/2020 14:32	OLD CLARK STATION
1104970	SITE	604 WEYMUTH PL	FUST	7/29/2020 7:34	WEYMUTH
1104971	SITE	602 WEYMUTH PLACE	FUST	7/29/2020 7:46	WEYMUTH
1104980	SITE	Highland Preserve	MULLOY	7/31/2020 15:11	NEWBURG
1104982	SITE	Jewish Community Center	MULLOY	7/31/2020 16:38	DUTCHMANS
1105014	SITE	Homewood Suites by Hilton	MULLOY	8/10/2020 13:08	CENTRAL
1105016	SITE	Autotruck FCU	MULLOY	8/10/2020 15:17	OBANNON STATION
1105024	SITE	Parking Expansion Visually Impaired Preschool	BRADLEYB	8/12/2020 14:44	NEWBURG
1105031	SITE	SOUTH PARK COUNTRY CLUB	FUST	8/13/2020 11:37	SOUTH PARK
1105033	SITE	Kingdom Center Church	HARDLEY	8/14/2020 11:07	POPLAR
1105035	SITE	Bloch Broadway Drainage	BRADLEYB	8/14/2020 16:06	BROADWAY
1105044	SITE	Beulah Creek Apartments	HARDLEY	8/18/2020 10:32	BEULAH CHURCH
1105050	SITE	STATION AT MIDDLETOWN	FUST	8/19/2020 11:08	
1105052	SITE	4141 BARDSTOWN RD PARKING	FUST	8/21/2020 13:25	BARDSTOWN
1105053	SITE	St. Luke's Episcopal Church Expansion	MULLOY	8/21/2020 16:57	MAPLE
1105056	SITE	CIVIC WAY PARKING 9530	FUST	8/24/2020 11:31	CIVIC
1105057	SITE	Sanctuary Falls Sec. 1	MULLOY	8/24/2020 15:57	
1105079	SITE	Baptist Health Observation/Surgery Addition	HARDLEY	8/27/2020 9:56	KRESGE
1105086	SITE	LOUISVILLE INDUSTRIAL CENTER BUILDINGS B AND G	FUST	9/1/2020 12:04	NATIONAL
1105096	SITE	Stony Brook Drive Stockpile	HARDLEY	9/2/2020 10:27	STONY BROOK
1105109	SITE	Goodwill Building Expansion / 4950 US 42	BRADLEYB	9/4/2020 18:42	U S HIGHWAY 42
1105110	SITE	LG&E ST HELENS REGULATOR STATION	FUST	9/8/2020 9:35	MANSLICK
1105115	SITE	Eye Care Clinical Trials Building	HARDLEY	9/9/2020 10:04	SPRING
1105118	SITE	Woodridge Estates	MULLOY	9/9/2020 16:17	MAYROW
1105119	SITE	Woodridge Estates	MULLOY	9/9/2020 16:59	MAYROW
1105120	SITE	Woodridge Estates	MULLOY	9/9/2020 17:03	MAYROW
1105123	SITE	Preferred Plastics	HARDLEY	9/10/2020 10:17	CANE RUN
1105124	SITE	Golden Retriever Rescue & Adoption	HARDLEY	9/10/2020 11:11	VINE CREST
1105126	SITE	265 Logistics Park	MULLOY	9/10/2020 15:52	AIKEN
1105127	SITE	Terra Crossing Blvd Ext. & Shared Detention Basin	MULLOY	9/10/2020 16:37	AIKEN
1105128	SITE	Southwest Town Center Outlot	MULLOY	9/10/2020 17:29	DIXIE
1105130	SITE	Southeast Maintenance Yard Expansion	HARDLEY	9/14/2020 9:24	OUTER
1105139	SITE	CHEMOURS LOUISVILLE WORKS	FUST	9/17/2020 8:53	CAMP GROUND
1105148	SITE	Plantside Drive Extension & Rehl Rd Widening	HARDLEY	9/21/2020 11:12	REHL
1105159	SITE	Vehicular Gate 6	HARDLEY	9/25/2020 8:00	PHILLIPS
1105160	SITE	Genentech	MULLOY	9/28/2020 10:48	RIVERPORT
1105161	SITE	Dudley Square Condos	MULLOY	9/28/2020 11:19	DUDLEY SQUARE
1105163	SITE	LVLX 171 Marathon Pipe Repair	HARDLEY	9/29/2020 9:05	HIDDEN CREEK
1105165	SITE	MG Entertainment	HARDLEY	10/7/2020 9:17	GLOBAL
1105169	SITE	Enclave At Warwick Village	BRADLEYB	9/30/2020 0:17	WASHBURN
1105184	SITE	Willow Pointe Drive Storm	MULLOY	10/1/2020 14:40	WILLOW POINTE
1105185	SITE	Cave Hill Cemetery - Etley Ave Entrance	MULLOY	10/2/2020 14:05	BAXTER
1105189	SITE	BOYD CAT	FUST	10/6/2020 9:48	ELECTRON
1105194	SITE	LG&E SOUTH ENGINEERING CENTER	FUST	10/7/2020 8:27	JENNINGS
1105195	SITE	AIRSPACE III	FUST	10/7/2020 9:26	NATIONAL
1105197	SITE	Nulu Container Park	KLOECHLE	10/7/2020 10:38	JEFFERSON
1105205	SITE	LOUISVILLE EXCHANGER AND VESSEL	FUST	10/8/2020 8:18	GILMORE INDUSTRIAL
1105210	SITE	Gray St. Parking Lot	HARDLEY	10/8/2020 10:10	GRAY
1105213	SITE	Kroger Distribution Center Parking Expansion	MULLOY	10/8/2020 11:20	NELSON MILLER

Permit Number	Type	Project Name	Reviewer	Issued Date	Address
1105216	SITE	All About Kids	BRADLEYB	10/8/2020 11:56	BLANKENBAKER
1105218	SITE	A&S Truck Road Services	MULLOY	10/8/2020 16:37	FREEPORT
1105220	SITE	SINGLE FAMILY 1719 PERSHING AVE	FUST	10/9/2020 7:27	PERSHING
1105223	SITE	BACHMAN PIERCY MILL TRACE	FUST	10/12/2020 7:27	PIERCY MILL
1105237	SITE	Creekside Crossing Apts. Ph 2	MULLOY	10/13/2020 16:57	COOPER CHURCH
1105242	SITE	Mike's Carwash - Breckenridge	MULLOY	10/13/2020 17:32	BRECKENRIDGE
1105247	SITE	Bearcamp Road Culvert Replacements	HARDLEY	10/14/2020 10:19	BEARCAMP
1105250	SITE	CARBIDE INDUSTRIES POND 2 BERM RESTORATION	FUST	10/14/2020 10:47	BELLS
1105260	SITE	SHAKES RUN SECTIONS 6	FUST	10/16/2020 8:02	WHITE OAK
1105263	SITE	Capital Properties Inc.	BRADLEYB	10/19/2020 12:30	PLANTSIDE
1105267	SITE	Swiss Village	MULLOY	10/19/2020 14:59	LYNN
1105268	SITE	Newburg Area Elementary School	MULLOY	10/19/2020 15:35	INDIAN
1105284	SITE	DOW CHEMICAL FOUNDATION ONLY	FUST	10/21/2020 8:38	CAMP GROUND
1105292	SITE	7500 JEFFERSON BLVD CLEARING AND GRADING	FUST	10/22/2020 8:09	JEFFERSON
1105297	SITE	USPS Louisville Fern Creek Carrier Annex	HARDLEY	10/23/2020 11:01	BEULAH CHURCH
1105298	SITE	Parks Herr Lane	HARDLEY	10/26/2020 8:52	HERR
1105299	SITE	Waterfront Botanical Gardens Phase 1C	HARDLEY	10/26/2020 10:24	FRANKFORT
1105305	SITE	LGE - Training Addition	MULLOY	10/26/2020 13:03	BALLARDSVILLE
1105309	SITE	ISCO WAREHOUSE EXPANSION	FUST	10/27/2020 6:39	FREEPORT
1105311	SITE	Valicor Waste Solidation	HARDLEY	10/27/2020 9:33	PORT
1105322	SITE	Kentucky / Indiana Foot & Ankle Specialists	BRADLEYB	10/28/2020 10:05	JEFFERSON
1105329	SITE	Cardinal Hill Drainage	MULLOY	10/30/2020 13:56	CARDINAL HILL
1105341	SITE	LG&E Clark Station Road Gas Main Extension	BRADLEYB	11/2/2020 11:41	CLARK STATION
1105357	SITE	PADDOCK SHOPS	FUST	11/6/2020 8:11	SUMMIT PLAZA
1105367	SITE	Brand Home 2.0 Addition	HARDLEY	11/10/2020 11:16	MAIN
1105374	SITE	4025 POPLAR LEVEL RD	FUST	11/11/2020 7:58	POPLAR LEVEL
1105377	SITE	Strawberry XK, LLC	HARDLEY	11/12/2020 11:44	STRAWBERRY
1105379	SITE	Brentlinger Townhome Apartments	MULLOY	11/12/2020 14:03	BRENTLINGER
1105381	SITE	Partridge Meadows Maintenance & Laundry Building	BRADLEYB	11/13/2020 3:19	FOUR WINDS
1105382	SITE	INTERTECH MECHANICAL SERVICES	FUST	11/13/2020 10:49	FERN VALLEY
1105384	SITE	NOBLE FUNK MICRO BREWERY	FUST	11/13/2020 11:30	2ND
1105401	SITE	Matt Ledington Bridge Replacement	HARDLEY	11/18/2020 11:06	CHENOWETH RUN
1105403	SITE	Orell Mini Warehouse	HARDLEY	11/19/2020 10:06	DIXIE
1105405	SITE	9603 Watterson Trail LE	MULLOY	11/19/2020 16:39	WATTERSON
1105413	SITE	Shawnee Park Slope Stabilization	HARDLEY	11/23/2020 9:43	NORTHWESTERN
1105432	SITE	Jefferson Green Apartments Phase II	HARDLEY	12/1/2020 10:37	MCCAWLEY
1105442	SITE	Zappos Parking Lot Expansion	HARDLEY	12/3/2020 9:32	MINOR
1105444	SITE	New Dixie Elementary School	HARDLEY	12/3/2020 10:21	JOHNSONTOWN
1105450	SITE	LG&E-KU Canal Generation Station Demo	MULLOY	12/4/2020 14:10	NORTHWESTERN
1105451	SITE	Club K-9	MULLOY	12/4/2020 14:46	TAYLORSVILLE
1105481	SITE	VA Quality Motors	BRADLEYB	12/7/2020 17:08	BEULAH CHURCH
1105482	SITE	BUILD MY PLACE RETAIL WAREHOUSE	FUST	12/8/2020 9:19	FERN VALLEY
1105496	SITE	INDIAN SPRINGS COMM ASSC DREDGE RESTORATION	FUST	12/10/2020 8:29	FAIRWAY POINTE
1105497	SITE	BE PAYNE LWC ClO2 GENERATION SYSTEM	FUST	12/10/2020 9:28	RIVER
1105506	SITE	St. Catherine Multi-Family	MULLOY	12/14/2020 15:03	ST CATHERINE
1105509	SITE	TOADVINE ENTERPRISES	FUST	12/15/2020 11:15	TAYLORSVILLE
1105518	SUBDIV	The Courtyards at Curry Farms Section 2	HARDLEY	12/16/2020 9:35	AIKEN
1105519	SUBDIV	WILKIE RIDGE SEC 5	FUST	12/17/2020 8:19	MOUNT HOLYOKE
1105530	SITE	1231 Durrett Ln	MULLOY	12/17/2020 15:11	DURRETT
1105535	SITE	The Terra Apartment Homes	HARDLEY	12/21/2020 10:38	FACTORY
1105537	SITE	NEW CUT CENTER LOT 2 PARKING REVISIONS	FUST	12/21/2020 11:21	NEW CUT
1105553	SITE	Floyd - Wolf Pen Branch Road	BRADLEYB	12/23/2020 14:45	WOLF PEN BRANCH
1105565	SITE	LG&E TEP ASHBOTTOM SOUTH POLE REPLACEMENT	FUST	12/30/2020 7:40	GRADE
1105570	SITE	Drakes Hurstbourne	MULLOY	1/4/2021 14:55	HURSTBOURNE
1105576	SITE	FKC WATTERSON DIALYSIS	FUST	1/5/2021 9:43	CHAMPIONS TRACE
1105592	SITE	Schuhmann-Blankenbaker Lane Sanitary Sewer	BRADLEYB	1/7/2021 12:03	BLANKENBAKER
1105593	SITE	St. Joseph's Children's Home Renovation	MULLOY	1/7/2021 15:37	FRANKFORT
1105595	SITE	Matly Digital Solutions	MULLOY	1/7/2021 16:17	PRESTON
1105603	SUBDIV	NORTON COMMONS NORTH VILLAGE PHASE 6B	FUST	1/11/2021 11:24	BROWNSBORO
1105624	SITE	NORTON AUDUBON MEDICAL OFFICE	FUST	1/19/2021 9:02	POPLAR LEVEL
1105626	SITE	Donerail Run Apartments Offsite LE	MULLOY	1/19/2021 9:27	TAYLORSVILLE
1105632	SITE	St. John Paul II Parish Life Center	MULLOY	1/19/2021 16:07	GOLDSMITH
1105634	SITE	VAMC Community Based Outpatient Clinic	MULLOY	1/19/2021 16:41	DIXIE
1105641	SITE	UofL New Residence Hall Ph. 2	MULLOY	1/25/2021 14:20	CENTENNIAL
1105649	SITE	Dixie Elementary Pedestrian Bridge Replacement	HARDLEY	1/26/2021 11:19	DONAU
1105656	SITE	Goodwill Industries	HARDLEY	1/27/2021 9:04	BROADWAY
1105658	SITE	Gorham Way Pump Station Elimination	MULLOY	1/28/2021 16:48	GORHAM
1105668	SITE	Locust Grove Site Improvements	HARDLEY	2/1/2021 11:17	BLANKENBAKER
1105669	SITE	N. Hurstbourne Storage	MULLOY	2/1/2021 14:32	MORAT
1105673	SITE	Willowview Lofts	BRADLEYB	2/2/2021 11:05	TAYLORSVILLE
1105682	SITE	PACCAR Inc	HARDLEY	2/4/2021 10:33	RANDY COE
1105704	SITE	Marian Ct. PS Elimination	MULLOY	2/12/2021 15:16	MARIAN
1105716	SUBDIV	Creekside Commons Section 1	HARDLEY	2/17/2021 10:58	ENGLISH STATION

Permit Number	Type	Project Name	Reviewer	Issued Date	Address
1105717	SITE	CVS Pharmacy 11089	HARDLEY	2/17/2021 11:11	BROADWAY
1105719	SITE	Newtown Woods Apartments Phase 1	MULLOY	2/17/2021 15:33	OLD NEW CUT
1105722	SUBDIV	Fordham Park Subdivision	HARDLEY	2/19/2021 9:19	FACTORY
1105723	SUBDIV	Meadows at Floyds Fork Sect 3 C & G	HARDLEY	2/19/2021 9:26	STONEHOUSE
1105724	SITE	Bluegrass Harley Davidson	HARDLEY	2/19/2021 10:30	FACTORY
1105732	SITE	Trinity HS Marshall Stadium Enhancements	HARDLEY	2/23/2021 10:49	SHELBYVILLE
1105761	SITE	GE VISITOR CENTER	FUST	3/1/2021 9:45	BUECHEL BANK
1105762	SITE	Amerisource Bergen Parking Expansion	BRADLEYB	3/1/2021 12:52	GLOBAL DISTRIBUTION
1105763	SITE	BECKLEY VILLAGE	FUST	3/2/2021 9:27	BECKLEY RIDGE
1105801	SITE	Lake Forest Lane Lot 5	BRADLEYB	3/5/2021 12:46	
1105802	SITE	Urton Lane Senior Apartments	BRADLEYB	3/5/2021 14:08	MERIDIAN HILLS
1105804	SITE	Powerscreen Crushing and Screening	MULLOY	3/8/2021 17:04	REHL
1105810	SUBDIV	SHAKES RUN SEC 14	FUST	3/10/2021 8:04	WHITE OAK
1105811	SITE	U-Haul Moving & Storage at Lynnview	HARDLEY	3/10/2021 9:29	PRESTON
1105814	SITE	Tucker Station Road Improvements	MULLOY	3/10/2021 13:28	TUCKER STATION
1105830	SITE	Car Wash USA Express	BRADLEYB	3/15/2021 12:41	MUD
1105842	SITE	1007 South English Station Road	HARDLEY	3/17/2021 9:06	ENGLISH STATION
1105845	SITE	Creekside Commons Offsite Sewer	HARDLEY	3/18/2021 7:36	ENGLISH STATION
1105851	SITE	Gardens at Glenmary Village	MULLOY	3/18/2021 15:25	CLUBVIEW
1105856	SITE	CEDAR SPRINGS RETAIL FEEDERS SUPPLY ADDDITION	FUST	3/22/2021 8:04	BARDSTOWN
1105863	SITE	Hyundai Parking and Vehicle Expansion	HARDLEY	3/23/2021 10:08	DIXIE
1105888	SITE	Louisville Regional Airport Authority	HARDLEY	3/25/2021 9:47	PARK
1105896	SITE	LOGISTIC CENTER AT LOU. AIRPORT CLEARING AND GRAD	FUST	3/26/2021 7:46	
1105900	SITE	Ballard High School Detention Basin	HARDLEY	3/26/2021 8:57	BROWNSBORO
1105912	SITE	Brown Forman Shively Wathen Ln Entrance	MULLOY	3/30/2021 15:01	DIXIE
1105913	SITE	LIA Gas Main Relocation	MULLOY	3/30/2021 15:41	ASHBOTTOM
1105931	SITE	Denny Crum Hall	MULLOY	4/2/2021 15:45	EASTERN
1105935	SITE	Manning Pool Project	BRADLEYB	4/6/2021 13:06	SASSE
1105950	SITE	Autumn Trace	HARDLEY	4/7/2021 10:28	AUTUMN TRACE
1105960	SITE	Pinehurst 4700	BRADLEYB	4/8/2021 13:35	SHEPHERDSVILLE
1105965	SUBDIV	Olmsted Place Subdivision	MULLOY	4/9/2021 14:01	MILLVALE
1105969	SUBDIV	Meadows at Floyds Fork Section 2	HARDLEY	4/12/2021 11:01	STONEHOUSE
1105975	SITE	AMIN MEDICAL PRACTICE PARKING EXPANSION	FUST	4/13/2021 11:25	SHIPP
1105980	SUBDIV	Massey Property	MULLOY	4/13/2021 15:31	THUNDER SKY
1105981	SITE	Liquor Outlet	KLOECHLE	4/14/2021 9:16	BRECKENRIDGE
1105991	SUBDIV	Bellingham Park Phase 1B	HARDLEY	4/16/2021 9:27	HALDEN RIDGE
1105992	SUBDIV	Bellingham Park Phase 2	HARDLEY	4/16/2021 9:30	HALDEN RIDGE
1106011	SITE	HIGHLANDS LATIN SCHOOL ADDITION	FUST	4/21/2021 9:10	SHELBYVILLE
1106016	SITE	LG & E Aiken Rd Distribution Pipeline-Phase II	HARDLEY	4/21/2021 10:57	AIKEN
1106024	SITE	OVEC: Dixie Highway	BRADLEYB	4/22/2021 10:57	DIXIE
1106029	SITE	SWIFT ENTRANCE IMPROVEMENTS	FUST	4/23/2021 7:56	STORY
1106033	SITE	Brown-Forman Distillery Expansion	MULLOY	4/23/2021 13:32	DIXIE
1106034	SITE	ATKORE PLASTICS WAREHOUSE EXPANSION FOUNDATION ONL	FUST	4/26/2021 10:32	ENTERPRISE
1106046	SITE	The Preserve at Cedar Creek Sec. 3	MULLOY	4/27/2021 15:58	CEDAR CREEK
1106053	SITE	KY Louisville Campground	BRADLEYB	4/28/2021 14:21	CAMP GROUND
1106054	SITE	MIB Distribution Center	MULLOY	4/28/2021 17:14	MIDDLETOWN INDUSTRIAL
1106055	SITE	M&M Interiors	MULLOY	4/28/2021 17:41	COMMONWEALTH
1106075	SITE	LG&E ST HELENS REG STATION PHASE 2	FUST	5/4/2021 8:15	MANSLICK
1106080	SITE	Louisville Dive Center	BRADLEYB	5/4/2021 12:22	ROOSEVELT
1106097	SITE	Oxmoor Cemetery Beautification	HARDLEY	5/10/2021 10:24	OXMOOR
1106099	SITE	20" Western Kentucky Standardization Project	MULLOY	5/10/2021 17:16	BLEVINS GAP
1106110	SITE	NCI - Handicap Parking Addition	HARDLEY	5/13/2021 9:59	NORTON HEALTHCARE
1106113	SITE	IAC	MULLOY	5/13/2021 16:47	BISHOP
1106114	SITE	BE Payne Filter Plant- Renovate Haul Road	HARDLEY	5/14/2021 10:17	RIVER
1106118	SUBDIV	Lakeview Villas Subdivision	HARDLEY	5/14/2021 11:30	MALLET HILL
1106122	SITE	6106 S. Watterson Trail Stockepile Plan	HARDLEY	5/17/2021 11:51	WATTERSON
1106125	SITE	Churchill Downs Turf Course Improvements	MULLOY	5/17/2021 13:43	CENTRAL
1106135	SITE	Oxmoor Center-Restaurant Outparcel #1	HARDLEY	5/18/2021 10:15	SHELBYVILLE
1106138	SITE	PARK DUVALLE	FUST	5/18/2021 11:00	BARDSTOWN
1106140	SITE	Taco Bell W. Broadway	HARDLEY	5/18/2021 11:23	BROADWAY
1106152	SUBDIV	Manslick Commons	HARDLEY	5/20/2021 11:16	MANSLICK
1106153	SITE	Tattenham Lane Sidewalk Project	HARDLEY	5/20/2021 11:29	TATTENHAM
1106156	SITE	WAREHOUSE CRUMS LN CLEARING AND GRADING ONLY	FUST	5/21/2021 7:56	CRUMS
1106158	SITE	Langdon Place Duplex	MULLOY	5/21/2021 12:30	LANGDON
1106159	SITE	Jacobi Sales	MULLOY	5/21/2021 13:28	OLD BARDSTOWN
1106161	SITE	LG&E MT WASH-FAIRMNONT POLE REPLACEMENT	FUST	5/24/2021 8:40	BARDSTOWN
1106168	SITE	Beecher Terrace Phase 3 Public Improvements	MULLOY	5/25/2021 16:58	LIBERTY
1106169	SITE	Fairmount Road PS Force Main Ext. Ph. 1	MULLOY	5/25/2021 17:19	CEDAR CREEK
1106171	SITE	Chickasaw Park Green Infrastructure Project	HARDLEY	5/26/2021 10:20	SOUTHWESTERN
1106174	SITE	Likins 6 Plex	MULLOY	5/27/2021 13:55	BLOSSOM
1106175	SITE	Zeochem Office and Laboratory Building	MULLOY	5/27/2021 15:28	12TH
1106176	SITE	Cherokee Springs	MULLOY	5/27/2021 15:59	CHEROKEE
1106184	SITE	Goodwill Preston Highway	HARDLEY	6/1/2021 10:44	PRESTON

Permit Number	Type	Project Name	Reviewer	Issued Date	Address
1106201	SITE	RIVERVIEW PARK IMPROVEMENT PHASE III	FUST	6/2/2021 10:28	GREENWOOD
1106205	SITE	Mix Ave Self Storage	MULLOY	6/2/2021 13:32	MIX
1106207	SITE	The Car Wash Company	MULLOY	6/2/2021 15:42	ALLIANT
1106209	SITE	Spalding University - Physical Therapy School	MULLOY	6/2/2021 16:19	3RD
1106228	SITE	L&N Sinkhole Repair	HARDLEY	6/9/2021 10:19	BROADWAY
1106246	SITE	Chenoweth Lane Four-Plex	BRADLEYB	6/11/2021 16:44	CHENOWETH
1106249	SITE	3824 Camp Ground Rd.	MULLOY	6/14/2021 16:28	CAMP GROUND
1106264	SITE	Jiffy Lube Multicare	BRADLEYB	6/16/2021 12:27	JEFFERSON
1106266	SITE	Midway Distribution Center	HARDLEY	6/17/2021 10:11	BLANKENBAKER
1106268	SITE	Antioch Church Soccer	BRADLEYB	6/17/2021 11:22	SOUTHSIDE
1106271	SITE	Villages at Heritage Creek Sec. 1	MULLOY	6/17/2021 16:56	CEDAR CREEK
1106273	SITE	Renaissance South Business Park Tract 1 Found only	FUST	6/21/2021 9:44	OUTER
1106311	SITE	2020 Stream Restoration Maintenance Bruce Creek	SELCHB	6/25/2021 8:38	BRUCE
1106313	SITE	8501 AIR COMMERCE DR CLEARING AND GRADING ONLY	FUST	6/25/2021 11:27	AIR COMMERCE
1106315	SITE	Comfort Court Revised Lot Grading	BRADLEYB	6/25/2021 14:35	COMFORT
1106321	SITE	BAPTIST EAST FERN VALLEY RD	FUST	6/28/2021 11:17	FERN VALLEY
1106329	SITE	Scooter's Coffee 4703 Dixie Hwy	MULLOY	6/28/2021 16:17	DIXIE
1106330	SITE	Scooter's Coffee 9070 Dixie Hwy	MULLOY	6/28/2021 16:25	DIXIE
1106349	SUBDIV	Timber Creek Section 2	HARDLEY	6/30/2021 10:23	WOODEN TRACE

APPENDIX 2.2.4 EPSC FIELD VERIFICATION TRAINING SOP

EPSC Inspector Field Verification Training (Third Party Oversight Inspection)

MS4 Program:	Erosion Prevention and Sediment Control (EPSC)
MS4 Program Task:	EPSC Inspector Field Verification Training (Third Party Oversight Inspection)
Documentation Date/Rev/Author:	April 26, 2021 Version 004

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1. Purpose

As a component of Louisville MSD's MS4 permit requirements (Section 7.1.1 *Kentucky Pollutant Discharge Elimination System (KPDES) Permit, Permit No.: KYS000001, AI No.: 8235, Effective February 1, 2017*), and in an effort to standardize EPSC inspections and follow-up procedures throughout the organization, the following SOP has been developed for third parties to perform annual training of MSD's inspectors. This third-party review process was reflected in the 2012 EPA Enforcement Audit, and further stated in Section 2.2.4. *Construction Site Stormwater Runoff Control* of the KPDES Permit KYS000001 (Section 4 Task Metrics, Table 4-1) . The oversight inspections are intended to address evaluation of inspector preparedness; knowledge of Erosion Prevention and Sediment Control (EPSC), Best Management Practices (BMPs), Stormwater Pollution Prevention Plan (SWPPP) content, and MSD procedures and ordinances; evaluation of inspector's interaction with the Contractor and ability to enforce the SWPPP; evaluation of the inspector's consistency with Good Housekeeping/Pollution Prevention (GH/P2); evaluation of inspector's follow-up procedures and data entry of their inspections. This SOP will identify how inspectors are selected and trainings scheduled, staff to be included in the training, what is included in the training; and debriefing procedures. The SOP includes the following checklist: *EPSC Inspector Annual Evaluation Checklist, Rev. Oct-2020* (7.4.1) and **Error! Reference source not found.** (**Error! Reference source not found.**). The form will be completed by the trainer for each site visit conducted with the inspector.

1.1. Purpose of Inspector Training

MSD is required under its Phase I Municipal Separate Storm Sewer System (MS4) permit (KYS00001) to perform oversight inspections of construction sites for proper management of stormwater runoff. Specifically stated in MSD's MS4 Permit for Minimum Control Measure (MCM 4), Management Activities, MSD is to "*review inspector practices with individual MSD inspectors to communicate/confirm oversight responsibilities, documentation requirements, and frequency of inspection, inspection standards and protocols. The refresher review (performed on-site) will include EPSC and non-EPSC construction stormwater control metrics, the most current KDOW General Construction Permit* [7.5.3 *Kentucky Pollutant Discharge Elimination System (KPDES) No. KYR100000 – General Permit for Stormwater Discharges Associated with Construction Activities (KYR10) 12/02/2019*] *and the current USEPA MS4 Program Evaluation Construction Site Checklist* [7.5.1 *Kentucky Erosion Prevention and Sediment Control Field Guide (2004, Revised in 2009)*, Appendix F – Erosion/Sediment Control Site Inspection Checklist]." The training discussed in this SOP is intended to satisfy this permit requirement. Inspectors currently consist of personnel from the Engineering Division, Development and Stormwater Services, Construction Inspection group (7.5.6 *Louisville MSD Organization Chart, Effective Jan-2020*).

In addition, MSD must conform to Louisville Metro's EPSC Ordinance No. 186 (7.2.1 *Louisville-Jefferson County Metro Government, Chapter 159, Erosion Prevention and Sediment Control Ordinance (Ordinance No. 186, Series 2007) Sep-2007*). This ordinance describes the training/certification that each MSD inspector must have and

how they are to implement enforcement when violations occur on the site. The inspector should understand the various enforcement options available to them, how to issue a field correction notice or notification of a violation and establish a compliance schedule, when to make a KDOW referral, the documentation required and the importance of conducting a follow-up inspection.

2. Roles

Roles and responsibilities are based on Louisville MSD Organization Chart, Effective Jan-2020 (7.5.6).

Table 2-1 – Roles

SUBJECT MATTER / ROLE	DIVISION	DEPARTMENT	CONTACT
	Engineering Division	Development and Stormwater Services	Development and Stormwater Services Director
	Engineering Division	Development and Stormwater Services	Engineering Administrative Coordinator
	Engineering Division	Development and Stormwater Services – Construction Inspection	Construction Inspection Manager
	Engineering Division	Development and Stormwater Services – Construction Inspection	Construction Inspection Supervisor
	Engineering Division	Development and Stormwater Services – Construction Inspection	Construction Inspector I, II, and III
	Engineering Division	Development and Stormwater Services – Construction Inspection	Engineering Technician I
	Engineering Division	Development and Stormwater Services	MS4/Floodplain Program Manager

SUBJECT MATTER / ROLE	DIVISION	DEPARTMENT	CONTACT
		– MS4/Floodplain Program	
	Engineering Division	Development and Stormwater Services – MS4/Floodplain Program	Engineer II
	Engineering Division	Development and Stormwater Services – MS4/Floodplain Program	Associate Engineer II
	Engineering Division	Development and Stormwater Services – MS4/Floodplain Program	Engineering Technician II

3. Procedures

3.1. Procedures for Inspector Selection and Training Scheduling

The following paragraphs provide the procedures for selecting and scheduling inspector trainings.

3.1.1. Inspector Selection

MSD Construction Inspectors are required to participate in Third Party Oversight Inspections and attend refresher training on an annual basis.

3.1.2. Scheduling Third Party Oversite Inspection

The Construction Inspection Supervisors (“Supervisor”) will provide a list of inspectors that provide EPSC inspection services, and the inspector’s contact

information, to the third party trainer ("Trainer"). The trainer will select two sites recently inspected by the MSD inspector to visit. These two sites selected must be at 30% - 80% construtions completion. Inspectors are not made aware of the coming site visit. The supervisors are not to inform the inspectors of the upcoming training.

The trainer will complete the *EPSC Inspector Annual Evaluation Checklist, Rev. Oct-2020* (7.4.1) which incorporates the inspection activities listed in the *Louisville MSD Stormwater Construction Site Inspection Report, Rev. 11/19/2009* (7.5.4).

The trainer will document any deficiencies noted during the site visits and perform a follow-up check with assigned inspectors to verify that the proper documentation method has been utilized.

3.2. People Involved in the Inspector Training Process

The following people will be involved in the inspector training process.

Construction Inspector Manager ("Manager") and Supervisors ("Supervisor") – The Manager and Supervisors will be debriefed on the entire inspector training process initially by the Trainer and will be notified each year when the process will begin. Once the Supervisors have been notified that the process is beginning for that year, they will provide a list of the inspectors and the inspector's contact information, to the third party trainer.

Third Party Trainer ("Trainer") – The Trainer will notify the Construction Inspection Manager and Supervisors once the training process is beginning for that year and request a list of inspector's and contact information for each inspector. The Trainer will conduct training with the inspectors within the allotted time and complete the necessary inspection form: *EPSC Inspector Annual Evaluation Checklist, Rev. Oct-2020* The Trainer will prepare a draft summary findings document, focused on compliance and a goal of continual improvement, that will be submitted to the MSD Construction Inspection Manager for review and comment. The Trainer will meet with the MSD Construction Inspection Manager and Supervisors to discuss the draft document.

Construction Inspectors ("Trainee") – Trainees will consist of inspectors in the Construction Inspection group. Any MSD staff or hired contractor that provides EPSC inspection services should be included in the training as well.

Roles and responsibilities are further outlined in Section 2 Roles *and* Table 2-1 – Roles.

3.3. Training Process and Component

The training will consist of the following five process elements: 3.3.1 Selecting the site, 3.3.2 Review of Inspector's Notes for Each Site, 3.3.3 Site Inspection, 3.3.4 Follow-up Check, and 3.3.5 Documentation Review by Construction Inspection Staff

3.3.1. Selecting the Site

3.3.2. The trainer shall visit the sites recently inspected by the MSD inspector (preferably the following day). Inspectors will not be made aware of the upcoming site Review *of Inspector's Notes*

Prior to each site visit, the trainer will access MSD's Capital Project File and Enforcement Log Database to review the information that the inspector entered into the system.

3.3.3. Site Inspection

The trainer shall inspect the site noting any deficiencies in the BMPs, as well as paperwork (absence of SDP, NOI, SWPPP, etc.) and fill out the inspection form. After the inspection, the trainer shall verify that the information entered in the database by MSD inspector correctly reflects the current situation.

3.3.4. Follow-up Check

If during inspection the trainer encounters any deficiencies requiring immediate attention, the trainer shall notify MSD inspector. Within three days, the trainer will confirm that the inspector has accurately addressed and followed-up on any identified deficiencies, enforcement actions, or KDOW referrals as necessary.

3.3.5. Documentation Review by Construction Inspection Staff

The trainer will evaluate the performance of all inspectors to determine what areas additional training is needed. The trainer will use the EPSC Inspector Annual Evaluation Checklist and determine what percentage of inspections were in compliance for each question on the list. The results from each question will be presented to MSD staff will include a summary of findings. This documentation will be presented to MSD during the third party de-briefing meeting.

3.4. Documentation Requirements

The following documentation requirements exist within MSD's MS4 permit and ordinance and will be reviewed with each inspector to determine if they are familiar with these requirements.

3.4.1. Process for identifying sites to inspect

The Construction Manager Supervisors maintain databases of all active construction sites based on the issuance of Site Disturbance Permits. The MS4 permit requires MSD to inspect 90% of all construction sites that have an active Site Disturbance Permit every month. The Construction Supervisors assign inspectors to sites to meet this requirement. Inspectors conduct inspections from the time that the Site

Disturbance Permit is issued until the Site Disturbance Permit Release letter has been issued by MSD.

3.4.2. Inspection frequency

Construction Inspectors inspect their MSD Capital Projects daily or as often as possible to ensure compliance with the approved EPSC plan and phasing. At a minimum, Construction Inspectors inspect their assigned private development job sites (Water Management projects, Lateral Extensions, Private Sewers, and small Capital Projects) once every two weeks and after every storm event producing 0.5" or more of precipitation.

3.4.3. Site Inspection Form and Data Entry

Though an Inspector may take notes in a journal when walking through the site conducting an inspection, they are required to complete a *Louisville MSD Stormwater Construction Site Inspection Report, Rev. 11/19/2009* (7.5.4) or enforcement log entry to the database for each site visit they complete. Inspection documentation for Enforcement Inspectors is housed in the Enforcement Log Database located on the MSD server under "My Applications". On Capital projects, inspectors incorporate their EPSC notes into their daily reports and place a hard copy in the Project File and an electronic copy in the capital project files on the MSD server at W:\data\ENG\Project Files.

3.5. Enforcement Requirements

The Inspector identifies any deficiencies on the written reports/notes and communicates these deficiencies to the person whose name and signature are on the EPSC Inspection form and makes them aware these deficiencies need to be resolved immediately.

3.5.1. MSD Capital Projects

If the Inspector finds upon a follow-up inspection, the deficiencies are not satisfactorily and promptly resolved, the inspector shall issue a FCN (**Error! Reference source not found. Error! Reference source not found.**) for the necessary repairs, maintenance, inspection or approved plan compliance. One copy of all FCN's shall be sent to the Engineering Administrative Coordinate in the Development and Stormwater Services department.

Contained in the FCN should be a description of the deficiency, corrective measures to be performed and a time period to perform the corrections (typically 48 hours or less). Following the time period allowed for the correction(s) to be performed, the Inspector shall perform a follow-up inspection to assess whether the violation has been corrected per the notice.

If, during the follow-up inspection, the violation has been corrected, the Inspector should complete an inspection report stating such. If the follow-up inspection

indicates the violation has not been corrected, then the Inspector should notify their Supervisor to have the Inspector perform an inspection immediately. If the violation can be confirmed and documentation is in order, then the Inspector should prepare an NOV (**Error! Reference source not found. Error! Reference source not found.**) and possibly a SWO (**Error! Reference source not found. Error! Reference source not found.**). The Inspector should try to deliver a copy of the NOV to an on-site contractor representative, post a copy at the site, and give documentation to their Supervisor to review and issue the violation via certified mail. The Inspector should place the site/project in their work calendar to perform an inspection each day until the violation is resolved.

If site conditions warrant (such as off-site degradation or adverse impacts), an NOV and SWO should be issued immediately.

When the on-site contractor representative has addressed the violations identified in the NOV or SWO, the on-site contractor representative should notify the MSD inspector who will verify compliance within the next business day. If the site is no longer in violation, the Inspector will notify their Supervisor, who will transmit a Notice of Compliance (NOC) letter to the on-site contractor representative and other applicable MSD personnel, lifting the SWO.

3.5.2. Homebuilding Sites

There are a few minor variations for enforcement on homebuilding sites, which are detailed in this section.

Beginning a land disturbance activity (i.e. basement dig, lot grading, etc.) without proper Best Management Practices (BMP's) (i.e. silt fence, construction entrance, or appropriate inlet controls) installed, will result in an immediate NOV/SWO with financial penalties due until BMP's are installed. Each NOV/ SWO will carry at least a one day financial penalty upon issuance.

In an effort to ensure the EPSC Certified Personnel or Homebuilder is performing their "Daily Inspection" of their site and making necessary repairs/maintenance as required by the EPSC Ordinance, MSD will do the following:

- If the same homebuilding site receives more than three (3) FCN's for the same type of documented (with pictures) violation, the Inspector will issue a NOV/ SWO with financial penalties due until corrective measures are completed. Each NOV/ SWO will carry at least a one day financial penalty upon issuance. If the issue is not resolved, then additional measures will be taken to include EPSC bonds or revoking EPSC Certification for those involved.
- In addition, once the violator receives more than three (3) FCN's, they will be required to keep record of their daily inspections and keep those records onsite for MSD inspection. Failure to perform this task will result in an additional NOV/SWO and penalties.

4. Task Metrics

Table 4-1 - KPDES Permit KYS 000001, Table 4. Construction Site Stormwater Runoff Control Requirements (CS), CS 2 – CS Management Activities

Element Task	Frequency or Measure of Success	Activity Required
Construction Site Inspection	Permittee shall continue to implement the criteria and/or procedures for site inspections	The permittee shall develop and implement criteria and/or procedures for site inspection. The procedures shall include an Enforcement Response Plan outlined in Section 159.05 of the Louisville/Jefferson County Erosion Prevention and Sediment Control Ordinance *[7.2.1]*.

Element Task	Frequency or Measure of Success	Activity Required
Construction Stormwater Runoff Control Program Inspection Refresher	Permittee shall complete refresher review with Construction inspectors annually, reporting the date and the number of attendees in the Annual Report	The permittee shall review inspector practices with individual MSD and contract inspectors to communicate/confirm oversight responsibilities, documentation requirements, frequency of inspection, inspection standards and protocols. The refresher review (performed on-site) will include EPSC and non-EPSC construction stormwater control metrics, the most current KDOW General Construction Permit *[7.5.3 Kentucky Pollutant Discharge Elimination System (KPDES) No. KYR100000 – General Permit for Stormwater Discharges Associated with Construction Activities (KYR10) 12/02/2019]* and the current USEPA MS4 Program Evaluation Construction Site Checklist *[7.5.1 Kentucky Erosion Prevention and Sediment Control Field Guide (2004, Revised in 2009), Appendix F – Erosion/Sediment Control Site Inspection Checklist]*.
Third Party Oversight Inspection	Document training materials and the number of third party inspections conducted	The permittee shall utilize third party inspections for development of recommendations of efficacy of permittee inspections and enforcement. Updates to training materials shall be administered for permittee personnel at least once per year, if necessary.

Table 4-2 - SWQMP (July-2017), 2.4.4 Construction Site Inspection

Frequency or Measure of Success	Activity Required
Permittee shall continue to implement the criteria and/or procedures for site inspections.	The permittee shall develop and implement criteria and/or procedures for site inspection. The procedures shall include an Enforcement Response Plan outlined in Section 159.05 of the Louisville/Jefferson County Erosion Prevention and Sediment Control Ordinance *[7.2.1]*.

To ensure compliance with approved plans, MSD inspects land disturbing activities for compliance with Section 159.05 of the ordinance as a matter of daily business. The intent of the Ordinance is to pursue and secure negotiated compliance wherever practicable and effective prior to alternative enforcement measures being invoked. A Notice of Violation (NOV) [Error! Reference source not found. Error! Reference source not found.] *and Stop Work Order (SWO)* [Error! Reference source not found. Error! Reference source not found.] *is issued in accordance with Section 159.05.*

MSD has developed the following Standard Operating Procedures (SOPs) to document protocols for construction site inspections and oversight: the EPSC Construction Site Inspection (SOP CS-01) documents how inspections are conducted and documented as well as how enforcement procedures are implemented and tracked; and EPSC Inspector Field Verification Training (SOP CS-02) documents oversight inspection review responsibilities, frequency and standards.

Table 4-3 - SWQMP (July-2017), 2.4.9 Construction Stormwater Runoff Control Program Inspection Refresher

Frequency or Measure of Success	Activity Required
Permittee shall complete refresher review with Construction inspectors annually, reporting the date and the number of attendees in the Annual Report	The permittee shall review inspector practices with individual MSD and contract inspectors to communicate/confirm oversight responsibilities, documentation requirements, and frequency of inspection, inspection standards and protocols. The refresher review (performed on-site) will include EPSC and non-EPSC construction stormwater control metrics, the most current KDOW General Construction Permit *[7.5.3 Kentucky Pollutant Discharge Elimination System (KPDES) No. KYR100000 – General Permit for Stormwater Discharges Associated with Construction Activities (KYR10) 12/02/2019]* and the current USEPA MS4 Program Evaluation Construction Site Checklist *[7.5.1 Kentucky Erosion Prevention and Sediment Control Field Guide (2004, Revised in 2009), Appendix F – Erosion/Sediment Control Site Inspection Checklist]*.

MSD has a long history of providing training to individual MSD and contract inspectors to communicate/confirm oversight responsibilities, best practices, documentation requirements, inspection frequency, inspection standards, and protocols. MSD currently provides, and will continue to provide the refresher review (performed on-site) includes EPSC, and non-EPSC construction stormwater control metrics, the most current KDOW General Construction Permit [7.5.3 ***Kentucky Pollutant Discharge Elimination System (KPDES) No. KYR100000 – General Permit for Stormwater Discharges Associated with Construction Activities (KYR10) 12/02/2019***] *and the current EPA MS4 Program Evaluation Construction Site Checklist* [7.5.1 ***Kentucky Erosion Prevention and Sediment Control Field Guide (2004, Revised in 2009)***, Appendix F – Erosion/Sediment Control Site Inspection Checklist] *as outlined specifically in the permit requirement.*

In addition to this requirement, MSD performs third party on-site EPSC refresher trainings in a one-on-one audit style format. These audits are beneficial in identifying program effectiveness and areas that the inspectors needed to focus and/or improve. The results of this program have prompted more frequent interactions with the inspectors and their management counterparts.

Table 4-4 SWQMP (July-2017), 2.4.14 Third Party Oversight Inspection

Frequency or Measure of Success	Activity Required
Document training materials and the number of third party inspections conducted	The permittee shall utilize third party inspections for development of recommendations of efficacy of permittee inspections and enforcement. Updates to training materials shall be administered for permittee personnel at least once per year, if necessary.
MSD currently conducts annual oversight inspections of MSD's inspectors. The oversight inspections are intended to address evaluation of inspector preparedness; knowledge of Erosion Prevention and Sediment Control (EPSC) best management practices (BMPs), Stormwater Pollution Prevention Plan (SWPPP) content, and MSD procedures and ordinances; evaluation of inspector's interaction with the Contractor and ability to enforce the SWPPP; evaluation of the inspector's consistency with Good Housekeeping/Pollution Prevention (GH/P2); evaluation of inspector's follow-up procedures and data entry of their inspections. The findings from the annual third party oversight inspections are utilized to educate and train personnel.	

5. Regulatory Reporting

5.1. Completed inspections are reported annually in Municipal Separate Storm Sewer System (MS4) Annual Report, KPDES Permit No. KYS000001, AI No. 8325.

6. Training

6.1. Construction Inspector Training

Table 6-1 SWQMP (July-2017), 2.4.10 Construction Inspector Training

Frequency or Measure of Success	Activity Required
Permittee shall provide at least three (3) training opportunities annually reporting the date and the number of attendees in the Annual Report	The permittee shall continue construction inspector training program placing new emphasis on delivering similar messages and understanding between MSD inspectors (regular and contracted) and qualified local contractor inspectors.

MSD has partnered with JCPS for several years to facilitate this training. The training was the first program in the state focused on increasing the knowledge and accountability of contractors. While it can only be measured anecdotally, the training course has been a useful point of reference to improve the quality of inspections performed and provide creditability to the resulting BMP improvements/maintenance identification. Furthermore, it has raised the expectations and expedited the enforcement process by reducing the initial step of educating the private construction inspector on their responsibilities for evaluating the proper construction, operation and maintenance of BMPs.

Training sessions are held based on demand at least three times every year with participants ranging from Certified Plan Reviewer/Preparer, Contractors, Homebuilders and MSD personnel. In addition, personnel from other utility companies are certified. The training is currently focused on EPSC (but does include the same target audiences that are needed to train for post-construction practices. MSD will update this course as necessary for post-construction runoff control practices including green infrastructure).

In 2010 MSD instituted testing requirement(s) for construction contractor inspectors (MSD and permittee). Furthermore, MSD contract inspectors (used for staff supplementation) are required to have NICET certifications.

Information about the training program is available at:
http://www.lifelonglearning4u.com/msd/index.htm

6.1.1. Contractor EPSC Training

6.1.2. Homebuilder EPSC Training

6.1.3. Construction Field Day

6.1.4. Certified Plan Review/Preparer Training

7. Related Documents

7.1. Regulatory Permit

7.1.1. Kentucky Pollutant Discharge Elimination System (KPDES) Permit, Permit No.: KYS000001, AI No.: 8235, Effective February 1, 2017

7.2. Policy

7.2.1. Louisville-Jefferson County Metro Government, Chapter 159, Erosion Prevention and Sediment Control Ordinance (Ordinance No. 186, Series 2007) Sep-2007

7.2.2. Louisville-Jefferson County Metro Government, Chapter 157, Floodplain Management Ordinance. (Ordinance No. 125, Series 2005) Dec-2006

7.2.3. MSD Wastewater/Stormwater Discharge Regulations (WDRs), Effective 11/26/2013 (Articles 1 through 5 & Article 7) and 08/01/2013 (Article 6)

7.3. Reporting

7.3.1. Municipal Separate Storm Sewer System (MS4) Annual Report, KPDES Permit No. KYS000001, AI No. 8325

7.3.2. Municipal Separate Storm Sewer System (MS4) Stormwater Quality Management Plan (SWQMP) 2017-2022, (July 2017)

7.4. Forms

7.4.1. EPSC Inspector Annual Evaluation Checklist, Rev. Oct-2020

7.5. Reference Documents

7.5.1. Kentucky Erosion Prevention and Sediment Control Field Guide (2004, Revised in 2009)

- Appendix G – Erosion/Sediment Control Site Inspection Checklist

7.5.2. Kentucky Best Management Practices (BMPs) for Controlling Erosion, Sediment, and Pollutant Runoff from Construction Sites, Planning and Technical Specifications Manual (2004, Revised in 2009).

7.5.3. Kentucky Pollutant Discharge Elimination System (KPDES) No. KYR100000 – General Permit for Stormwater Discharges Associated with Construction Activities (KYR10) 12/02/2019

7.5.4. Louisville MSD Stormwater Construction Site Inspection Report, Rev. 11/19/2009

7.5.5. Louisville MSD Design Manual, Effective 08/01/2009:

- Chapter 10 Stormwater Facilities Design
- Chapter 11 Private Development Drainage

- Chapter 12 Erosion Prevention and Sediment Control

7.5.6. Louisville MSD Organization Chart, Effective Jan-2020

8. Location

8.1. The original file is located on the network: W:\DATA\MS4\Industrial Program\SOPs

9. Review Cycle

Annually, during the Third Party De-brief Meeting with MSD (**Error! Reference source not found.**), the trainer will assemble, review, and assess all the training forms for compliance and to identify components of the program that could be enhanced. The review and assessment efforts will be recorded in a draft summary findings document and submitted to MSD for review and comment. The trainer and MSD will meet to discuss the findings and recommended enhancements.

APPENDIX 2.4.10 EPSC TRAINING SUMMARY

APPENDIX 2.4.10 EPSC TRAINING SUMMARY

Certificates Awarded from 7/1/2020 to 6/30/2021	
Certification Title	**Certificates Awarded**
EPSC Certified Plan Reviewer/Preparer	4
EPSC Home Builder	1
EPSC Online Contractor	177
EPSC Online Home Builder	39
Total Participants that received Certifications	**221**

APPENDIX 2.4.14 THIRD-PARTY EPSC REFRESHER TRAINING

Annual EPSC Construction and Enforcement Inspector Field Verifications

May 2021

msd
Safe, clean waterways

Agenda

- Background
- Site Selection Process
- EPSC Third Party Inspection Checklist
- Overview of Selected Sites
- Trainer's Observations
- Conclusions

Background

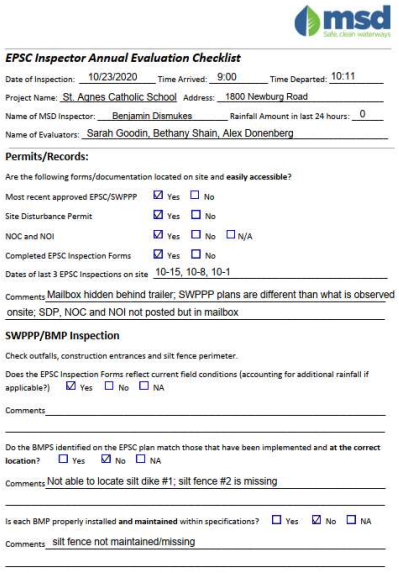
- MSD contracted with the AECOM and CDI, to serve as the third-party trainer for conducting the EPSC Inspector Training
- SWQMP 2.4.9 – Update Inspector Field Verification Training to include the KDOW General Construction Permit KYR10
- Additionally, according to SWQMP 2.4.9, MSD is required to review inspector practices with the goal to communicate/confirm oversight responsibilities, documentation requirements, frequency of inspection, and inspection standards and protocols

Site Selection Process

- MSD's Bond & Enforcement and Construction Supervisors provided an Inspection Report of active sites to select for inspections, as well as the most up-to-date contact information to the third-party trainer.
  - This list included multiple sites and project types at different completion phases for each inspector.
- With the goal to select at least two sites per inspector, the third-party trainer randomly selected the sites from the list.

EPSC Third Party Inspection Checklist

- The MSD inspector trainee was not made aware of the independent site inspection performed by the third-party trainer. After the inspection, the trainer completed the EPSC Inspector Annual Evaluation Checklist



EPSC Inspector Annual Evaluation Checklist

Date of Inspection: 10/23/2020 Time Arrived: 9:00 Time Departed: 10:11

Project Name: St. Agnes Catholic School Address: 1800 Newburg Road

Name of MSD Inspector: Benjamin Dismukes Rainfall Amount in last 24 hours: 0

Name of Evaluators: Sarah Goodin, Bethany Shain, Alex Donenberg

Permits/Records:

Are the following forms/documentation located on site and **easily accessible**?

Most recent approved EPSC/SWPPP ☑ Yes ☐ No

Site Disturbance Permit ☑ Yes ☐ No

NOC and NOI ☑ Yes ☐ No ☐ N/A

Completed EPSC Inspection Forms ☑ Yes ☐ No

Dates of last 3 EPSC Inspections on site 10-15, 10-8, 10-1

Comments Mailbox hidden behind trailer; SWPPP plans are different than what is observed onsite; SDP, NOC and NOI not posted but in mailbox

SWPPP/BMP Inspection

Check outfalls, construction entrances and silt fence perimeter.

Does the EPSC Inspection Forms reflect current field conditions (accounting for additional rainfall if applicable?) ☑ Yes ☐ No ☐ NA

Comments

Do the BMPS identified on the EPSC plan match those that have been implemented and **at the correct location**? ☐ Yes ☑ No ☐ NA

Comments Not able to locate silt dike #1; silt fence #2 is missing

Is each BMP properly installed **and maintained** within specifications? ☐ Yes ☑ No ☐ NA

Comments silt fence not maintained/missing

Overview of Selected Sites

- All inspectors with active construction sites were trained between October 23, 2020 and December 2, 2020, for a total of 17 individual inspectors and 34 unique job sites.

Inspector Name	Project Name	Project Type	Percent Complete	Date of Inspector's Last Visit to Site	Date of Third-Party Inspection
Benjamin Dismukes	St. Agnes Catholic School	Water Management	55	10/14/2020	10/23/2020
	Chamberlain Lane Apts	Lateral Extension	50	11/3/2020	11/6/2020
Bryon Richardson	1001 E. Liberty St	Residential Construction	0	10/30/2020	11/4/2020
	317 South Wenzel	Residential Construction	0	10/30/2020	11/4/2020
Denver Craft Jr	Assumption HS	Water Management	55	10/22/2020	10/23/2020
	Jewish Community Center	Water Management	25	10/22/2020	10/23/2020
Everett Greenwood Jr (Buster)	Harrod's Creek	Emergency	95	10/29/2020	11/6/2020
	Ken Towery Westport Rd	Water Management	40	10/6/2020	11/6/2020
Jerry Bond Jr	Blue Lick Rd Subdivision	Water Management	35	11/11/2020	11/12/2020
	Parkside at Mt Washington	Subdivision	35	11/11/2020	11/12/2020
Jesse Barrett	Beecher Terrace Ph 3 Demo	Water Management	30	11/30/2020	12/2/2020
	PPG (Porter Paint) Demo	Water Management	40	11/30/2020	12/2/2020
Joshua Graves	Greater Louisville Association of Realtors	Water Management	65	10/19/2020	10/28/2020
	Evapar	Water Management	85	10/6/2020	10/28/2020
Lauren Butler	Miller Blankenbaker Road	Water Management	75	10/27/2020	10/28/2020
	Grocers Ice & Cold Storage Company	Water Management	61	10/20/2020	11/4/2020
Michael Harrett (Mike)	2713 Blankenbaker Road	Water Management	70	10/27/2020	10/28/2020
	Wimsatt College Drive	Water Management	60	11/4/2020	11/6/2020

Overview of Selected Sites

- All inspectors with active construction sites were trained between October 23, 2020 and December 2, 2020, for a total of 17 individual inspectors and 34 unique job sites.

Ronald Henderson	City View Apartments	Water Management	60	11/2/2020	11/4/2020
	U of L New Residence Hall	Water Management	60	11/10/2020	11/12/2020
Ronnie Richards	7700 Niemann Dr	Residential Construction	0	11/10/2020	11/11/2020
	7701 Niemann Dr	Residential Construction	0	11/10/2020	11/11/2020
Scott Doss	I-64 and Grinstead Interceptor	Capital	95	10/26/2020	11/4/2020
	3111 Goose Creek Rd	Residential Construction	0	11/30/2020	12/2/2020
Steven Blanford (Steve)	Project 346 S Peterson Ave. Stream Restoration	Capital	45	11/2/2020	11/4/2020
	QSR Automation	Water Management	50	11/25/2020	12/2/2020
Terry Miller (Ted)	Kenlie Place Patio Homes	Water Management	79	10/26/2020	10/28/2020
	Cooper Chase Ph 2	Water Management	44	10/26/2020	10/28/2020
Tyler Smith	The Enclave at Douglass Hills	Subdivision	70	10/27/2020	10/28/2020
	Twin Lakes Offsite Compensation Basin	Water Management	75	11/4/2020	11/6/2020
Uriah Maudlin	Beacon Community Credit Union	Water Management	50	11/10/2020	11/12/2020
	Southwest Town Center Outlet	Water Management	35	11/10/2020	11/12/2020
Bruce Hardin	4915 Pasafino Court	Residential Construction		11/11/2020	11/12/2020
	L&N Federal Credit Union	Water Management	55	11/6/2020	11/12/2020

Trainer's Observations

- Overall, it appears that MSD inspectors have sufficient knowledge of EPSC controls and conduct their inspections properly. It should also be noted that most contractors exhibit positive attitude towards maintaining erosion controls on site.
- Most Common Deficiency:
  - Damaged or incorrectly installed silt fences
  - EPSC/SWPPP documents missing
  - MSD Mailboxes inadequate
  - Proper paperwork for explaining changes to BMPs

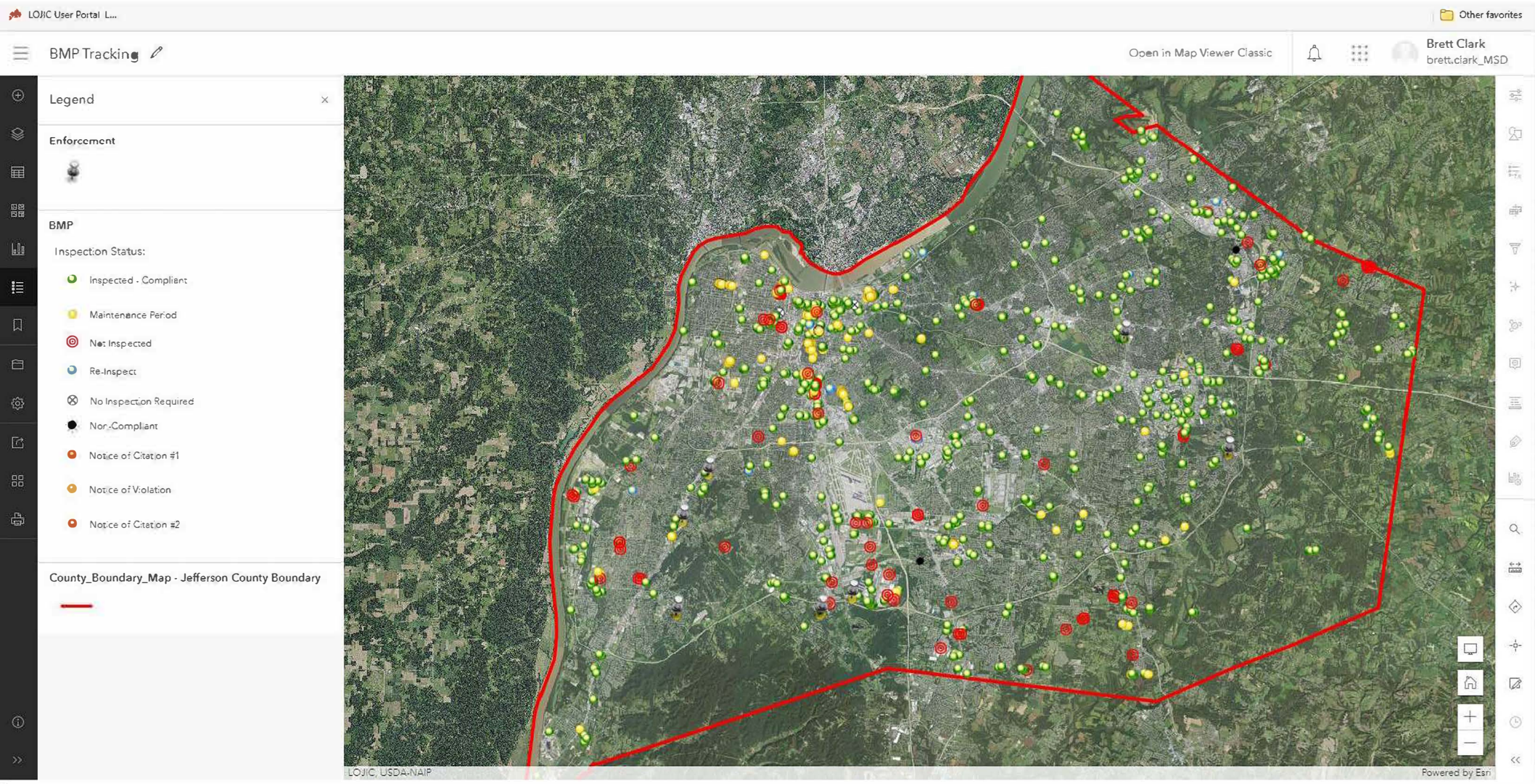
msd
Safe, clean waterways

Conclusions

- Although MSD inspectors are very knowledgeable of erosion control practices, they could benefit from additional training in the following areas:
  1. Keeping required paperwork onsite and checking contractor's inspection forms
  2. Proper Protocol for EPSC Plan or SWPPP amendments
  3. Floodplain Ordinance and buffer zone requirements

APPENDIX 2.5.2 POST-CONSTRUCTION INSPECTION AND ENFORCEMENT TRACKING MAP

APPENDIX 2.5.2 POST-CONSTRUCTION INSPECTION AND ENFORCMENT TRACKING MAP



APPENDIX 2.5.3 REVIEWED POST-CONSTRUCTION BMP REQUIRED PROJECTS

APPENDIX 2.5.3 REVIEWED POST-CONSTRUCTION BMP REQUIRED PROJECTS

License #	Business Name	Issued Date	Address
16GI1015	SHAKES RUN SECTION 8	4/22/2021 10:49	17321 DEER CROSSING TRL LOUISVILLE KY 40023-0000
GI919106	PARISTOWN	10/7/2020 9:53	720 BRENT ST LOUISVILLE KY 40204-0000
GI921674	Bardstown Rd 3MG Elevated Storage Tank	3/15/2021 10:46	8612 OLD BARDSTOWN RD LOUISVILLE KY 40291-0000
GI923270	Victory Knoll Apartments	3/11/2021 16:46	11840 ELLINGSWORTH LN MIDDLETOWN KY 40243-0000
GI923687	Brentlinger Connector - Phase 2	10/8/2020 9:03	10000 WINGFIELD RD LOUISVILLE KY 40291-0000
GI923736	Beecher Terrace Phase 1	3/4/2021 13:24	300 ROY WILKINS AVE LOUISVILLE KY 40202-0000
GI924344	The Flats at Springhurst	2/23/2021 9:21	4201 SIMCOE LN LOUISVILLE KY 40241-0000
GI924535	Taylor Cove	12/14/2020 19:14	4208 TAYLORSVILLE RD LOUISVILLE KY 40220-0000
GI924723	THE FARMS AT LOVERS LANE SEC 3	3/15/2021 10:03	6307 LOVERS LN LOUISVILLE KY 40291-0000
GI924905	SHAKES RUN SEC 12	4/22/2021 10:58	2419 IRISH BEND CT LOUISVILLE KY 40023-0000
GI924970	Famrington Hotel	1/21/2021 13:35	380 FARMINGTON AVE LOUISVILLE KY 40209-0000
GI925705	Commerce Crossings Apartments	4/15/2021 10:55	9707 COOPER CHURCH DR LOUISVILLE KY 40229-0000
GI925719	NORTON BROWNSBORO BED TOWER AND PARKING ADDITION	10/19/2020 9:34	4960 NORTON HEALTHCARE BLVD LOUISVILLE KY 40241-0000
GI925947	Ormsby Lane Senior Apartments	12/31/2020 8:42	911 ORMSBY LN LYNDON KY 40242-0000
GI926002	Finish Line Apartments	10/8/2020 10:25	5209 ELZIE RD LOUISVILLE KY 40258-0000
GI926442	Covington By The Lake	10/19/2020 9:24	7331 JEFFERSON BLVD LOUISVILLE KY 40219-0000
GI926490	Haven on Tucker Apartments	5/25/2021 13:32	1411 TUCKER STATION RD LOUISVILLE KY 40299-0000
GI927608	OLYMPIA PARK PLAZA	10/7/2020 8:48	4803 OLYMPIA PARK PLZ LOUISVILLE KY 40241-0000
GI927770	Glenview Trust	12/30/2020 10:48	5900 U S HIGHWAY 42 LOUISVILLE KY 40241-0000
GI927771	Advanced ENT and Allergy	12/14/2020 19:15	2944 BRECKENRIDGE LN LOUISVILLE KY 40220-0000
GI928044	Hearthstone Meadows Subdivision	3/22/2021 11:39	4604 CURVE HILL RD LOUISVILLE KY 40299-0000
GI928655	Fincastle Farms Sec 2	12/14/2020 19:15	7607 WOLF PEN BRANCH RD LOUISVILLE KY 40059-0000
GI929148	Stor-All	10/8/2020 8:03	12113 SHELBYVILLE RD MIDDLETOWN KY 40243-0000
GI929228	The Miracle League Baseball Complex	6/16/2021 13:34	8703 FERNDALE RD LOUISVILLE KY 40291-0000
GI929682	LaQuinta Inn Terra View	5/19/2021 14:18	13825 TERRA VIEW TRL LOUISVILLE KY 40245-0000
GI929687	Norton Commons North Village Ph 9	12/14/2020 19:16	6120 CHAMBERLAIN LN LOUISVILLE KY 40059-0000
GI930847	Beecher Terrace Phase I Roadways	3/4/2021 13:23	300 ROY WILKINS AVE LOUISVILLE KY 40202-0000
GI931746	DOMINION NORTHFIELD INDEPENDENT LIVING	2/4/2021 12:09	6000 HUNTING RD NORTHFIELD KY 40222-0000
GI931973	Frontgate Apartments	4/2/2021 12:04	7411 OUTER LOOP LOUISVILLE KY 40228-0000
GI932741	Creek View Estates Extension	10/19/2020 9:13	8801 FAIRMOUNT RD R LOUISVILLE KY 40291-0000
GI932911	Bardstown Road Storage	10/19/2020 9:58	4401 BARDSTOWN RD LOUISVILLE KY 40218-0000
GI933384	Dove Point Estates Section 2	12/14/2020 19:16	13131 TRUMP AVE LOUISVILLE KY 40299-0000
GI933486	Anchorage Plaza II	10/19/2020 9:52	12920 FACTORY LN LOUISVILLE KY 40245-0000
GI933537	Noltemeyer	12/14/2020 19:16	1725 RESEARCH DR JEFFERSONTOWN KY 40299-0000
GI933726	Express Carwash	12/18/2020 14:52	4856 CANE RUN RD LOUISVILLE KY 40216-0000
GI933790	Glenmary Pointe Phase 3	12/21/2020 12:21	11236 PROFESSIONAL PARK DR 101 LOUISVILLE KY 40291-0000
GI933855	RENAISSANCE SOUTH BUSINESS PARK LOT 19	10/19/2020 8:33	2811 TRANSGLOBAL DR LOUISVILLE KY 40219-0000
GI934366	Go-Store-It-Self-Storage	12/14/2020 19:16	2217 GOLDSMITH LN LOUISVILLE KY 40218-0000
GI934999	Churchill Downs Backside Phase 2	10/8/2020 9:07	3750 OAKDALE AVE LOUISVILLE KY 40214-0000
GI935195	Bradbe and Routt LV KY	4/9/2021 16:08	6312 ROUTT RD H LOUISVILLE KY 40299-0000
GI935225	Tucker Station Senior Apartments	2/23/2021 10:14	1408 TUCKER STATION RD LOUISVILLE KY 40299-0000
GI935241	NORTON COMMONS NORTH VILLAGE PHASE 10	10/19/2020 9:16	6120 CHAMBERLAIN LN LOUISVILLE KY 40059-0000
GI935380	15 Acre Residual Improvements	10/7/2020 7:52	2510 TERRA CROSSING BLVD LOUISVILLE KY 40245-0000
GI935428	HOS Properties	12/31/2020 8:16	8727 OLD BARDSTOWN RD LOUISVILLE KY 40291-0000
GI935460	Caswell Springs Subdivision	12/14/2020 19:17	6707 SHAFFER LN LOUISVILLE KY 40291-0000
GI935520	BLUEGRASS LAWN AND GARDEN WAREHOUSE AND PARKING	12/30/2020 10:14	6502 BLEVINS GAP RD LOUISVILLE KY 40272-0000
GI935541	Bellingham Park Phase 1A	10/19/2020 10:18	13615 FACTORY LN LOUISVILLE KY 40245-0000
GI935580	Hurstbourne town Center- Hyatt House Louisville E	12/14/2020 19:17	101 WHITTINGTON PKY HURSTBOURNE KY 40222-0000
GI935620	Big Spring Country Club Phase 2 Renovation	10/8/2020 9:25	5901 DUTCHMANS LN LOUISVILLE KY 40205-0000
GI935680	Evansville Teachers Federal Credit Union	10/7/2020 8:00	2300 HIGH WICKHAM PL LOUISVILLE KY 40245-0000
GI935840	US Express, LLC	12/23/2020 15:02	1319 TILE FACTORY LN LOUISVILLE KY 40213-0000
GI935920	Hurstbourne Town Center tracts 4 & 5	10/7/2020 8:04	9300 SHELBYVILLE RD HURSTBOURNE KY 40222-0000
GI936000	Glenmary Cove	12/30/2020 11:37	8602 OLD BARDSTOWN RD LOUISVILLE KY 40291-0000
GI936142	SHELBYHURST OFFICE BUILDING 435	12/30/2020 10:56	435 N WHITTINGTON PKY LOUISVILLE KY 40222-0000
GI936180	SOUTHPOINT SENIOR APARTMENTS	4/15/2021 10:58	5185 SOUTHPOINT DR 101 LOUISVILLE KY 40229-0000
GI936200	Watterson Court Distribution Center	10/7/2020 8:39	11410 WATTERSON CT JEFFERSONTOWN KY 40299-0000
GI936262	Bridwell Apartments	12/14/2020 19:17	3311 BRIDWELL DR LOUISVILLE KY 40216-0000
GI936340	JSCC LLC	12/14/2020 19:17	10803 CEDAR CREEK RD LOUISVILLE KY 40229-0000
GI936420	Johnson Animal Hospital	10/8/2020 10:21	2940 BRECKENRIDGE LN MEADOWVIEW ESTATES KY 40220-0000
GI936520	SEATONVILLE SUBDIVISION CLEARING ONLY	10/19/2020 9:04	10501 SEATONVILLE RD LOUISVILLE KY 40291-0000
GI936600	SCHUMACHER HOMES	12/14/2020 19:17	121 HUNTINGTON RIDGE DR MIDDLETOWN KY 40223-0000
GI936623	Brown-Forman, Site Security	10/19/2020 8:58	840 DIXIE HWY LOUISVILLE KY 40210-0000
GI936743	Bridlewood Trails Section 4	12/14/2020 19:17	
GI936776	Old Dominion Freight Lines	5/7/2021 11:38	1400 LOUIS COLEMAN JR DR LOUISVILLE KY 40211-0000
GI936781	Mercedes Benz 100 Parking Spaces	12/31/2020 8:58	2520 TERRA CROSSING BLVD LOUISVILLE KY 40245-0000
GI936790	Little Spring Farm Sec 4C.	12/31/2020 8:35	11400 VISTA CLUB CT LOUISVILLE KY 40291-0000
GI936804	Shawnee Park Boat Ramp	4/21/2021 15:58	4501 W BROADWAY LOUISVILLE KY 40211-0000
GI936835	Signature Point Sec. 5	1/22/2021 14:55	1111 ROSE HILL LN LOUISVILLE KY 40299-0000
GI936836	Blankenbaker Station II - Lot 23	5/10/2021 12:45	13150 PLANTSIDE DR LOUISVILLE KY 40299-0000
GI936853	HONDA WORLD EXPANSION	3/29/2021 12:21	1 AUTOCENTER DR FOREST HILLS KY 40299-0000
GI936933	Kentuck Exposition Center- Vehicular Entrance	12/14/2020 19:17	937 PHILLIPS LN LOUISVILLE KY 40209-0000
GI939215	RENAISSANCE BUSINESS PARK TRACT 15-17	3/29/2021 15:57	2103 SOUTH PARK RD LOUISVILLE KY 40219-0000
GI939270	Westport Road Plaza	12/14/2020 19:18	2927 GOOSE CREEK RD 101 MEADOW VALE KY 40241-0000
GI939285	Ballard High School Track Rehabilitation	10/19/2020 9:21	6000 BROWNSBORO RD LOUISVILLE KY 40222-0000

License #	Business Name	Issued Date	Address
GI939290	Tony's Wrecker Service	12/14/2020 19:18	3315 COLLINS LN LOUISVILLE KY 40245-0000
GI939389	Breckenridge Center	5/10/2021 10:10	2935 BRECKENRIDGE LN 102 LOUISVILLE KY 40220-0000
GI939472	Landherr Investments, LLC	1/8/2021 14:20	
GI939533	Plantside Drive Extension & Rehl Rd Widening	5/10/2021 12:29	PLANTSIDE DR LOUISVILLE KY 40299-0000
GI939556	MG Entertainment	6/24/2021 10:56	7021 GLOBAL DR LOUISVILLE KY 40258-0000
GI939574	SHAKES RUN SECTIONS 6 & 14	5/26/2021 11:01	2307 WHITE OAK WAY LOUISVILLE KY 40023-0000

APPENDIX 2.5.12 SUMMARY OF GREEN INCENTIVE PROJECTS

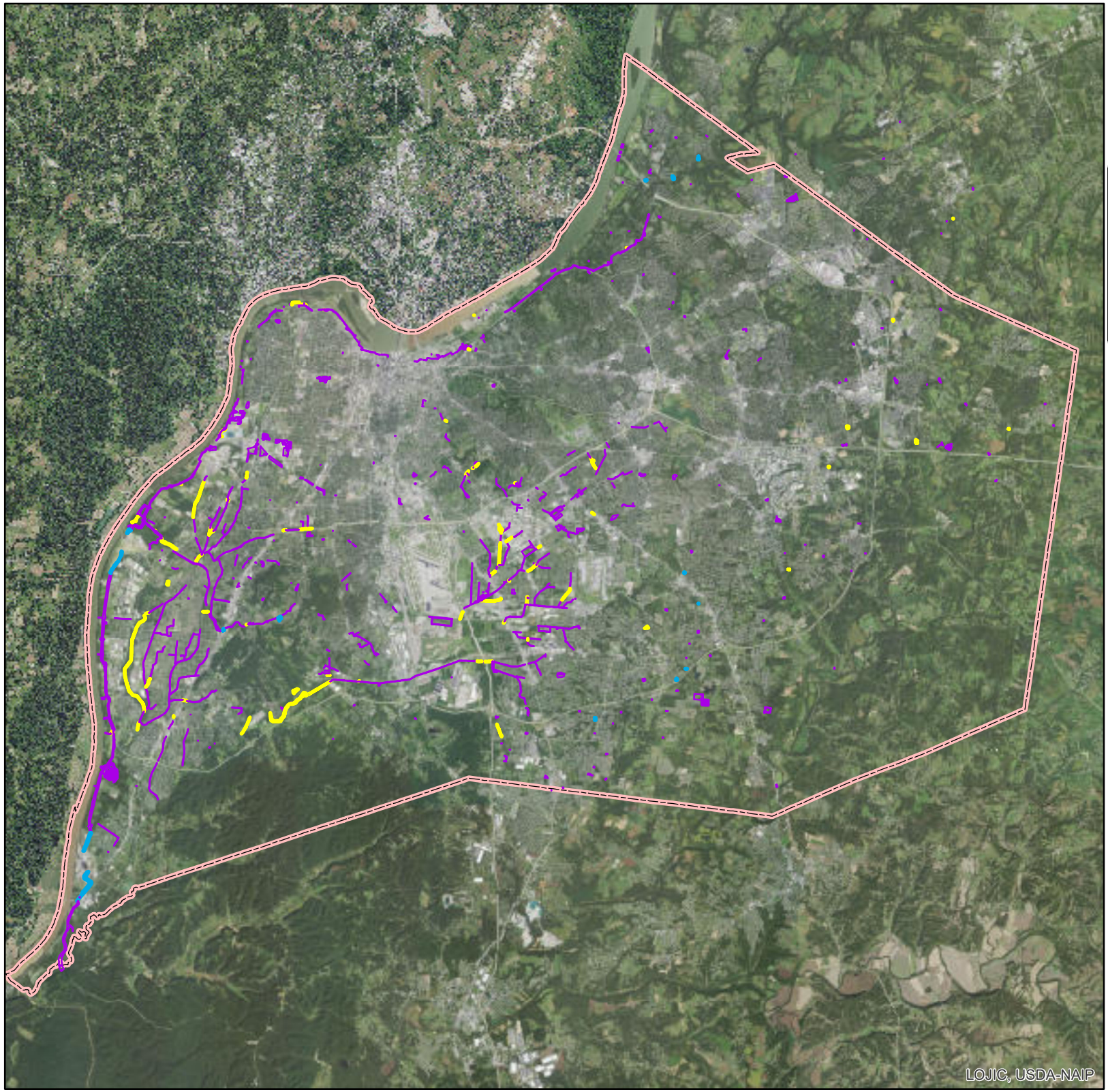
APPENDIX 2.5.12 Summary of Incentive Projects

Project Name	Type	Address	Cost	Impervious Area Captured (sq. ft)	Status	Complete Date
MSD Central Maintenance Facility	Infiltration Trench	3050 Commerce Center Pl	$230,651	308,112	Complete	Feb-21
Chickasaw Park	Bioswale	1200 Southwestern Pkwy	$35,000	Unknown	Complete	Jun-21
			$265,651	308,112		

APPENDIX 2.5.19 MAP OF MSD MOWING BOUNDARIES

MSD MOWING BOUNDARIES

APPENDIX 2.5.19



Legend

- MSD Maintained Areas
- Restoration (No Mow) Areas
- Other Agency
- Jefferson County Boundary

N

0 1 2 4 Miles

1 inch equals 3.64 miles

msd Safe, clean waterways

LOJIC

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APPENDIX 2.5.20 URBAN REFORESTATION GRANT SUMMARY

APPENDIX 2.5.20 URBAN REFORESTATION GRANT SUMMARY

Project	# of Trees
Trees Louisville	166
Highlands Douglas Neighborhood Association	63
Original Highlands Neighborhood Association	25
Louisville Grows - Area 19 (Portland)	166
Belknap Neighborhood Association	26
Bonnycastle Neighborhood Association	30
Deer Park Neighborhood Association	77
Botanical Gardens	36
Toonerville Trolley Neighborhood Association	60
Seventh Street Garden	50
Hayfield-Dundee	23
Louisville Metro District 8	100
Planting O' The Green - District 21	166
	988

APPENDIX 2.6.3 MS4 RELATED TRAINING SUMMARY

Course Name	Category	Date	Hours	Location
Infrastructure Asset Management Training	Administrative	9/9/2020	1	COMPUTER
Infrastructure Asset Management Training	Administrative	9/15/2020	1	COMPUTER
Infrastructure Asset Management Training	Administrative	10/12/2020	1	COMPUTER
Infrastructure Asset Management Training	Administrative	10/13/2020	1	COMPUTER
Infrastructure Asset Management Training	Administrative	10/16/2020	1	COMPUTER
Infrastructure Asset Management Training	Administrative	10/22/2020	1	COMPUTER
Infrastructure Asset Management Training	Administrative	10/23/2020	1	COMPUTER
Infrastructure Asset Management Training	Administrative	10/27/2020	1	COMPUTER
Infrastructure Asset Management Training	Administrative	10/30/2020	1	COMPUTER
Infrastructure Asset Management Training	Administrative	11/1/2020	1	COMPUTER
Infrastructure Asset Management Training	Administrative	11/2/2020	1	COMPUTER
Infrastructure Asset Management Training	Administrative	11/16/2020	1	COMPUTER
Infrastructure Asset Management Training	Administrative	12/1/2020	1	COMPUTER
Infrastructure Asset Management Training	Administrative	12/17/2020	1	COMPUTER
Infrastructure Asset Management Training	Administrative	2/26/2021	1	COMPUTER
Infrastructure Asset Management Training	Administrative	3/1/2021	1	COMPUTER
Infrastructure Asset Management Training	Administrative	5/27/2021	1	COMPUTER
MSD 101 - Core Services - Consent Decree - One Water	Administrative	9/24/2020	1.5	CMF
MSD 101 - Core Services - Consent Decree - One Water	Administrative	12/10/2020	1.5	CMF
MSD 101 - Core Services - Consent Decree - One Water	Administrative	1/13/2021	1.5	CMF
MSD 101 - Core Services - Consent Decree - One Water	Administrative	4/6/2021	1.5	CMF
MSD 101 - Core Services - Consent Decree - One Water	Administrative	6/17/2021	1.5	CMF
EROSION CONTROL	Collections System	8/13/2020	1.5	CMF
REPAIR AND REGRADE DRAINAGE FACILITIES	Collections System	8/13/2020	1.5	CMF
SEWER CLEANING & MAINTENANCE	Collections System	2/3/2021	1	CMF
SORP - First Quarter Field Training - Preparing Monitoring and Responses	Collections System	3/31/2021	1	COMPUTER
SORP - First Quarter Field Training - Preparing Monitoring and Responses	Collections System	6/8/2021	1	COMPUTER
SORP - Fourth Quarter Field Training - Overflow Reporting and Documentation	Collections System	12/17/2020	1	COMPUTER
SORP - Fourth Quarter Field Training - Overflow Reporting and Documentation	Collections System	12/21/2020	1	COMPUTER
SORP - Fourth Quarter Field Training - Overflow Reporting and Documentation	Collections System	12/27/2020	1	COMPUTER
SORP - Fourth Quarter Field Training - Overflow Reporting and Documentation	Collections System	12/31/2020	1	COMPUTER
SORP - Fourth Quarter Field Training - Overflow Reporting and Documentation	Collections System	1/4/2021	1	COMPUTER
SORP - Fourth Quarter Field Training - Overflow Reporting and Documentation	Collections System	1/5/2021	1	COMPUTER
SORP - Fourth Quarter Field Training - Overflow Reporting and Documentation	Collections System	1/11/2021	1	COMPUTER
SORP - Fourth Quarter Field Training - Overflow Reporting and Documentation	Collections System	1/12/2021	1	COMPUTER
SORP - Fourth Quarter Field Training - Overflow Reporting and Documentation	Collections System	1/25/2021	1	COMPUTER
SORP - Second Quarter Field Training - Overflow Assessment	Collections System	9/4/2020	1	COMPUTER
SORP - Second Quarter Field Training - Overflow Assessment	Collections System	9/10/2020	1	COMPUTER
SORP - Second Quarter Field Training - Overflow Assessment	Collections System	9/24/2020	1	COMPUTER
SORP - Second Quarter Field Training - Overflow Assessment	Collections System	7/1/2020	1	COMPUTER
SORP - Second Quarter Field Training - Overflow Assessment	Collections System	1/20/2021	1	COMPUTER
SORP - Second Quarter Field Training - Overflow Assessment	Collections System	6/21/2021	1	COMPUTER
SORP - Second Quarter Field Training - Overflow Assessment	Collections System	6/30/2021	1	COMPUTER
SORP - Third Quarter Field Training - Public Notification and Cleanup	Collections System	10/7/2020	1	COMPUTER
SORP - Third Quarter Field Training - Public Notification and Cleanup	Collections System	10/13/2020	1	COMPUTER
SORP - Third Quarter Field Training - Public Notification and Cleanup	Collections System	12/4/2020	1	COMPUTER
SORP - Third Quarter Field Training - Public Notification and Cleanup	Collections System	12/11/2020	1	COMPUTER
SORP - Third Quarter Field Training - Public Notification and Cleanup	Collections System	12/21/2020	1	COMPUTER
SORP - Third Quarter Field Training - Public Notification and Cleanup	Collections System	9/30/2020	1	COMPUTER
SORP - Third Quarter Field Training - Public Notification and Cleanup	Collections System	1/4/2021	1	COMPUTER
SORP - Third Quarter Field Training - Public Notification and Cleanup	Collections System	1/11/2021	1	COMPUTER
SORP Annual Overview Training	Collections System	2/1/2021	1	COMPUTER
SORP Annual Overview Training	Collections System	2/2/2021	1	COMPUTER
SORP Annual Overview Training	Collections System	2/3/2021	1	COMPUTER
SORP Annual Overview Training	Collections System	2/4/2021	1	COMPUTER
SORP Annual Overview Training	Collections System	2/5/2021	1	COMPUTER
SORP Annual Overview Training	Collections System	2/8/2021	1	COMPUTER
SORP Annual Overview Training	Collections System	2/9/2021	1	COMPUTER
SORP Annual Overview Training	Collections System	2/10/2021	1	COMPUTER
SORP Annual Overview Training	Collections System	2/11/2021	1	COMPUTER
SORP Annual Overview Training	Collections System	2/12/2021	1	COMPUTER
SORP Annual Overview Training	Collections System	2/15/2021	1	COMPUTER
SORP Annual Overview Training	Collections System	2/16/2021	1	COMPUTER
SORP Annual Overview Training	Collections System	2/17/2021	1	COMPUTER
SORP Annual Overview Training	Collections System	2/18/2021	1	COMPUTER
SORP Annual Overview Training	Collections System	2/19/2021	1	COMPUTER
SORP Annual Overview Training	Collections System	2/20/2021	1	COMPUTER
SORP Annual Overview Training	Collections System	2/22/2021	1	COMPUTER
SORP Annual Overview Training	Collections System	2/23/2021	1	COMPUTER
SORP Annual Overview Training	Collections System	2/24/2021	1	COMPUTER
SORP Annual Overview Training	Collections System	2/25/2021	1	COMPUTER
SORP Annual Overview Training	Collections System	2/26/2021	1	COMPUTER
SORP Annual Overview Training	Collections System	3/1/2021	1	COMPUTER
SORP Annual Overview Training	Collections System	3/2/2021	1	COMPUTER
SORP Annual Overview Training	Collections System	3/3/2021	1	COMPUTER
SORP Annual Overview Training	Collections System	3/4/2021	1	COMPUTER
SORP Annual Overview Training	Collections System	3/5/2021	1	COMPUTER
SORP Annual Overview Training	Collections System	3/6/2021	1	COMPUTER
SORP Annual Overview Training	Collections System	3/8/2021	1	COMPUTER

Course Name	Category	Date	Hours	Location
SORP Annual Overview Training	Collections System	3/9/2021	1	COMPUTER
SORP Annual Overview Training	Collections System	3/10/2021	1	COMPUTER
SORP Annual Overview Training	Collections System	3/11/2021	1	COMPUTER
SORP Annual Overview Training	Collections System	3/12/2021	1	COMPUTER
SORP Annual Overview Training	Collections System	3/13/2021	1	COMPUTER
SORP Annual Overview Training	Collections System	3/15/2021	1	COMPUTER
SORP Annual Overview Training	Collections System	3/16/2021	1	COMPUTER
SORP Annual Overview Training	Collections System	3/17/2021	1	COMPUTER
SORP Annual Overview Training	Collections System	3/18/2021	1	COMPUTER
SORP Annual Overview Training	Collections System	3/19/2021	1	COMPUTER
SORP Annual Overview Training	Collections System	3/20/2021	1	COMPUTER
SORP Annual Overview Training	Collections System	3/22/2021	1	COMPUTER
SORP Annual Overview Training	Collections System	3/23/2021	1	COMPUTER
SORP Annual Overview Training	Collections System	3/24/2021	1	COMPUTER
SORP Annual Overview Training	Collections System	3/25/2021	1	COMPUTER
SORP Annual Overview Training	Collections System	3/26/2021	1	COMPUTER
SORP Annual Overview Training	Collections System	3/29/2021	1	COMPUTER
SORP Annual Overview Training	Collections System	3/30/2021	1	COMPUTER
SORP Annual Overview Training	Collections System	3/31/2021	1	COMPUTER
SORP Annual Overview Training	Collections System	4/12/2021	1	COMPUTER
SWPPP Overview Training (StormWater Pollution Prevention Plan)	Collections System	8/27/2020	1	COMPUTER
SWPPP Overview Training (StormWater Pollution Prevention Plan)	Collections System	2/1/2021	1	COMPUTER
SWPPP Overview Training (StormWater Pollution Prevention Plan)	Collections System	2/16/2021	1	COMPUTER
SWPPP Overview Training (StormWater Pollution Prevention Plan)	Collections System	2/17/2021	1	COMPUTER
SWPPP Overview Training (StormWater Pollution Prevention Plan)	Collections System	2/19/2021	1	COMPUTER
SWPPP Overview Training (StormWater Pollution Prevention Plan)	Collections System	4/28/2021	1	COMPUTER
SWPPP Overview Training (StormWater Pollution Prevention Plan)	Collections System	4/30/2021	1	COMPUTER
SWPPP Overview Training (StormWater Pollution Prevention Plan)	Collections System	5/3/2021	1	COMPUTER
SWPPP Overview Training (StormWater Pollution Prevention Plan)	Collections System	5/4/2021	1	COMPUTER
SWPPP Overview Training (StormWater Pollution Prevention Plan)	Collections System	5/5/2021	1	COMPUTER
SWPPP Overview Training (StormWater Pollution Prevention Plan)	Collections System	5/6/2021	1	COMPUTER
SWPPP Overview Training (StormWater Pollution Prevention Plan)	Collections System	5/7/2021	1	COMPUTER
SWPPP Overview Training (StormWater Pollution Prevention Plan)	Collections System	5/8/2021	1	COMPUTER
SWPPP Overview Training (StormWater Pollution Prevention Plan)	Collections System	5/9/2021	1	COMPUTER
SWPPP Overview Training (StormWater Pollution Prevention Plan)	Collections System	5/10/2021	1	COMPUTER
SWPPP Overview Training (StormWater Pollution Prevention Plan)	Collections System	5/11/2021	1	COMPUTER
SWPPP Overview Training (StormWater Pollution Prevention Plan)	Collections System	5/12/2021	1	COMPUTER
SWPPP Overview Training (StormWater Pollution Prevention Plan)	Collections System	5/13/2021	1	COMPUTER
SWPPP Overview Training (StormWater Pollution Prevention Plan)	Collections System	5/14/2021	1	COMPUTER
SWPPP Overview Training (StormWater Pollution Prevention Plan)	Collections System	5/16/2021	1	COMPUTER
SWPPP Overview Training (StormWater Pollution Prevention Plan)	Collections System	5/17/2021	1	COMPUTER
SWPPP Overview Training (StormWater Pollution Prevention Plan)	Collections System	5/18/2021	1	COMPUTER
SWPPP Overview Training (StormWater Pollution Prevention Plan)	Collections System	5/19/2021	1	COMPUTER
SWPPP Overview Training (StormWater Pollution Prevention Plan)	Collections System	5/20/2021	1	COMPUTER
SWPPP Overview Training (StormWater Pollution Prevention Plan)	Collections System	5/21/2021	1	COMPUTER
SWPPP Overview Training (StormWater Pollution Prevention Plan)	Collections System	5/23/2021	1	COMPUTER
SWPPP Overview Training (StormWater Pollution Prevention Plan)	Collections System	5/24/2021	1	COMPUTER
SWPPP Overview Training (StormWater Pollution Prevention Plan)	Collections System	5/26/2021	1	COMPUTER
SWPPP Overview Training (StormWater Pollution Prevention Plan)	Collections System	5/27/2021	1	COMPUTER
SWPPP Overview Training (StormWater Pollution Prevention Plan)	Collections System	5/28/2021	1	COMPUTER
SWPPP Overview Training (StormWater Pollution Prevention Plan)	Collections System	5/30/2021	1	COMPUTER
SWPPP Overview Training (StormWater Pollution Prevention Plan)	Collections System	5/31/2021	1	COMPUTER
SWPPP Overview Training (StormWater Pollution Prevention Plan)	Collections System	6/1/2021	1	COMPUTER
SWPPP Overview Training (StormWater Pollution Prevention Plan)	Collections System	6/2/2021	1	COMPUTER
SWPPP Overview Training (StormWater Pollution Prevention Plan)	Collections System	6/3/2021	1	COMPUTER
SWPPP Overview Training (StormWater Pollution Prevention Plan)	Collections System	6/4/2021	1	COMPUTER
SWPPP Overview Training (StormWater Pollution Prevention Plan)	Collections System	6/7/2021	1	COMPUTER
SWPPP Overview Training (StormWater Pollution Prevention Plan)	Collections System	6/9/2021	1	COMPUTER
SWPPP Overview Training (StormWater Pollution Prevention Plan)	Collections System	6/10/2021	1	COMPUTER
SWPPP Overview Training (StormWater Pollution Prevention Plan)	Collections System	6/11/2021	1	COMPUTER
SWPPP Overview Training (StormWater Pollution Prevention Plan)	Collections System	6/13/2021	1	COMPUTER
SWPPP Overview Training (StormWater Pollution Prevention Plan)	Collections System	6/14/2021	1	COMPUTER
SWPPP Overview Training (StormWater Pollution Prevention Plan)	Collections System	6/15/2021	1	COMPUTER
SWPPP Overview Training (StormWater Pollution Prevention Plan)	Collections System	6/16/2021	1	COMPUTER
SWPPP Overview Training (StormWater Pollution Prevention Plan)	Collections System	6/17/2021	1	COMPUTER
SWPPP Overview Training (StormWater Pollution Prevention Plan)	Collections System	6/21/2021	1	COMPUTER
SWPPP Overview Training (StormWater Pollution Prevention Plan)	Collections System	6/24/2021	1	COMPUTER
SWPPP Overview Training (StormWater Pollution Prevention Plan)	Collections System	6/25/2021	1	COMPUTER
SWPPP Overview Training (StormWater Pollution Prevention Plan)	Collections System	6/26/2021	1	COMPUTER
SWPPP Overview Training (StormWater Pollution Prevention Plan)	Collections System	6/28/2021	1	COMPUTER
SWPPP Overview Training (StormWater Pollution Prevention Plan)	Collections System	6/29/2021	1	COMPUTER
SWPPP Overview Training (StormWater Pollution Prevention Plan)	Collections System	6/30/2021	1	COMPUTER
Morris Forman Emergency Spill Response Training	Reporting	5/3/2021	1	COMPUTER
Morris Forman Emergency Spill Response Training	Reporting	5/4/2021	1	COMPUTER
Morris Forman Emergency Spill Response Training	Reporting	5/5/2021	1	COMPUTER
Morris Forman Emergency Spill Response Training	Reporting	5/9/2021	1	COMPUTER
Morris Forman Emergency Spill Response Training	Reporting	5/13/2021	1	COMPUTER
Morris Forman Emergency Spill Response Training	Reporting	3/24/2021	1	COMPUTER
HazMat Refresher Training (8 Hour)	Safety	11/16/2020	8	MFWTP
HazMat Refresher Training (8 Hour)	Safety	11/18/2020	8	CMF
HazMat Refresher Training (8 Hour)	Safety	11/30/2020	8	CMF

Course Name	Category	Date	Hours	Location
HazMat Refresher Training (8 Hour)	Safety	12/3/2020	8	CMF
HazMat Refresher Training (8 Hour)	Safety	12/4/2020	8	CMF
HazMat Refresher Training (8 Hour)	Safety	12/8/2020	8	CMF
HazMat Refresher Training (8 Hour)	Safety	12/14/2020	8	CMF
HazMat Refresher Training (8 Hour)	Safety	12/16/2020	8	CMF
HazMat Refresher Training (8 Hour)	Safety	12/17/2020	8	CMF
HazMat Refresher Training (8 Hour)	Safety	12/22/2020	8	MFWTP
HazMat Refresher Training (8 Hour)	Safety	12/28/2020	8	MFWTP
HazMat Refresher Training (8 Hour)	Safety	12/30/2020	8	FFWTP
HazMat Refresher Training (8 Hour)	Safety	1/20/2021	8	FFWTP
HazMat Refresher Training (8 Hour)	Safety	1/25/2021	8	CMF
HazMat Refresher Training (8 Hour)	Safety	1/27/2021	8	CMF
HazMat Refresher Training (8 Hour)	Safety	2/2/2021	8	CMF
HazMat Refresher Training (8 Hour)	Safety	2/9/2021	8	FFWTP
HazMat Refresher Training (8 Hour)	Safety	2/17/2021	8	CMF
Hazmat Training 40 Hour	Safety	7/27/2020	40	OFF-SITE
Hazmat Training 40 Hour	Safety	11/30/2020	40	OFF-SITE
NEOGOV - Safety - Spill Prevention and Control	Safety	12/2/2020	0.5	COMPUTER
WATER QUALITY MANAGEMENT (360 WATER)	Wastewater Operations	12/2/2020	1	COMPUTER
		Hours:	**386**	

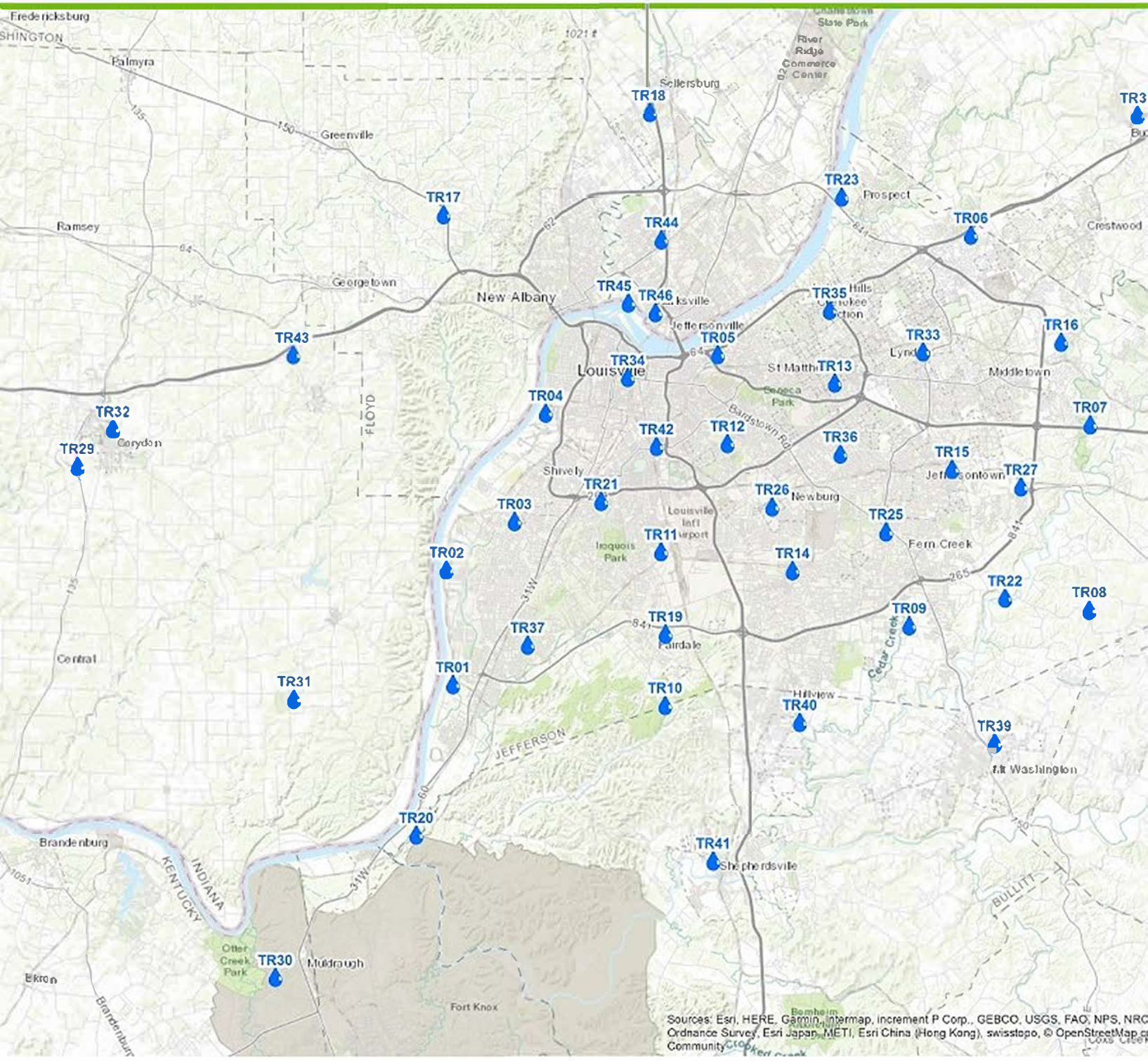
APPENDIX 2.6.8 STORM SEWER MAINTENANCE SUMMARY

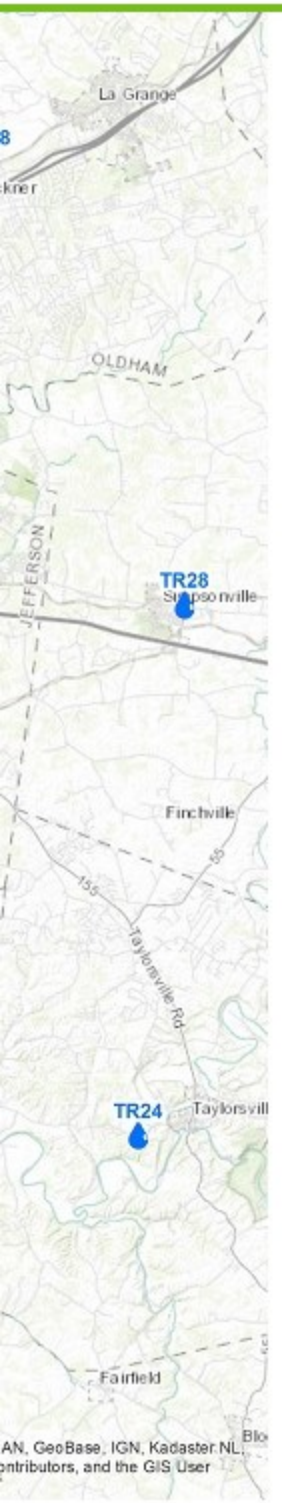
APPENDIX 2.6.8 Summar of Storm Sewer System Maintenance

Maintenance Activity	Inside CSSA Cost	Footage	Work Orders	Outside CSSA Cost	Footage	Work Orders	Total Cost	Total Footage	Total Work Orders
Catch Basin & Storm Sewer Cleaning Activity	**$ 70,323**	**345,328**	**19,143**	**$ 14,113**	**260,286**	**6,938**	**$ 84,436**	**605,615**	**26,081**
Catch Basin Cleaning	**$ 13,728**	**5**	**17,279**	**$ 4,660**	**-**	**4,123**	**$ 18,388**	**5**	**21,402**
CATCH BASIN CLEANING	$ 8,262	-	16,442	$ 4,660	-	3,849	$ 12,922	-	20,291
CATCH BASIN CLG BY A CUSTOMER	$ 5,466	5	837	$ -	-	274	$ 5,466	5	1,111
Storm Sewer Cleaning	**$ 56,595**	**345,323**	**1,864**	**$ 9,453**	**260,286**	**2,815**	**$ 66,048**	**605,610**	**4,679**
FLUSH ASSET	$ 237	318,348	509	$ 3,010	102,908	1,017	$ 3,248	421,256	1,526
ROOT CUTTING	$ -	5,260	58	$ 3,620	75,972	366	$ 3,620	81,232	424
ROUTINE (PM) SEWER FLUSHING	$ -	20,696	358	$ -	78,038	989	$ -	98,735	1,347
VACTOR	$ 56,358	1,019	939	$ 2,823	3,368	443	$ 59,181	4,387	1,382
Channel Maintenance Activity	**$ 55,276**	**33,989**	**3,277**	**$ 2,443,899**	**485,566**	**7,635**	**$ 2,499,175**	**519,555**	**10,912**
Channel Maintenance Activity	**$ 55,276**	**12,489**	**2,976**	**$ 2,442,596**	**394,066**	**5,039**	**$ 2,497,873**	**406,555**	**8,015**
AREAS TRIMMED	$ -	-	6	$ 2,896	820	4	$ 2,896	820	10
DEBRIS REMOVAL	$ -	-	1	$ 8,345	650	18	$ 8,345	650	19
DITCH CLEANING	$ 8,160	3,830	9	$ 713,723	156,699	529	$ 721,884	160,529	538
DITCH REGRADING	$ 8,423	576	8	$ 703,612	31,036	319	$ 712,035	31,612	327
DRAINAGE OBSTRUCTION	$ 3,685	20	13	$ 160,792	681	374	$ 164,477	701	387
DRIVEWAY APRON RESTORE	$ 550	75	1	$ 237,618	2,347	44	$ 238,168	2,422	45
HEADWALL INSTALLATION/REPAIR	$ -	-	-	$ 22,172	-	13	$ 22,172	-	13
INSTALL CONCRETE CHANNEL	$ -	-	-	$ 23,576	292	12	$ 23,576	292	12
PIPE INSTALLATION	$ 8,309	185	3	$ 234,930	3,407	46	$ 243,239	3,592	49
RECURRING DITCH CLEANING	$ -	-	-	$ 231,159	113,295	119	$ 231,159	113,295	119
ROUTINE MOWING	$ 1,649	7,802	2,921	$ 13,744	84,837	3,495	$ 15,393	92,639	6,416
TREE REMOVAL	$ 20,575	-	13	$ 90,029	-	65	$ 110,604	-	78
STORM LINE REPAIR	$ 3,925	1	1	$ -	1	1	$ 3,925	2	2
Storm Events	**$ -**	**21,500**	**301**	**$ 1,302**	**91,500**	**2,596**	**$ 1,302**	**113,000**	**2,897**
HOT SPOTS--RAIN EVENTS	$ -	21,500	301	$ 1,302	91,500	2,596	$ 1,302	113,000	2,897
STORM EVENTS-RAIN/SNOW, ETC.	**$ 10,988**	**-**	**1**	**$ -**	**-**	**-**	**$ 10,988**	**-**	**1**
STORM EVENTS-RAIN/SNOW, ETC.	**$ 10,988**	**-**	**1**	**$ -**	**-**	**-**	**$ 10,988**	**-**	**1**
STORM EVENTS-RAIN/SNOW, ETC.	$ 10,988	-	1	$ -	-	-	$ 10,988	-	1
Grand Total	**$ 136,588**	**379,317**	**22,421**	**$ 2,458,011**	**745,852**	**14,573**	**$ 2,594,599**	**1,125,169**	**36,994**

APPENDIX 2.7.6 RAIN GAUGE MAP

APPENDIX 2.7.6 RAIN GAUGE MAP




La Grange
OLDHAM
JEFFERSON
TR28
Finchville
155
Taylorsville Rd
TR24
Fairfield
AN, GeoBase, IGN, Kadaster NL,
ntributors, and the GIS User

APPENDIX 2.7.8 MONITORING STATIONS MAP

APPENDIX 2.7.8 MONITORING STATIONS MAP

Map Key

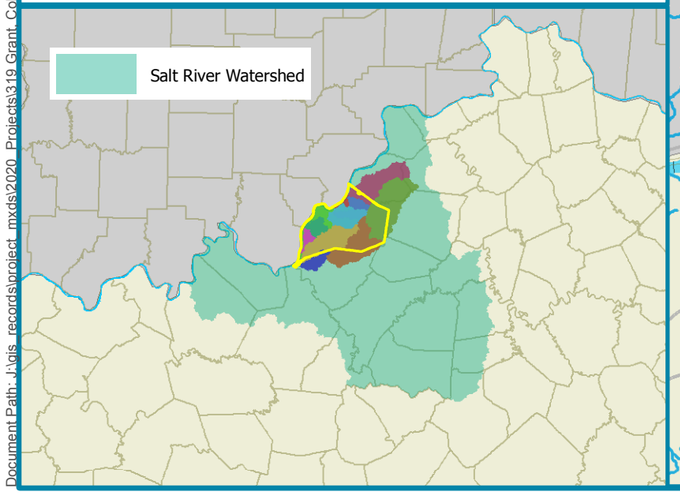
- IOAP Projects
- Stream Meters
- Jefferson County Boundary
- County Boundaries

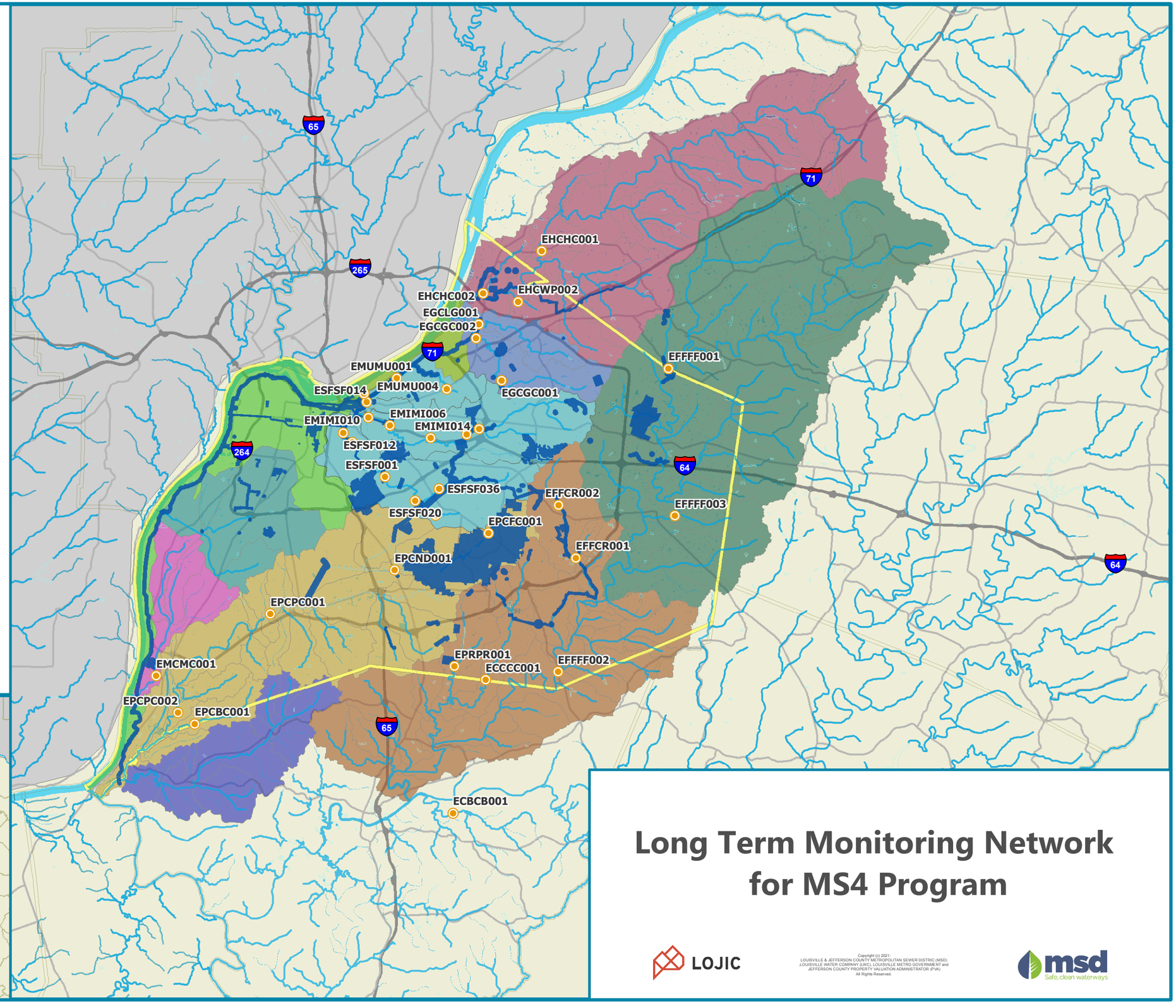
Hydrology

- Stream
- Ditch or Canal
- Intermittent Stream
- Lake or Pond
- Dam

Watersheds, 11 Digit HUC

- Ohio River
- City/Ohio River
- Harrods Creek
- Goose Creek
- Beargrass Creek
- Mill Creek
- Lower Mill Creek
- Upper Floyds Fork
- Lower Floyds Fork
- Pond Creek
- Pond Creek/Knob Creek





Long Term Monitoring Network for MS4 Program

LOJIC

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msd
Safe, clean waterways

Document Path: J:\dis_records\project_mxds\2020_Projects\319 Grant_Colette Easter\MXD\Grant Map County Wide Mon Sites.mxd

APPENDIX 5A CONTINUOUS MONITORING – SONDE WATERSHED DATA, CONDUCTIVITY, pH, DISSOLVED OXYGEN, AND TEMPERATURE

APPENDIX 5A ANALYZED CONTINUOUS MONITORING DATA - SONDE WATERSHED DATA

Site	Temp Complete	Temp Criteria	DO Complete	Do Avg	DO Criteria	pH Complete	pH Criteria	Spec Complete	Min	Max
Harrods Creek at Covered Bridge Road	94.3	100.0	85.7	10.2	100.0	49.4	100.0	93.6	139.0	641.0
Goose Creek at Old Westport Road	88.7	100.0	76.2	9.9	100.0	58.1	100.0	81.1	57.0	1660.0
Goose Creek at US 42	100.0	100.0	94.3	9.9	100.0	89.8	100.0	97.0	127.0	1580.0
Little Goose Creek at US 42	99.2	100.0	78.9	9.6	100.0	55.8	100.0	95.5	111.0	3340.0
Muddy Fork of Beargrass Creek at Mockingbird Valley Road	86.8	100.0	86.8	9.4	98.3	6.4	100.0	85.7	71.0	2610.0
Middle Fork of Beargrass Creek at Old Cannons Lane	92.8	100.0	91.3	9.6	98.8	92.8	100.0	92.5	77.0	3920.0
Middle Fork of Beargrass Creek at Lexington Road	82.6	100.0	70.6	7.8	78.1	70.2	100.0	76.2	84.0	1820.0
South Fork of Beargrass Creek at Trevilian Way	60.0	100.0	83.8	8.8	97.7	83.8	100.0	83.8	64.0	3810.0
SFBGC@Breckinridge Street	82.3	100.0	55.8	9.3	95.3	63.0	100.0	58.9	93.0	930.0
South Fork of Beargrass Creek at River Road	91.7	100.0	62.3	8.5	77.6	75.1	100.0	89.1	113.0	2890.0
Floyds Fork at Ash Avenue	57.7	100.0	49.1	8.3	98.5	47.2	100.0	52.1	144.0	586.0
Floyds Fork at Old Taylorsville Road	79.2	100.0	57.0	8.7	98.0	67.9	100.0	77.7	165.0	783.0
Floyds Fork at Bardstown Road	100.0	100.0	55.1	10.1	97.3	69.8	100.0	90.9	177.0	919.0
Chenoweth Run #1 at Ruckriegel Parkway	93.2	100.0	67.5	9.7	100.0	75.1	100.0	92.1	57.0	6270.0
Chenoweth Run #1 at Gelhaus Lane	72.1	99.5	70.9	9.6	100.0	43.4	98.3	70.2	53.0	2200.0
Cedar Creek at Thixton Lane	91.3	100.0	86.4	9.7	99.6	91.3	100.0	84.2	65.0	1220.0
Pennsylvania Run at Mount Washington Road	96.6	100.0	58.9	10.3	95.5	58.1	100.0	84.9	75.0	630.0
Fern Creek at Bardstown Road	93.2	100.0	89.8	9.5	100.0	93.2	100.0	92.8	70.0	2340.0
Northern Ditch at Preston Highway	100.0	99.2	84.5	10.0	97.3	65.7	100.0	97.7	135.0	1570.0
Pond Creek at Manslick Road	93.6	100.0	81.9	9.0	86.2	86.0	100.0	91.7	85.0	3000.0
Pond Creek at Pendleton Road	92.1	100.0	86.4	8.8	95.2	63.4	100.0	92.1	63.0	2580.0
Brier Creek at Bear Camp Road	92.5	100.0	74.0	8.8	78.6	86.0	100.0	91.7	66.0	354.0
Mill Creek at Orell Road	28.3	100.0	25.3	12.7	100.0	24.9	98.5	28.3	43.0	1260.0
Cedar Creek at State Highway 1442	87.9	100.0	84.5	10.2	99.6	62.6	100.0	71.7	134.0	560.0

APPENDIX 5A ANALYZED CONTINUOUS MONITORING DATA - CONDUCTIVITY

Watershed Name	USGSNUM	MSD NAME	PCT_COMPLETE_RECORD	MinOfConductivity	AvgOfConductivity	MaxOfConductivity	SORTNO
Harrods Creek	3292470	Harrods Creek at Covered Bridge Road	93.6	139	453	641	1
Goose Creek	3292474	Goose Creek at Old Westport Road	81.1	57	532	1660	3
Goose Creek	3292475	Goose Creek at US 42	97.0	127	550	1580	4
Goose Creek	3292480	Little Goose Creek at US 42	95.5	111	663	3340	5
Muddy Fork of Beargrass Creek	3293530	Muddy Fork of Beargrass Creek at Mockingbird Valley Road	85.7	71	682	2610	6
Middle Fork of Beargrass Creek	3293000	Middle Fork of Beargrass Creek at Old Cannons Lane	92.5	77	684	3920	8
Middle Fork of Beargrass Creek	3293500	Middle Fork of Beargrass Creek at Lexington Road	76.2	84	542	1820	9
South Fork of Beargrass Creek	3292500	South Fork of Beargrass Creek at Trevilian Way	83.8	64	567	3810	10
South Fork of Beargrass Creek	3292555	SFBGC@Breckinridge Street	58.9	93	501	930	11
South Fork of Beargrass Creek	3293510	South Fork of Beargrass Creek at River Road	89.1	113	685	2890	13
Floyds Fork	3297900	Floyds Fork at Ash Avenue	52.1	144	459	586	14
Floyds Fork	3298000	Floyds Fork at Old Taylorsville Road	77.7	165	508	783	15
Floyds Fork	3298200	Floyds Fork at Bardstown Road	90.9	177	510	919	16
Floyds Fork	3298135	Chenoweth Run #1 at Ruckriegel Parkway	92.1	57	774	6270	17
Floyds Fork	3298150	Chenoweth Run #1 at Gelhaus Lane	70.2	53	569	2200	18
Cedar Creek	3298250	Cedar Creek at Thixton Lane	84.2	65	611	1220	19
Pennsylvania Run	3298300	Pennsylvania Run at Mount Washington Road	84.9	75	410	630	20
Pond Creek	3301900	Fern Creek at Bardstown Road	92.8	70	660	2340	21
Pond Creek	3301940	Northern Ditch at Preston Highway	97.7	135	572	1570	22
Pond Creek	3302000	Pond Creek at Manslick Road	91.7	85	572	3000	23
Pond Creek	3302030	Pond Creek at Pendleton Road	92.1	63	513	2580	24
Pond Creek	3302050	Brier Creek at Bear Camp Road	91.7	66	237	354	25
Mill Creek	3294570	Mill Creek at Orell Road	28.3	43	397	1260	27
Cedar Creek (Bullitt County)	3297800	Cedar Creek at State Highway 1442	71.7	134	462	560	28

APPENDIX 5A ANALYZED CONTINUOUS MONITORING DATA - pH

Watershed Name	Watershed Name	USGSNUM	MSD NAME	DAYS_COMPLETE_RECORD	DAYS_pH_CRITERIA_NOT_MET	DAYS_pH_CRITERIA_MET	PCT_pHFINAL_MET_OF AVAIL	PCT_COMPLETE_RECORD	MinOfpH	MaxOfpH
Muddy Fork of Beargrass Creek	Muddy Fork of Beargrass Creek	3293530	Muddy Fork of Beargrass Creek at Mockingbird Valley Road	17	0	17	100.0	6.4	6.9	7.8
Mill Creek	Mill Creek	3294570	Mill Creek at Orell Road	66	1	65	98.5	24.9	7.4	9.4
Floyds Fork	Floyds Fork	3298150	Chenoweth Run #1 at Gelhaus Lane	115	2	113	98.3	43.4	7.1	9.1
Floyds Fork	Floyds Fork	3297900	Floyds Fork at Ash Avenue	125	0	125	100.0	47.2	6.8	8.8
Harrods Creek	Harrods Creek	3292470	Harrods Creek at Covered Bridge Road	131	0	131	100.0	49.4	7.1	9
Goose Creek	Goose Creek	3292480	Little Goose Creek at US 42	148	0	148	100.0	55.8	7.3	8.7
Pennsylvania Run	Pennsylvania Run	3298300	Pennsylvania Run at Mount Washington Road	154	0	154	100.0	58.1	6.7	8.7
Goose Creek	Goose Creek	3292474	Goose Creek at Old Westport Road	154	0	154	100.0	58.1	6.9	8.4
Cedar Creek (Bullitt County)	Cedar Creek (Bullitt County)	3297800	Cedar Creek at State Highway 1442	166	0	166	100.0	62.6	7.5	9
South Fork of Beargrass Creek	South Fork of Beargrass Creek	3292555	SFBGC@Breckinridge Street	167	0	167	100.0	63.0	6.2	8.4
Pond Creek	Pond Creek	3302030	Pond Creek at Pendleton Road	168	0	168	100.0	63.4	6.5	8.7
Pond Creek	Pond Creek	3301940	Northern Ditch at Preston Highway	174	0	174	100.0	65.7	7	8.7
Floyds Fork	Floyds Fork	3298000	Floyds Fork at Old Taylorsville Road	180	0	180	100.0	67.9	7.5	8.7
Floyds Fork	Floyds Fork	3298200	Floyds Fork at Bardstown Road	185	0	185	100.0	69.8	7.1	8.5
Middle Fork of Beargrass Creek	Middle Fork of Beargrass Creek	3293500	Middle Fork of Beargrass Creek at Lexington Road	186	0	186	100.0	70.2	6.8	8.2
Floyds Fork	Floyds Fork	3298135	Chenoweth Run #1 at Ruckriegel Parkway	199	0	199	100.0	75.1	7.2	8.6
South Fork of Beargrass Creek	South Fork of Beargrass Creek	3293510	South Fork of Beargrass Creek at River Road	199	0	199	100.0	75.1	6.2	8.3
South Fork of Beargrass Creek	South Fork of Beargrass Creek	3292500	South Fork of Beargrass Creek at Trevilian Way	222	0	222	100.0	83.8	6.9	8.6
Pond Creek	Pond Creek	3302000	Pond Creek at Manslick Road	228	0	228	100.0	86.0	6.5	8.7
Pond Creek	Pond Creek	3302050	Brier Creek at Bear Camp Road	228	0	228	100.0	86.0	6.2	7.3
Goose Creek	Goose Creek	3292475	Goose Creek at US 42	238	0	238	100.0	89.8	7.1	8.6
Cedar Creek	Cedar Creek	3298250	Cedar Creek at Thixton Lane	242	0	242	100.0	91.3	7.3	8.9
Middle Fork of Beargrass Creek	Middle Fork of Beargrass Creek	3293000	Middle Fork of Beargrass Creek at Old Cannons Lane	246	0	246	100.0	92.8	7.2	8.6
Pond Creek	Pond Creek	3301900	Fern Creek at Bardstown Road	247	0	247	100.0	93.2	6.6	8.5

APPENDIX 5A ANALYZED CONTINUOUS MONITORING DATA - DISSOLVED OXYGEN

SORTNO	USGSNUM	MSD NAME	DAYS_DAILY CRITERIA MET	PCT_DAILY_CRITERIA_MET_OF_AVAIL	PCT_COMPLETE_RECORD	AvgOfDissolved Oxygen
27	3294570	Mill Creek at Orell Road	67	100	25.28301887	12.6802244
14	3297900	Floyds Fork at Ash Avenue	128	98.46153846	49.05660377	8.280027338
16	3298200	Floyds Fork at Bardstown Road	142	97.26027397	55.09433962	10.10997984
11	3292555	SFBGC@Breckinridge Street	141	95.27027027	55.8490566	9.254568654
15	3298000	Floyds Fork at Old Taylorsville Road	148	98.01324503	56.98113208	8.658572515
20	3298300	Pennsylvania Run at Mount Washington Road	149	95.51282051	58.86792453	10.31434215
13	3293510	South Fork of Beargrass Creek at River Road	128	77.57575758	62.26415094	8.537390864
17	3298135	Chenoweth Run #1 at Ruckriegel Parkway	179	100	67.54716981	9.735889803
9	3293500	Middle Fork of Beargrass Creek at Lexington Road	146	78.07486631	70.56603774	7.849258824
18	3298150	Chenoweth Run #1 at Gelhaus Lane	188	100	70.94339623	9.625989893
25	3302050	Brier Creek at Bear Camp Road	154	78.57142857	73.96226415	8.833928284
3	3292474	Goose Creek at Old Westport Road	202	100	76.22641509	9.94171544
5	3292480	Little Goose Creek at US 42	209	100	78.86792453	9.576851759
23	3302000	Pond Creek at Manslick Road	187	86.17511521	81.88679245	8.984619087
10	3292500	South Fork of Beargrass Creek at Trevilian Way	217	97.74774775	83.77358491	8.772143461
22	3301940	Northern Ditch at Preston Highway	218	97.32142857	84.52830189	10.04154696
28	3297800	Cedar Creek at State Highway 1442	223	99.55357143	84.52830189	10.20172156
1	3292470	Harrods Creek at Covered Bridge Road	227	100	85.66037736	10.17934272
24	3302030	Pond Creek at Pendleton Road	218	95.19650655	86.41509434	8.82374863
19	3298250	Cedar Creek at Thixton Lane	228	99.56331878	86.41509434	9.741243736
6	3293530	Muddy Fork of Beargrass Creek at Mockingbird Valley Road	226	98.26086957	86.79245283	9.393379016
21	3301900	Fern Creek at Bardstown Road	238	100	89.81132075	9.532774731
8	3293000	Middle Fork of Beargrass Creek at Old Cannons Lane	239	98.76033058	91.32075472	9.574311211
4	3292475	Goose Creek at US 42	250	100	94.33962264	9.856567983

APPENDIX 5A ANALYZED CONTINUOUS MONITORING DATA - TEMPERATURE

Watershed Name	USGSNUM	MSD NAME	DAYS_COMPLETE_RECORD	DAYS_TEMP_CRITERIA_NOT_MET	DAYS_TEMP_CRITERIA_MET	PCT_TEMPFINAL_MET_OF AVAIL	PCT_TEMPFINAL_COMPLETE_RECORD
Mill Creek	3294550	Mill Creek Cutoff at Cane Run Road		0			
South Fork of Beargrass Creek	3292550	South Fork of Beargrass Creek at Schiller Avenue Ramp		0			
Mill Creek	3294570	Mill Creek at Orell Road	75	0	75	100	28.30188679
Floyds Fork	3297900	Floyds Fork at Ash Avenue	153	0	153	100	57.73584906
South Fork of Beargrass Creek	3292500	South Fork of Beargrass Creek at Trevilian Way	159	0	159	100	60
Floyds Fork	3298150	Chenoweth Run #1 at Gelhaus Lane	191	1	190	99.47643979	72.0754717
Floyds Fork	3298000	Floyds Fork at Old Taylorsville Road	210	0	210	100	79.24528302
South Fork of Beargrass Creek	3292555	SFBGC@Breckinridge Street	218	0	218	100	82.26415094
Middle Fork of Beargrass Creek	3293500	Middle Fork of Beargrass Creek at Lexington Road	219	0	219	100	82.64150943
Muddy Fork of Beargrass Creek	3293530	Muddy Fork of Beargrass Creek at Mockingbird Valley Road	230	0	230	100	86.79245283
Cedar Creek (Bullitt County)	3297800	Cedar Creek at State Highway 1442	233	0	233	100	87.9245283
Goose Creek	3292474	Goose Creek at Old Westport Road	235	0	235	100	88.67924528
Cedar Creek	3298250	Cedar Creek at Thixton Lane	242	0	242	100	91.32075472
South Fork of Beargrass Creek	3293510	South Fork of Beargrass Creek at River Road	243	0	243	100	91.69811321
Pond Creek	3302030	Pond Creek at Pendleton Road	244	0	244	100	92.0754717
Pond Creek	3302050	Brier Creek at Bear Camp Road	245	0	245	100	92.45283019
Middle Fork of Beargrass Creek	3293000	Middle Fork of Beargrass Creek at Old Cannons Lane	246	0	246	100	92.83018868
Floyds Fork	3298135	Chenoweth Run #1 at Ruckriegel Parkway	247	0	247	100	93.20754717
Pond Creek	3301900	Fern Creek at Bardstown Road	247	0	247	100	93.20754717
Pond Creek	3302000	Pond Creek at Manslick Road	248	0	248	100	93.58490566
Harrods Creek	3292470	Harrods Creek at Covered Bridge Road	250	0	250	100	94.33962264
Pennsylvania Run	3298300	Pennsylvania Run at Mount Washington Road	256	0	256	100	96.60377358
Goose Creek	3292480	Little Goose Creek at US 42	263	0	263	100	99.24528302
Floyds Fork	3298200	Floyds Fork at Bardstown Road	265	0	265	100	100
Goose Creek	3292475	Goose Creek at US 42	265	0	265	100	100
Pond Creek	3301940	Northern Ditch at Preston Highway	265	2	263	99.24528302	100

APPENDIX 5B CONTINUOUS MONITORING – SITE DATA, E COLI, WET OR DRY, TOTAL NITROGEN, AND METALS

APPENDIX 5B ANALYZED QUARTERLY MONITORING DATA - SITE DATA

Loccode	MSD NAME	IANALYTE	AvgOfconverted_result
ECBCB001	Cedar Creek at State Highway 1442	Oil and Grease Total	2.5
ECBCB001	Cedar Creek at State Highway 1442	Total Nitrogen	0.822875
ECBCB001	Cedar Creek at State Highway 1442	TSS	18
ECCCC001	Cedar Creek at Thixton Lane	Oil and Grease Total	2.5
ECCCC001	Cedar Creek at Thixton Lane	Total Nitrogen	4.722
ECCCC001	Cedar Creek at Thixton Lane	TSS	5.375
EFFCR001	Chenoweth Run #1 at Gelhaus Lane	Oil and Grease Total	2.5
EFFCR001	Chenoweth Run #1 at Gelhaus Lane	Total Nitrogen	1.0375
EFFCR001	Chenoweth Run #1 at Gelhaus Lane	TSS	6.125
EFFCR002	Chenoweth Run #1 at Ruckriegel Parkway	Oil and Grease Total	2.5
EFFCR002	Chenoweth Run #1 at Ruckriegel Parkway	Total Nitrogen	1.36425
EFFCR002	Chenoweth Run #1 at Ruckriegel Parkway	TSS	21.375
EFFFF001	Floyds Fork at Ash Avenue	Oil and Grease Total	2.5
EFFFF001	Floyds Fork at Ash Avenue	Total Nitrogen	2.532625
EFFFF001	Floyds Fork at Ash Avenue	TSS	9.6875
EFFFF002	Floyds Fork at Bardstown Road	Oil and Grease Total	2.5
EFFFF002	Floyds Fork at Bardstown Road	Total Nitrogen	2.93525
EFFFF002	Floyds Fork at Bardstown Road	TSS	4.5
EFFFF003	Floyds Fork at Old Taylorsville Road	Oil and Grease Total	2.5
EFFFF003	Floyds Fork at Old Taylorsville Road	Total Nitrogen	2.73525
EFFFF003	Floyds Fork at Old Taylorsville Road	TSS	4.625
EGCGC001	Goose Creek at Old Westport Road	Oil and Grease Total	2.5
EGCGC001	Goose Creek at Old Westport Road	Total Nitrogen	1.506
EGCGC001	Goose Creek at Old Westport Road	TSS	2.75
EGCGC002	Goose Creek at US 42	Oil and Grease Total	2.5
EGCGC002	Goose Creek at US 42	Total Nitrogen	1.73625
EGCGC002	Goose Creek at US 42	TSS	7.125
EGCLG001	Little Goose Creek at US 42	Oil and Grease Total	2.5
EGCLG001	Little Goose Creek at US 42	Total Nitrogen	3.2225
EGCLG001	Little Goose Creek at US 42	TSS	13
EHCHC001	Harrods Creek at Covered Bridge Road	Oil and Grease Total	2.5
EHCHC001	Harrods Creek at Covered Bridge Road	Total Nitrogen	1.56225
EHCHC001	Harrods Creek at Covered Bridge Road	TSS	4.75
EHCWP002	Wolf Pen Branch at 8200 Wolf Pen Branch Road	Oil and Grease Total	2.5
EHCWP002	Wolf Pen Branch at 8200 Wolf Pen Branch Road	Total Nitrogen	1.36625
EHCWP002	Wolf Pen Branch at 8200 Wolf Pen Branch Road	TSS	6.75
EMCMC001	Mill Creek at Orell Road	Oil and Grease Total	2.5
EMCMC001	Mill Creek at Orell Road	Total Nitrogen	7.3455
EMCMC001	Mill Creek at Orell Road	TSS	10.33333333
EMCMX001	Mill Creek Cutoff at Cane Run Road	Oil and Grease Total	2.5
EMCMX001	Mill Creek Cutoff at Cane Run Road	Total Nitrogen	0.886875
EMCMX001	Mill Creek Cutoff at Cane Run Road	TSS	17
EMIMI002	Middle Fork of Beargrass Creek at Old Cannons Lane	Oil and Grease Total	2.5
EMIMI002	Middle Fork of Beargrass Creek at Old Cannons Lane	Total Nitrogen	1.88525
EMIMI002	Middle Fork of Beargrass Creek at Old Cannons Lane	TSS	3.5
EMIMI009	Middle Fork of Beargrass Creek at Browns Lane	Oil and Grease Total	2.5
EMIMI009	Middle Fork of Beargrass Creek at Browns Lane	Total Nitrogen	2.0821
EMIMI009	Middle Fork of Beargrass Creek at Browns Lane	TSS	7.9
EMIMI010	Middle Fork of Beargrass Creek at Lexington Road	Oil and Grease Total	2.5
EMIMI010	Middle Fork of Beargrass Creek at Lexington Road	Total Nitrogen	2.0585
EMIMI010	Middle Fork of Beargrass Creek at Lexington Road	TSS	5.625
EMUMU001	Muddy Fork of Beargrass Creek at Mockingbird Valley Road	Oil and Grease Total	2.5
EMUMU001	Muddy Fork of Beargrass Creek at Mockingbird Valley Road	Total Nitrogen	3.6065
EMUMU001	Muddy Fork of Beargrass Creek at Mockingbird Valley Road	TSS	4.25
EPCBC001	Brier Creek at Bear Camp Road	Oil and Grease Total	2.5

Loccode	MSD NAME	IANALYTE	AvgOfconverted_result
EPCBC001	Brier Creek at Bear Camp Road	Total Nitrogen	0.683083333
EPCBC001	Brier Creek at Bear Camp Road	TSS	2.125
EPCFC001	Fern Creek at Bardstown Road	Oil and Grease Total	2.5
EPCFC001	Fern Creek at Bardstown Road	Total Nitrogen	1.4225
EPCFC001	Fern Creek at Bardstown Road	TSS	8
EPCND001	Northern Ditch at Preston Highway	Oil and Grease Total	2.5
EPCND001	Northern Ditch at Preston Highway	Total Nitrogen	1.124
EPCND001	Northern Ditch at Preston Highway	TSS	3.125
EPCPC001	Pond Creek at Manslick Road	Oil and Grease Total	2.5
EPCPC001	Pond Creek at Manslick Road	Total Nitrogen	1.02425
EPCPC001	Pond Creek at Manslick Road	TSS	29.75
EPCPC002	Pond Creek at Pendleton Road	Oil and Grease Total	2.5
EPCPC002	Pond Creek at Pendleton Road	Total Nitrogen	0.96225
EPCPC002	Pond Creek at Pendleton Road	TSS	12.875
EPRPR001	Pennsylvania Run at Mount Washington Road	Oil and Grease Total	2.5
EPRPR001	Pennsylvania Run at Mount Washington Road	Total Nitrogen	1.374125
EPRPR001	Pennsylvania Run at Mount Washington Road	TSS	3.875
ESFSF001	South Fork of Beargrass Creek at Trevilian Way	Oil and Grease Total	2.5
ESFSF001	South Fork of Beargrass Creek at Trevilian Way	Total Nitrogen	2.005875
ESFSF001	South Fork of Beargrass Creek at Trevilian Way	TSS	8.5
ESFSF006	South Fork of Beargrass Creek at Brownsboro Road	Oil and Grease Total	2.5
ESFSF006	South Fork of Beargrass Creek at Brownsboro Road	Total Nitrogen	2.1925
ESFSF006	South Fork of Beargrass Creek at Brownsboro Road	TSS	4.75
ESFSF012	SFBGC@Breckinridge Street	Oil and Grease Total	2.5
ESFSF012	SFBGC@Breckinridge Street	Total Nitrogen	1.9975
ESFSF012	SFBGC@Breckinridge Street	TSS	2.375

APPENDIX 5B ANALYZED QUARTERLY MONITORING DATA - E COLI

SORTNO	Loccode	DESCR	M	Y	CountOfM	GM	EC_Overall_Compliance_2_equals_criteria_met	Geomean_compliance	CountOfconverted_result	SumOfsingle_sample_max_compliance	PCT	20_pct_max_compliance
1	EHCHC001	HARRODS CREEK AT HIGHWAY 329 NR GOSHEN, KY.	5	2021	5	95.0512546	2	1	5	5	1	1
1	EHCHC001	HARRODS CREEK AT HIGHWAY 329 NR GOSHEN, KY.	7	2020	5	312.731573	0	0	5	2	0.4	0
1	EHCHC001	HARRODS CREEK AT HIGHWAY 329 NR GOSHEN, KY.	8	2020	5	828.459655	0	0	5	1	0.2	0
1	EHCHC001	HARRODS CREEK AT HIGHWAY 329 NR GOSHEN, KY.	6	2021	5	95.4511293	1	1	5	4	0.8	0
1	EHCHC001	HARRODS CREEK AT HIGHWAY 329 NR GOSHEN, KY.	10	2020	5	86.0482179	2	1	5	5	1	1
1	EHCHC001	HARRODS CREEK AT HIGHWAY 329 NR GOSHEN, KY.	9	2020	5	86.6679175	2	1	5	5	1	1
2	EHCWP002	Wolf Pen Branch @ 8200 WPB RD2	6	2021	5	380.356659	0	0	5	1	0.2	0
2	EHCWP002	Wolf Pen Branch @ 8200 WPB RD2	5	2021	5	180.018617	0	0	5	4	0.8	0
2	EHCWP002	Wolf Pen Branch @ 8200 WPB RD2	10	2020	6	221.84339	0	0	6	2	0.333333333	0
2	EHCWP002	Wolf Pen Branch @ 8200 WPB RD2	7	2020	5	961.736114	0	0	5	2	0.4	0
2	EHCWP002	Wolf Pen Branch @ 8200 WPB RD2	8	2020	5	245.525884	0	0	5	2	0.4	0
2	EHCWP002	Wolf Pen Branch @ 8200 WPB RD2	9	2020	5	220.619741	0	0	5	3	0.6	0
3	EGCGC001	GOOSE CREEK AT OLD WESTPORT RD NR ST MATTHEWS, KY	6	2021	5	820.896259	0	0	5	0	0	0
3	EGCGC001	GOOSE CREEK AT OLD WESTPORT RD NR ST MATTHEWS, KY	5	2021	5	327.808768	0	0	5	2	0.4	0
3	EGCGC001	GOOSE CREEK AT OLD WESTPORT RD NR ST MATTHEWS, KY	7	2020	5	901.233123	0	0	5	0	0	0
3	EGCGC001	GOOSE CREEK AT OLD WESTPORT RD NR ST MATTHEWS, KY	8	2020	5	993.691925	0	0	5	0	0	0
3	EGCGC001	GOOSE CREEK AT OLD WESTPORT RD NR ST MATTHEWS, KY	10	2020	5	914.123358	0	0	5	1	0.2	0
3	EGCGC001	GOOSE CREEK AT OLD WESTPORT RD NR ST MATTHEWS, KY	9	2020	5	755.213603	0	0	5	0	0	0
4	EGCGC002	GOOSE CREEK AT US HWY 42 NEAR GLENVIEW ACRES, KY	10	2020	5	343.223299	0	0	5	1	0.2	0
4	EGCGC002	GOOSE CREEK AT US HWY 42 NEAR GLENVIEW ACRES, KY	9	2020	5	178.263129	0	0	5	4	0.8	0
4	EGCGC002	GOOSE CREEK AT US HWY 42 NEAR GLENVIEW ACRES, KY	8	2020	5	242.723223	0	0	5	2	0.4	0
4	EGCGC002	GOOSE CREEK AT US HWY 42 NEAR GLENVIEW ACRES, KY	7	2020	6	423.154726	0	0	6	2	0.333333333	0
4	EGCGC002	GOOSE CREEK AT US HWY 42 NEAR GLENVIEW ACRES, KY	6	2021	6	112.620569	2	1	6	5	0.833333333	1
4	EGCGC002	GOOSE CREEK AT US HWY 42 NEAR GLENVIEW ACRES, KY	5	2021	5	148.136481	0	0	5	3	0.6	0
5	EGCLG001	LITTLE GOOSE CREEK NEAR HARRODS CREEK, KY	8	2020	5	268.412762	0	0	5	2	0.4	0
5	EGCLG001	LITTLE GOOSE CREEK NEAR HARRODS CREEK, KY	7	2020	5	597.606018	0	0	5	1	0.2	0
5	EGCLG001	LITTLE GOOSE CREEK NEAR HARRODS CREEK, KY	6	2021	5	144.86394	0	0	5	4	0.8	0
5	EGCLG001	LITTLE GOOSE CREEK NEAR HARRODS CREEK, KY	10	2020	5	124.186783	1	1	5	4	0.8	0
5	EGCLG001	LITTLE GOOSE CREEK NEAR HARRODS CREEK, KY	5	2021	5	142.698881	0	0	5	3	0.6	0
5	EGCLG001	LITTLE GOOSE CREEK NEAR HARRODS CREEK, KY	9	2020	5	141.886953	0	0	5	4	0.8	0
6	EMUMU001	MUDDY FK AT MOCKINGBIRD VALLEY RD AT LOUISVILLE,KY	7	2020	5	621.025607	0	0	5	0	0	0
6	EMUMU001	MUDDY FK AT MOCKINGBIRD VALLEY RD AT LOUISVILLE,KY	10	2020	5	245.307506	0	0	5	3	0.6	0
6	EMUMU001	MUDDY FK AT MOCKINGBIRD VALLEY RD AT LOUISVILLE,KY	5	2021	5	256.969225	0	0	5	3	0.6	0
6	EMUMU001	MUDDY FK AT MOCKINGBIRD VALLEY RD AT LOUISVILLE,KY	6	2021	5	412.529861	0	0	5	1	0.2	0
6	EMUMU001	MUDDY FK AT MOCKINGBIRD VALLEY RD AT LOUISVILLE,KY	8	2020	5	568.214177	0	0	5	0	0	0
6	EMUMU001	MUDDY FK AT MOCKINGBIRD VALLEY RD AT LOUISVILLE,KY	9	2020	5	732.40782	0	0	5	0	0	0
7	EMIMI009	MIFBGC @ Browns LN	10	2020	7	1259.95329	0	0	7	0	0	0
7	EMIMI009	MIFBGC @ Browns LN	8	2020	7	1582.77205	0	0	7	0	0	0
7	EMIMI009	MIFBGC @ Browns LN	6	2021	5	1223.7233	0	0	5	0	0	0
7	EMIMI009	MIFBGC @ Browns LN	9	2020	6	1273.19943	0	0	6	0	0	0
7	EMIMI009	MIFBGC @ Browns LN	7	2020	6	1222.30821	0	0	6	0	0	0
7	EMIMI009	MIFBGC @ Browns LN	5	2021	5	458.849134	0	0	5	0	0	0
8	EMIMI002	M FK BEARGRASS CR AT OLD CANNONS LN AT LOUISVILLE	5	2021	5	194.607999	0	0	5	2	0.4	0
8	EMIMI002	M FK BEARGRASS CR AT OLD CANNONS LN AT LOUISVILLE	9	2020	6	757.470444	0	0	6	0	0	0
8	EMIMI002	M FK BEARGRASS CR AT OLD CANNONS LN AT LOUISVILLE	10	2020	6	415.371726	0	0	6	3	0.5	0
8	EMIMI002	M FK BEARGRASS CR AT OLD CANNONS LN AT LOUISVILLE	8	2020	6	427.678066	0	0	6	1	0.166666667	0
8	EMIMI002	M FK BEARGRASS CR AT OLD CANNONS LN AT LOUISVILLE	6	2021	5	383.438276	0	0	5	2	0.4	0
8	EMIMI002	M FK BEARGRASS CR AT OLD CANNONS LN AT LOUISVILLE	7	2020	7	441.201137	0	0	7	1	0.142857143	0
9	EMIMI010	M FK BEARGRASS CR AT LEXINGTON RD AT LOUISVILLE,KY	6	2021	5	538.673957	0	0	5	1	0.2	0
9	EMIMI010	M FK BEARGRASS CR AT LEXINGTON RD AT LOUISVILLE,KY	10	2020	6	199.055923	0	0	6	4	0.666666667	0
9	EMIMI010	M FK BEARGRASS CR AT LEXINGTON RD AT LOUISVILLE,KY	7	2020	6	2059.08448	0	0	6	0	0	0
9	EMIMI010	M FK BEARGRASS CR AT LEXINGTON RD AT LOUISVILLE,KY	8	2020	6	507.969254	0	0	6	1	0.166666667	0
9	EMIMI010	M FK BEARGRASS CR AT LEXINGTON RD AT LOUISVILLE,KY	9	2020	6	562.237561	0	0	6	2	0.333333333	0
9	EMIMI010	M FK BEARGRASS CR AT LEXINGTON RD AT LOUISVILLE,KY	5	2021	5	412.660692	0	0	5	2	0.4	0
10	ESFSF001	SOUTH FORK BEARGRASS CREEK AT LOUISVILLE, KY	7	2020	5	570.548775	0	0	5	1	0.2	0
10	ESFSF001	SOUTH FORK BEARGRASS CREEK AT LOUISVILLE, KY	9	2020	5	486.449994	0	0	5	1	0.2	0
10	ESFSF001	SOUTH FORK BEARGRASS CREEK AT LOUISVILLE, KY	5	2021	5	173.194832	0	0	5	2	0.4	0
10	ESFSF001	SOUTH FORK BEARGRASS CREEK AT LOUISVILLE, KY	6	2021	5	135.901373	0	0	5	3	0.6	0
10	ESFSF001	SOUTH FORK BEARGRASS CREEK AT LOUISVILLE, KY	10	2020	5	177.103399	0	0	5	4	0.8	0
10	ESFSF001	SOUTH FORK BEARGRASS CREEK AT LOUISVILLE, KY	8	2020	5	1610.67146	0	0	5	0	0	0
11	ESFSF012	S FK BEARGRASS CR @ E BRECKINRIDGE ST @ LOUISVILLE	10	2020	5	263.949813	0	0	5	2	0.4	0
11	ESFSF012	S FK BEARGRASS CR @ E BRECKINRIDGE ST @ LOUISVILLE	5	2021	5	511.204813	0	0	5	0	0	0
11	ESFSF012	S FK BEARGRASS CR @ E BRECKINRIDGE ST @ LOUISVILLE	7	2020	5	1576.43635	0	0	5	0	0	0
11	ESFSF012	S FK BEARGRASS CR @ E BRECKINRIDGE ST @ LOUISVILLE	8	2020	5	1773.77082	0	0	5	1	0.2	0
11	ESFSF012	S FK BEARGRASS CR @ E BRECKINRIDGE ST @ LOUISVILLE	9	2020	5	1282.28003	0	0	5	0	0	0
11	ESFSF012	S FK BEARGRASS CR @ E BRECKINRIDGE ST @ LOUISVILLE	6	2021	5	545.884668	0	0	5	2	0.4	0
12	ESFSF006	SFBGC@ Brownsboro Road	7	2020	5	1211.02324	0	0	5	1	0.2	0
12	ESFSF006	SFBGC@ Brownsboro Road	5	2021	5	937.661192	0	0	5	0	0	0
12	ESFSF006	SFBGC@ Brownsboro Road	9	2020	5	2131.68035	0	0	5	0	0	0
12	ESFSF006	SFBGC@ Brownsboro Road	6	2021	5	790.021044	0	0	5	0	0	0
12	ESFSF006	SFBGC@ Brownsboro Road	10	2020	5	456.842965	0	0	5	1	0.2	0
12	ESFSF006	SFBGC@ Brownsboro Road	8	2020	5	3470.2238	0	0	5	0	0	0
14	EFFFF001	FLOYDS FORK NEAR PEWEE VALLEY, KY	5	2021	5	318.401174	0	0	5	3	0.6	0

SORTNO	Loccode	DESCR	M	Y	CountOfM	GM	EC_Overall_Compliance_2_equals_criteria_met	Geomean_compliance	CountOfconverted_result	SumOfsingle_sample_max_compliance	PCT	20_pct_max_compliance
14	EFFFF001	FLOYDS FORK NEAR PEWEE VALLEY, KY	6	2021	5	189.388948	0	0	5	3	0.6	0
14	EFFFF001	FLOYDS FORK NEAR PEWEE VALLEY, KY	7	2020	5	720.128559	0	0	5	1	0.2	0
14	EFFFF001	FLOYDS FORK NEAR PEWEE VALLEY, KY	8	2020	5	1011.38339	0	0	5	0	0	0
14	EFFFF001	FLOYDS FORK NEAR PEWEE VALLEY, KY	10	2020	5	110.015979	2	1	5	5	1	1
14	EFFFF001	FLOYDS FORK NEAR PEWEE VALLEY, KY	9	2020	5	411.523095	0	0	5	3	0.6	0
15	EFFFF003	FLOYDS FORK AT FISHERVILLE, KY	7	2020	5	434.107633	0	0	5	2	0.4	0
15	EFFFF003	FLOYDS FORK AT FISHERVILLE, KY	9	2020	5	179.096322	0	0	5	4	0.8	0
15	EFFFF003	FLOYDS FORK AT FISHERVILLE, KY	8	2020	5	321.332803	0	0	5	2	0.4	0
15	EFFFF003	FLOYDS FORK AT FISHERVILLE, KY	10	2020	5	227.019104	0	0	5	4	0.8	0
15	EFFFF003	FLOYDS FORK AT FISHERVILLE, KY	5	2021	5	299.430709	0	0	5	4	0.8	0
15	EFFFF003	FLOYDS FORK AT FISHERVILLE, KY	6	2021	5	341.297064	0	0	5	2	0.4	0
16	EFFFF002	FLOYDS FORK NEAR MT WASHINGTON, KY	6	2021	5	736.782545	0	0	5	0	0	0
16	EFFFF002	FLOYDS FORK NEAR MT WASHINGTON, KY	7	2020	5	713.908999	0	0	5	2	0.4	0
16	EFFFF002	FLOYDS FORK NEAR MT WASHINGTON, KY	8	2020	5	424.383084	0	0	5	2	0.4	0
16	EFFFF002	FLOYDS FORK NEAR MT WASHINGTON, KY	9	2020	5	181.528512	0	0	5	4	0.8	0
16	EFFFF002	FLOYDS FORK NEAR MT WASHINGTON, KY	10	2020	5	353.705327	0	0	5	3	0.6	0
16	EFFFF002	FLOYDS FORK NEAR MT WASHINGTON, KY	5	2021	5	132.996351	0	0	5	4	0.8	0
17	EFFCR002	CHENOWETH RUN AT RUCKRIEGAL PARKWAY, KY	7	2020	5	839.368386	0	0	5	0	0	0
17	EFFCR002	CHENOWETH RUN AT RUCKRIEGAL PARKWAY, KY	6	2021	5	555.466084	0	0	5	1	0.2	0
17	EFFCR002	CHENOWETH RUN AT RUCKRIEGAL PARKWAY, KY	9	2020	5	669.437933	0	0	5	1	0.2	0
17	EFFCR002	CHENOWETH RUN AT RUCKRIEGAL PARKWAY, KY	8	2020	5	1151.71568	0	0	5	1	0.2	0
17	EFFCR002	CHENOWETH RUN AT RUCKRIEGAL PARKWAY, KY	10	2020	5	375.185339	0	0	5	3	0.6	0
17	EFFCR002	CHENOWETH RUN AT RUCKRIEGAL PARKWAY, KY	5	2021	5	399.145389	0	0	5	1	0.2	0
18	EFFCR001	CHENOWETH RUN AT GELHAUS LANE NEAR FERN CREEK, KY	9	2020	5	350.836438	0	0	5	3	0.6	0
18	EFFCR001	CHENOWETH RUN AT GELHAUS LANE NEAR FERN CREEK, KY	10	2020	5	207.60925	0	0	5	4	0.8	0
18	EFFCR001	CHENOWETH RUN AT GELHAUS LANE NEAR FERN CREEK, KY	8	2020	5	394.060658	0	0	5	3	0.6	0
18	EFFCR001	CHENOWETH RUN AT GELHAUS LANE NEAR FERN CREEK, KY	7	2020	5	1022.51667	0	0	5	0	0	0
18	EFFCR001	CHENOWETH RUN AT GELHAUS LANE NEAR FERN CREEK, KY	6	2021	5	562.969052	0	0	5	1	0.2	0
18	EFFCR001	CHENOWETH RUN AT GELHAUS LANE NEAR FERN CREEK, KY	5	2021	5	326.024231	0	0	5	3	0.6	0
19	ECCCC001	CEDAR CREEK AT THIXTON ROAD NEAR LOUISVILLE, KY	8	2020	5	773.172809	0	0	5	1	0.2	0
19	ECCCC001	CEDAR CREEK AT THIXTON ROAD NEAR LOUISVILLE, KY	6	2021	5	411.059733	0	0	5	1	0.2	0
19	ECCCC001	CEDAR CREEK AT THIXTON ROAD NEAR LOUISVILLE, KY	7	2020	5	356.837176	0	0	5	2	0.4	0
19	ECCCC001	CEDAR CREEK AT THIXTON ROAD NEAR LOUISVILLE, KY	10	2020	5	740.433643	0	0	5	1	0.2	0
19	ECCCC001	CEDAR CREEK AT THIXTON ROAD NEAR LOUISVILLE, KY	5	2021	5	246.497088	0	0	5	4	0.8	0
19	ECCCC001	CEDAR CREEK AT THIXTON ROAD NEAR LOUISVILLE, KY	9	2020	5	479.179249	0	0	5	0	0	0
20	EPRPR001	PENNSLYVANIA RUN AT MT WASHINGTON RD NR LOUISVILLE	7	2020	5	205.206615	0	0	5	3	0.6	0
20	EPRPR001	PENNSLYVANIA RUN AT MT WASHINGTON RD NR LOUISVILLE	8	2020	5	1340.14859	0	0	5	1	0.2	0
20	EPRPR001	PENNSLYVANIA RUN AT MT WASHINGTON RD NR LOUISVILLE	9	2020	5	329.6499	0	0	5	2	0.4	0
20	EPRPR001	PENNSLYVANIA RUN AT MT WASHINGTON RD NR LOUISVILLE	6	2021	5	339.720757	0	0	5	1	0.2	0
20	EPRPR001	PENNSLYVANIA RUN AT MT WASHINGTON RD NR LOUISVILLE	5	2021	5	235.247553	0	0	5	4	0.8	0
20	EPRPR001	PENNSLYVANIA RUN AT MT WASHINGTON RD NR LOUISVILLE	10	2020	6	1386.82717	0	0	6	2	0.333333333	0
21	EPCFC001	FERN CREEK AT OLD BARDSTOWN RD AT LOUISVILLE, KY	7	2020	5	801.043503	0	0	5	0	0	0
21	EPCFC001	FERN CREEK AT OLD BARDSTOWN RD AT LOUISVILLE, KY	8	2020	6	892.462119	0	0	6	3	0.5	0
21	EPCFC001	FERN CREEK AT OLD BARDSTOWN RD AT LOUISVILLE, KY	5	2021	5	396.668154	0	0	5	2	0.4	0
21	EPCFC001	FERN CREEK AT OLD BARDSTOWN RD AT LOUISVILLE, KY	6	2021	5	587.264746	0	0	5	0	0	0
21	EPCFC001	FERN CREEK AT OLD BARDSTOWN RD AT LOUISVILLE, KY	10	2020	5	421.089111	0	0	5	3	0.6	0
21	EPCFC001	FERN CREEK AT OLD BARDSTOWN RD AT LOUISVILLE, KY	9	2020	5	657.968946	0	0	5	1	0.2	0
22	EPCND001	NORTHERN DITCH AT OKOLONA, KY	10	2020	5	146.381853	0	0	5	4	0.8	0
22	EPCND001	NORTHERN DITCH AT OKOLONA, KY	8	2020	5	201.483287	0	0	5	4	0.8	0
22	EPCND001	NORTHERN DITCH AT OKOLONA, KY	7	2020	5	249.762086	0	0	5	3	0.6	0
22	EPCND001	NORTHERN DITCH AT OKOLONA, KY	6	2021	5	944.253516	0	0	5	0	0	0
22	EPCND001	NORTHERN DITCH AT OKOLONA, KY	5	2021	5	499.86835	0	0	5	3	0.6	0
22	EPCND001	NORTHERN DITCH AT OKOLONA, KY	9	2020	5	285.836383	0	0	5	4	0.8	0
23	EPCPC001	POND CREEK NEAR LOUISVILLE, KY	9	2020	5	328.20371	0	0	5	3	0.6	0
23	EPCPC001	POND CREEK NEAR LOUISVILLE, KY	10	2020	5	254.543356	0	0	5	3	0.6	0
23	EPCPC001	POND CREEK NEAR LOUISVILLE, KY	8	2020	5	414.329585	0	0	5	1	0.2	0
23	EPCPC001	POND CREEK NEAR LOUISVILLE, KY	7	2020	5	403.796331	0	0	5	2	0.4	0
23	EPCPC001	POND CREEK NEAR LOUISVILLE, KY	5	2021	5	1036.48156	0	0	5	2	0.4	0
23	EPCPC001	POND CREEK NEAR LOUISVILLE, KY	6	2021	5	1110.47467	0	0	5	1	0.2	0
24	EPCPC002	POND CREEK AT PENDLETON ROAD NEAR LOUISVILLE, KY	5	2021	5	1370.10461	0	0	5	3	0.6	0
24	EPCPC002	POND CREEK AT PENDLETON ROAD NEAR LOUISVILLE, KY	7	2020	5	512.785265	0	0	5	3	0.6	0
24	EPCPC002	POND CREEK AT PENDLETON ROAD NEAR LOUISVILLE, KY	8	2020	5	167.433045	0	0	5	3	0.6	0
24	EPCPC002	POND CREEK AT PENDLETON ROAD NEAR LOUISVILLE, KY	10	2020	5	239.115688	0	0	5	4	0.8	0
24	EPCPC002	POND CREEK AT PENDLETON ROAD NEAR LOUISVILLE, KY	9	2020	5	273.321076	0	0	5	4	0.8	0
24	EPCPC002	POND CREEK AT PENDLETON ROAD NEAR LOUISVILLE, KY	6	2021	6	320.41278	0	0	6	4	0.666666667	0
25	EPCBC001	BRIER CREEK AT PENDELTON ROAD NEAR LOUISVILLE, KY	10	2020	5	66.0374535	1	1	5	4	0.8	0
25	EPCBC001	BRIER CREEK AT PENDELTON ROAD NEAR LOUISVILLE, KY	5	2021	5	201.597299	0	0	5	2	0.4	0
25	EPCBC001	BRIER CREEK AT PENDELTON ROAD NEAR LOUISVILLE, KY	6	2021	5	351.208388	0	0	5	1	0.2	0
25	EPCBC001	BRIER CREEK AT PENDELTON ROAD NEAR LOUISVILLE, KY	7	2020	5	331.726037	0	0	5	1	0.2	0
25	EPCBC001	BRIER CREEK AT PENDELTON ROAD NEAR LOUISVILLE, KY	8	2020	5	191.846896	0	0	5	3	0.6	0
25	EPCBC001	BRIER CREEK AT PENDELTON ROAD NEAR LOUISVILLE, KY	9	2020	5	232.362774	0	0	5	4	0.8	0
26	EMCMX001	MILL CREEK CUTOFF NEAR LOUISVILLE, KY	7	2020	6	1055.2202	0	0	6	1	0.166666667	0
26	EMCMX001	MILL CREEK CUTOFF NEAR LOUISVILLE, KY	6	2021	5	832.608527	0	0	5	1	0.2	0

SORTNO	Loccode	DESCR	M	Y	CountOfM	GM	EC_Overall_Compliance_2_equals_criteria_met	Geomean_compliance	CountOfconverted_result	SumOfsingle_sample_max_compliance	PCT	20_pct_max_compliance
26	EMCMX001	MILL CREEK CUTOFF NEAR LOUISVILLE, KY	5	2021	5	1692.94541	0	0	5	2	0.4	0
26	EMCMX001	MILL CREEK CUTOFF NEAR LOUISVILLE, KY	10	2020	5	177.034184	0	0	5	4	0.8	0
26	EMCMX001	MILL CREEK CUTOFF NEAR LOUISVILLE, KY	9	2020	5	235.434747	0	0	5	4	0.8	0
26	EMCMX001	MILL CREEK CUTOFF NEAR LOUISVILLE, KY	8	2020	5	103.664838	2	1	5	5	1	1
27	EMCMC001	MILL CREEK AT ORELL ROAD NEAR LOUISVILLE, KY	5	2021	5	886.389402	0	0	5	2	0.4	0
27	EMCMC001	MILL CREEK AT ORELL ROAD NEAR LOUISVILLE, KY	6	2021	5	1303.99423	0	0	5	2	0.4	0
27	EMCMC001	MILL CREEK AT ORELL ROAD NEAR LOUISVILLE, KY	7	2020	6	788.052479	0	0	6	1	0.166666667	0
27	EMCMC001	MILL CREEK AT ORELL ROAD NEAR LOUISVILLE, KY	8	2020	5	464.152755	0	0	5	1	0.2	0
27	EMCMC001	MILL CREEK AT ORELL ROAD NEAR LOUISVILLE, KY	9	2020	5	883.511728	0	0	5	1	0.2	0
28	ECBCB001	CEDAR CREEK AT HWY 1442 NEAR SHEPHERDSVILLE, KY	9	2020	5	502.434475	0	0	5	3	0.6	0
28	ECBCB001	CEDAR CREEK AT HWY 1442 NEAR SHEPHERDSVILLE, KY	10	2020	5	445.390602	0	0	5	4	0.8	0
28	ECBCB001	CEDAR CREEK AT HWY 1442 NEAR SHEPHERDSVILLE, KY	8	2020	5	1333.44492	0	0	5	1	0.2	0
28	ECBCB001	CEDAR CREEK AT HWY 1442 NEAR SHEPHERDSVILLE, KY	7	2020	5	505.333884	0	0	5	3	0.6	0
28	ECBCB001	CEDAR CREEK AT HWY 1442 NEAR SHEPHERDSVILLE, KY	6	2021	5	288.82988	0	0	5	3	0.6	0
28	ECBCB001	CEDAR CREEK AT HWY 1442 NEAR SHEPHERDSVILLE, KY	5	2021	5	141.453605	0	0	5	4	0.8	0

APPENDIX 5B ANALYZED QUARTERLY MONITORING DATA - WET OR DRY

SORTNO	Loccode	DESCR	WET_OR_DRY	CountOfSAMPNO
1	EHCHC001	HARRODS CREEK AT HIGHWAY 329 NR GOSHEN, KY.	Dry	4
2	EHCWP002	Wolf Pen Branch @ 8200 WPB RD2	Dry	4
3	EGCGC001	GOOSE CREEK AT OLD WESTPORT RD NR ST MATTHEWS, KY	Dry	4
4	EGCGC002	GOOSE CREEK AT US HWY 42 NEAR GLENVIEW ACRES, KY	Dry	4
5	EGCLG001	LITTLE GOOSE CREEK NEAR HARRODS CREEK, KY	Dry	4
6	EMUMU001	MUDDY FK AT MOCKINGBIRD VALLEY RD AT LOUISVILLE,KY	Dry	4
7	EMIMI009	MIFBGC @ Browns LN	Dry	5
8	EMIMI002	M FK BEARGRASS CR AT OLD CANNONS LN AT LOUISVILLE	Dry	4
9	EMIMI010	M FK BEARGRASS CR AT LEXINGTON RD AT LOUISVILLE,KY	Dry	4
10	ESFSF001	SOUTH FORK BEARGRASS CREEK AT LOUISVILLE, KY	Dry	4
11	ESFSF012	S FK BEARGRASS CR @ E BRECKINRIDGE ST @ LOUISVILLE	Dry	4
12	ESFSF006	SFBGC@ Brownsboro Road	Dry	4
14	EFFFF001	FLOYDS FORK NEAR PEWEE VALLEY, KY	Dry	4
15	EFFFF003	FLOYDS FORK AT FISHERVILLE, KY	Dry	4
16	EFFFF002	FLOYDS FORK NEAR MT WASHINGTON, KY	Dry	4
17	EFFCR002	CHENOWETH RUN AT RUCKRIEGAL PARKWAY, KY	Dry	4
18	EFFCR001	CHENOWETH RUN AT GELHAUS LANE NEAR FERN CREEK, KY	Dry	4
19	ECCCC001	CEDAR CREEK AT THIXTON ROAD NEAR LOUISVILLE, KY	Dry	4
20	EPRPR001	PENNSLYVANIA RUN AT MT WASHINGTON RD NR LOUISVILLE	Dry	4
21	EPCFC001	FERN CREEK AT OLD BARDSTOWN RD AT LOUISVILLE, KY	Dry	4
22	EPCND001	NORTHERN DITCH AT OKOLONA, KY	Dry	4
23	EPCPC001	POND CREEK NEAR LOUISVILLE, KY	Dry	4
24	EPCPC002	POND CREEK AT PENDLETON ROAD NEAR LOUISVILLE, KY	Dry	4
25	EPCBC001	BRIER CREEK AT PENDELTON ROAD NEAR LOUISVILLE, KY	Dry	4
26	EMCMX001	MILL CREEK CUTOFF NEAR LOUISVILLE, KY	Dry	4
27	EMCMC001	MILL CREEK AT ORELL ROAD NEAR LOUISVILLE, KY	Dry	3
28	ECBCB001	CEDAR CREEK AT HWY 1442 NEAR SHEPHERDSVILLE, KY	Dry	4

APPENDIX 5B ANALYZED QUARTERLY MONITORING DATA - TOTAL NITROGEN

Loccode	AvgOfSumOfconverted_result
ECBCB001	0.823
ECCCC001	4.722
EFFCR001	1.038
EFFCR002	1.364
EFFFF001	2.533
EFFFF002	2.935
EFFFF003	2.735
EGCGC001	1.506
EGCGC002	1.736
EGCLG001	3.223
EHCHC001	1.562
EHCWP002	1.366
EMCMC001	7.346
EMCMX001	0.887
EMIMI002	1.885
EMIMI009	2.082
EMIMI010	2.059
EMUMU00	3.607
EPCBC001	0.683
EPCFC001	1.423
EPCND001	1.124
EPCPC001	1.024
EPCPC002	0.962
EPRPR001	1.374
ESFSF001	2.006
ESFSF006	2.193
ESFSF012	1.998

APPENDIX 5B ANALYZED QUARTERLY MONITORING DATA - METALS

Combo	Loccode	DESCR	COLDATE	IANALYTE	converted_result	USE_Data	WET_OR_DRY	Metals Analysis - Step 1 Export.M	Metals Analysis - Step 1 Export.Y	Metals Analysis - Step 1 Export._MON	SORTNO	Hardness	Factor 1	Factor 2	Factor 3	Factor 4	Acute_Limit	Acute_Compliance_1_is_criteria_met	Chronic_Limit	Chronic_Compliance_1_is_criteria_met	Field0	Field1	Field2	_MY_
ESFSF012 - 7/13/2020 9:20:00 AM	ESFSF012	S FK BEARGRASS CR @ E BRECKINRIDGE ST @ LOUISVILLE	7/13/2020 9:20	Copper	11	Y	Dry	7	2020	Jul	11	70	0.9422	-1.7	0.8545	-1.702	10.00347184	0	6.878077531	0	7	2020	Jul	Jul-20

APPENDIX 5C RAW SONDE AND STREAMFLOW DATA

APPENDIX 5D RAW LIMS DATA

msd
Safe, clean waterways

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LouisvilleMSD.org
Customer Relations 502.540.6000

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